CITY OF
FOLSOM
DISTINCTIVE BY NATURE

PLANNING COMMISSION AGENDA
May 15, 2019
CITY COUNCIL CHAMBERS
6:30 p.m.
50 Natoma Street
Folsom, California 95630

CALL TO ORDER PLANNING COMMISSION: Jennifer Lane, Kevin Mallory, Vice Chair Eileen Reynolds, Daniel West, Kevin Duewel, Barbara Leary, Chair Justin Raithel

Any documents produced by the City and distributed to the Planning Commission regarding any item on this agenda will be made available at the Community Development Counter at City Hall located at 50 Natoma Street, Folsom, California and at the table to the left as you enter the Council Chambers. The meeting is available to view via webcast on the City's website the day after the meeting.

PLEDGE OF ALLEGIANCE

CITIZEN COMMUNICATION: The Planning Commission welcomes and encourages participation in City Planning Commission meetings, and will allow up to five minutes for expression on a non-agenda item. Matters under the jurisdiction of the Commission, and not on the posted agenda, may be addressed by the general public; however, California law prohibits the Commission from taking action on any matter which is not on the posted agenda unless it is determined to be an emergency by the Commission.

MINUTES

The minutes of April 17, 2019 will be presented for approval.

PRESENTATION

1. **SACOG Presentation on the Regional Housing Needs Assessment (RHNA) (Sacramento Area Council Governments, Greg Chew)**

NEW BUSINESS

2. **PN 19-148 Nomination of the Name Merrill to the Folsom Historic Street Name List and Determination that the Project is Exempt from the CEQA**

   The applicant, Jason Merrill, has proposed that the name "Merill" be added to the Historic Street Name list. The project is exempt from environmental review under Section 15061(b)(3) of the CEQA Guidelines (Review for Exemption). **(Project Planner, Brianna Gustafson, Assistant Planner)**

3. **<u>PN 17-270, Canyon Terrace Apartments Expansion and Remodel General Plan Amendment and Design Review and Consideration of a Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program for the Project</u>**

   A Public Hearing to consider a request from Canyon Terrace Folsom, LLC for approval of a General Plan Amendment and Design Review for a 96 unit expansion, and the remodeling of the existing 200-unit Canyon Terrace Apartment Community located at 1600 Canyon Terrace Lane. A General Plan Amendment is requested to change the General Plan land use designation from MLD (Multi-Family Low Density) to MMD (Multi-Family Medium Density). Design Review is requested for development of 96 new apartments units, two new clubhouse buildings, a new maintenance and storage building, six new carports, remodeling of the 200 existing apartment units, and various site improvements. The zoning classification for the site is R-M, while the General Plan land-use designation is MLD. An Initial Study and Mitigated Negative Declaration have been prepared in accordance with the requirements of the California Environmental Quality Act. **(Project Planner: Principal Planner, Steve Banks / Applicant: Canyon Terrace Folsom, LLC)**

4. **<u>Overview of City of Folsom Housing Programs</u> (Senior Planner, Stephanie Henry)**

PLANNING COMMISSION / PLANNING MANAGER REPORT

The next Planning Commission meeting is scheduled for **June 5, 2019**. Additional non-public hearing items may be added to the agenda; any such additions will be posted on the bulletin board in the foyer at City Hall at least 72 hours prior to the meeting. Persons having questions on any of these items can visit the Community Development Department during normal business hours (8:00 a.m. to 5:00 p.m.) at City Hall, 2nd Floor, 50 Natoma Street, Folsom, California, prior to the meeting. The phone number is (916) 461-6203 and FAX number is (916) 355-7274.

In compliance with the Americans with Disabilities Act, if you are a disabled person and you need a disability-related modification or accommodation to participate in the meeting, please contact the Community Development Department at (916) 461-6203, (916) 355-7274 (fax) or kmullett@folsom.ca.us. Requests must be made as early as possible and at least two-full business days before the start of the meeting.

NOTICE REGARDING CHALLENGES TO DECISIONS

The appeal period for Planning Commission Action: Any appeal of a Planning Commission action must be filed, in writing with the City Clerk's Office no later than ten (10) days from the date of the action pursuant to Resolution No. 8081. Pursuant to all applicable laws and regulations, including without limitation, California Government Code Section 65009 and or California Public Resources Code Section 21177, if you wish to challenge in court any of the above decisions (regarding planning, zoning and/or environmental decisions), you may be limited to raising only those issues you or someone else raised at the public hearing(s) described in this notice/agenda, or in written correspondence delivered to the City at, or prior to, the public hearing

PLANNING COMMISSION MINUTES
April 17, 2019
CITY COUNCIL CHAMBERS
6:30 P.M.
50 Natoma Street
Folsom, CA 95630

CALL TO ORDER PLANNING COMMISSION: Barbara Leary, Jennifer Lane, Kevin Mallory, Vice Chair Eileen Reynolds, Daniel West, Kevin Duewel, Chair Justin Raithel

ABSENT: Mallory

CITIZEN COMMUNICATION: None

MINUTES: The minutes of March 20, 2019 were amended with modification to the votes of Item 2. PN 19-079, Mangini Ranch Village 8 and 9 Design Review to read "AYES: MALLORY, REYNOLDS, WEST, DUEWEL, RAITHEL; NOES: LANE; ABSTAIN: NONE; ABSENT: LEARY."

NEW BUSINESS

1. **PN 19-104, Russell Ranch Design Guidelines Planned Development Permit Modification**

A Public Hearing to consider a request from The New Home Company for approval of a Planned Development Permit Modification to make an alteration to the Russell Ranch Design Guidelines to permit unconditioned outdoor California rooms to encroach up to five feet into the required rear yard setback for SFHD (Single-Family High Density) designated lots within the Russell Ranch Subdivision. The zoning classification for the site is SP-SFHD PD and the General Plan land-use designation is SFHD. An Environmental Impact Report has previously been certified for the Russell Ranch Subdivision project on May 15, 2015 by the City Council in accordance with the requirements of the California Environmental Quality Act (CEQA) and the CEQA Guidelines and no further environmental review is required in association with this application. **(Project Planner: Principal Planner, Steve Banks / Applicant: The New Home Company)**

COMMISSIONER LEARY MOVED TO APPROVE THE PLANNED DEVELOPMENT PERMIT MODIFICATION FOR A CHANGE TO THE RUSSELL RANCH DESIGN GUIDELINES TO PERMIT UNCONDITIONED OUTDOOR CALIFORNIA ROOMS TO ENCROACH FIVE FEET INTO THE REQUIRED FIFTEEN-FOOT REAR YARD SETBACK FOR SFHD DESIGNATED LOTS AS ILLUSTRATED ON ATTACHMENTS 5 THROUGH 9, FOR THE RUSSELL RANCH DESIGN GUIDELINES PLANNED DEVELOPMENT PERMIT MODIFICATION PROJECT (PN 19-104) WITH THE FOLLOWING FINDINGS: GENERAL FINDINGS A & B, CEQA FINDINGS C-F, PLANNED DEVELOPMENT PERMIT EXTENSION FINDINGS G-N, AND CONDITIONS OF APPROVAL NO. 1-10 WITH MODIFICATION TO ATTACHMENT 10, RUSSELL RANCH DESIGN GUIDELINES #8 TO

STATE “For Single-Story Residences in SFHD lots, a 5’ encroachment into the rear yard setback will be granted for 3-sided outdoor covered unconditional spaces (this exception applies to 2-sided spaces with a fireplace).”

COMMISSIONER DUEWEL SECONDED THE MOTION, WHICH CARRIED THE FOLLOWING VOTE:

AYES:	LEARY, LANE, REYNOLDS, WEST, DUEWEL, RAITHEL
NOES:	NONE
ABSTAIN:	NONE
ABSENT:	MALLORY

2. PN 19-067, Mangini Ranch Villages 3-5 Subdivision Planned Development Permit Modification and Residential Design Review

A Public Hearing to consider a request from TRI Pointe Homes for approval of a Planned Development Permit Modification to increase the maximum lot coverage from 50% to 55% for the two single-story master plans, and also to reduce the required front yard setback for a side-load garage feature on one master plan from 20 feet to 15 feet for the Mangini Ranch Villages 3-5 Subdivision situated within the Folsom Plan Area. In addition, the applicant is requesting approval of a Residential Design Review Application for 222 single-family residential unit within the Mangini Ranch Villages 3-5 Subdivision. The specific plan designation for the site is SP-SFHD PD and the General Plan land-use designation is SFHD. The City, as lead agency, previously determined that the Mangini Ranch Subdivision project is entirely consistent with the Folsom Plan Area Specific Plan (FPASP) and therefore the project is exempt from the California Environmental Quality Act as provided by Government Code section 65457 and CEQA Guidelines section 15182 and no further environmental review is required in association with this application. **(Project Planner: Principal Planner, Steve Banks / Applicant: TRI Pointe Homes)**

COMMISSIONER REYNOLDS MOVED TO APPROVE A PLANNED DEVELOPMENT PERMIT MODIFICATION TO INCREASE THE MAXIMUM LOT COVERAGE FROM 50% TO 55% FOR TWO SINGLE-STORY MASTER PLANS, AND ALSO TO REDUCE THE REQUIRED FRONT YARD SETBACK FOR A SIDE-LOAD GARAGE FEATURE ON ONE MASTER PLAN FROM 20 FEET TO 15 FEET. IN ADDITION, MOVE TO APPROVE A RESIDENTIAL DESIGN REVIEW APPLICATION FOR 222 SINGLE-FAMILY RESIDENTIAL UNITS AS ILLUSTRATED ON ATTACHMENTS 5 THROUGH 11 FOR THE MANGINI RANCH SUBDIVISION PROJECT WITH THE FOLLOWING FINDINGS: GENERAL FINDINGS A & B, CEQA FINDINGS C-G, DESIGN REVIEW FINDINGS H-J, PLANNED DEVELOPMENT PERMIT FINDINGS K-R, AND CONDITIONS OF APPROVAL NO. 1-14 WITH MODIFICATION TO CONDITION NO.1 TO STATE “This project approval is for the Mangini Ranch Villages 3-5 Subdivision Planned Development Permit and Residential Design Review, which includes an increase in the maximum lot coverage from 50% to 55% for two single-story master plans with non-conditioned California rooms a reduction in the required front yard setback from 20 feet to 15 feet for one two-story master plan, and design review approval for 222 traditional single-family residential units located within Villages 3, 4, and 5 of the previously approved Mangini Ranch Subdivision project for the Mangini Ranch Villages 3-5 Subdivision Planned Development Permit and Residential Design Review project (PN 19-067). Implementation of the project shall be consistent with the above-referenced items as modified by these conditions of approval.”

COMMISSIONER LEARY SECONDED THE MOTION, WHICH CARRIED THE FOLLOWING VOTE:

AYES:	LEARY, LANE, REYNOLDS, WEST, DUEWEL, RAITHEL
NOES:	NONE
ABSTAIN:	NONE
ABSENT:	MALLORY

PLANNING MANAGER REPORT

None

RESPECTFULLY SUBMITTED,

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Kelly Mullett, SENIOR OFFICE ASSISTANT

APPROVED:

____

Justin Raithel, CHAIRMAN

CITY OF
FOLSOM
DISTINCTIVE BY NATURE

COMMUNITY DEVELOPMENT

DATE: 5/15/19 Planning Commission Meeting

TO: Chairman and Planning Commissioners

FROM: Community Development Director, Pam Johns

SUBJECT: SACOG Presentation on Regional Housing Need Assessment (RHNA)

Item #1

A SACOG Presentation on the Regional Housing Needs Assessment (RHNA) will be presented by Greg Chew.

AGENDA ITEM NO. 2
Type: Public Hearing
Date: May 15, 2019

Planning Commission Staff Report

50 Natoma Street, Council Chambers
Folsom, CA 95630

Project:	Nomination of the Name Merrill to the Folsom Historic Street Name List
File #:	PN-19-148
Request:	Add the Name Merrill to the Folsom Historic Street Name List
Location:	Historic names are used for new streets throughout the City of Folsom
Staff Contact:	Brianna Gustafson, Assistant Planner, 916-461-6210, bgustafson@folsom.ca.us

Applicant
Name: Jason Merrill
Address: 39 Crestview Drive
Kettle Falls, WA 99141

Recommendation: Conduct a public hearing and upon conclusion recommend approval of the addition of the proposed street name Merrill to the City of Folsom Historic Street name list (Attachment 2).

Project Summary: The proposed street name Merrill has been nominated and is to be considered for listing on the Historic Street Name List. Street names that have been approved for listing can be selected by project applicants to name new City streets.

Table of Contents:

Submitted,

PAM JOHNS
Community Development Director

ATTACHMENT 1
BACKGROUND/ANALYSIS

BACKGROUND/PROPOSAL

The applicant, Jason Merrill, is requesting that the name Merrill be added to the Historic Street Name List. Jason Merrill wants to honor his father, Marvin Merrill, a 92-year-old Marine veteran who served in World War II and the Korean War.

Marvin Merrill has been a resident in Folsom since 1957 after he was hired by Aerojet as a machinist. He worked on the Titan missile program in the liquid fuel area, along with building the OMS engines for the Space Shuttle and landing gear for aircraft. He lived at 1181 School Street until the strike in 1971, moving for 9 months to Reno for his work. He then returned to 1336 School Street in 1972 and owned that property until 2016. He now lives in a senior apartment complex in Roseville to be closer to his family. Marvin Merrill bowled in the leagues at Folsom Lake Bowl and coached little league baseball throughout the 1960's here in Folsom.

POLICY/RULE

The Folsom Municipal Code (FMC Section 16.08.020[C][6]) requires that all new street names be considered and approved by the Planning Commission. Historic names that have been approved for listing with the City's Historic Street Name List by the Planning Commission can be selected by project applicants and dedicated to new streets within the City.

ANALYSIS

The nominated name Merrill was reviewed by the emergency services personnel and they have determined that there are not any existing street names in Folsom identical to the proposed street name Merrill. The City does have a street named Herrill Court which is similar to the proposed name, but not similar enough to justify rejection of the name Merrill. As such, staff has determined that the proposed name Merrill is qualified to be added to the City's Historic Street Name List as long as the suffix is not court.

ENVIRONMENTAL REVIEW

The project is exempt from environmental review under Section 15061(b)(3) of the CEQA Guidelines (Review for Exemption).

RECOMMENDATION/PLANNING COMMISSION ACTION

Staff recommends that the Planning Commission approve the addition of the proposed street name Merrill to the City of Folsom Historic Street Name List (Attachment 2).

GENERAL FINDINGS

A. NOTICE OF HEARING HAS BEEN GIVEN AT THE TIME AND IN THE MANNER REQUIRED BY STATE LAW AND CITY CODE.

B. THE PROJECT IS CONSISTENT WITH THE FOLSOM MUNICIPAL CODE.

CEQA FINDINGS

C. A THE PROJECT IS EXEMPT FROM ENVIRONMENTAL REVIEW UNDER SECTION 150061(B)(3) OF THE CEQA GUIDELINES (REVIEW FOR EXEMPTION).

Attachment 2
Folsom Historic Street Name List

CITY OF FOLSOM
HISTORIC STREET NAME LIST

Updated: 3-7-18

NAME	SIGNIFICANCE	SUBDIVISION	DATE
AGOSTINI	Planning Commissioner	Prairie Oaks, Unit P	
ALTERI	Citizen Request	Empire Ranch 40B	
ASSAY			
AULL	First warden of the prison		
AVAZEDO	Had grape vineyard in the area around Bidwell, Oak, & Mormon St.		
AZAVEDO	Planning Commissioner	The Parkway, Phase 2	2002
BALLOU	Mary and her husband sailed from New Hampshire to California and settled in Mormon Island. Mary and husband later moved to Negro Bar, where Mary cooked for a boarding house.	The Parkway, Lot A	2006
BARNHILL	Veteran, killed in Iraq 2005	The Oaks	2006
BAYER	Volunteer fireman	The Parkway, Phase 2	2002
BICKER	Worked for the Natomas Co., wife was 1st City Treasurer	Natoma Valley	2006
BOLI	Lou Boli, City Attorney (late 1950's to early 1960's) wife Ruth	Briggs Ranch	
BONHAM	Owner of Bonham's Feed Store during 1940'S and 1950'S		
BOWEN	Planning Commissioner, worked in real estate	The Parkway, Phase 2	2002
BRADLEY	Cyrus Bradley owned an insurance business in Folsom 1859 to 1867. He built the residence at 606 Figueroa Street	Oaks at Willow Springs, Parkside	2012
BRAZIL	Well known large family, including a son John that operated a bar named "John's Hideway". Daughter Emily married George Coval.	The Parkway, Lot A	
BRODER	Ranchers	The Parkway, Phase 2, B3	
BRYAN		The Parkway, Phase 2	2002
BUGBY	Vintner in this area and was also elected Sheriff of Sac. County	Not Available	
BULJAN	Prison Guard	Not Available	2004

BURLOND		Empire Ranch, Village 34	2005
BUSSING		The Enclaves	
CAPLES	Postmaster	ARC-Canyon Falls Village	2001
CARLSON	Planning Commissioner	Natoma Station -Bungalows	1995
CARROLL	Historic company owner	Empire Ranch, Village 34	2005
CASEY-GOMES	Fire Chief for volunteers	Prairie Oaks, Unit 3 (Gomes)	
CASTRO	Historic family, Planning Commissioner and citizen recommendation	Cobble Ridge	
CHALCEDONY		The Parkway, Phase 2	2002
CHAN	Long time Folsom family	Cresleigh Ravine	2015
CHELMSFORD		**Not Available**	
CLAUDD	Resident		
CLEMENSEN		The Parkway, Phase 2	2002
COLNER	Andy and Marie – Andy was gold buyer and lived in a mobile home where the old bridge is located. One night a gang looking for gold broke into his home and tortured him. The gang was from Auburn, and the leader was executed for murder.	The Island, Phase 1	2014
COOCH	Athletic/Academic/Student Officer		
COONEY	Historical "White Bear Saloon"	Prairie Oaks, Unit 10	
COX	Merchant with J&P Hardware and mining term	Prairie Oaks, Unit 10	
CRAIL	Wilsey Crail had a pool hall on Sutter St. and taught many kids the finer points of the game. Son Jim had a market in Georgetown. Younger kids were "Buck," Beth, and Nellie.	The Parkway Village H	2017
CROW	James Crow and his wife built Folsom's first duplexes in the 1950s.	(Crow Canyon Drive)	N/A
CROWLE	Prison Accountant	The Parkway, Phase 2	2002
CUMMINGS	1987 Honorary Citizen of the Year	Natoma Valley	2006
CURRY	Employed by the Natomas Company	The Parkway, Phase 2	2002
DALL	Folsom Hook & Ladder Company	The Parkway, Phase 2	2002
DARLING	Rancher	The Parkway, Phase 2	
DEGNAN	Prison Worker		
DEAN	Killed in WWII	Not Available	
DENTON	Prison Worker	The Parkway, Phase 2	2002

DIEFENDERFER	Contractor		
DIGGINS		Cobble Ridge	2001
DOHERTY	1989 Honorary Citizen of the Year	The Parkway, Phase 2	2002
DOLAN	Tom Dolan, City Council Member	Sierra Estates	-
DOWD		Santa Juanita Subdivision	2014
DUCHOW	Veteran killed in WWII		
DURFEE	Two brothers – both physicians who bought the second store at Negro Bar.	Natoma Valley	2006
DRUILLINGER	School teacher		
EHRKEY			
ELLIS	George Ellis, Fire Commissioner, son Kenneth worked for City	Prairie Oaks, Unit 11	
ELMER KALLIS*	Elmer Kallis, Resident, Veteran WWII who survived Pearl Harbor.		
ELSWORTH	Planning Commissioner	The Parkway, Phase 2	2002
ESCHELMAN	Prison Guard	The Parkway, Phase 2	2002
FALLON	Russell Fallon owned a plumbing/electrical business in the original Wells Fargo building in the mid 1940s. His nephew Tom Russell and wife Ethel raised five children in Folsom.		
FARGO	Veteran killed in WWII	Not Available	
FARLEY	Veteran killed in WWII	Close to Blue Ravine/Riley	
FEHR		Empire Ranch, Village 34	2005
FERGUSON	Teacher	The Parkway, Phase 2	2002
FERRIER	Planning Commissioner and City Council Member	The Enclaves	2003
FERRY	Warden Larkin's son	Union Square	2004
FETTER		Broadstone 3, Village 2C	2003
FITZSIMONS	1987 Honorary Citizen of the Year	The Parkway, Phase 2	2002
FRATIS (JOHN)	First Police Judge	Prairie Oaks, Unit 8	
GALLINGER	Citizen Recommendation	Broadstone 3	
GARDNER		Prairie Oaks, Unit 8	
GAILANDER	Telephone Switchboard Operator (on Figueroa Street)		
GEORGE McADOW*	Station Master at the passenger depot		
GHILAIN	Jack Ghilain, High School coach		
GIVEN	Alice Given	The Enclaves	2003

GRAHAM	Operated American Exchange Hotel	Prairie Oaks, Unit 9	SIERRA EST.
GUZZETTI	Louie had a bar on Sutter St. and owned a grape vineyard on lower Sutter St.	The Parkway, Lot A	2006
HAKE			
HALVERSON	Planning Commissioner	The Parkway, Phase 2	2002
HAMMOND	Vice Mayor, Service Station Operator	The Parkway, Phase 2	2002
HANDY	First Council Woman (1954)	Empire Ranch, Village 21	2004
HAPTON		The Parkway, Phase 2	2002
HEILER	First Brewery	Broadstone 3	
HEINZE	Warden		
HENDERSON	Killed in WWII	Not Available	
HILDERBRAND	Worked for the Natomas Company	Empire Ranch, Village 21	2005
HILL	Jim Hill, Town Barber		
HOLLEY	Grocery Business (1889)	Sibley Square	
JUNE HOSE			
HOUX	Planning Commissioner		
HOWARD CHAN*	(Both names or only the last name)		
HULETT	City police, raised at prison	Empire Ranch, Village 22	2004
HUMBERT	Civil Engineer (1976)	The Enclaves	2003
HUSE	Secretary of Prison Warden		shenry
HYMAN	Businessman		
ICKES			
IMHOFF	Businessman (store on Sutter Street during 1890's)		
INKS ?	City Council Member	Empire Ranch, Villages 34 and 35	2005
ISAMINGER			
JAMIE		(Off Sibley)	
JAMES	Planning Commissioner		
JENKINS		The Parkway, Phase 2	2002
JIM HILL		Natoma Valley	2006
KARL	Prison Guard		

KAVINE	Prison Guard	Empire Ranch, Village 22	2004
KEARNS	Jimmy Kearns, Prison Guard	The Parkway, Phase 2	2002
KEE	Grocery Store in China Town 1890	Empire Ranch, Village 22	2004
KEEFE	Bobby Keefe, Postmaster		
KEFER	Big League Pitcher	Prairie Oaks, Unit 3	
KIDDER		The Parkway, Phase 2	2002
KIRBY	Gene Kirby	Willow Springs Cluster	
KLUMPP	Louie Klumpp, Mortician, Mayor of Sacramento, owned bar on Sutter Street		
KOSTER			
LAHR			
LEFEVRE		Empire Ranch	
LEONARD	John Leonard Businessman and Judge	Natoma Valley	2006
LESNICK	Ed Lesnick, Academian, Pro-football player, Coach	Broadstone 2-Village 8	
LEULLA	Folsom Historian		
LEWIS	O.C. was very active in the original Hook & Ladder Co., also owned property on the 900 block of Sutter Street, along with other properties in Folsom	Parkway, Lot A	2006
LINDELOF	James Lindelof, a Folsom boy, was killed in an ambush in Afghanistan while filming action. James was a grandson of the longtime Thompson family. Two family members worked for the City.	The Oaks	2006
LONG		The Parkway, Phase 2	2002
LOOMIS	Jack Loomis killed in auto accident on the night of his senior HS prom May 18, 1962	Subdivision north of Levy Road	2005
LUNG	General Merchandise Contractor (1890)		
MADELEINE MOSELEY	A very active and caring resident who provided many years of volunteer service to the Folsom community. Madeleine served as a city sentinel and was a regular attendee and speaker at City Council meetings for more than 30 years.		
MAHAFFEY	Prison worker	The Parkway, Phase 2	2002
MANASCO	George Manasco, Volunteer Fireman	The Parkway, Phase 2	2002
MANGE	Principal of the Jr. High Charter School, Teacher and Citizen of		

	the Year (1984)		
MARSALLA	Planning Commissioner	ARC-Canyon Falls Village	2001
MARTIN	Tom Martin Realtor, Developer	Sibley Square	
McADOW	George McAdow station master at the historic passenger depot	The Parkway, Lot J	2006
McBETH	Elmer McBeth	(Not Available)	
McDONALD			
McKENNY	'Mac' owned a garage	The Parkway, Phase 2	2002
McKIERNAN	Veteran killed in WWII	Not Available	
McMETH			
McWILLIAMS			
MENDES	Frank Mendes, Worked for the Natoma Company	The Parkway, Phase 2	2002
MENDONCA	Melvin Mendonca, Worked for the Natoma Company		
MEREDITH	Store and Hotel Owner (early 1950's)	The Parkway, Phase 2	2002
METTE	Louie	Prairie Oaks	
MILINOCKET			
MINNIE OLIVE ??	Wife of George McAdow	The Parkway, Lot J	2006
MOESZINGER	Citizen of the Year (1982)		
MOON	Planning Commissioner	Madrone	
MOORE	Chuck More, Councilman, Owned gas station at the intersection of Bidwell St. and Market St.	The Enclaves	2003
MORGANITE		The Parkway, Phase 2	2002
MORRIS	Paul Morris ('P.J.'), Warden, Honorary Citizen of the Year 1983		
MUNDT	Herman Mundt, Constable, Son Albert Mundt, D.A. Sacramento County		
NEASHAM	Prison Guard		
NEEDLES	Killed in WWII	Not Available	N/A
NETTLE	John Nettle moved to Folsom in the mid-1930's. He fought in Tunisia and Italy during WWII. He was employed by the Natoma Company.		
NICHOLS	Blacksmith (1881)	Prairie Oaks	
OLIVER	Businessman	Empire Ranch, Village 31	
ORENO	Supporter/Teacher	Empire Ranch, Village 32 and 40C	2005

OSBORNE	Prison Worker	The Parkway, Phase 2	2002
OTIS	1989 Honorary Citizen of the Year		
PAAVOLA	John and Mary Paavola, Owned shoe store on Sutter St.	The Parkway, Phase 2	2002
PATRICK	1985 Honorary Citizen of the Year	Willow Springs	
PRICE	Killed in WWII	East of Sutter Middle School	
QUIGLEY	B.C. was Justice of the Peace in Granite Township in the 1850s, and had the fist lumber yard in Folsom.	Natoma Valley	2006
RAMOS		Empire Ranch, Village 36	2005
REIMAN	Al Reiman, Pharmacist, Honorary Citizen of the Year 1989	The Parkway, Lot D	2005
RELVAS	Al Relvas, City Council Member, Pharmacist Abe Relvas, owned the Sutter Club	The Parkway, Phase 2	2002
RITCHIE	Stan Ritchie, Operated fruit market	Empire Ranch, Village 21 and 32	2004
RIZOR	Martin Rizor, Killed in auto accident (1930's)	Empire Ranch, Village 32	2005
RONCHI	Judge – R.J. a Swiss Italian had a grocery store on Sutter Street, call "Grocery Folks," later went to work at the prison and after retirement was longtime Justice of the Peace – was very active in Folsom Lions Club.		
ROTARY	Citizen of the Year (1980)		
ROWLANDS		Sierra Estates	
ROY KEETER*	Retired from Navy, Electrician, Worked at Folsom Prison		
RUMSEY	Killed in WWII	Not Available	
RUSSELL	Dan Russell, Owned ranch in the east area	Empire Ranch, Village 36	2005
RYAN	Bill Ryan	Repressa	
SAUL		Natoma Valley	2006
SCHEETS			
SCHEIDEGGER	City Council Member and Planning Commissioner	The Parkway, Phase 2	2002
SEABOUGH	Editor of Folsom's first newspaper	Willow Springs Cluster	2001
SERPA	Joe Serpa	Broadstone 3	
SETAUKET			
SIEKFIN	School Superintendent, Honorary Citizen of the Year 1981		
SIMPSON		(Simpson Court Sac County)	N/A
SKOHEGAN			
SLAUGHTER	Doctor (1898)		

SLAYBACK	Doctor, Arrived in Folsom 1882	Empire Ranch, Village 21	2004
SLICKEN	Mining term		
SMITH	Planning Commissioner	The Parkway, Phase 2	2002
SOUZA	Worked for the Natoma Company	The Parkway, Phase 2	2002
SPIVA		The Enclaves	2003
STOCKING		Empire Ranch, Village 22	2004
STONEHEDGE		Willow Springs Cluster	2001

SUNDAHL	Carl Sundahl, Dentist, Rotarian, Honorary Citizen of the Year 1984	Empire Ranch, Village 36 and 32	2005
SWINGLE	Longtime Folsom resident – 5 children, 3 still alive and living in Folsom.	Empire Ranch, Village 36	2005
THOMPSON	Edward Thompson, City Water Department	Willow Springs Cluster	2001
THURMAN	Fire Chief, Sheet metal worker	The Parkway, Phase 2	2002
TIBESSART	Earl Tibessart	Broadstone 3	
TOWNSEND	Charlie Townsend, Planning Commissioner	Empire Ranch, Village 32	2005
TRACY	Owner of a restaurant on Sutter Street (1917-1939)	Empire Ranch, Village 34	2005
TRAZIEL		Broadstone 3	2000
TUCHER	The family had two sons and one daughter and was very well liked.	Empire Ranch, Village 22	2004
VAN DYKE	Town Barber	The Island, Phase 1	2014
VAN VRANKIN			
VAN WICKLE	Winkle, Fire Chief	(Van Winkle is off Inwwod)	
VAN WICKLIN	Peggy van Wicklin		
VAN DE VORT			
WADDILOVE	Owner of Folsom Hook & Ladder and Freight Bus		
WALES	Stephen Wales, veteran killed in WW2	South of City Hall	
WARD	Tom Ward, Episcopalian Priest, killed in Navy	The Enclaves	2003
WEBB	Bryant Webb, Insurance Business	The Enclaves	2003
WEINREICH	Worked for Natomas Company	The Parkway, Phase 2	2002
WELTY	Dan and Louise Welty, Operated a telephone company and the Gaslight Theatre, Honorary Citizen of the Year 1972	The Parkway Village H	2017
WOODHEAD	Prison Worker	Empire Ranch, Village 22	2004

ZERLANG	Margarite Zerlang	The Parkway, Phase 2	2002
ZITTEL	Roger Zittel, Lutheran Minister, Farmer, Planning Commissioner, President of Chamber of Commerce	Empire Ranch, Village 24	

- Names with an asterisk must use both first and last name to avoid sound-alikes.

C:\streetnames\historical.397

Attachment 3
Merrill Street Name Nomination Letter and Related Documents

Merrill Street Name Request (4/15/2019)

My father, Marvin Merrill, moved to Folsom in 1957 after being hired by Aerojet as a machinist. He worked on the Titan missile program in the liquid fuel area, along with building the OMS engines for the Space Shuttle and some landing gear for aircraft. Before that he served in the U. S. Marine Corp. on the island of Guam during WWII, after that he was called back in from the Reserves to be a drill Sgt. at Camp Pendleton during the Korean war. My mother and father both bowled in the leagues at Lake Bowl throughout the 60's, my father coached little league baseball also back in the 60's. We lived at 1181 School St. until the strike in '71, moving for 9 months to Reno for his work. We then returned to 1336 School St. in '72 and owned that property until 2016.

Myself, I did 30 years civil service work including active duty, national guard and reserves. Served in 4 war zones with 2 tours in Iraq, one in Afghanistan and one during Bosnia. Worked 6 times as a defense contractor and was hand picked for the AFCAP contract where we went to 5 bases to set up ATC systems before the second Iraq tour.

Jason Merrill

All League baseball 1976 Folsom High
Golden Empire Champions – baseball, band and choir

Brianna Gustafson

Subject: RE: Note from Jason Merrill to your Facebook Page Roger Gaylord

From: Roger Gaylord <rgaylord@folsom.ca.us>
Sent: Tuesday, March 26, 2019 11:44 AM
To: Jason Merrill <theboze76@gmail.com>
Cc: Elaine Andersen <eandersen@folsom.ca.us>
Subject: Re: Note from Jason Merrill to your Facebook Page Roger Gaylord

Thank you so much Jason!

This is something I'll forward directly to staff, specificity our city manager Elaine Anderson.

Truly appreciate you families service to our great city!

Elaine, FYI. :)

Roger D. Gaylord, III
Folsom City Council
c.916-730-3248

"Alone we can do so little, together we can do so much."

www.facebook.com/RogerGaylordIII

On Mar 26, 2019, at 9:39 AM, Jason Merrill <theboze76@gmail.com> wrote:

> Your Name: Jason Merrill
>
> Phone Number: 916-365-3637
>
> Your Question: Hi Roger,
>
> Our family have been long time residents of Folsom, since 1957. I am writing to you to see what the process is to use our family name on one of the streets in Folsom. Many of the older town streets are named after war veterans, I would like to petition for one. My father owned houses at 1181 and 1336 School St. – he was a Marine veteran from WWII and Korea, I served in Operation Joint Guard during the Bosnia conflict for the USAF – then again in Afghanistan and 2 tours in Iraq. Could you give me any info on this process?
>
> My father is still alive at age 92, this would be a cool public event to do this spring/summer (for dad)
>
> Thanks, Jason
>
> Folsom High All League Baseball 1976
> Resume attached

(some is classified)
Sent from Mail for Windows 10

<RESUME 1.doc>

AGENDA ITEM NO. 3
Type: Public Hearing
Date: May 15, 2019

Planning Commission Staff Report

50 Natoma Street, Council Chambers
Folsom, CA 95630

Project:	Canyon Terrace Apartments Expansion and Remodel
File #:	PN-17-270
Request:	General Plan Amendment and Design Review
Location:	1600 Canyon Terrace Lane
Staff Contact:	Steve Banks, Principal Planner, 916-461-6207 sbanks@folsom.ca.us

Applicant/Property Owner
Name: Canyon Terrace Folsom, LLC
Address: 23622 Calabasas Road, Suite 200
Calabasas, CA 91302

Recommendation: Conduct a public hearing and upon conclusion recommend City Council Adoption of the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program, City Council Approval of a General Plan Amendment to change the land use designation for the 16.96-acre project site (APN No. 213-0060-025) from MLD (Multi-Family Low Density) to MMD (Multi-Family Medium Density), and City Council Approval of Design Review for a 96-unit expansion and remodel of the existing Canyon Terrace Apartment Community as illustrated on Attachments 5 through 23 for the Canyon Terrace Apartments Expansion and Remodel project (PN 17-270) subject to the findings (Findings A-J) and conditions of approval (Conditions 1-14) attached to this report.

Project Summary: The proposed project involves a request for approval of a General Plan Amendment and Design Review for expansion and remodeling of the existing 200-unit Canyon Terrace Apartment Community located on at 1600 Canyon Terrace Lane. Specifically, the applicant is proposing development of 96 new apartments units within a landscaped area along the project's eastern boundary adjacent to American River Canyon Drive. The proposed expansion will bring the total number of units within the apartment community up to 296. The 96 proposed apartment units, which are located in eight (8) two and three-story buildings, range in size from 700 square feet (1BR/1BA) up to 1,322 square feet (3BR/2BA). The proposed project also includes replacing an existing single-story community building, pool area, and tennis courts with a new single-story clubhouse building with expanded outdoor amenities including a pool, spa, and deck area. In addition, the proposed project includes remodeling and modernization of the 200 existing apartment units (18 two-story apartment buildings) to compliment the design of the 96 proposed apartment units. Lastly, the project provides for either ten (10) affordable housing units within the overall apartment community or an in-lieu fee payment of $139,000 into the City's Housing Trust Fund.

The proposed project includes a request for approval of a General Plan Amendment and Design Review. A General Plan Amendment (MLD to MMD) is being requested due to the fact that the residential density of the project is increasing from 11.7-units per acre to 17.4 units per acre. The MLD General Plan land use designation only accommodates 7-12 units per acre, while the MMD General Plan land use designation allows 12-20 units per acre. The proposed project also includes a request for Design Review approval for 96 new apartments units, a new clubhouse building, and remodeling of the 200 existing apartment units.

Table of Contents:

25. Initial Study, Mitigated Negative Declaration, and Mitigation Monitoring and Reporting Program
26. Site Photographs

Submitted,

PAM JOHNS
Community Development Director

ATTACHMENT 1
DESCRIPTION/ANALYSIS

APPLICANT'S PROPOSAL

The applicant, Canyon Terrace Folsom, LLC, is requesting approval of a General Plan Amendment and Design Review for expansion and remodeling of the existing 200-unit Canyon Terrace Apartment Community situated on a 16.96-acre site located at 1600 Canyon Terrace Lane. A General Plan Amendment (Attachment 5) is requested to change the General Plan land use designation from MLD (Multi-Family Low Density) to MMD (Multi-Family Medium Density). Design Review (Attachments 6-21) is requested for development of 96 new apartments units, two new clubhouse buildings, a new maintenance and storage building, six new carports, remodeling of the 200 existing apartment units, and various site improvements.

The proposed project includes development of 96 new apartment units distributed among eight (8) two and three-story apartment buildings. The eight new apartment buildings are proposed to be located in a landscaped area along the eastern portion of the project site adjacent to American River Canyon Drive. The proposed apartment units, which range in size from 700 square feet up to 1,322 square feet, include 48 one-bedroom units, 40 two-bedroom units, and 8 three-bedroom units. The design concept for the proposed apartments buildings features a modern Craftsman-style architecture intended to give the apartment community a more contemporary appearance.

The proposed project also involves remodeling and modernization of the 200 existing apartment units at the Canyon Terrace Apartment Community to compliment the design and architecture of the 96 proposed apartment units. The 200 existing apartment units, which are dispersed among 18 two-story apartment buildings, feature a California Craftsman-style design. Remodeling of the existing apartment buildings includes replacing the existing porch and balcony railings, repainting the fascia and gutters, and introducing a new color-block scheme. It is important to note that the applicant is already in the process of modernizing the interior of the existing apartment units by providing new flooring upgrades, new kitchen upgrades, new bathroom upgrades, additional washers and dryers, and replacing water heaters.

The proposed project entails replacing an existing split-level community building, pool area, and two tennis courts with two new single-story clubhouse buildings with expanded outdoor amenities including a pool, spa, and deck area. The clubhouse buildings will include a leasing office, a manager's office, a fitness room, an amenity room, and restroom facilities. The clubhouse buildings have been designed to match the design, materials, and colors proposed for the new apartment buildings. The applicant is also proposing to replace three existing temporary storage sheds located in the southwest corner of the project site with a permanent 612-square-foot maintenance shop and storage building.

Access to the project site is provided by two existing driveways located on the west side of American River Canyon Drive, no changes or modifications are proposed to these driveways. Three new drive aisles are proposed to provide access to the new apartment buildings and to new parking lot areas. New pedestrian walkways are proposed to facilitate access in and around the project site. The proposed project includes construction of 238 new parking spaces and removal of 87 existing parking spaces, resulting in an overall increase of 151 parking spaces within the apartment community. Additional site improvements include underground utilities, six new carports, two trash/recycling enclosures, retaining walls, site lighting, and site landscaping.

The proposed project includes a number of energy efficiency and sustainability features including solar panels, electrical vehicle charging stations, and electric vehicle car sharing. Specifically, the applicant is proposing to install a photovoltaic system on the rooftops of the clubhouse building and one of the new apartment buildings (Building 1). The applicant is also proposing to provide three electric vehicle charging stations near the leasing office for use by residents of the apartment community. In addition, the applicant is proposing to implement an electric vehicle car sharing program which will allow residents shared use of an on-site electric vehicle.

In an effort to assist the City in meeting its affordable housing needs and demonstrate a community benefit, the applicant has voluntarily submitted an affordable housing proposal for the project. The affordable housing proposal includes providing ten (10) deed-restricted affordable housing units within the overall apartment community. The ten deed-restricted affordable housing units would be comprised of seven (7) Low-Income units and three (3) Very Low-Income units. This proposal is consistent with the City's inclusionary housing requirements applicable to for-sale units. As an alternative to providing affordable housing units within the project, the applicant is proposing to provide an in-lieu fee payment of $139,000 into the City's Housing Trust Fund. The in-lieu fee is consistent with the City's Commercial Housing Trust Fund Fee calculation.

POLICY/RULE

Folsom Municipal Code (FMC), Section 17.68.050 requires that applications for General Plan Amendments be forwarded to the City Council for final action. Folsom Municipal Code (FMC), Section 17.06.030 also requires that multi-family residential projects containing two or more units submit a Design Review Application for approval by the Planning Commission.

ANALYSIS

General Plan and Zoning Consistency

The General Plan land use designation for the project site is MLD (Multi-Family Low Density) and zoning classification is R-M (Residential, Multi-Family Dwelling District). The applicant is proposing a General Plan Amendment to change the land use designation for the16.96-acre project site from MLD (Multi-Family Low Density) to MMD (Multi-Family Medium Density) in order to accommodate the increased residential density associated with the proposed project. With approval of the proposed expansion (200 units to 296 units), the density of the project would increase from 11.7 units per acre to 17.5 units per acre. The MLD land use designation only allows development of 7 to 12 units per acre, while the proposed MMD land use designation permits development of 12 to 20 units per acre. The proposed project is consistent with both the proposed General Plan land use designation (MMD) and the existing Zoning designation (R-M) for the site, as multi-family dwellings and apartment houses are identified as permitted land use (Folsom Municipal Code, FMC Section 17.17).

The recently approved City of Folsom General Plan (2035) outlines a number of goals, policies, and implementation programs designed to guide the physical, economic, and environmental growth of the City. Staff has determined that the proposed project is consistent with the General Plan goals and policies as outlined and discussed below:

APPLICABLE GENERAL PLAN GOALS AND POLICIES

GP GOAL LU 1.1 (Land Use/Growth and Change)

Retain and enhance Folsom's quality of life, unique identity, and sense of community while continuing to grow and change.

GP POLICY LU 1.1.11 (Vacant and Underutilized Sites)

Monitor residential and non-residential development and make adjustments as necessary to the amount of land designated for various uses and the rate of project approvals to promote a reasonable citywide balance between new employment-generating development and housing development.

The proposed project is consistent with this policy in that the project is providing new multi-family apartment units in a portion of the City that has not experienced significant new multi-family apartment development over the past ten years. For example, from 2010 to 2019, 1,062 multi-family apartment units have been approved and/or constructed in the southern portion of the City (south of the American River), while during that same timeframe, only 59 multi-family apartment units have been approved and/or constructed in the northern portion of the City (north of the American River). As a result, the proposed project is assisting in providing a more balanced distribution in terms of the location of multi-family dwelling units within the City.

GP POLICY LU 1.1.12-1 (Infill Development)
Respect the local context: New development should improve the character and connectivity of the neighborhood in which it occurs. Physical design should respond to the scale and features of the surrounding community, while improving critical elements such as transparency and permeability.

The proposed project is consistent with this policy in that the project features significant site and design improvements which will enhance the overall character of the neighborhood including introducing new apartment units with a contemporary craftsman-style design, remodeling and modernization of the 200 existing apartment units, replacing the existing clubhouse building and outdoor amenities, and facilitating improved pedestrian circulation with new walkways and connection points.

GP POLICY LU 1.1.12-2 (Infill Development)
Work with neighbors: Infill development requires neighborhood consultation to understand the concerns, goals, and needs of existing neighborhoods. Ensure the planning and design process provides proper avenues for neighborhood input while fulfilling the community's larger goals for walkability and compact development.

The proposed project is consistent with this policy in that the project applicant held three separate neighborhood outreach meetings (July 13, 2015, July 27, 2015, and March 28, 2019) at which residents within the American River Canyon South neighborhood were invited to learn more about the proposed project and provide feedback. While attendance was relatively low, the residents who attended these outreach events were generally supportive of the proposed project and thought it would enhance the overall appearance of the neighborhood.

GP POLICY LU 1.1.15 (SACOG Blueprint Principles)
Strive to adhere to the Sacramento Regional Blueprint Growth Principles.

The proposed project is consistent with this policy in that the project has been designed to adhere to the primary SACOG Blueprint Principles including Compact Development, Housing Choice and Diversity, Use of Existing Assets, and Quality Design. Compact Development involves creating environments that are more compactly built and use space in an efficient but attractive manner and helps to encourage more walking, biking, and transit use and shorter auto trips. Housing Choice and Diversity includes providing a variety of places where people can live (apartments, townhomes, condominiums, and single-family detached homes) and also creating opportunities for the variety of people who need them such as families, singles, seniors, and people with special needs. Use of Existing Assets entails intensification of the existing use or redevelopment in order to make better use of existing public infrastructure, including roads. Quality Design focuses on the design details of any land development (such as relationship to the street, placement of garages, facades, sidewalks, street widths, landscaping, etc.), which are all factors that influence the attractiveness of living in a compact development and facilitate the ease of walking within and in and out of a community.

APPLICABLE GENERAL PLAN GOALS AND POLICIES

GP GOAL LU 6.1 (Residential Neighborhoods)

Allow for a variety of housing types and mix of uses that provide choices for Folsom residents, create complete and livable neighborhoods, and encourage walking and biking.

GP POLICY LU 6.1.3 (Efficiency through Density)

Support an overall increase in average residential densities in identified urban centers and mixed-use districts. Encourage new housing types to shift from lower-density, large-lot developments to higher-density, small-lot and multifamily developments, as a means to increase energy efficiency, conserve water, reduce waste, as well as increase access to services and amenities (e.g., open space) through an emphasis of mixed uses in these higher-density developments.

The proposed project is consistent with this policy in that the project is increasing the residential density (11.7 to 17.5 units per acre) of an existing multi-family residential development that is adjacent to a neighborhood commercial shopping center. In addition, the proposed project includes many features that will increase energy efficiency and sustainability including replacing existing water heaters, installing solar panels on roofs, providing electric vehicle charging stations, and implementing an electric vehicle car sharing program.

GP GOAL LU 9.1 (Land Use/Community Design)

Encourage community design that results in a distinctive, high-quality built environment with a character that creates memorable places and enriches the quality of life of Folsom's residents.

GP POLICY LU 9.1.10 (Renewable and Alternative Energy Generation Systems)

Require the use of solar, wind, and other on-site renewable energy generation systems as part of the design of new planned developments.

The proposed project is consistent with this policy in that the project includes a number of energy efficiency and sustainability features including solar panels, electrical vehicle charging stations, and an electric vehicle car sharing program. In particular, the applicant is proposing to install a photovoltaic system on the rooftops of the community clubhouse building and one of the new apartment buildings (Building 1). The applicant is also proposing to provide three electric vehicle charging stations located near the leasing office for exclusive use by residents of the apartment community. Lastly, the applicant is proposing to implement an electric vehicle car sharing program which will allow residents shared use of an on-site electric vehicle.

GP GOAL M 4.1 (Vehicle Traffic and Parking)
Ensure a safe and efficient network of streets for car and trucks, as well as provide an adequate supply of vehicle parking.

GP POLICY M 4.1.3 (Level of Service)
Strive to achieve a least traffic Level of Service "D" (or better) for local streets and roadways throughout the City. In designing transportation improvements, the City will prioritize use of smart technologies and innovative solutions that maximize efficiencies and safety while minimizing the physical footprint. During the course of Plan buildout it may occur that temporarily higher Levels of Service result where roadway improvements have not been adequately phased as development proceeds. However, this situation will be minimized based on annual traffic studies and monitoring programs. Staff will report to the City Council at regular intervals via the Capital improvement Program process for the Council to prioritize project integral to achieving Level of Service D or better.

The proposed project is consistent with this policy in that the project will not result in any of the study intersections falling to the Level of Service "E" with the exception of the intersection of Oak Avenue Parkway and Baldwin Dam Road. The Oak Avenue Parkway/Baldwin Dam Road intersection currently operates at LOS E; however, the level of service improves to LOS D under Cumulative No Project Conditions, then reverts back to LOS E under Cumulative Plus Project Conditions. To address this unacceptable level of service, the project is required to provide a "fair share contribution" towards street improvements (widening of Oak Avenue Parkway between Folsom-Auburn Road and Baldwin Dam Road) that will improve the Level of Service at this particular intersection under Cumulative Plus Project Conditions (2035) from Level of Service "E" to Level of Service "B". A full discussion of this topic is covered within the Traffic/Access/Circulation section of this staff report.

GP GOAL M 4.2 (Vehicle Traffic and Parking)
Provide and manage a balanced approach to parking that meets economic development and sustainability goals.

GP POLICY M 4.2.4 (Electric Vehicle Charging Stations)
Encourage the installation of electric vehicle charging stations in parking spaces throughout the city, prioritizing installations at multi-family residential units.

The proposed project is consistent with this policy in that the project includes three electric vehicle charging stations located near the leasing office for exclusive use by residents of the apartment community. The number of proposed electric vehicle charging station is consistent with the California Green Buildings Standards Code's provisions for multi-family residential development.

GP GOAL H-1 (Adequate Land Supply for Housing)
To provide an adequate supply of suitable sites for the development of a range of housing types to meet the housing needs of all segments of the population.

GP POLICY H 1.3
The City shall encourage home builders to develop their projects on multi-family-designated land at the high end of the applicable density range.

The proposed project is consistent with this policy in that the project will increase the residential density of the subject property from 11.7 units per acre to 17.5 units per acre. The proposed MMD land use designation permits residential development of 12 to 20 units per acre, development of the property at the 17.5 units per acre would be considered the high end of the density range.

GP GOAL H-2 (Removing Barriers to the Production of Housing)
To minimize governmental constraints on the development of housing for households of all income levels.

GP POLICY H 2.7
The City shall educate the community on the needs, the realities and the benefits of affordable and high-density housing.

The proposed project is consistent with this policy in that the project will result in development of a higher density apartment community than is currently present on the project site. In addition, the proposed project includes development of ten (10) affordable housing units within the overall project site or payment of an in-lieu fee into the City's Housing Trust Fund.

GP GOAL H-3 (Facilitating Affordable Housing)
To facilitate affordable housing opportunities to serve the needs of people who live and work in the community.

GP POLICY H 3.1
The City shall encourage residential projects affordable to a mix of household incomes and disperse affordable housing projects throughout the City to achieve a balance of housing in all neighborhoods and communities.

The proposed project is consistent with this policy in that the applicant has voluntarily submitted an affordable housing proposal for the project. The affordable housing proposal includes providing ten (10) deed-restricted affordable housing units within the overall apartment community. The ten deed-restricted affordable housing units are comprised of seven (7) Low-Income units and three (3) Very Low-Income units. This proposal is consistent with the City's inclusionary housing requirements applicable to for-sale units. Low-Income units are housing units that are affordable to household whose combined income is at 80% of the median income as established by HUD for the Sacramento area. Very Low-Income units are housing units that are affordable to household whose combined income is at 50% of the median income as established by HUD for the Sacramento area. As an alternative to providing affordable housing units within the project, the applicant is proposing to provide an in-lieu fee payment of $139,000 into the City's Housing Trust Fund to assist with development of affordable housing units at other locations throughout the City. The in-lieu fee is consistent with the City's Commercial Housing Trust Fund Fee calculation.

GP GOAL H-4 (Neighborhood Preservation and Housing Rehabilitation)
To encourage the conservation and maintenance of the existing housing stock, neighborhoods, and historic homes in Folsom.

GP POLICY H 4.1
The City shall encourage private reinvestment in older residential neighborhoods and private rehabilitation of existing housing.

The proposed project is consistent with this policy in that the project involves remodeling and modernization of the 200 existing apartment units at the Canyon Terrace Apartment Community. The proposed project also includes replacing an existing split-level community building, pool area, and two tennis courts with a two new single-story clubhouse building with expanded outdoor amenities including a pool, spa, and deck area. While not part of the project proposal, the applicant is already in the process of modernizing the interior of the existing apartment units by providing new flooring upgrades, new kitchen upgrades, new bathroom upgrades, additional washers and dryers, and replacing water heaters.

GP GOAL H-5 (Housing Opportunities for Special Needs Groups)
To provide a range of housing services for Folsom residents with special needs, including seniors, persons with disabilities, single parents, large families, the homeless, and residents with extremely low incomes.

GP POLICY H 4.1
The City shall encourage the development of three- and four-bedroom units in multi-family rental housing to encourage the provision of adequate rental housing for large families (except for senior housing projects).

The proposed project is consistent with this policy in that the project includes development of eight (8) three-bedrooms units within the apartment community. The three-bedroom units will provide housing opportunities for those with special needs including but not limited to seniors, persons with disabilities, single parents, large families, and residents with extremely low incomes.

Land Use Compatibility
As mentioned previously within this report, the 16.96-acre project site is located near the intersection of American River Canyon Drive and Oak Avenue Parkway. The project site is bounded by a neighborhood shopping center to the north with Oak Avenue Parkway beyond, single-family residential development to the south with Oak Canyon Way beyond, single-family residential development to the west with Santa Juanita Avenue beyond, and American River Canyon Drive to the east with single-family residential development beyond.

As described above, the project site is located within a geographic area that is predominantly residential in nature. In terms of compatibility with the nearby single-family residential development, the proposed project has been designed to minimize impacts to nearby residents with respect to site design and architectural building design. In relation to site design, the applicant has built the homes into the slope so that the apartment buildings appear to be only two-stories tall as viewed from American River Canyon Drive and three-stories tall facing the interior of the project site. There is also a substantial existing landscape buffer along the project's eastern boundary with American River Canyon Drive that will effectively screen the new apartment buildings. The proposed project also meets or exceeds all development standards in terms of building height and building setbacks from property lines. With regard to the architectural design of the proposed apartment buildings, the applicant has created a contemporary design theme that utilizes building materials and colors that are complimentary to existing single-family homes in the project area. Based on the aforementioned information, staff has determined that the proposed project is compatible with the surrounding residential development and commercial development.

Development Standards

The proposed project has a zoning designation of R-M (Residential, Multi-Family Dwelling District), thus it is subject to the development standards established by the Folsom Municipal Code (FMC, Section 17.17) for this zoning district. The following table outlines the development standards for the R-M zoning district and the proposed project:

Canyon Terrace Apartments Development Standards Table

	Lot Area	Lot Width	Maximum Building Coverage	Front Yard Setback	Rear Yard Setback	Side Yard Setbacks	Maximum Building Height
R-M Standard	6,000 s.f.	60 feet	60%	20 feet	20 feet	5 feet and 11 feet	50 feet
Proposed Project	738,777 s.f.	1,200 feet	23%	20+ feet	20 feet	5 feet and 11 feet	38 feet

As shown on the development standards table, the proposed project meets all applicable development standards established for the R-M zoning district including minimum lot area, minimum lot width, maximum building coverage, front yard setback, rear yard setback, side yard setbacks, and maximum building height. As a result, staff has determined that the proposed project meets the intent, purposes, and standards set forth in the Residential, Multi-Family Dwelling District (FMC Section 17.17).

Traffic/Access/Circulation

Existing Roadway Network:

Significant roads in the project vicinity include American River Canyon Drive and Oak Avenue Parkway. American River Canyon Drive is a four-lane divided major collector roadway that operates at a posted speed limit of 40 mph. American River Canyon Drive intersects with Oak Avenue Parkway at its northern terminus and with Greenback Lane at its southern terminus. In the project area, Oak Avenue Parkway is a two to four-lane undivided minor arterial roadway with a posted speed limit of 45 mph. Oak Avenue Parkway traverses the cities of Citrus Heights and Folsom in an east-west direction and intersects with American River Canyon Drive in the project vicinity. Consistent with the General Plan, the City is in the process of seeking funding to expand Oak Avenue Parkway to four lanes between Folsom-Auburn Road and a point slightly west of Baldwin Dam Road.

Traffic Impacts:
The traffic, access, and circulation analysis associated with the proposed project is based on the results of a Traffic Impact Analysis that was prepared on February 18, 2019 by Omni-Means. The traffic study analyzed traffic operations in the vicinity of the project site under four scenarios: Existing Conditions, Existing Plus Project Conditions, Cumulative No Project Conditions (2035), and Cumulative Plus Project Conditions (2035). Potential impacts of the project were evaluated at twelve (12) street intersections including but not limited to American River Canyon Drive/Oak Avenue Parkway, American Canyon River Drive/Greenback Lane, Oak Avenue Parkway/Baldwin Dam Road, and Oak Avenue Parkway/Folsom-Auburn Road.

Under Existing Conditions, all of the study intersections operate at an acceptable Level of Service (LOS D or better) during the AM Peak Hour (7:00 a.m. to 9:00 a.m.) and PM Peak Hour (4:00 p.m. to 6:00 p.m.) with the exception of the intersection of Oak Avenue Parkway and Baldwin Dam Road. The Oak Avenue Parkway/Baldwin Dam Road intersection currently operates at LOS E during the AM Peak Hour.

The proposed project is expected to generate 51 vehicle-trips during the weekday AM peak hour (10 inbound and 41 outbound) and 71 during the weekday PM peak hour (46 inbound and 25 outbound). In addition, the proposed project is projected to generate a total of 705 daily vehicle trips. Under Existing Plus Project Conditions, all of the study intersections operate at an acceptable Level of Service (LOS D or better) during the AM Peak Hour and PM Peak Hour with the exception of the intersection of Oak Avenue Parkway and Baldwin Dam Road, which continues to operate at LOS E during the AM Peak Hour. The project-related delay at this particular intersection during the AM Peak Hour is 2.2 seconds, which is less than the City's 5-second threshold for being considered a significant impact at an unsignalized street intersection.

Under Cumulative No Project Conditions, all of the study intersections operate at an acceptable Level of Service (LOS D or better) during the AM Peak Hour and PM Peak Hour with the exception of the intersections of Oak Avenue Parkway/Baldwin Dam and Oak Avenue Parkway/Folsom-Auburn Road. During this timeframe, the intersection of Oak Avenue Parkway and Baldwin Dam Road will operate at LOS E during the PM Peak Hour. Also, during this time period, the intersection of Oak Avenue Parkway and Folsom-Auburn Road will operate at LOS E during both the AM and PM Peak Hour periods.

Under Cumulative Plus Project Conditions, all of the study intersections operate at an acceptable Level of Service (LOS D or better) during the AM Peak Hour and PM Peak Hour with the exception of the intersections of Oak Avenue Parkway/Baldwin Dam and Oak Avenue Parkway/Folsom-Auburn Road. The intersection or Oak Avenue

Parkway and Baldwin Dam Road will operate at LOS E during both the AM and PM Peak Hours, while the intersection of Oak Avenue Parkway and Folsom-Auburn Road will also operate at LOS E during the AM and PM Peak Hour periods. The addition of project-related trips to these cumulative conditions increases the delay at the Oak Avenue Parkway/Folsom-Auburn Road intersection by 2.4 seconds in the AM Peak Hour and 2.1 seconds in the PM Peak Hour. This increase in delay is less than the 5-second significance threshold established for signalized intersections in the City.

The intersection of Oak Avenue Parkway and Baldwin Dam Road currently operates at an unacceptable level of service (LOS E) under Existing Conditions in the AM Peak Hour, and continues to operate at LOS E after addition of the project-related trips. This intersection is projected to operate at LOS D in the AM Peak Hour and an unacceptable LOS E during the PM Peak Hour under Cumulative No Project Conditions. The addition of the project-related trips to the cumulative scenario results in this intersection returning to LOS E during the AM Peak Hour and increases the delay at the intersection by 3.2 seconds in the PM Peak Hour. While the project causes the LOS to go from acceptable to unacceptable, and a return to the existing LOS condition in the circumstances described, the project does not cause the peak hour warrant to be met in the AM Peak Hour, nor does it increase the delay by more than the 5-second threshold established for unsignalized intersections in the PM Peak Hour. As a result, the transportation and traffic-related impacts associated with the proposed project are not considered significant.

As described above, the proposed project does not result in any significant traffic impacts to the twelve study intersections in terms of increased delays. However, the project does cause the Oak Avenue Parkway/Baldwin Dam Road intersection to return to LOS E under Cumulative Plus Project Conditions. The City is currently in the process of securing funding to expand Oak Avenue Parkway from two lanes to four lanes between Folsom-Auburn Road and a point slightly west of Baldwin Dam Road (where the roadway is already four lanes wide) as called for by the General Plan. The widening of Oak Avenue Parkway from two lanes to four lanes will improve the level of service at the Oak Avenue Parkway/Baldwin Dam Road intersection from LOS D to LOS B under Cumulative Plus Project Conditions. To address the project's impact to the level of service at the Oak Avenue Parkway/Baldwin Dam Road intersection, staff recommends the follow measure be implemented (Condition No. 41)

- The owner/applicant shall be responsible for their fair share of the cost associated with the widening of Oak Avenue Parkway (design, construction, traffic signal modifications, etc.) as determined by a fair share cost analysis. The fair share analysis shall be prepared by a licensed professional subject to mutual agreement by the owner/applicant and the City and shall be approved by the City.

Project Access and On-Site Circulation:
As shown on the submitted site plan (Attachment 6), access to the project site is provided by two existing driveways located on the west side of American River Canyon Drive. Each of these driveways allow full turning movements into and out of the project site with no restrictions. No changes or modifications are proposed with respect to the two existing driveways. Bicycle and pedestrian access to the project site is accommodated by existing Class II bicycle lanes and four-foot-wide sidewalks located on both side of American River Canyon Drive. The proposed project includes constructing a new sidewalk at the northern project driveway that connects the existing sidewalk along the west side of American River Canyon Drive to pedestrian walkways within the project site.

Internal vehicle circulation is provided by a series of existing drive aisles and also by new drive aisles that will be constructed with development of the project. The most notable vehicle circulation improvement is a new drive aisle that runs parallel to American River Canyon Drive and provides a direct connection between the northern and southern portions of the project site, thus providing better overall circulation and accessibility for emergency response vehicles. Internal pedestrian circulation is provided by a combination of existing walkways and proposed walkways which will be interconnected with each other. The Traffic Impact Analysis evaluated the existing and proposed access and on-site circulation facilities associated with the proposed project and determined that they will function effectively and appropriately.

Traffic Safety Committee
The proposed project was reviewed by the Traffic Safety Committee at its February 28, 2019 meeting. At the aforementioned meeting, the Committee discussed a number of traffic, access, and circulation-related topics associated with the proposed project. In particular, the Committee expressed an interest in providing additional pedestrian connectivity between the project site (near southern project driveway) and American River Canyon Drive. However, the Committee acknowledged that there are some existing physical constraints (severe slopes, retaining walls, etc.) on the project site adjacent to American River Canyon Drive that may prohibit construction of an additional pedestrian connection. To that end, the Committee recommended that the applicant evaluate, and if feasible, construct an additional pedestrian connection between the

existing sidewalk along the western side of American River Canyon Drive and the project site (near southern project driveway). Condition No. 42 is included to reflect this requirement.

Parking

The existing project site provides a total of 411 parking spaces including 211 uncovered parking stalls and 200 covered carport parking stalls. The proposed project includes removal of 87 existing parking spaces (79 uncovered stalls and 8 covered carport stalls) to accommodate development of the new apartment buildings. The proposed project also includes creation of 238 new parking stalls including 135 uncovered parking stalls, 26 covered carport stalls, and 77 garage parking spaces located on the ground level under some of the apartment buildings. With the proposed modifications, the project site will have a total of 562 parking spaces to serve residents and guests.

The Folsom Municipal Code (Section 17.17.100) requires 1.5 parking spaces per unit for multi-family structures and complexes located within the R-M (Residential, Multi-Family Zoning District) zoning district. Utilizing the aforementioned parking ratio, the proposed project includes more than adequate parking by providing 562 parking spaces whereas 444 parking spaces are required.

The existing apartment community contains 10 bicycle parking spaces. The Folsom Municipal Code (FMC, Section 17.57.090) requires multi-family residential developments to provide one bicycle parking space for every five dwelling units. To address the existing deficiency in bicycle parking on the project site and the bicycle parking needs associated with the proposed apartment expansion, staff recommends that 49 new bicycle parking spaces be provided. In addition, staff recommends that the bicycle parking spaces be evenly distributed throughout the project site. Condition No. 44 is included to reflect these requirements.

Noise

Based on the close proximity of the project site to American River Canyon Drive and an adjacent neighborhood shopping center, an Environmental Noise Analysis (Attachment 23) was prepared for the proposed project by J.C. Brennan & Associates on September 26, 2018. The purpose of the Analysis was to quantify existing noise levels associated with traffic on roadways in the project area as well as commercial activities in the project area, and to compare those noise levels against the applicable City of Folsom noise standards for acceptable noise exposure at residential land uses. The Analysis determined that the proposed project will comply with the interior and exterior noise level standards established by the General Plan and the Folsom Municipal Code (FMC, Section 8.42, Noise Control).

Expansion and remodeling of the Canyon Terrace Apartment Community project would temporarily increase noise levels in the project vicinity during the construction period, which would take approximately 12 to 18 months. Construction activities, including site clearing, excavation, grading, building construction, and paving, would be considered an intermittent noise impact throughout the construction period of the project. The City's Noise Ordinance excludes construction activities from meeting the General Plan Noise Element standards, provided that all phases of construction are limited to the hours between 7:00 a.m. and 6:00 p.m. on weekdays, and between 8:00 a.m. and 5:00 p.m. on Saturdays. To ensure compliance with the City's Noise Control Ordinance and General Plan Noise Element, staff recommends that hours of construction operation be limited from 7:00 a.m. to 6:00 p.m. on weekdays and 8:00 a.m. to 5:00 p.m. on Saturdays with no construction permitted on Sundays or holidays. In addition, staff recommends that construction equipment be muffled and shrouded to minimize noise levels. Condition No. 45 is included to reflect these requirements.

Site Lighting

The applicant is proposing to use a combination of free-standing parking area lights, post-mounted decorative light poles, carport lighting, and building-attached lighting. The free-standing parking area lights, which are located throughout the new parking lot areas, are 14 feet tall and feature a contemporary design. The post-mounted decorative lights, which are located on the interior of the project site to illuminate walkways and landscape features, are 15 feet tall and also include a contemporary design. The carport lighting features recessed lighting located within the carport structures. The building attached lighting, which includes decorative light fixtures mounted to the apartment buildings, are positioned at strategic locations throughout the project site to provide illumination for residents. To minimize potential lighting-related impacts, staff recommends that all free-standing parking area lights, post-mounted decorative light poles, carport lighting, and building-attached lighting be screened, shielded, and directed downward to minimize glare towards the surrounding properties. In addition, staff recommends that the final design of all exterior lighting be subject to review and approval by the Community Development Department. Condition No. 23 is included to reflect these requirements.

Existing and Proposed Landscaping

The existing 16.96-acre project site is fully landscaping with a combination of trees, shrubs, and groundcover. Development of the proposed project will result in the removal of landscaped areas primarily within the eastern portion of the project site. However, a majority of the landscaping adjacent to American River Canyon Drive including a substantial oleander hedge and mature street trees will be retained. In addition, all existing landscaping located outside of the construction zones will remain.

There are a total of 183 trees located on the project site including Aleppo Pine, American Sweetgum, Ash, Callery Pear, Chinese Evergreen Elm, Chinese Pistache, Coast Redwood, Deodar Cedar, Honey Locust, London Plane, Maytens Tree, Mexican Fan Palm, Purple Leaf Plum, Red Maple, Silver Maple, Tulip Tree, and White Alder. None of the aforementioned trees are considered "protected" trees as defined by the City's Tree Preservation Ordinance (FMC, Chapter 12.16). As shown on the submitted tree removal plan (Attachment 13), 102 trees would be removed to accommodate development of the proposed project, leaving 81 existing trees on the project site.

As shown on the submitted landscape plan (Attachment 12), the proposed project includes installation of new landscaping including a variety of trees (279 new trees), shrubs and groundcover. Proposed shade and accent trees include Cedar, Chinese Pistache, Crape Myrtle, Flowering Plum, Laurel Cherry, and Maple. Proposed shrubs and groundcover include Atlas Fescue, Autumn Sage, Blue Oaks Grass, Dwarf Bottlebrush, Flower Carpet, Fortnight Lily, Japanese Barberry, Spanish Lavender, and Star Jasmine. It is important to acknowledge that the proposed project will be replacing all of the "high water use" lawn area located along the project's eastern frontage with a "low water use" native grass mixture. Also, of note is the fact that even with modifications to the existing landscaping, 48 percent of the overall project site will be landscaped with development of the proposed project.

The concept of hydro-zoning, or using materials that are compatible in their water use requirements together within the same irrigation zones, are to be applied with all planting and irrigation design. All proposed landscape areas will have automatically controlled irrigation systems that incorporate the use of spray, subsurface in-line emitters, and other high efficiency drip-type systems. All irrigation watering will be required to comply with the water conservation requirements established within the Folsom Municipal Code (FMC, Chapter 13.26 Water Conservation) and shall comply with all state water conservation regulations and restrictions pertaining to water conservation and outdoor landscaping. In addition, all landscaping and irrigation will be required to comply with the City's Model Water Efficiency Landscape Ordinance. Condition No. 31 is included to reflect these requirements.

Grading and Drainage

As shown on the submitted grading plan (Attachment 7), the topography of the project site slopes downward from American River Canyon Drive towards the project site, with the steepest slopes being situated adjacent to the American River Canyon Drive. The project site grades range from 345 feet along the eastern edge of the project site to an elevation of 275 feet at the southwest corner of the project site. In addition, the proposed building pad elevations for the apartment buildings and clubhouse building range from 303 to 323 feet above sea level. Due to the aforementioned site topography, a number of retaining walls are proposed to be constructed on the project site. The proposed retaining walls, which range from 3-13 feet in height, feature three different designs including stem walls, block-style walls, and rockery walls. Staff recommends that the final location, height, design, and materials of the retaining walls is subject to review and approval by the Community Development Department. Condition No. 47 is included to reflect this requirement.

Development of the project site is also anticipated to require moderate movement of soils and the compaction of said materials. The applicant will be required to provide a complete geotechnical report before the design of interior drive aisles, parking lot areas, and building foundations are finalized. Condition No. 12 is included to reflect this requirement.

As shown on the submitted drainage plan (Attachment 8), the applicant is proposing to construct a number of stormwater drainage features including bio-retention swales, bio-retention basins, and bio-retention planters to treat a portion of the stormwater runoff on the project site. In addition, the proposed project includes installation of new storm drain pipes and storm drain inlets, which will tie into the existing storm drainage facilities located within the project site. Staff recommends the storm drain improvement plans provide for "Best Management Practices" that meet the requirements of the water quality standards of the City's National Pollutant Discharge Elimination System Permit issued by the State Regional Water Quality Control Board. Condition No. 26 is included to reflect this requirement.

Walls/Fencing

The applicant is proposing to construct a five-foot-tall combination wall/fence around the swimming pool and spa located area adjacent to the clubhouse buildings. The five-foot tall combination wall/fence, which will be decorative in nature, is proposed to be constructed of concrete split-face blocks (tan-colored) on the lower portion of the structure and tubular steel (gray-colored) on the upper portion. Staff recommends that the final location, height, design, materials, and colors of the wall/fence be subject to review and approval by the Community Development Department. Condition No. 48 is included to reflect this requirement.

Trash/Recycling

The applicant is proposing to install two new trash/recycling enclosures to serve the 96 new apartment units within the apartment community. The proposed trash/recycling enclosures are centrally located on the drive aisle that is adjacent to American River Canyon Drive. Staff recommends that the final location, design, materials, and colors of the trash/recycling enclosures be subject to review and approval by the Community Development Department. Condition No. 46 is included to reflect these requirements.

Signage
The existing apartment community includes two monument signs, with one sign located at each project driveway entrances on American River Canyon Drive respectively. The applicant is not proposing any changes or modifications to the existing signage within the apartment community at this time. Staff recommends that any future signs are subject to the requirements of the Folsom Municipal Code (FMC, Section 17.59) with respect to sign location, sign height, and sign area. Condition No. 52 is included to reflect these requirements.

Schools
Representatives of the Folsom-Cordova Unified School District have concluded the proposed project is anticipated to generate 30 (K-12) students. Students from the proposed project will attend Carl Sundahl Elementary School, Sutter Middle School, and Folsom High School. The school district had indicated that the aforementioned schools will accommodate the students generated from this project.

The Folsom-Cordova Unified School District has also indicated that all of the aforementioned schools are currently operating at or near capacity and that there may not be excess capacity at current school sites. It is the policy of the District to balance class loads at each school. If an individual grade level is full, then the student or pupil may be bused to another school within the district. It is important to note that the District also reviews attendance boundaries on a yearly basis and makes adjustments as necessary.

The State of California (Government Code Section 65995) establishes the maximum fee that a school district can impose on residential development or construction to address the impacts associated with an increase in student population. In the specific case of the Folsom Cordova Unified School District, the established residential impact fee is approximately $7.01 per square foot. Based on the aforementioned impact fee, the District expects to generate approximately $840,365 in revenue from the proposed project. It is critical to note that, under state law, the City is prohibited from denying or refusing to approve a residential subdivision based on the adequacy of the existing school facilities.

Affordable Housing
The applicant has voluntarily submitted an Affordable Housing Proposal or Plan (Attachment 23) to assist the City in meeting its affordable housing needs and as as a community benefit to justify the land use change. The Affordable Housing Plan provides for the inclusion of affordable housing units within the existing apartment community or an in-lieu fee payment into the City's Housing Trust Fund. In terms of providing affordable units, the applicant is proposing to provide a total of ten (10) deed-

restricted affordable housing units including seven (7) Low-Income units and three (3) Very-Income units. This proposal is consistent with the City's inclusionary housing requirements applicable to for-sale units. For the purposes of the Affordable Housing Plan, Low Income units are defined as housing units that are affordable to household whose combined income is at 80% of the median income as established by HUD for the Sacramento area. Very Low-Income units are defined as housing units that are affordable to household whose combined income is at 50% of the median income as established by HUD for the Sacramento area. With respect to location, the affordable housing units could be located within any of the existing or new apartments buildings within the apartment community.

As an alternative to providing affordable housing units within the apartment community, the Affordable Housing Plan proposes to provide an in-lieu fee payment in the amount of $139,000 into the City's Housing Trust Fund. The applicant based this fee on the Housing Trust Fund impact fee applied to commercial developments as there currently is no such impact fee for multi-family rental projects within the City. The purpose of the Housing Trust Fund is to encourage and assist with the financing of new affordable housing projects throughout the City and to support administration of the City's housing programs. It is important to clarify the Affordable Housing Plan proposed by the applicant offers to provide either on-site affordable housing units or an in-lieu fee payment, but not both.

As noted above, the applicant has voluntarily submitted an Affordable Housing Plan for the proposed project in order to demonstrate a community benefit for the land use change. The proposed project is otherwise not subject to the City's Inclusionary Housing Ordinance (FMC, Section 17.104). The Inclusionary Housing Ordinance is only applicable to for-sale development projects with ten or more units or residential rental projects of ten units or more receiving funding assistance from the City. While the project is not subject to the Inclusionary Housing Ordinance, the applicant did model their Affordable Housing Plan after the requirements of the Ordinance. Specifically, the Ordinance requires that inclusionary housing units be equal to ten percent of the total number of units within the project. The Ordinance also states that the ten percent of units shall consist of seven percent Low-Income units and three percent Very Low-Income units. Even though not required, the submitted Affordable Housing Plan is consistent with the aforementioned requirements of the Inclusionary Housing Ordinance.

In evaluating the applicant's Affordable Housing Plan, staff considered the potential impact on the City's Regional Housing Needs Allocation (RHNA) requirement. State Housing Element Law (Government Code Section 65580) mandates that local governments must adequately plan to meet the existing and projected housing needs of all economic segments of the community. The City of Folsom Housing Element, which was adopted on October 22, 2013, assesses the city's future housing needs based on the regional "fair share" allocation in the Regional Housing Needs Allocation (RHNA) prepared by the Sacramento County Council of Governments (SACOG). SACOG, in its RHNA, allocated the City of Folsom a total of 4,633 housing units for the period from January 1, 2013 through June 30, 2021. The following table shows the City's progress towards meeting its RHNA requirements:

Regional Housing Needs Allocation (RHNA) Progress			
Income Level	RHNA Allocation Of Units	Total Units Built to Date	Total Units Remaining
Very Low	1,218	20	1,198
Low	854	86	768
Moderate	862	802	60
Above Moderate	1,699	1,371	328
Totals	4,633	2,279	2,354

As shown in the table above, the City has constructed 2,279 affordable housing units during the current RNHA period, with 2,354 units remaining to be built to satisfy the current RNHA requirement. In terms of income level, the largest area of need in the City is the provision of Very Low-Income units and Low-Income units. The applicant has submitted an Affordable Housing Plan that provides seven Low-Income units and three Very Low-Income units or a $139,000 in-lieu fee payment into the Housing Trust Fund. Staff has determined that it would be more beneficial to the City for the applicant to provide affordable housing units within the apartment community in that the affordable housing units would assist the City in meeting its RHNA requirements in a timelier fashion than the in-lieu fee payment. In addition, the affordable housing units would be located within a portion of the City that has been underrepresented in terms of affordable housing units within the past ten years. Staff recommends that the owner/applicant execute an Affordable Housing Agreement with the City prior to issuance of the first Building Permit. Condition No. 61 is included to reflect this requirement.

Community Outreach and Public Comments

In an effort to educate and engage the local community regarding the proposed project, the applicant held three separate neighborhood outreach events (July 13, 2015, July 27, 2015, and March 28, 2019). Each of these outreach events, which were sponsored by the project applicant, were attending by approximately 15 to 20 residents and neighbors. The residents and neighbors who attended the outreach events were generally supportive of the proposed project and commented that the project would be beneficial to residents of the existing apartment community as well as resident of the surrounding neighborhood. One neighbor, who lives across American River Canyon Drive from the apartment community, did express concern about the potential for car headlights to shine into her home at night as vehicles exit the project site.

During the course of the required Mitigated Negative Declaration public review period, which ran from April 26, 2019 to May 15, 2019, City staff received written comments (Attachment 26) from approximately 30 residents. In the comment letters, the residents expressed opposition to the proposed project including concerns regarding increased traffic and congestion, traffic safety, roadway damage, funding and landscape maintenance of the American River Canyon Parkway, impact to home values, noise impacts, carbon footprint impacts, aesthetic impacts, lack of adequate public notice, and impact to character of the existing neighborhood.

Architecture/Design

As detailed in the project description, the proposed project includes development of 96 new apartment units divided among eight (8) two and three-story apartment buildings, remodeling and modernization of the 200 existing apartment units, replacing the existing community building with two new single-story clubhouse buildings, replacing three existing temporary storage sheds with a new 612-square-foot maintenance shop and storage building, and constructing six (6) new carport structures.

The design of the eight (8) proposed apartment buildings and two (2) clubhouse buildings features a contemporary Craftsman-style architecture which is intended to improve upon the more dated Craftsman-style architecture of the existing apartment buildings. Key design elements associated with the proposed apartment buildings include shed roofs, flat roof elements, highly articulated facades, staggered massing, clear-story windows, and recessed and cantilevered balconies. Proposed building materials include stucco siding, horizontal shiplap wood siding, composite wood panels, vinyl windows, perforated aluminum railing, wood-paneled garage doors, and composition-shingle roof tiles. Primary building colors feature a wide range of earth tones (Artic White, Pottery Blue, Snow, Thumper, and Timber Bark) supplemented with white trim-colored elements.

The design of the eighteen (18) existing two-story apartment buildings features a traditional California Craftsman-style architecture that was fairly common when the apartment community was originally constructed in the late 1980's. The existing apartment buildings and clubhouse are characterized by their expansive gable shingle-tiled roofs, deep roof eave overhangs, vertical wood siding, and gathered windows. The applicant is proposing to remodel the existing apartment buildings to compliment the modern Craftsman-style design of the new apartment buildings. The proposed apartment remodel includes replacing the existing porch and balcony railings with perforated aluminum railings, repainting the fascia and gutters, and introducing a new color-block scheme. The proposed color scheme is highlighted by warmer earth tones

(Acier, Extra White, and Sierra Redwood) accented with white trim-colored elements.

The proposed 612-square-foot maintenance and storage building features a contemporary design intended to blend with the design of the existing and proposed freestanding carports located throughout the project site. Proposed building materials include stucco, wood-paneled doors, vinyl windows, and composition-shingle roof tiles. The primary building color is grey, supplemented with brown trim elements and a charcoal-colored roof.

The six (6) proposed carport structures have been designed to match the design, materials, and colors of the existing carport structures on the project site. The existing carport structures feature a sloped roof pitch that matches the roof pitch of the existing apartment buildings. Primary building materials include vertical wood siding, aluminum support posts, and gable shingle roof tiles. The color scheme for the existing and proposed carport structures will match the color scheme proposed to be implemented for the remodeled apartment buildings.

The overall architectural concept for the proposed project focused on taking cues from the existing craftsman-style building roof forms and architectural vernaculars, combining those elements with contemporary craftsman-style building forms and vernaculars to become a distinct architectural style. The modernization of the existing apartment buildings is intended to be united with the architecture of the new residential buildings through the use of similar color, material, and texture palettes. The existing apartment community, in its current condition, has a simple architectural vernacular with fairly minimal material and texture options.

The existing apartment buildings and clubhouse are characterized by their expansive gable shingle-tiled roofs, deep roof eave overhangs, vertical wood siding, and gathered windows. The ornament on the buildings is minimal, as there are painted wood slates providing horizontal banding and vertical window gatherings to activate the two-story facades. There are practical challenges caused by the expansive gable roof expression including compact and compressed building frontages, limited fenestration in the living and bedrooms areas, large blank facades on the end of the buildings, no opportunity for additional fenestration from other orientations, and limited planar depth in the facades. To address some of these challenges associated with the existing apartment buildings, the applicant is proposing to replace the existing porch and balcony railings, repaint the fascia and gutters, and introduce a new color-block scheme

The design of the new apartment buildings is intended to capitalize on the challenges posed by the existing apartment buildings, while also borrowing some of the better design concepts. The new apartment buildings include shed roofs, which slope downward towards the ends of the buildings, keeping the primary façade free for fenestration as well as material and texture articulation. The proposed shed roofs also extend beyond the building face providing additional height for clear-story windows in living areas. The new apartment buildings are proposed to be clad in two styles of

Hardie-Panels (white horizontal shiplap and large vertical positioned panels) as well as stucco. The horizontal shiplap Hardie-Panels are sized to mimic the widths of the vertical siding on the existing apartment buildings. Similar to the existing apartment buildings, façade layering is attained by featuring recessed and cantilevered balconies. Additionally, windows are recessed providing shadow boxes to the new facades.

Upon completion of the expansion and remodel, both the proposed apartment buildings and existing apartment buildings will be finished in a color and material palette that is complimentary to both. Common design elements among the new and existing apartment buildings will include gathered windows, recessed balconies, perforated balcony/patio and stair railings, expressive roof design and expansive roof eaves.

The proposed project is not located within an area that has established residential design guidelines. However, the project is subject to the City's Design Guidelines for Multi-Family Development. The overall purpose of the Design Guidelines is to promote and protect public health, safety, and general welfare of the community by:

- Supporting the preservation of existing neighborhood character and community value.
- Promote the vision of suitable housing types for all residents including new standards for developments with higher densities and usage mix.
- Encourage the formulation or regulations that reflect the direction of the Folsom General Plan and add a qualitative direction for new developments in support of General Plan Policies.
- Provide guidance for increasing density with greater attention paid to amenities.
- Creation of interconnected and livable communities.
- Minimize the impact of parking within existing or planned neighborhoods.

In terms of architecture and design, the Design Guidelines for Multi-Family Development recommend that multi-family projects be designed in a manner that compliments the surrounding community. The following are some of the specific design recommendations suggested by the Design Guidelines:

- Variety and distinctness in design are desirable
- Expanses of uninterrupted wall area, unbroken roof forms, and box-like structures shall be prohibited. Balconies, porches, bay windows, chimneys, and other design elements with projections and varied setbacks shall be used to break up the physical characteristics of structures.

- Separations and changes in the height of roof planes shall be used to visually separate the units. Articulation such as roof dormers, hips, gables, balconies, wall projections, and porches shall be used to break up the visual massing of building facades.

- The use of a variety and combination of building materials is encouraged. Building materials selected for multi-family projects shall be very durable and require low maintenance including, but not limited to, stucco, stone, and brick. Building materials shall integrate quality design elements consistent with the design of the development and the surrounding neighborhood.

- Predominant roof materials shall be of high quality, durable material such as, but not limited to, clay or concrete roof tiles and asphalt shingles.

- Exterior building colors shall be compatible with the surrounding neighborhood setting and shall not be out of character or in visual competition with the existing surrounding design elements.

- All accessory structures, including carports, garages, and solid waste enclosures, shall be designed with materials and in a manner consistent with the architectural design characteristics of the development.

In reviewing the architecture and design of the proposed project (Attachments 19-21), City staff determined that the applicant successfully incorporated many of the essential design elements required by the Design Guidelines for Multi-Family Development including incorporating highly articulated facades, staggered building massing, varied roof design elements, covered entries, recessed and cantilevered balconies, and various decorative enhancements. As recommended by the Design Guidelines, the primary colors are generally earth tone in nature and feature various shades of brown and tan. The supporting trim and accent colors offer richer and more vibrant colors including the use of white and red. Proposed roof shingle colors, which have been designed to complement the building colors, feature a charcoal blend. In addition, the proposed apartment buildings utilize a variety of natural building materials as suggested by the Design Guidelines including stucco siding, vertical wood siding, wood panels, wood-paneled garage doors, and composition shingle roof tiles. Staff forwards the following design recommendations to the Commission for consideration:

1. This approval is for eight (8), two and three-story apartments buildings, two (2) clubhouse buildings, six (6) carport structures, a 612-square-foot maintenance and storage building, and remodeling of the 18 existing two-story apartment buildings associated with the Canyon Terrace Apartments Expansion and Remodel project. The applicant shall submit building plans that comply with this approval.

2. The design, materials, and colors of the proposed Canyon Terrace Apartments expansion and remodel project shall be consistent with the submitted building elevations, materials samples, and color scheme to the satisfaction of the Community Development Department.

3. Roof-mounted mechanical equipment, including satellite dish antennas, shall not extend above the height of the parapet walls. Ground-mounted mechanical equipment shall be shielded by landscaping or trellis type features.

4. Utility equipment such as transformers, electric and gas meters, electrical panels, and junction boxes shall be screened by walls and or landscaping.

These recommendations are included in the conditions of approval presented for consideration by the Planning Commission (Condition No. 49).

ENVIRONMENTAL REVIEW
Staff has prepared an Initial Study, Mitigated Negative Declaration, and Mitigation Monitoring and Reporting Program (Attachment 24) for the project in accordance with the California Environmental Quality Act (CEQA) regulations and determined that with the proposed mitigations, the project will not have a significant effect on the environment. The Mitigated Negative Declaration has been prepared and noticed for public comment on the project, and mitigation measures have been included as Conditions of Approval. To date, 30 written comments have been received from the public during the Mitigated Negative Declaration public review period (April 26, 2019 to May 15, 2019). Pursuant to CEQA Guidelines Section 15074(c), the documents and other material that constitutes the record regarding his project may be accessed by contacting the Community Development Department (City of Folsom Community Development Department/50 Natoma Street, Folsom CA 95630/Principal Planner Steve Banks)

RECOMMENDATION/PLANNING COMMISSION ACTION
Conduct a public hearing and upon conclusion recommend City Council Adoption of the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program, City Council Approval of a General Plan Amendment to change the land use designation for the 16.96-acre project site (APN No. 213-0060-025) from MLD (Multi-Family Low Density) to MMD (Multi-Family Medium Density), and City Council Approval of Design Review for a 96-unit expansion and remodel of the existing Canyon Terrace Apartment Community as illustrated on Attachments 5 through 23 for the Canyon Terrace Apartments Expansion and Remodel project (PN 17-270) subject to the findings (Findings A-J) and conditions of approval (Conditions 1-61) attached to this report.

GENERAL FINDINGS

A. NOTICE OF HEARING HAS BEEN GIVEN AT THE TIME AND IN THE MANNER REQUIRED BY STATE LAW AND CITY CODE.

B. WITH THE PROPOSED AMENDMENT, THE PROJECT IS CONSISTENT WITH THE GENERAL PLAN AND THE ZONING CODE OF THE CITY.

CEQA FINDINGS

C. A MITIGATED NEGATIVE DECLARATION AND MITIGATION MONITORING AND REPORTING PROGRAM HAVE BEEN PREPARED FOR THE PROJECT IN ACCORDANCE WITH CEQA.

D. THE PLANNING COMMISSION HAS CONSIDERED THE PROPOSED MITIGATED NEGATIVE DECLARATION AND MITIGATION MONITORING AND REPORTING PROGRAM BEFORE MAKING A RECOMMENDATION TO THE CITY COUNCIL REGARDING THE PROJECT.

E. ON THE BASIS OF THE WHOLE RECORD BEFORE THE PLANNING COMMISSION, THERE IS NO SUBSTANTIAL EVIDENCE THAT THE PROJECT, AS CONDITIONED, WILL HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.

F. THE MITIGATED NEGATIVE DECLARATION REFLECTS THE INDEPENDENT JUDGMENT AND ANALYSIS OF THE CITY OF FOLSOM.

G. THE MITIGATED NEGATIVE DECLARATION HAS DETERMINED THAT THE PROPOSED PROJECT, AS CONDITIONED AND CONSISTENT WITH THE REQUIRED MITIGATION MONITORING AND REPORTING PROGRAM, WOULD NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT WITH MITIGATION MEASURES.

GENERAL PLAN FINDING

H. THE PROJECT IS CONSISTENT WITH THE CITY'S GENERAL PLAN, ZONING, AND THE FOLSOM MUNICIPAL CODE WITH THE PROPOSED AMENDMENT.

DESIGN REVIEW FINDINGS

I. WITH THE PROPOSED AMENDMENT, THE PROJECT IS IN COMPLIANCE WITH THE GENERAL PLAN AND THE ZONING ORDINANCE.

J. THE PROJECT PROVIDES COMPATIBILITY OF BUILDING MATERIALS, TEXTURES AND COLORS WITH SURROUNDING DEVELOPMENT AND CONSISTENCY WITH THE GENERAL DESIGN THEME OF THE NEIGHBORHOOD.

ATTACHMENT 2
BACKGROUND

BACKGROUND

In 1984, the Planning Commission approved a Planned Development Permit for the development of a 200-unit multi-family apartment project (Canyon Terrace Apartment Community) on a 16.96-acre parcel located approximately 500 feet from the southwest corner of the intersection of American River Canyon Drive and Oak Avenue Parkway. The apartment community, which included 18 two-story buildings, featured a combination of one and two-bedroom apartments units ranging in size from 700 square feet (1BR/1BA) to 900 square feet (2BR/2BA). The apartment community also included a number of amenities including a community clubhouse building, barbeque and picnic areas, two tennis courts, and a swimming pool.

On November 14, 1985, the Planning Commission approved a formal street name (Canyon Terrace Lane) for the Canyon Terrace Apartment Community. On August 25, 1986, the Planning Commission approved a Sign Use Permit to allow for the placement of two project identification monument signs at the project site, with one monument sign being located at each project driveway. In 1987, the Canyon Terrace Apartment Community was constructed with residents moving in shortly thereafter.

GENERAL PLAN DESIGNATION	MLD (Multi-Family Low Density)	
ZONING DESIGNATION	R-M (Residential, Multi-Family Dwelling District)	
ADJACENT LAND USES/ZONING	North:	Commercial Development (C-1 PD) with Oak Avenue Parkway Beyond
	South:	Single-Family Residential Development (R-1-ML) with Oak Canyon Way Beyond
	East:	American River Canyon Drive with Single-Family Residential Development (R-1-ML) Beyond
	West:	Single-Family Residential Development (AR-1/Orangevale) with Santa Juanita Avenue
SITE CHARACTERISTICS	The 16.96-acre project site is fully developed with a 200-unit apartment community (Canyon Terrace) and associated site improvements including two driveways, drive aisles, parking, curbs, gutters, sidewalks,	

underground utilities, trash/recycling enclosures, landscaping, site lighting, signage, a swimming pool, and two tennis courts

APPLICABLE CODES

FMC 17.06, Design Review
FMC 17.17, Residential Multi-Family Dwelling District
FMC 17.57, Parking Requirements
FMC 17.68, Amendments

Attachment 3
Conditions of Approval

CONDITIONS OF APPROVAL FOR THE CANYON TERRACE APARTMENT EXPANSION AND REMODEL PROJECT (PN 17-270)
GENERAL PLAN AMENDMENT AND DESIGN REVIEW
1600 CANYON TERRACE LANE

	Mitigation Measure	Condition/Mitigation Measure	When Required	Responsible Department
1.		The applicant shall submit final site development plans to the Community Development Department that shall substantially conform to the exhibits referenced below: • General Plan Amendment Exhibit • Site Plan, dated April 1, 2019 • Grading Plan, dated April 1, 2019 • Drainage Plan, dated April 1, 2019 • Utility Plan, dated April 1, 2019 • Water Plan, dated April 1, 2019 • Sewer Plan, dated April 1, 2019 • Landscape Plan, dated April 1, 2019 • Tree Removal Plan, dated April 1, 2019 • Lighting Plan and Details, dated April 1, 2019 • Site Walls Plan and Details, dated April 1, 2019 • Site Sections, dated April 1, 2019 • Emergency Vehicle Access Exhibit, dated April 1, 2019 • Existing and Proposed Conditions Exhibit, dated April 1, 2019 • Building Elevations and Floor Plans, dated April 1, 2019 • Building Renderings, dated April 1, 2019 • Existing Building Renderings with Renovation Details, dated April 1, 2019 • Affordable Housing Proposal The project is approved for the development of the Canyon Terrace Apartment Expansion and Remodel project. Implementation of the project shall be consistent with the above-referenced items as modified by these conditions of approval.	B	CD (P)(E)

CONDITIONS OF APPROVAL FOR THE CANYON TERRACE APARTMENT EXPANSION AND REMODEL PROJECT (PN 17-270)
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	Mitigation Measure	Condition/Mitigation Measure	When Required	Responsible Department
2.		Building plans, and all civil engineering and landscape plans, shall be submitted to the Community Development Department for review and approval to ensure conformance with this approval and with relevant codes, policies, standards and other requirements of the City of Folsom.	I, B	CD (P)(E)(B)
3.		The project approval (Design Review) granted under this staff report shall remain in effect for two years from final date of approval (May 15, 2021). Failure to obtain the relevant building (or other) permits within this time period, without the subsequent extension of this approval, shall result in the termination of this approval.	B	CD (P)
4.		The owner/applicant shall defend, indemnify, and hold harmless the City and its agents, officers and employees from any claim, action or proceeding against the City or its agents, officers or employees to attack, set aside, void, or annul any approval by the City or any of its agencies, departments, commissions, agents, officers, employees, or legislative body concerning the project. The City will promptly notify the owner/applicant of any such claim, action or proceeding, and will cooperate fully in the defense. The City may, within its unlimited discretion, participate in the defense of any such claim, action or proceeding if both of the following occur: • The City bears its own attorney's fees and costs; and • The City defends the claim, action or proceeding in good faith The owner/applicant shall not be required to pay or perform any settlement of such claim, action or proceeding unless the settlement is approved by the owner/applicant.	OG	CD (P)(E)(B) PW, PR, FD, PD
5.	✓	The owner/applicant shall be required to participate in a mitigation monitoring and reporting program pursuant to City Council Resolution No. 2634 and Public Resources Code 21081.6. The mitigation monitoring and reporting measures identified in the Mitigated Negative Declaration prepared for this project have been incorporated into these conditions of approval in order to mitigate or avoid significant effects on the environment. These mitigation monitoring and reporting measures are identified with a check mark (✓) in the mitigation measure column.	G, I	CD (P)(E)

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	Mitigation Measure	Condition/Mitigation Measure	When Required	Responsible Department
		DEVELOPMENT COSTS AND FEE REQUIREMENTS		
6.		The owner/applicant shall pay all applicable taxes, fees and charges at the rate and amount in effect at the time such taxes, fees and charges become due and payable.	I, B	CD (P)(E)
7.		If applicable, the owner/applicant shall pay off any existing assessments against the property, or file necessary segregation request and pay applicable fees.	B	CD (E)
8.		The City, at its sole discretion, may utilize the services of outside legal counsel to assist in the implementation of this project, including, but not limited to, drafting, reviewing and/or revising agreements and/or other documentation for the project. If the City utilizes the services of such outside legal counsel, the applicant shall reimburse the City for all outside legal fees and costs incurred by the City for such services. The applicant may be required, at the sole discretion of the City Attorney, to submit a deposit to the City for these services prior to initiation of the services. The applicant shall be responsible for reimbursement to the City for the services regardless of whether a deposit is required.	I	CD (P)(E)
9.		If the City utilizes the services of consultants to prepare special studies or provide specialized design review or inspection services for the project, the applicant shall reimburse the City for actual costs it incurs in utilizing these services, including administrative costs for City personnel. A deposit for these services shall be provided prior to initiating review of the improvement plans or beginning inspection, whichever is applicable.	I, B	CD (P)(E)
10.		This project shall be subject to all City-wide development impact fees, unless exempt by previous agreement. This project shall be subject to all City-wide development impact fees in effect at such time that a building permit is issued. These fees may include, but are not limited to, fees for fire protection, park facilities, park equipment, Quimby, Humbug-Willow Creek Parkway, Light Rail, TSM, capital facilities and traffic impacts. The 90-day protest period for all fees, dedications, reservations or other exactions imposed on this project will begin on the date of final approval (May 15, 2019). The fees shall be calculated at the fee rate in effect at the time of building permit issuance.	B	CD (P)(E), PW, PK

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	Mitigation Measure	Condition/Mitigation Measure	When Required	Responsible Department
11.		The owner/applicant agrees to pay to the Folsom-Cordova Unified School District the maximum fee authorized by law for the construction and/or reconstruction of school facilities. The applicable fee shall be the fee established by the School District that is in effect at the time of the issuance of a building permit. Specifically, the owner/applicant agrees to pay any and all fees and charges and comply with any and all dedications or other requirements authorized under Section 17620 of the Education Code; Chapter 4.7 (commencing with Section 65970) of the Government Code; and Sections 65995, 65995.5 and 65995.7 of the Government Code.	B	CD (P)
		SITE DEVELOPMENT REQUIREMENTS		
12.		Prior to the issuance of any grading and/or building permit, the owner/applicant shall have a geotechnical report prepared by an appropriately licensed engineer that includes an analysis of site suitability, proposed foundation design for all proposed structures, and roadway and pavement design.	G, B	CD (E)
13.		Public and private improvements, including roadways, curbs, gutters, sidewalks, bicycle lanes and trails, streetlights, underground infrastructure and all other improvements shall be provided in accordance with the current edition of the City of Folsom *Standard Construction Specifications* and the *Design and Procedures Manual and Improvement Standards*. All necessary rights-of-way and/or easements shall be dedicated to the City of Folsom for these improvements.	I, B	CD (P)(E)
14.		The applicant/owner shall submit water, sewer and drainage studies to the satisfaction of the Community Development Department and provide sanitary sewer, water and storm drainage improvements with corresponding easements, as necessary, in accordance with these studies and the current edition of the City of Folsom *Standard Construction Specifications* and the *Design and Procedures Manual and Improvement Standards*.	I	CD (E)
15.		The improvement plans for the required public and private improvements shall be reviewed and approved by the Community Development Department prior to issuance of a building permit for the project.	B	CD (E)

**CONDITIONS OF APPROVAL FOR THE CANYON TERRACE APARTMENT EXPANSION AND REMODEL PROJECT (PN 17-270)
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	Mitigation Measure	Condition/Mitigation Measure	When Required	Responsible Department
16.		Final lot and building configurations may be modified to allow for overland release of storm events greater than the capacity of the underground system.	B	CD (E)
17.		The owner/applicant shall coordinate the planning, development and completion of this project with the various utility agencies (i.e., SMUD, PG&E, etc.).	I	CD (P)(E)
18.		The owner/applicant shall be responsible for replacing any and all damaged or hazardous public sidewalk, curb and gutter along the site frontage and/or boundaries, including pre-existing conditions and construction damage, to the satisfaction of the Community Development Department.	O	CD (E)
19.		For any improvements constructed on private property that are not under ownership or control of the owner/applicant, a right-of-entry, and if necessary, a permanent easement shall be obtained and provided to the City prior to issuance of a grading permit and/or approval of improvement plans.	G, I	CD (E)
20.		The on-site water and sewer systems shall be privately owned and maintained. The fire protection system shall be separate from the domestic water system. The fire system shall be constructed to meet the National Fire Protection Association Standard 24. The domestic water and irrigation system shall be metered per City of Folsom *Standard Construction Specifications*.	I	CD (E)
21.		The owner/applicant shall coordinate the planning, development and completion of this project with the various utility agencies (i.e., SMUD, PG&E, etc.).	I	CD (P)(E)
22.		Any reimbursement for public improvements constructed by the applicant shall be in accordance with a formal reimbursement agreement entered into between the City and the owner/applicant prior to approval of the improvement plans.	I	CD (E)

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	Mitigation Measure	Condition/Mitigation Measure	When Required	Responsible Department
23.		Final exterior building and site lighting plans shall be submitted for review and approval by Community Development Department for location, height, aesthetics, level of illumination, glare and trespass prior to the issuance of any building permits. All lighting, including but not limited to free-standing parking area lights, post-mounted decorative light poles, carport lighting, and building-attached lighting shall be screened, shielded, and directed downward to minimize glare towards the surrounding properties. In addition, staff recommends that the final design of all exterior lighting shall be subject to review and approval by the Community Development Department. Lighting shall also be equipped with a timer or photo condenser. In addition, free-standing parking lot lights shall utilize a low-intensity, energy efficient lighting method.	I, B	CD (P)
24.		The owner/applicant's existing Property Management Company shall be responsible for maintenance of all private streets, maintenance of all common areas, maintenance of all on-site landscaping, maintenance of private storm drain facilities, maintenance of bio-retention swales, maintenance of bio-retention basins, maintenance of bio-retention planters, maintenance of sanitary sewer improvements, and maintenance of any other on-site facilities throughout the life of the project to the satisfaction of the Community Development Department.	I, B	CD (P)(E)
		STORM WATER POLLUTION/CLEAN WATER ACT REQUIREMENTS		
25.		During Construction, the owner/applicant shall be responsible for litter control and sweeping of all paved surfaces in accordance with City standards. All on-site storm drains shall be cleaned immediately before the commencement of the rainy season (October 15).	G, I, B	CD (E)
26.		The storm drain improvement plans shall provide for "Best Management Practices" that meet the requirements of the water quality standards of the City's National Pollutant Discharge Elimination System Permit issued by the State Regional Water Quality Control Board.	G, I, B, O	CD (E)

CONDITIONS OF APPROVAL FOR THE CANYON TERRACE APARTMENT EXPANSION AND REMODEL PROJECT (PN 17-270) GENERAL PLAN AMENDMENT AND DESIGN REVIEW 1600 CANYON TERRACE LANE				
	Mitigation Measure	**Condition/Mitigation Measure**	**When Required**	**Responsible Department**
27.		Prior to issuance of grading permits, the project applicant shall obtain coverage under the State Water SWRCB General Permit for Discharges of Storm Water Associated with Construction Activity (Order 2009-0009-DWQ), including preparation and submittal of a project-specific SWPPP at the time the Notice of Intent (NOI) is filed. The project applicant shall also prepare and submit any other necessary erosion and sediment control and engineering plans and specifications for pollution prevention and control to the City of Folsom. The SWPPP shall contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list BMPs the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP.	G, I, B	CD (E)
28.		Prior to issuance of a Grading Permit, the owner/applicant shall submit erosion control plans and other monitoring programs for the construction and operational phases of the proposed project for review and approval by the City. The plan shall include Best Management Practices (BMP) to minimize and control the level of pollutants in stormwater runoff, and in runoff released to off-site receiving waters. Specific techniques may be based on geotechnical reports or the Erosion and Sediment Control Handbook of the California Department of Conservation, and shall comply with current City standards.	G, I	CD (E)

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	Mitigation Measure	Condition/Mitigation Measure	When Required	Responsible Department
29.		Prior to the approval of the final facilities design and the initiation of construction activities, the applicant shall submit an erosion control plan to the City for review and approval. The plan shall identify protective measures to be taken during excavation, temporary stockpiling, any reuse or disposal, and revegetation. Specific techniques may be based upon geotechnical reports, the Erosion and Sediment Control Handbook of the State of California Department of Conservation, and shall comply with all updated City standards.	G, I	CD (E)
		LANDSCAPE/TREE PRESERVATION REQUIREMENTS		
30.		The owner/applicant shall be responsible for on-site landscape maintenance throughout the life of the project to the satisfaction of the Community Development Department. Vegetation or planting shall not be less than that depicted on the final landscape plan, unless tree removal is approved by the Community Development Department because the spacing between trees will be too close on center as they mature.	B	CD (P)(E)

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	Mitigation Measure	Condition/Mitigation Measure	When Required	Responsible Department
31.		Final landscape plans and specifications for site development shall be prepared by a registered landscape architect and approved by the City Arborist and City staff prior to the approval of improvement plans. Said plans shall include all on-site landscape specifications and details, and shall comply with all State and local rules, regulations, Governor's declarations and restrictions pertaining to water conservation and outdoor landscaping. Landscaping of the parking area shall meet shade requirements as outlined in the Folsom Municipal Code Chapter 17.57. The landscape plans shall comply and implement water efficient requirements as adopted by the State of California (Assembly Bill 1881) (State Model Water Efficient Landscape Ordinance) until such time the City of Folsom adopts its own Water Efficient Landscape Ordinance at which time Owner Applicant shall comply with any new ordinance. Shade and ornamental trees shall be maintained according to the most current American National Standards for Tree Care Operations (ANSI A-300) by qualified tree care professionals. Tree topping for height reduction, sign visibility, light clearance or any other purpose shall not be allowed. Specialty-style pruning, such as pollarding, shall be specified within the approved landscape plans and shall be implemented during a 5-year establishment and training period.	I	CD(P)(E)

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	Mitigation Measure	Condition/Mitigation Measure	When Required	Responsible Department
		CULTURAL RESOURCE REQUIREMENTS		
32.	✓	In accordance with Section 15064.5 of the State CEQA Guidelines, if buried archaeological resources are discovered during demolition or construction, operations shall stop within 50 feet of the find, and a qualified archaeologist shall be consulted to determine whether the resource is significant and requires further study. The archaeologist shall make recommendations to the Lead Agency concerning appropriate measures that will be implemented to protect the resource(s), including but not limited to excavation and evaluation of the finds, consistent with Section 15064.5 of the CEQA Guidelines and 36 CFR 800. Cultural resources could consist of but are not limited to stone, bone, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. Any previously undiscovered resources found during demolition or construction within the project area should be recorded on appropriate Department of Parks and Recreation (DPR) 523 forms and evaluated for significance in terms of CEQA criteria.	G, I	CD (P)(E)
33.	✓	If human remains are encountered during excavations associated with this project, all work will halt within 50 feet of the find, and the County Coroner will be notified (per Section 7050.5 of the California Health and Safety Code and Section 15064.5 of the State CEQA Guidelines). If the coroner determines that the remains are of Native American origin, he/she will contact the NAHC. The NAHC will be responsible for designating the most likely descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Public Resources Code Section 5097.98. The MLD will make his/her recommendations within 48 hours of their notification by the NAHC.	G, I	CD (P)(E)

TRIBAL CULTURAL RESOURCE REQUIREMENTS				
34.	✓	If potential tribal cultural resources or human remains are discovered by Native American Representatives or Monitors from interested Native American Tribes, qualified cultural resources specialists or other Project personnel during construction activities, work will cease in the immediate vicinity of the find (based on the apparent distribution of cultural resources), whether or not a Native American Monitor from an interested Native American Tribe is present. The City shall immediately notify a qualified archaeologist and interested Native American Tribes to consult on the significance of the find and make recommendations for further evaluation and treatment as necessary. These recommendations and actions taken (or not taken) based on consultation will be documented in the project record. If the discovery includes human remains, the procedures in Mitigation Measure CUL-02 shall be implemented.	G, I	CD (E)(P)
35.	✓	A minimum of seven days prior to beginning earthwork or other soil disturbance activities, the applicant shall notify the City of the proposed earthwork start-date, in order to provide the City representative sufficient time to contact the United Auburn Indian Community (UAIC). A UAIC tribal representative shall be invited to inspect the project location, including any soil piles, trenches, or other disturbed areas, within the first five days of ground-breaking activity. Construction activity may be ongoing during this time. Should the tribe choose not to perform a field visit within the first five days, construction activities may continue as scheduled, as long as the notification was made.	G, I	CD (E)(P)

36.	✓	A construction worker tribal cultural resources awareness brochure and training program for personnel involved in project implementation will be developed by a qualified professional prior to the initiation of construction activities on the project. The brochure will be distributed during a training session that will be conducted by a qualified professional. Native American representatives and monitors from culturally affiliated and interested Native American tribes will be given the opportunity to contribute information to include in the program, if they so desire. The program will include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The construction worker tribal cultural resources awareness program will also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project property and will outline what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program will also underscore the requirement for confidentiality and culturally-appropriate treatment of any discovery that is determined by the City, in consultation with tribes, to be of significance to Native American tribal values.	G, I	CD (E)(P)
		BIOLOGICAL RESOURCE REQUIREMENT		
37.	✓	If demolition activities occur during the typical bird nesting season (February 15 through August 31), pre-construction nesting bird surveys shall be conducted by a qualified biologist on the project site and within a 500-foot radius of proposed demolition or construction areas, where access is available, no more than 14 days prior to the initiation of demolition or construction. If no nests are found, no further mitigation is required. If active nests are identified in these areas, the City shall coordinate with CDFW to develop measures to avoid disturbance of active nests prior to the initiation of any demolition or construction activities, or demolition or construction could be delayed until the young have fledged. Avoidance measures may include establishment of a buffer zone and monitoring of the nest by a qualified biologist until the young have fledged the nest and are independent of the site. If a buffer zone is implemented, the size of the buffer zone shall be determined by a qualified biologist in coordination with CDFW and shall be appropriate for the species of bird and nest location.	G, I	CD (E)(P)

AIR QUALITY REQUIREMENTS				
38.		Control of fugitive dust is required by District Rule 403 and enforced by SMAQMD staff. The owner/applicant shall implement the following measures as identified by the SMAQMD: • Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. • Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered. • Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. • Limit vehicle speeds on unpaved roads to 15 miles per hour (mph). • All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. • Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.	G, I, B	CD (P)(E)(B)

39.		In compliance with Rule 201 of the Sacramento Metropolitan Air Quality Management District (SMAQMD), the applicant/developer of the project shall verify with SMAQMD if a permit is required before equipment capable of releasing emissions to the atmosphere are used at the project site. The applicant/developer shall comply with the approved permit or provide evidence that a permit is not required.	G, I, B	CD (P)(E)(B)
40.		In compliance with Rule 442 of the Sacramento Metropolitan Air Quality Management District (SMAQMD), the applicant/developer of the project shall use architectural coatings that comply with the volatile organic compound content limits specified in the general rule.	G, I, B	CD (P)(E)(B)
		TRAFFIC, ACCESS, CIRCULATION, AND PARKING REQUIREMENTS		
41.		The owner/applicant shall be responsible for their fair share of the cost associated with the widening of Oak Avenue Parkway (design, construction, traffic signal modifications, etc.) as determined by a fair share cost analysis. The fair share analysis shall be prepared by a licensed professional subject to mutual agreement by the owner/applicant and the City and shall be approved by the City.	B	CD (P)(E)
42.		The owner/applicant shall evaluate, and if feasible, construct an additional pedestrian connection between the existing sidewalk along the western side of American River Canyon Drive and the project site (near the southern project driveway).	I	CD (P)(E)
43.		A minimum of 553 on-site parking spaces shall be provided for the project.	I, O	CD (P)(E)
44.		A minimum of 49 new on-site bicycle parking spaces shall be provided for the project. In addition, the bicycle parking spaces shall be evenly distributed throughout the project site to the satisfaction of the Community Development Department.	I, O	CD (P)(E)
		NOISE REQUIREMENTS		
45.		Compliance with Noise Control Ordinance and General Plan Noise Element shall be required. Hours of construction operation shall be limited from 7:00 a.m. to 6:00 p.m. on weekdays and 8:00 a.m. to 5:00 p.m. on Saturdays. No construction is permitted on Sundays or holidays. Construction equipment shall be muffled and shrouded to minimize noise levels.	G, I, B	CD (P)(E)
		ARCHITECTURE/SITE DESIGN REQUIREMENTS		
46.		The final location, orientation, design, materials, and colors of the trash/recycling enclosures shall be subject to review and approval by the Community Development Department.	I, B	CD (P)(E)
47.		The final location, height, design, materials, and colors for the proposed retaining walls shall be subject to review and approval by the Community Development Department.	I, B	CD (P)(E)

48.		The final location, height, design, materials, and colors of the proposed fencing shall be subject to review and approval by the Community Development Department.	I, B	CD (P)(E)
49.		The project shall comply with the following architecture and design requirements: 1. This approval is for eight (8), two and three-story apartments buildings, two (2) clubhouse buildings, six (6) carport structures, a 612-square-foot maintenance and storage building, and remodeling of the 18 existing two-story apartment buildings associated with the Canyon Terrace Apartments Expansion and Remodel project. The applicant shall submit building plans that comply with this approval. 2. The design, materials, and colors of the proposed Canyon Terrace Apartments expansion and remodel project shall be consistent with the submitted building elevations, materials samples, and color scheme to the satisfaction of the Community Development Department. 3. Roof-mounted mechanical equipment, including satellite dish antennas, shall not extend above the height of the parapet walls. Ground-mounted mechanical equipment shall be shielded by landscaping or trellis type features. 4. Utility equipment such as transformers, electric and gas meters, electrical panels, and junction boxes shall be screened by walls and or landscaping.	I, B	CD (P)
		GRADING REQUIREMENT		
50.		Prior to the approval of the final facilities design and the initiation of construction activities, the applicant shall submit an erosion control plan to the City for review and approval. The plan shall identify protective measures to be taken during excavation, temporary stockpiling, any reuse or disposal, and revegetation. Specific techniques may be based upon geotechnical reports, the Erosion and Sediment Control Handbook of the State of California Department of Conservation, and shall comply with all updated City standards.	G, I	CD (E)

		HAZARDOUS MATERIAL REQUIREMENT		
51.		Prior to initiating demolition activities, the project applicant shall retain a qualified inspector to survey the buildings and structures to be demolished for hazardous materials. If hazardous materials are found to be present, the project applicant shall have a licensed contractor properly remove and dispose of these hazardous materials in accordance with federal, state, and local laws.	D	CD (B)
		SIGN REQUIREMENTS		
52.		All signage shall be consistent with the requirements of the Folsom Municipal Code (Section 17.59.040).	B	CD (P)
		OTHER AGENCY REQUIREMENT		
53.		The owner/applicant shall obtain all required State and Federal permits and provide evidence that said permits have been obtained, or that the permit is not required, subject to staff review and approval of any grading or improvement plan.	G, I	CD (P)(E)
		FIRE DEPARTMENT REQUIREMENTS		
54.		The buildings shall have illuminated addresses visible from the street or drive fronting the property. Size and location of address identification shall be reviewed and approved by the Fire Marshal.	I	FD
55.		Prior to the issuance of any improvement plans or building permits, the Community Development and Fire Department shall review and approve all detailed design plans for accessibility of emergency fire equipment, fire hydrant flow location, and other construction features.	I, B	FD
56.		Fire Department-approved all-weather emergency access roads shall be provided for every facility or building, when any portion of the facility or any portion of an exterior wall of the first story of a building is located more than 150 feet from fire department vehicle access measured by an approved route around the exterior of the building or facility. (CFC 503.1.1). The Fire Code Official shall approve all alternative materials and methods (AM&M) of construction designs that are at least equivalent to the intent of the provisions of this code requirement. AM&M may include, but are not limited to, fire hose water supply standpipe systems, fire-rated construction separating the building into separate smoke compartments, areas of refuge separated by fire-rated construction, early-warning smoke and fire detection systems, etc.	I, B	FD

57.		All fire protection devices shall be designed to be located on site: fire hydrants, fire department connections, post indicator valves, etc. off-site devices cannot be used to serve the building. A water model analysis that proves the minimum fire flow will be required before any permits are issued. The fire sprinkler riser location shall be inside a Fire Control Room (5' X 7' minimum) with a full-sized 3'-0" door. This room can be a shared with other building utilities. The room shall only be accessible from the exterior.	I, B	FD
58.		All-weather emergency access roads and fire hydrants (tested and flushed) shall be provided before combustible material or vertical construction is allowed on site. All-weather access is defined as 6" of compacted AB from May 1 to September 30 and 2"AC over 6" AB from October 1 to April 30.	I, B	FD
		POLICE/SECURITY REQUIREMENT		
59.		The owner/applicant shall consult with the Police Department in order to incorporate all reasonable crime prevention measures. The following security/safety measures shall be required: • A security guard shall be on-duty at all times at the site or a six-foot security fence shall be constructed around the perimeter of construction areas. (This requirement shall be included on the approved construction drawings). • Security measures for the safety of all construction equipment and unit appliances shall be employed. • Landscaping shall not cover exterior doors or windows, block line-of-sight at intersections or screen overhead lighting.	G, I, B	PD
		MISCELLANEOUS REQUIREMENTS		
60.		The proposed project shall comply with all State and local rules, regulations, Governor's Declarations, and restrictions including but not limited to: requirements relative to water usage and conservation established by the State Water Resources Control Board and water usage and conservation requirements established within the Folsom Municipal Code, (Section 13.26 Water Conservation) and the California Model Water Efficient Landscape Ordinance, or amended from time to time.	I, B, OG	CD (P)(E)
61.		The owner/applicant shall execute an Affordable Housing Agreement with the City prior to issuance of the first Building Permit.	B	CD (P)

CONDITIONS

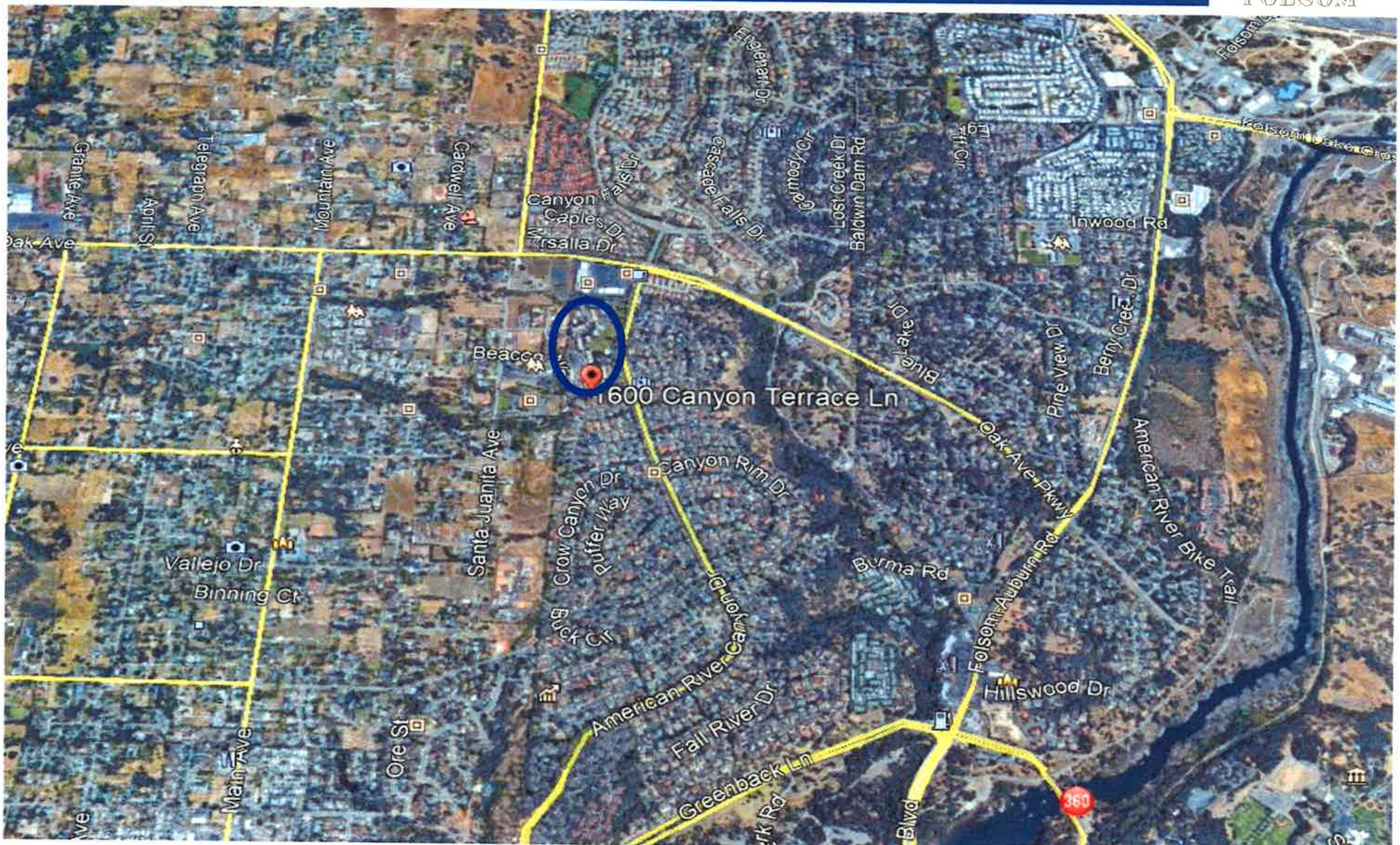
See attached tables of conditions for which the following legend applies.

RESPONSIBLE DEPARTMENT		**WHEN REQUIRED**	
CD	Community Development Department	I	Prior to approval of Improvement Plans
(P)	Planning Division	M	Prior to approval of Final Map
(E)	Engineering Division	B	Prior to issuance of first Building Permit
(B)	Building Division	O	Prior to approval of Occupancy Permit
(F)	Fire Division	G	Prior to issuance of Grading Permit
PW	Public Works Department	DC	During construction
PR	Park and Recreation Department	OG	On-going requirement
PD	Police Department	D	Prior to approval of Demolition Permit

Attachment 4
Vicinity Map

Vicinity Map

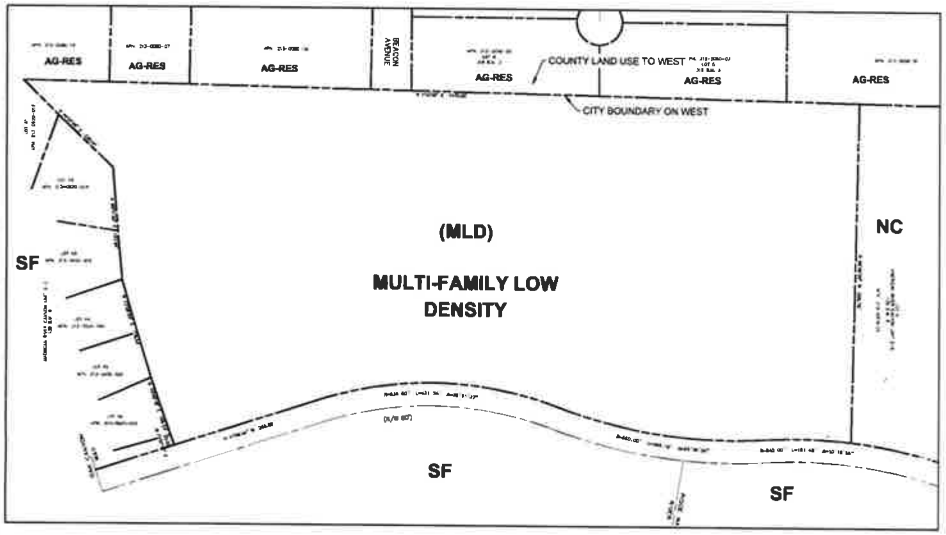
FOLSOM



Attachment 5
General Plan Amendment Exhibit
Dated April 1, 2019

Preliminary Design - Development Permit Application

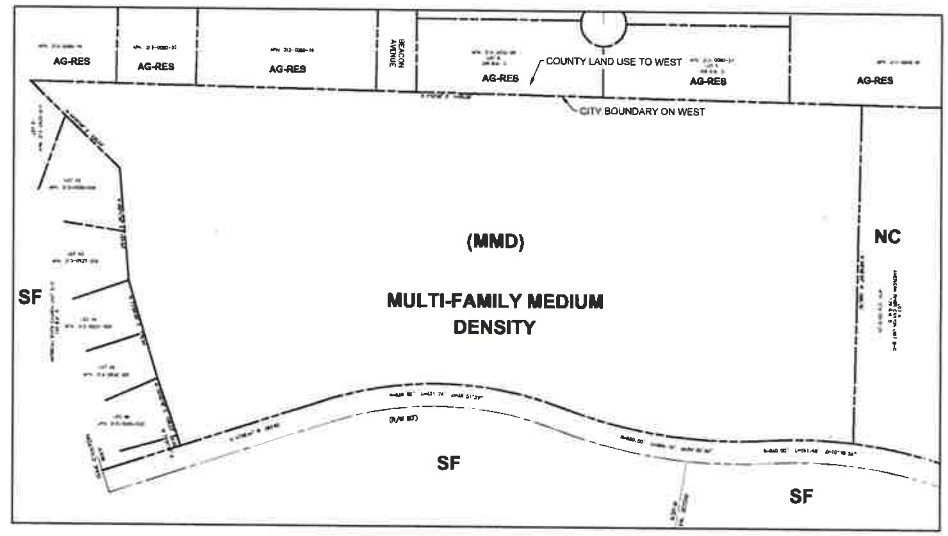
General Plan Amendment



EXISTING LAND USE

The MLD Residential Land Use allows for:

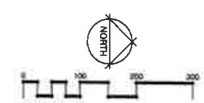
- Density: 7-11.9 DU/AC
- Population/AC: 15-26
- Building Height: 35-ft
- Building Coverage: 40%



PROPOSED LAND USE

The MMD Residential Land Use allows for:

- Density: 12-17.9 DU/AC
- Population/AC: 24-36
- Building Height: 50-ft
- Building Coverage: 60%



CANYON TERRACE APARTMENTS - INFILL

GPA

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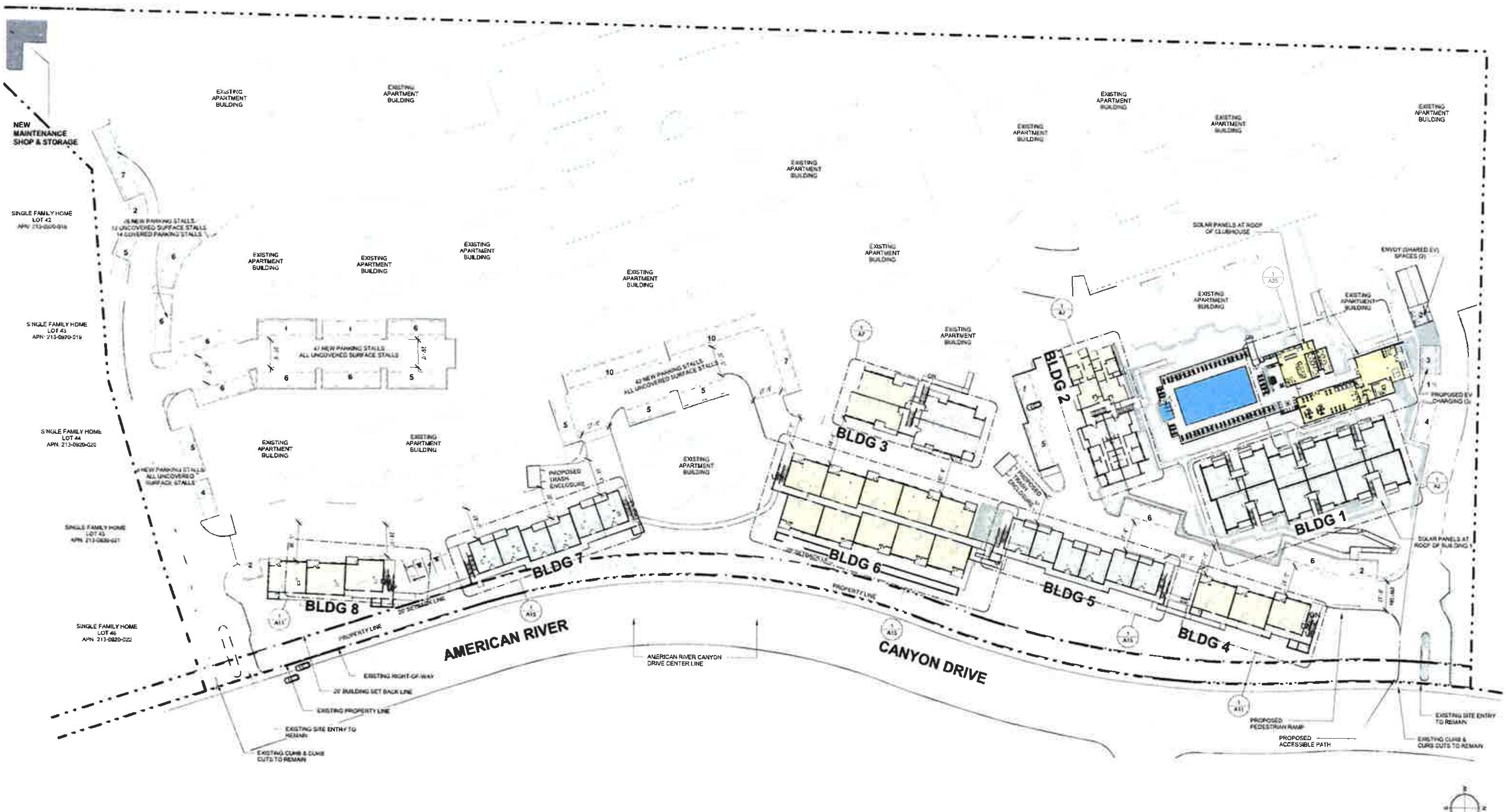
Folsom, California

Proposed By: Canyon Terrace Folsom, LLC
2215 Plaza Drive
Rocklin, CA 95765

In Association With: MVE + Partners Architects
www.mve-architects.com

July 17, 2017 2120UP2001.dwg

Attachment 6
Site Plan, dated April 1, 2019



THE EZRALOW COMPANY

MVE + PARTNERS

Canyon Terrace Apartments

SITE PLAN

A1

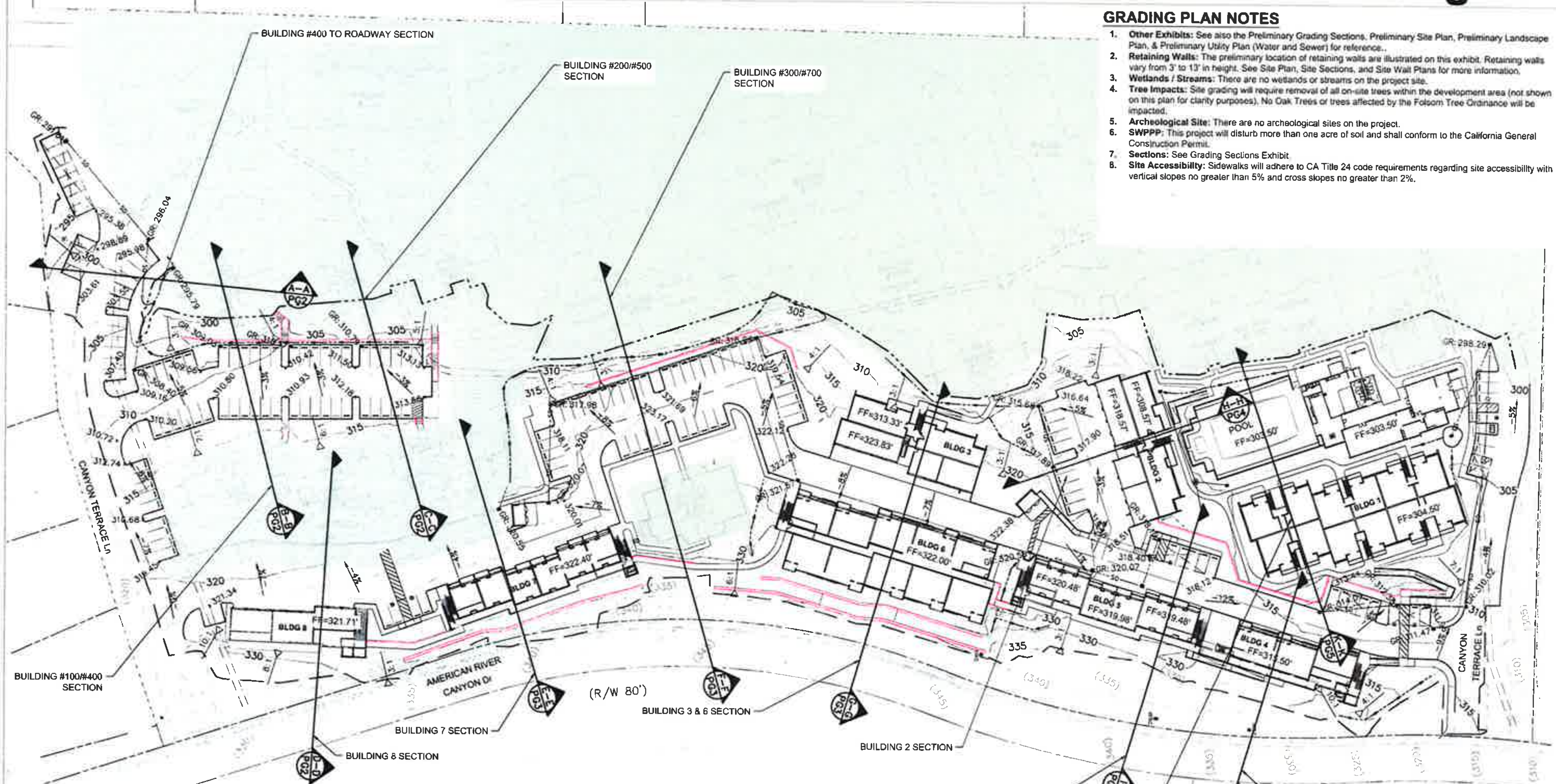
Attachment 7
Grading Plan, dated April 1, 2019

Preliminary Design - Development Permit Application

Grading Plan

GRADING PLAN NOTES

1. **Other Exhibits:** See also the Preliminary Grading Sections, Preliminary Site Plan, Preliminary Landscape Plan, & Preliminary Utility Plan (Water and Sewer) for reference..
2. **Retaining Walls:** The preliminary location of retaining walls are illustrated on this exhibit. Retaining walls vary from 3' to 13' in height. See Site Plan, Site Sections, and Site Wall Plans for more information.
3. **Wetlands / Streams:** There are no wetlands or streams on the project site.
4. **Tree Impacts:** Site grading will require removal of all on-site trees within the development area (not shown on this plan for clarity purposes). No Oak Trees or trees affected by the Folsom Tree Ordinance will be impacted.
5. **Archeological Site:** There are no archeological sites on the project.
6. **SWPPP:** This project will disturb more than one acre of soil and shall conform to the California General Construction Permit.
7. **Sections:** See Grading Sections Exhibit
8. **Site Accessibility:** Sidewalks will adhere to CA Title 24 code requirements regarding site accessibility with vertical slopes no greater than 5% and cross slopes no greater than 2%.



LEGEND

	SECTION LINE
	46" WATER LINE
	PROPOSED BUILDING LIMIT
	RIGHT-OF-WAY LIMIT OR PROPERTY LINE
	ROAD CENTER LINE
	RETAINING WALL
335	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
▪	STORM DRAIN INLET
SD	STORM DRAIN PIPE
	SWALE FLOW LINE
	ROUGH FILL LIMIT
	ROUGH CUT LIMIT

NORTH

SCALE 1" = 40'

CANYON TERRACE APARTMENTS - INFILL

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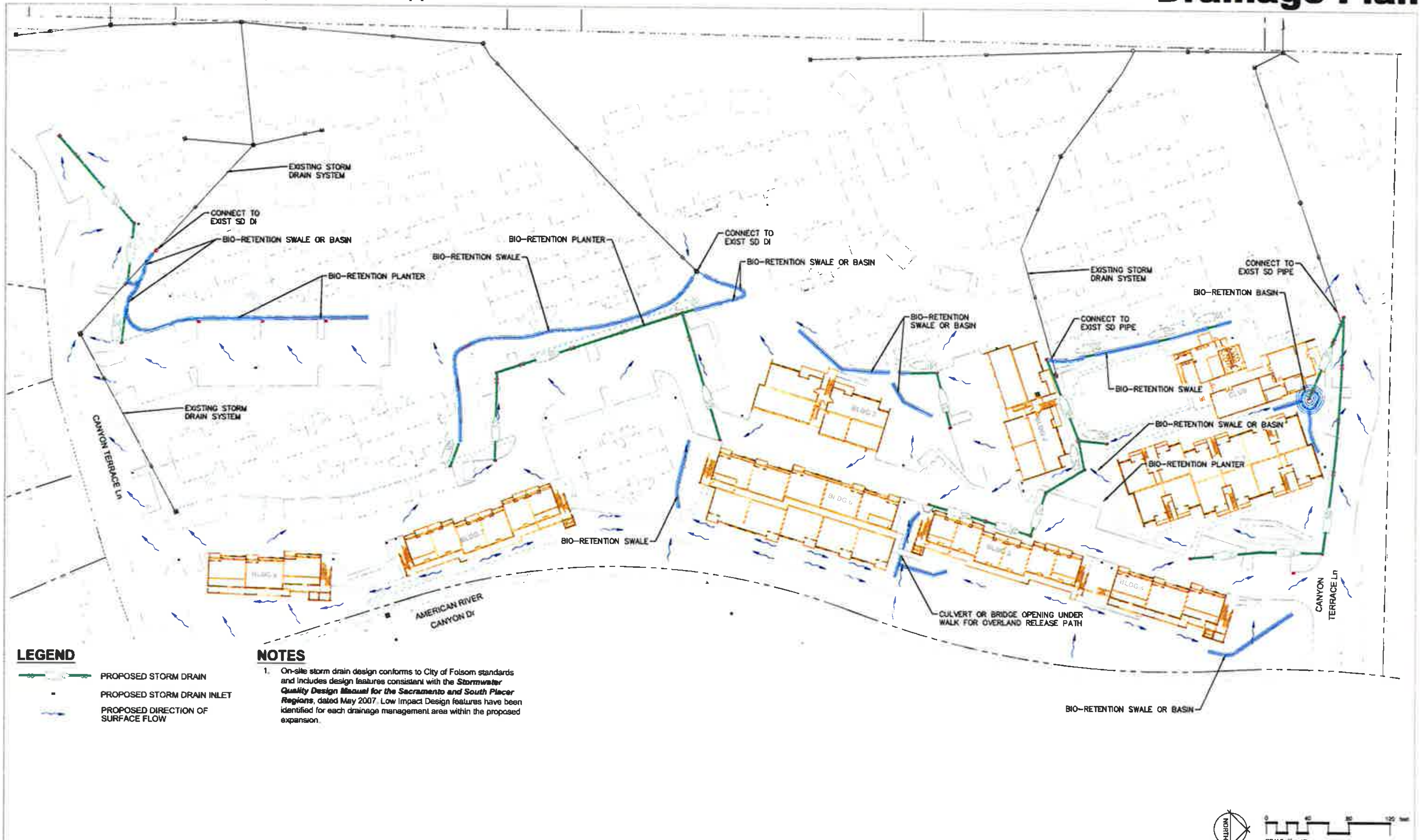
Attachment 8
Drainage Plan, dated April 1, 2019

Preliminary Design - Development Permit Application

Drainage Plan



LEGEND

- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- PROPOSED DIRECTION OF SURFACE FLOW

NOTES

1. On-site storm drain design conforms to City of Folsom standards and includes design features consistent with the ***Stormwater Quality Design Manual for the Sacramento and South Placer Regions***, dated May 2007. Low Impact Design features have been identified for each drainage management area within the proposed expansion.

CANYON TERRACE APARTMENTS - INFILL

G2

Folsom, California

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Rockin, CA 95765

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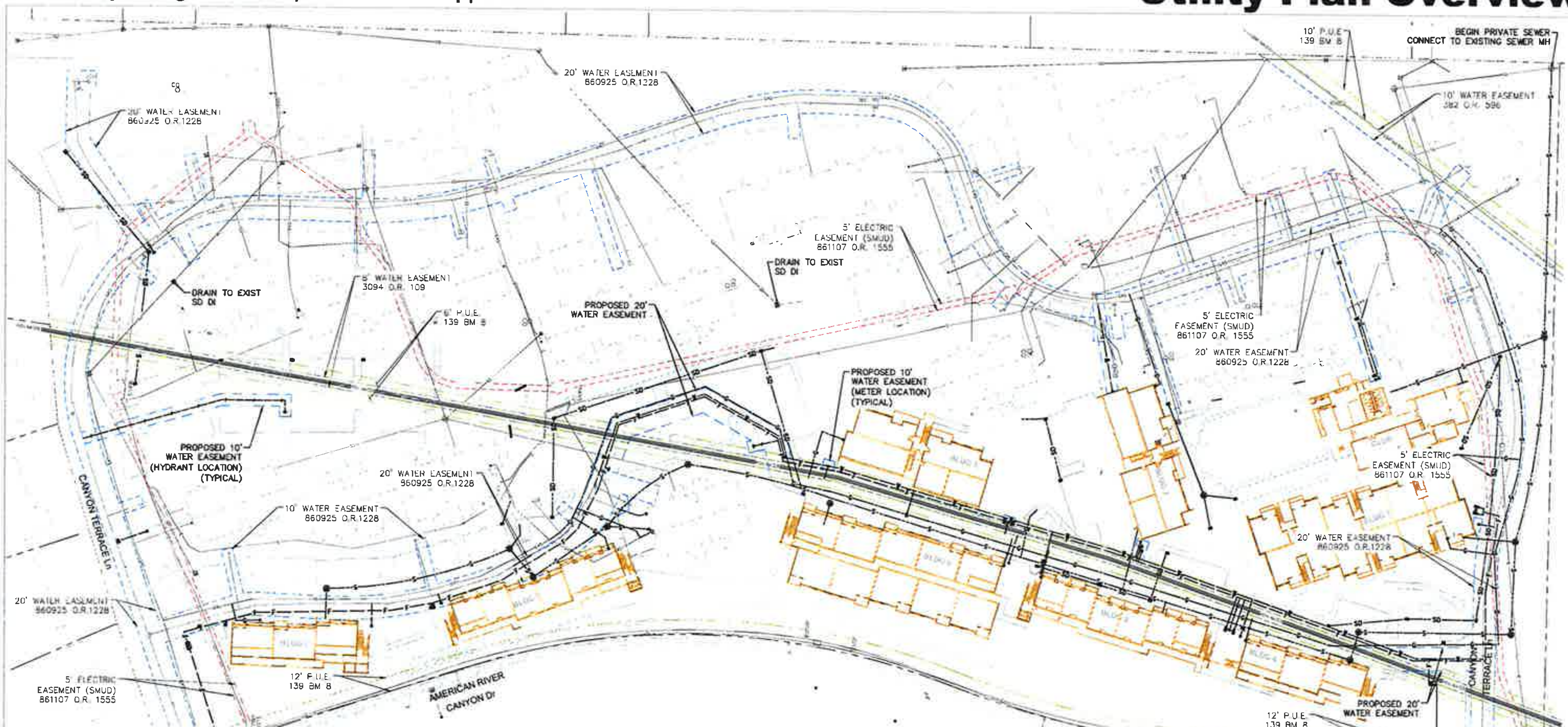
July 17, 2017

2120UPU001.dwg

Attachment 9
Utility Plan, dated April 1, 2019

Preliminary Design - Development Permit Application

Utility Plan Overview



LEGEND

EXISTING		PROPOSED	EASEMENTS	
	EXISTING 40" WATER LINE			EXISTING PUE
	STORM DRAIN	--SD——SD-		EXISTING WATER EASEMENT
	STORM DRAIN INLET			EXISTING ELECTRIC EASEMENT
	WATER LINE			PROPOSED WATER EASEMENT
	FIRE HYDRANT			
	FIRE WATER LINE			
	SANITARY SEWER			
	SEWER MANHOLE	●		
	GAS LINE			
	ELECTRIC LINE			
	ELECTRIC VAULT			

NOTES

1. The provisions of NFPA 24 with an underground fire supply plan will be provided with the building construction plans.
2. On-site sewer will be privately owned, operated, and maintained. The proposed sewer system connects runs south to north across the site to Canyon Terrace Ln, then east to west until connection to the public sewer system.
3. On-site domestic water will connect to the existing (looped) water system on-site. All domestic water pipelines will include a 20' wide S.J.S.W.D. easement for service.
4. On-site fire water will connect to the City of Folsom water supply on American River Canyon Drive at the north and south driveways and will include two double detector check valves (one each end of the looped system), providing fire water to new hydrants, exterior FDC assemblies (per City of Folsom Standard WR-09) and fire riser rooms.
5. On-site storm drain design conforms to City of Folsom standards and includes design features consistent with the ***Stormwater Quality Design Manual for the Sacramento and South Placer Regions***, dated May 2007. Low Impact Design features have been identified for each drainage management area within the proposed expansion.

See Sheets U2 (water) and U3 (sewer) for more information

See Sheet G2 (drainage) for more information

NORTH

SCALE 1" = 40'

CANYON TERRACE APARTMENTS - INFILL

U1

Folsom, California

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Rocklin, CA 95765

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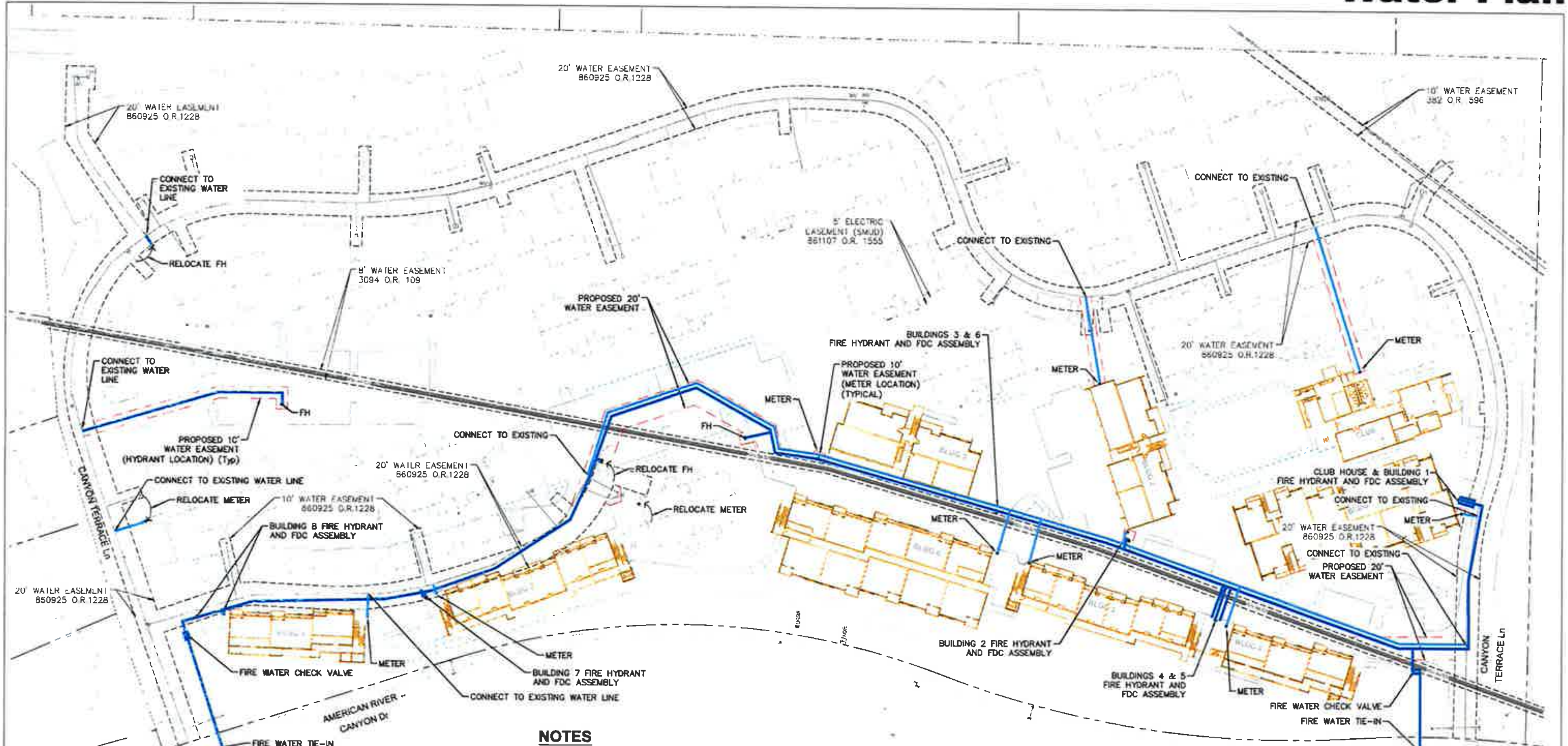
Attachment 10
Water Plan, dated April 1, 2019

Preliminary Design - Development Permit Application

Water Plan



LEGEND

EXISTING

- 40" WATER LINE
- WATER LINE
- FIRE HYDRANT

PROPOSED

- PROPOSED DOMESTIC WATER LINE
- FIRE HYDRANT
- PROPOSED FIRE WATER LINE

EASEMENTS

- EXISTING WATER EASEMENT
- PROPOSED WATER EASEMENT

NOTES

1. Existing buildings do not have fire riser rooms or FDC connections. Existing hydrants are shown on this plan.
2. The provisions of NFPA 24 with an underground fire supply plan will be provided with the building construction plans.
3. On-site domestic water will connect to the existing (looped) water system on-site. All domestic water pipelines will include a 20' wide S.J.S.W.D. easement for service.
4. On-site fire water will connect to the City of Folsom water supply on American River Canyon Drive at the north and south driveways and will include two double detector check valves (one each end of the looped system), providing fire water to new hydrants, exterior FDC assemblies (per City of Folsom Standard WR-09) and fire riser rooms.
5. Water lines have been designed with the proposed clearances

Horizontal Clearances
- Existing water lines 5' minimum clear (not to disturb trench backfill)
- Proposed water lines 1' minimum clear
- Gas Lines 5' minimum clear
- Sewer lines 10' minimum clear
- Note: All crossings shall be as close to perpendicular as possible.

Vertical Clearances
- 1' minimum clearance to all utilities

Note: Sewer and Storm Drain crossing over water lines will not be permitted.

NORTH

SCALE 1" = 40'

CANYON TERRACE APARTMENTS - INFILL

Folsom, California

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U2

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Attachment 11
Sewer Plan, dated April 1, 2019

Preliminary Design - Development Permit Application

Sewer Plan

LEGEND

PROPOSED SANITARY SEWER

NOTES

1. On-site sewer will be privately owned, operated, and maintained. The proposed sewer system connects runs south to north across the site to Canyon Terrace Lane, then east to west until connection to the public sewer system.
2. The proposed sewer line will function as a stand alone system (no tie-ins from existing network) until it connects to the outgoing manhole on the north west corner of the parcel.
3. All new trash enclosures shall include a drain that connects to the sanitary sewer system in conformance with Storm Water Quality Guidance.
4. A sewer capacity study will be performed during design phase to adequately assess on and off site impacts to the sewer system.

CANYON TERRACE APARTMENTS - INFILL

Folsom, California

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Rocklin, CA 95765

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Attachment 12
Landscape Plan, dated April 1, 2019

Preliminary Design - Development Permit Application

Landscape Architecture Plan

DESIGN NOTES

The proposed landscape design intends to replace large existing areas of high water use lawn grass, and replace these areas with a combination of low to medium use shrub / ground cover areas, and a low water use native grass mix intended to look like long meadow grass. Via low volume irrigation, the native grass mix will be retained in a green state year round.

Parking areas will be shaded by deciduous broadleaf and flowering canopy trees.

The Plant List is tentative and may expand or contract as the final planting design is prepared.

Plant Container Sizing

- Trees to be planted from minimum 15-gallon size containers
- Shrubs to be planted from 5-gallon and 1-gallon containers
- Ground Covers to be planted from 1-gallon containers

CALGreen+Tier 1 Checklist

The design of the landscape / irrigation system is intended to meet the CALGreen+Tier 1 Checklist associated with landscape elements. Toward this end the project will include the following best practices:

1. Hydrozone irrigation techniques will be incorporated.
2. The plant palette will utilize at least 75% native California or low water use plant materials appropriate to the climate zone region.

Note: Plant list illustrated is tentative and may expand or contract as the final design is prepared.

3. The use of potable water will be reduced to a quantity that does not exceed 65% of ETo times the landscape area.
4. Common area and perimeter area landscape irrigation will consist of a low volume drip system or low volume rotary sprinkler system.
5. All irrigation valves shall be connected to a "SMART" automatic control system.
6. All irrigation systems shall be designed to meet the most current water conservation policies and available equipment.

SCALE 1" = 40'

CANYON TERRACE APARTMENTS - INFILL

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July 17, 2017

Preliminary Design - Development Permit Application

SITE AREA CALCULATIONS

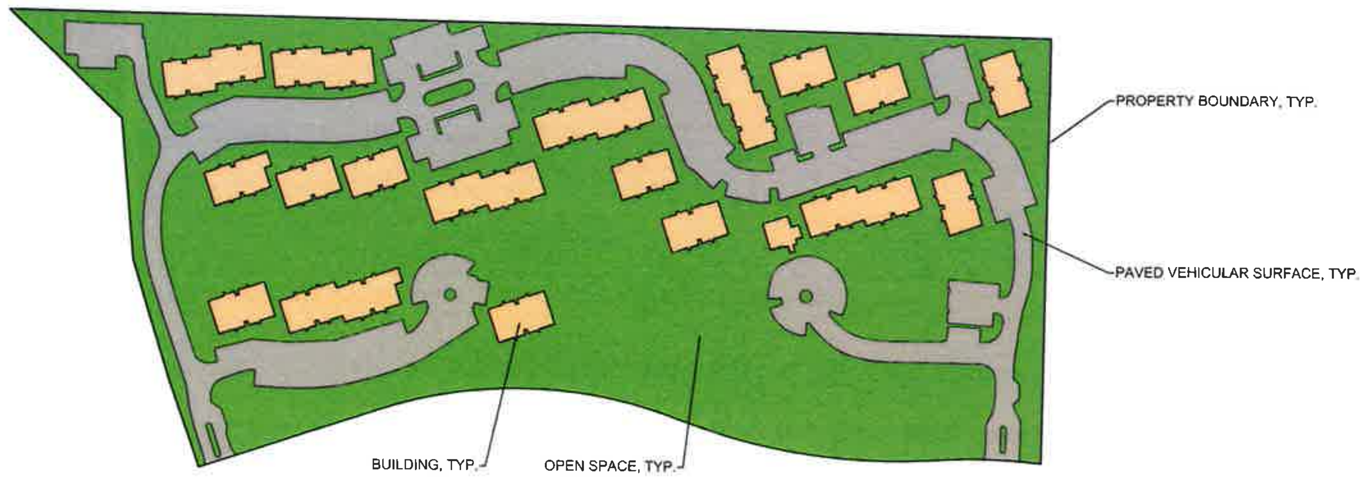
EXISTING CONDITIONS

PROJECT SITE TOTAL AREA:

739,107 SF (16.97 AC)

EXISTING SITE AREA CALCULATIONS

SYMBOL	NOTES	QTY
	PAVED AC	183,915 sf
	LANDSCAPE / OPEN SPACE	454,849 sf
	BUILDING	100,343 sf



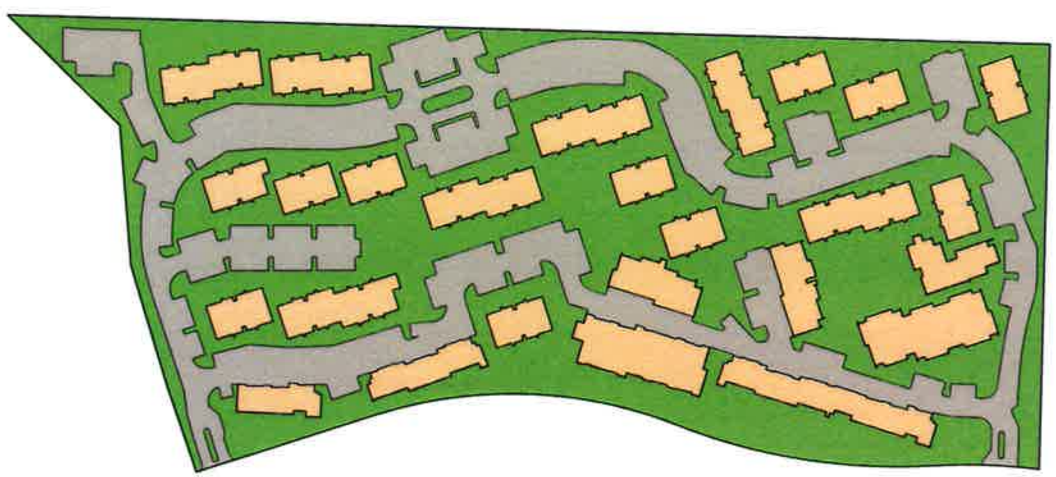
PROPOSED CONDITIONS

PROJECT SITE TOTAL AREA:

739,107 SF (16.97 AC)

PROPOSED SITE AREA CALCULATIONS

SYMBOL	NOTES	QTY
	PAVED AC	221,834 sf
	LANDSCAPE / OPEN SPACE	352,634 sf
	BUILDING	164,639 sf



EXISTING TO PROPOSED COMPARISON:

PAVED AC:

Existing	183,915 sf	(25% of Total Area)
Proposed	221,834 sf	(30% of Total Area)
DIFFERENCE	+37,919 sf	

BUILDINGS:

Existing	100,343 sf	(14% of Total Area)
Proposed	164,639 sf	(22% of Total Area)
DIFFERENCE	+64,296 sf	

OPEN SPACE:

Existing	454,849 sf	(61% of Total Area)
Proposed	352,634 sf	(48% of Total Area)
DIFFERENCE	-102,215 sf	

NORTH

0 40 80 120 feet

SCALE: 1" = 40'

CANYON TERRACE APARTMENTS - INFILL

Folsom, California

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2215 Plaza Drive
Rocklin, CA 95765

In Association With: MVE + Partners Architects
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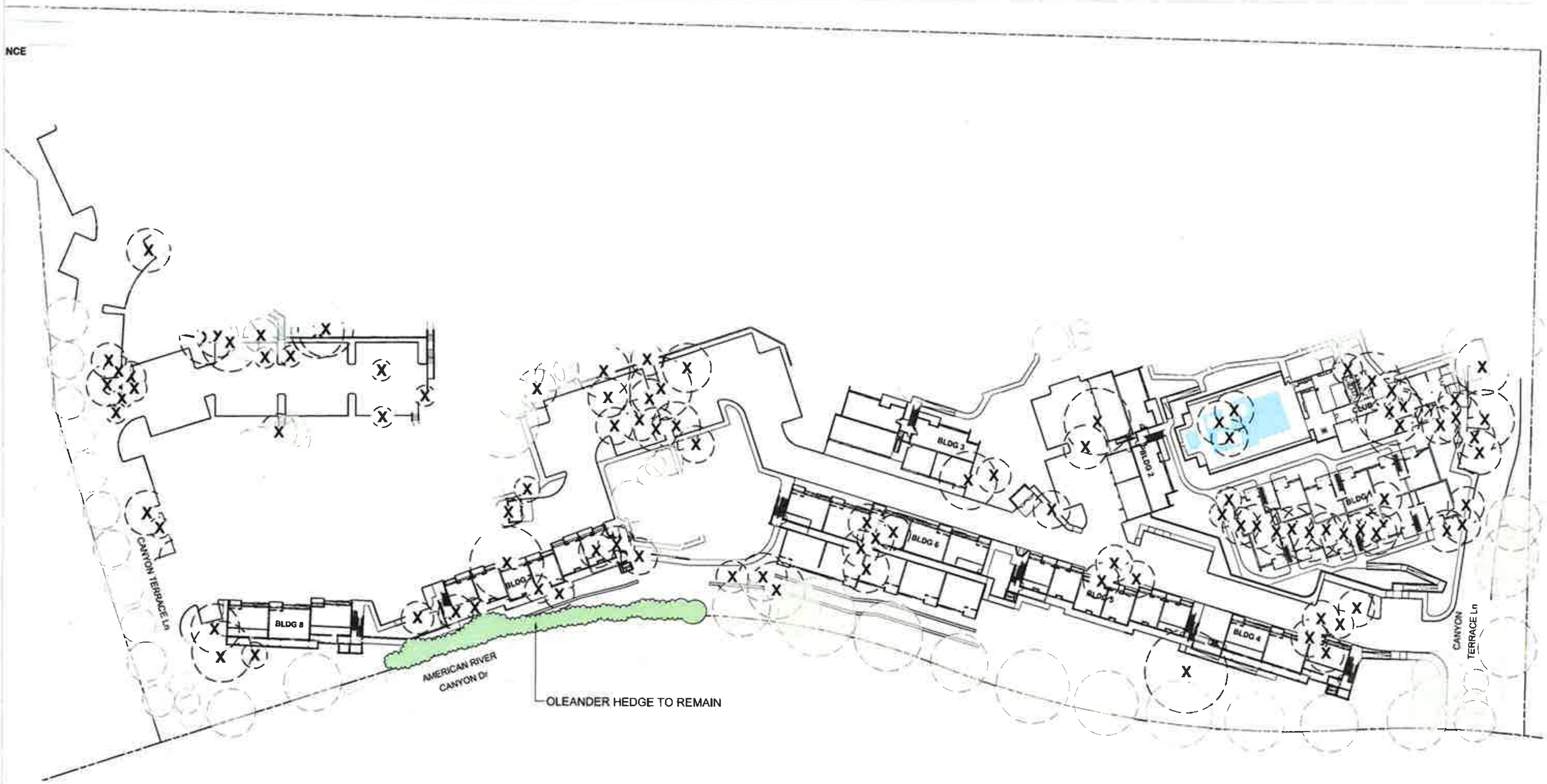
SAC

GHD Inc May 2, 2019

Attachment 13
Tree Removal Plan, dated April 1, 2019

Preliminary Design - Development Permit Application

Tree Removal Plan



LEGEND

X — TREE TO BE REMOVED (102 TOTAL)

TREE WITHIN DEVELOPMENT AREA TO BE RETAINED

NOTES

1. Removal of existing ornamental trees is necessary as a result of grading required, building locations, retaining wall locations, and pavement locations.

2. The trees being removed do not fall under the City's ordinance for tree protection / mitigation. See attached Arborist report for tree species identified in the development infill area.

CANYON TERRACE APARTMENTS - INFILL

TR

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Rocklin, CA 95765

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Attachment 14
Lighting Plan and Details, dated April 1, 2019

Luminaire Schedule

Symbol	Qty	Label	Description	LLF	Lum. Lumens	Lum. Watts
▣	16	P	Beacon - VPS-36L-65-4K7-4W-xxx-xx-xxx-xx	0.903	7490	65
⊙	32	S	US Architectural - COL12-III-24VLED-NW-350	0.903	1733	26

GENERAL NOTES

1. ALL EXTERIOR POLE MOUNTED LUMINAIRES AND BUILDING MOUNTED FIXTURES TO BE ROUTED THROUGH LIGHTING CONTROL SYSTEM PROVIDING AUTOMATIC SHUTOFF PER TITLE 24 REQUIREMENTS.
2. MINIMUM FOOTCANDLE LEVEL SHALL BE 0.1.

NUMBERED NOTES

(1) POST MOUNT LED FIXTURE, TYPE S. SEE DETAIL 4 ON SHEET E0.0.

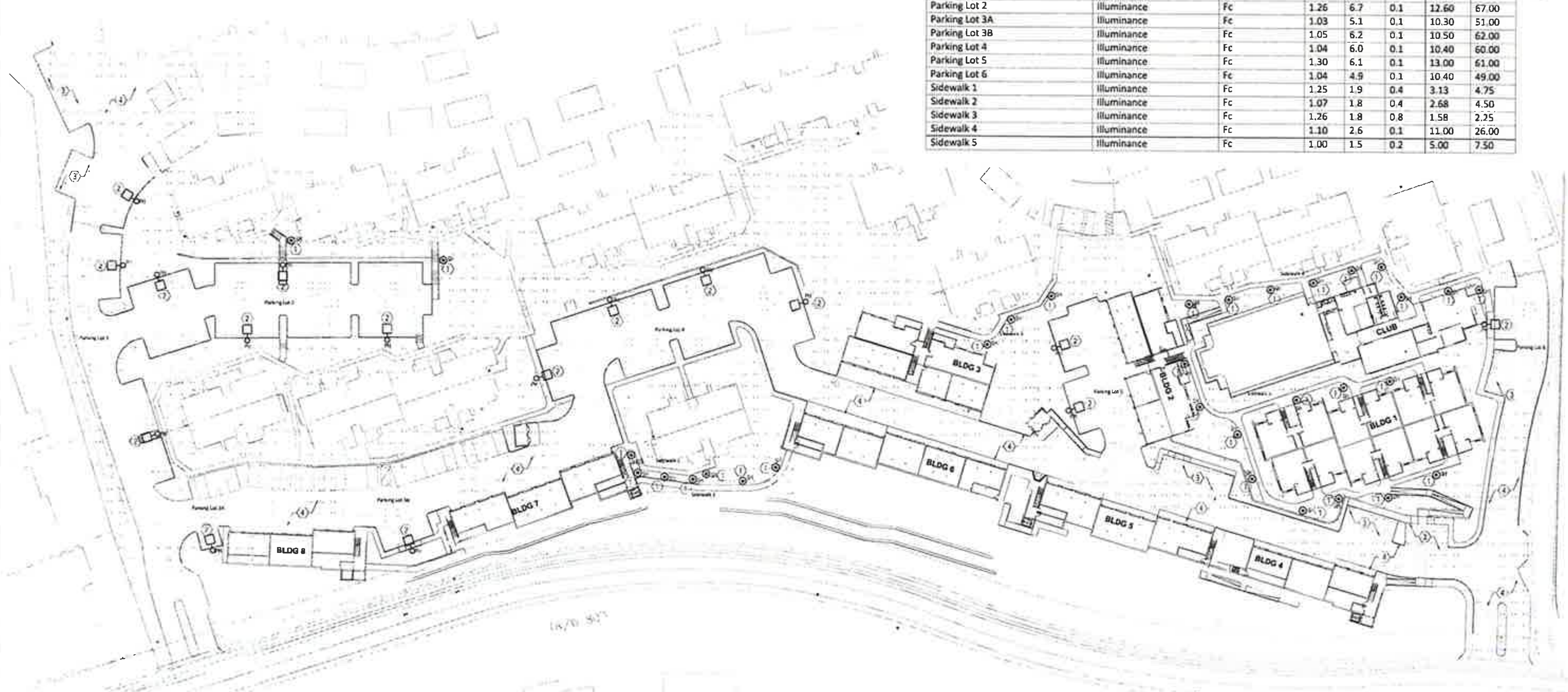
(2) SINGLE SIDED SHOE BOX PARKING POLE LIGHT, TYPE P. SEE DETAIL 3 ON SHEET E0.0.

(3) CARPORT AREAS TO BE SELF ILLUMINATED BY EXISTING CARPOT LIGHTING.

(4) AREA TO BE ILLUMINATED BY WALL PACKS MOUNTED ON BUILDING.

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking Lot 1	Illuminance	Fc	1.14	5.7	0.1	11.40	57.00
Parking Lot 2	Illuminance	Fc	1.26	6.7	0.1	12.60	67.00
Parking Lot 3A	Illuminance	Fc	1.03	5.1	0.1	10.30	51.00
Parking Lot 3B	Illuminance	Fc	1.05	6.2	0.1	10.50	62.00
Parking Lot 4	Illuminance	Fc	1.04	6.0	0.1	10.40	60.00
Parking Lot 5	Illuminance	Fc	1.30	6.1	0.1	13.00	61.00
Parking Lot 6	Illuminance	Fc	1.04	4.9	0.1	10.40	49.00
Sidewalk 1	Illuminance	Fc	1.25	1.9	0.4	3.13	4.75
Sidewalk 2	Illuminance	Fc	1.07	1.8	0.4	2.68	4.50
Sidewalk 3	Illuminance	Fc	1.26	1.8	0.8	1.58	2.25
Sidewalk 4	Illuminance	Fc	1.10	2.6	0.1	11.00	26.00
Sidewalk 5	Illuminance	Fc	1.00	1.5	0.2	5.00	7.50



(1) OVERALL SITE PLAN - LIGHTING

SCALE: 1" = 40'-0"

ECOM
ECOM ENGINEERING INC.
1796 TRIBUTE ROAD, SUITE 100
SACRAMENTO, CA. 95815
916.641.5600
916.641.1640 FAX
WWW.ECOMENG.COM

REVISIONS NO	DATE	DESCRIPTION

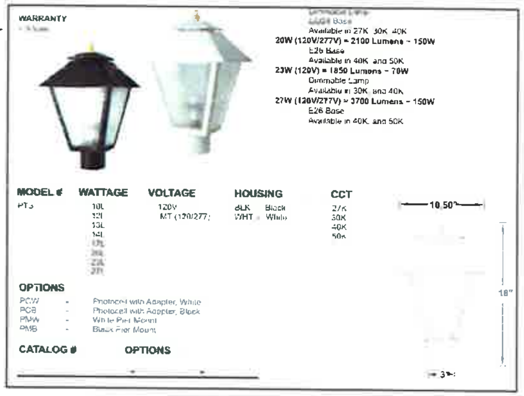
PROJECT
CANYON TERRACE
APARTMENTS

PROJECT
ADDRESS/
1600 CANYON TERRACE
LANE FOLSOM, CA

PRELIMINARY SITE PLAN - LIGHTING

PROJECT NO: 2015-0218.08
ENG/ARCH: -
PROJECT MANAGER: BS
SCALE: AS NOTED
DATE: JULY, 2017
DRAWN: ECOM
DRAWING: E1.0

FIXTURE STYLE INTENDED TO MATCH EXISTING SITE LIGHTING DESIGN



(1) POST MOUNT LED FIXTURE (TYPE S)

NO SCALE

GENERAL NOTES

THE CONTRACTOR SHALL VISIT JOB SITE AND VERIFY CONDITIONS BEFORE BIDDING.

THE ADJACENT BUSINESSES SHALL REMAIN IN OPERATION DURING ALL PHASES OF WORK. WHERE SYSTEM SHUTDOWNS AND POWER OUTAGES ARE UNAVOIDABLE, SUCH WORK SHALL BE SCHEDULED WITH THE CITY REPRESENTATIVE AND SHALL OCCUR AT SUCH TIMES AS TO CAUSE THE LEAST DISRUPTION OF NORMAL BUSINESS FUNCTIONS. INCLUDE ALL PREMIUM LABOR IN BID PROPOSAL TO COVER WORK REQUIRED TO BE PERFORMED BEFORE OR AFTER "NORMAL" WORKING HOURS.

ALL UNDERGROUND WIRING TO COMPLY WITH CEC 300.5.

UNLESS OTHERWISE INDICATED, ALL 20 AMP 120 OR 277 VOLT BRANCH CIRCUITS SHALL HAVE DEDICATED NEUTRALS. DO NOT SHARE NEUTRALS.

ALL EQUIPMENT INSTALLED OR CONNECTED BY THE CONTRACTOR SHALL BE LABELED OR CERTIFIED FOR ITS USE BY A NATIONALLY RECOGNIZED TESTING LABORATORY.

ALL MATERIAL AND EQUIPMENT IS TO BE LISTED AND INSTALLED PER MANUFACTURERS SPECIFICATIONS.

INSTALL ALL EQUIPMENT, CONDUITS, OUTLETS, AND FIXTURES IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES (CEC, STATE, COUNTY, AND CITY).

ALL OUTDOOR ELECTRICAL EQUIPMENT SHALL BE WEATHER PROTECTED.

ALL OUTDOOR FIXTURES SHALL BE 16' MAXIMUM ABOVE FINISHED GRADE TO TOP OF FIXTURE UNLESS NOTED OTHERWISE.

ALL POLE LIGHT FOUNDATIONS TO BE A MINIMUM 4' FROM UNDERGROUND UTILITIES.

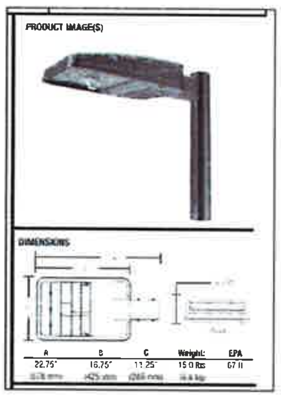
STANDARD ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
○-□	SINGLE SIDED SHOE BOX POLE LIGHT.
⊙	POST MOUNT LED FIXTURE.
⊠	RECESSED PULL BOX, SIZE INDICATED ON PLANS.
⊗	NUMBERED NOTE.
	ISOLUX DIAGRAM ILLUSTRATING FOOTCANDLE AND LIGHTING DISTRIBUTION PATTERNS.

811 Know what's below. Call before you dig.

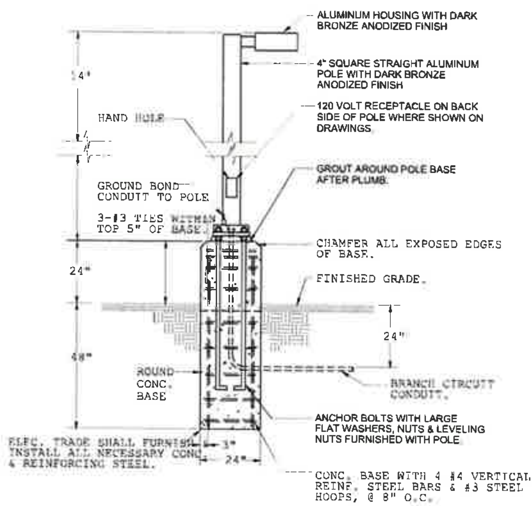
SHEET INDEX

SHEET	DESCRIPTION
E1.0	PRELIMINARY SITE PLAN - LIGHTING
E2.0	PRELIMINARY SYMBOLS LIST, NOTES, SHEET INDEX AND DETAILS



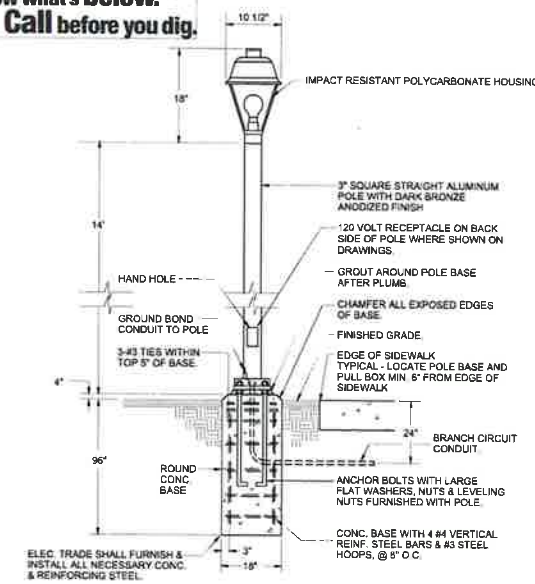
(2) SINGLE SIDED SHOE BOX PARKING POLE LIGHT (TYPE P)

NO SCALE



(3) SINGLE SIDED SHOE BOX PARKING POLE LIGHT DETAIL (TYPE P)

NO SCALE



(4) POLE LIGHT DETAIL TYPE S

NO SCALE

ECOM
ECOM ENGINEERING INC.
1796 TRIBUTE ROAD, SUITE 100
SACRAMENTO, CA. 95815
916.641.5600
916.641.1640 FAX
WWW.ECOMENG.COM

REVISIONS NO	DATE	DESCRIPTION

PROJECT
CANYON TERRACE
APARTMENTS

PROJECT
ADDRESS/
1600 CANYON TERRACE
LANE FOLSOM, CA

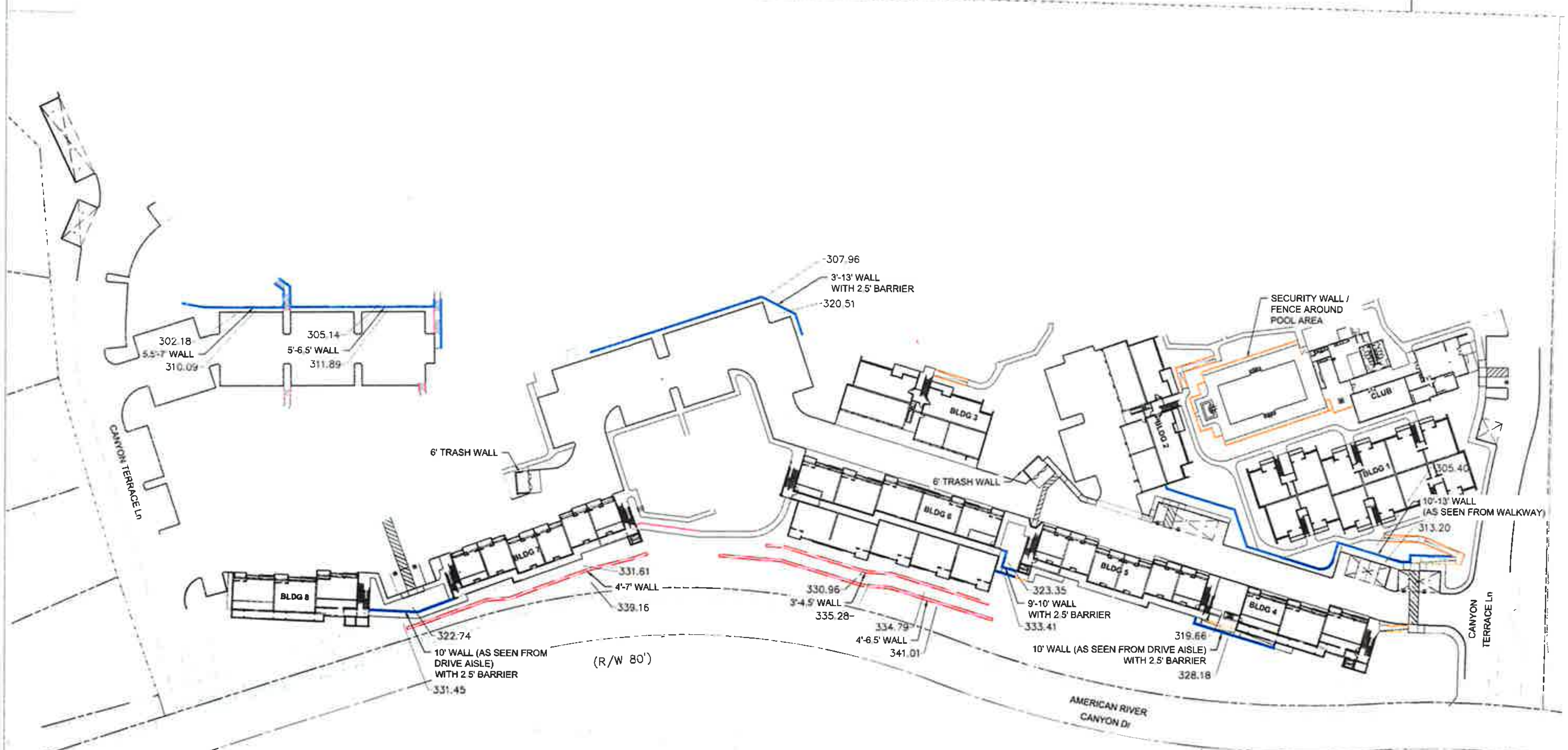
PRELIMINARY SYMBOLS LIST ,NOTES,SHEET INDEX, AND DETAILS

PROJECT NO 2015-1218.00	ENG/ARCH	PROJECT MANAGER ES
SCALE AS NOTED	DRAWING	
DATE JULY, 2017	E2.0	
DRAWN ECOM		

Attachment 15
Site Walls Plan and Details, dated April 1, 2019

Preliminary Design - Development Permit Application

Site Walls Plan



LEGEND

- RETAINING WALL WITH FAUX STONE SURFACE (TYPE 'B')
- RETAINING ROCKERY WALL (TYPE 'A')
- POOL SECURITY FENCE / WALL (5-FT. MINIMUM TALL) OR STEM WALL ALONG RAMPS

NOTES

1. See Sheet RW2 for examples of the proposed wall types.

CANYON TERRACE APARTMENTS - INFILL

RW1

Folsom, California

Proposed By: **Canyon Terrace Folsom, LLC**
2215 Plaza Drive
Rocklin, CA 95765

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www.mve-architects.com

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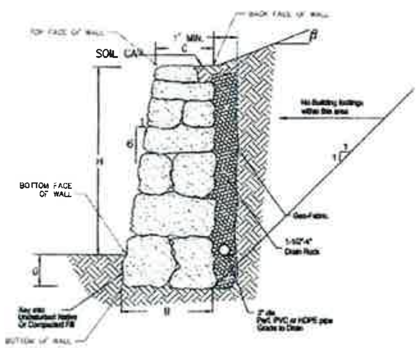
Retaining Wall Examples

ROCKERY WALL ———— OR —— RETAINING WALL (MANUFACTURE BLOCK STYLE)

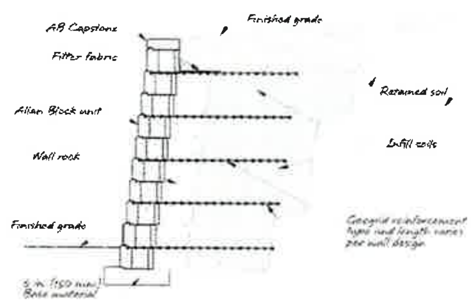
(TYPE 'A') (TYPE 'A')

CONCRETE RETAINING WALL

(TYPE 'B')



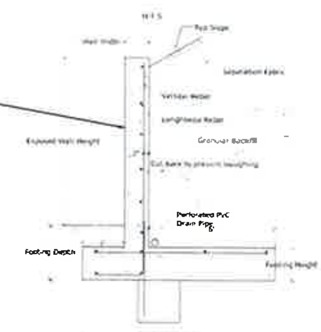
TYPICAL ROCKERY WALL DETAIL



TYPICAL RETAINING WALL DETAIL

(MANUFCTURE BLOCK STYLE)

FACED WITH FAUX STONE



TYPICAL CONCRETE RETAINING WALL DETAIL

CANYON TERRACE APARTMENTS - INFILL

RW2

Folsom, California

Proposed By: Canyon Terrace Folsom, LLC
2215 Plaza Drive
Rocklin, CA 95765

In Association With: MVE + Partners Architects
www.mve-architects.com

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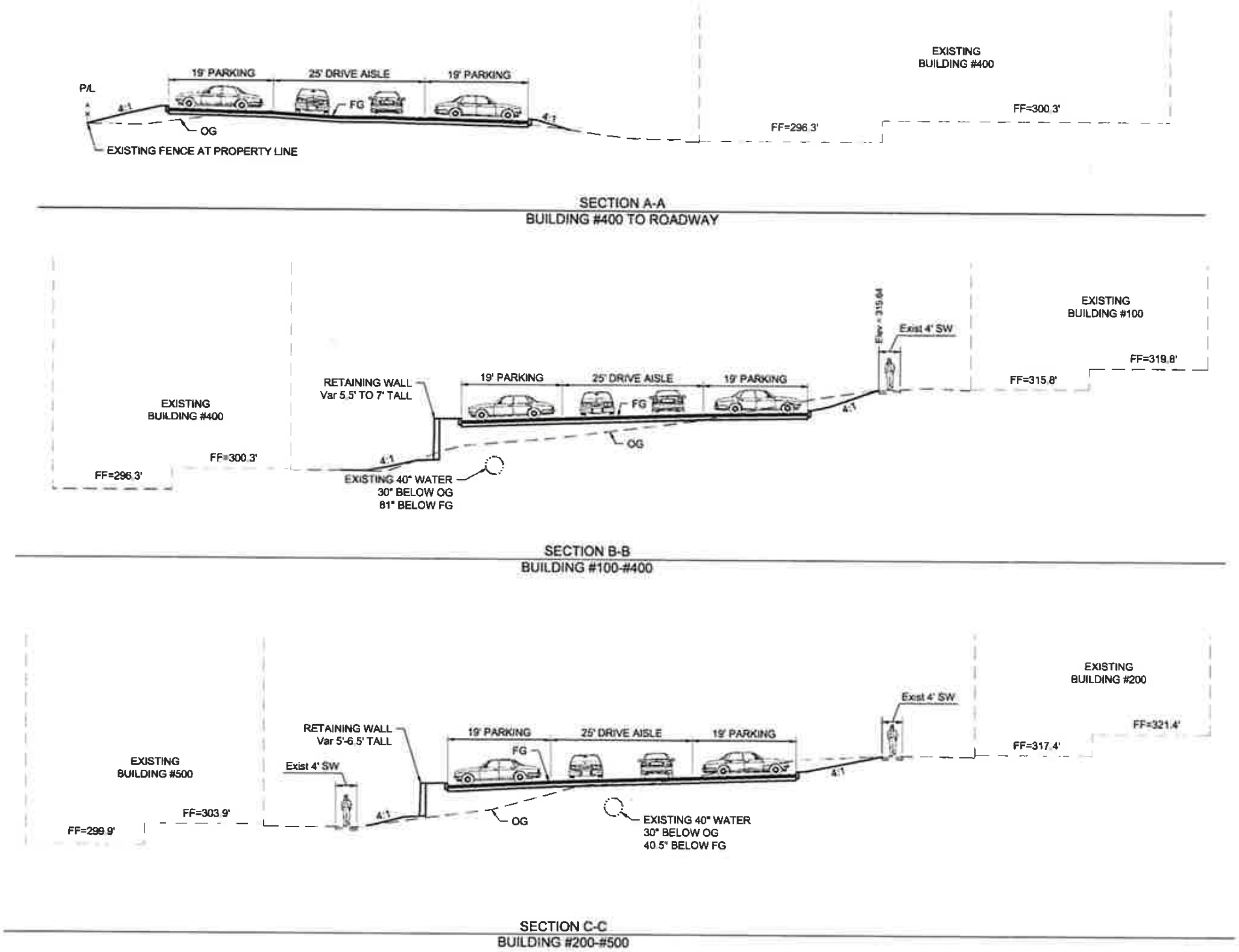
SACRAMENTO REGION

July 17, 2017 2120UPRW.dwg

Attachment 16
Site Sections, dated April 1, 2019

Preliminary Design - Development Permit Application

Site Sections



SCALE: NONE

CANYON TERRACE APARTMENTS - INFILL

G3

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Folsom, California

Proposed By: Canyon Terrace Folsom, LLC
2215 Plaza Drive
Rocklin, CA 95765

In Association With: MVE + Partners Architects
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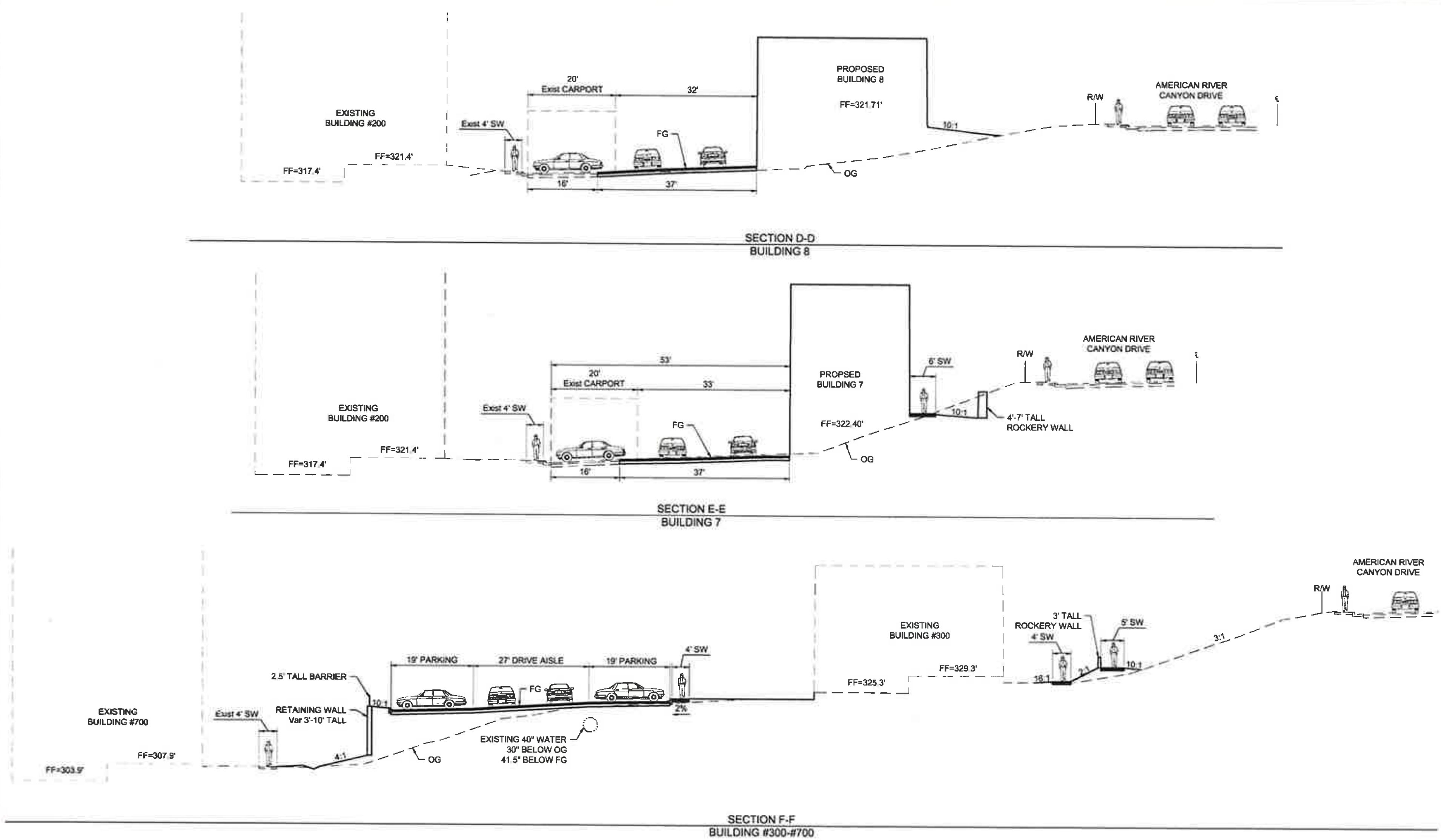
July 17, 2017 2120UPG001.dwg

Preliminary Design - Development Permit Application

Site Sections



SCALE: NONE

CANYON TERRACE APARTMENTS - INFILL

G4

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July 17, 2017
2120UPG001.dwg

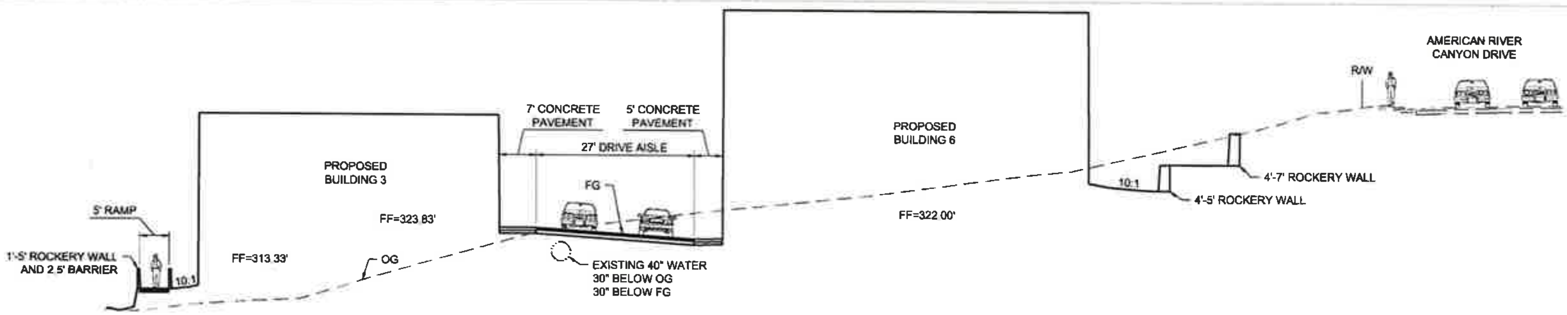
Folsom, California

Proposed By: Canyon Terrace Folsom, LLC
2215 Plaza Drive
Rocklin, CA 95765

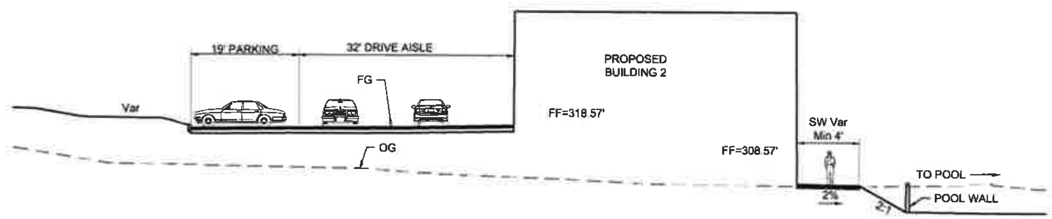
In Association With: MVE + Partners Architects
www.mve-architects.com

Preliminary Design - Development Permit Application

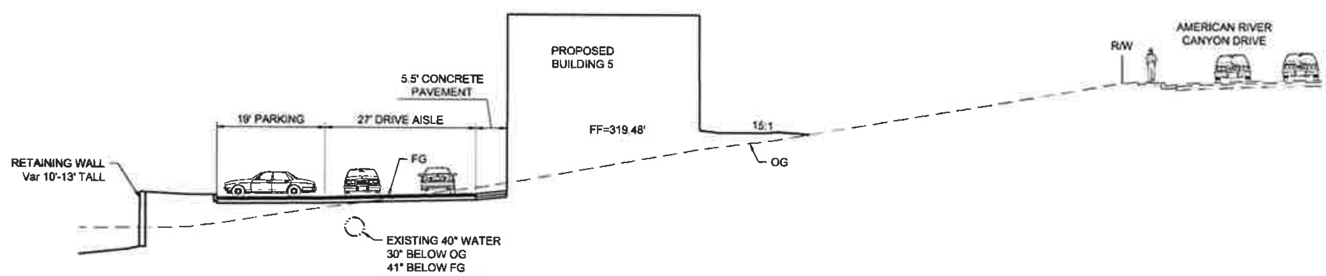
SECTIONS



SECTION G-G
BUILDING 3 & 6



SECTION H-H
BUILDING 2



SECTION I-I
BUILDING 5

SCALE: NONE

CANYON TERRACE APARTMENTS - INFILL

G5

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Folsom, California

Proposed By: Canyon Terrace Folsom, LLC
2215 Plaza Drive
Rocklin, CA 95765

In Association With: MVE + Partners Architects
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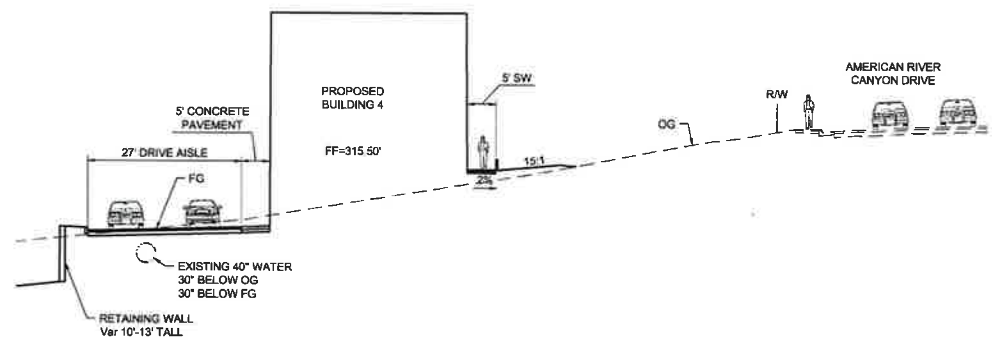
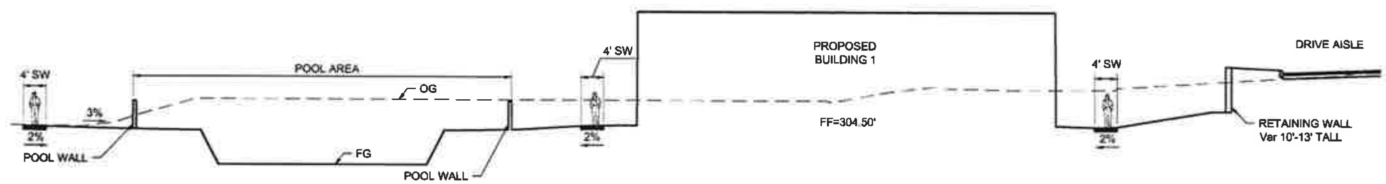
July 17, 2017 2120UPG001.dwg

Preliminary Design - Development Permit Application

Site Sections



SECTION J-J
BUILDING 4



SECTION K-K
BUILDING 1

SCALE: NONE

CANYON TERRACE APARTMENTS - INFILL

G6

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Folsom, California

Proposed By: Canyon Terrace Folsom, LLC
2215 Plaza Drive
Rockln, CA 95765

In Association With: MVE + Partners Architects
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July 17, 2017

Attachment 17
Emergency Vehicle Access Exhibit
Dated April 1, 2019

Preliminary Design - Development Permit Application

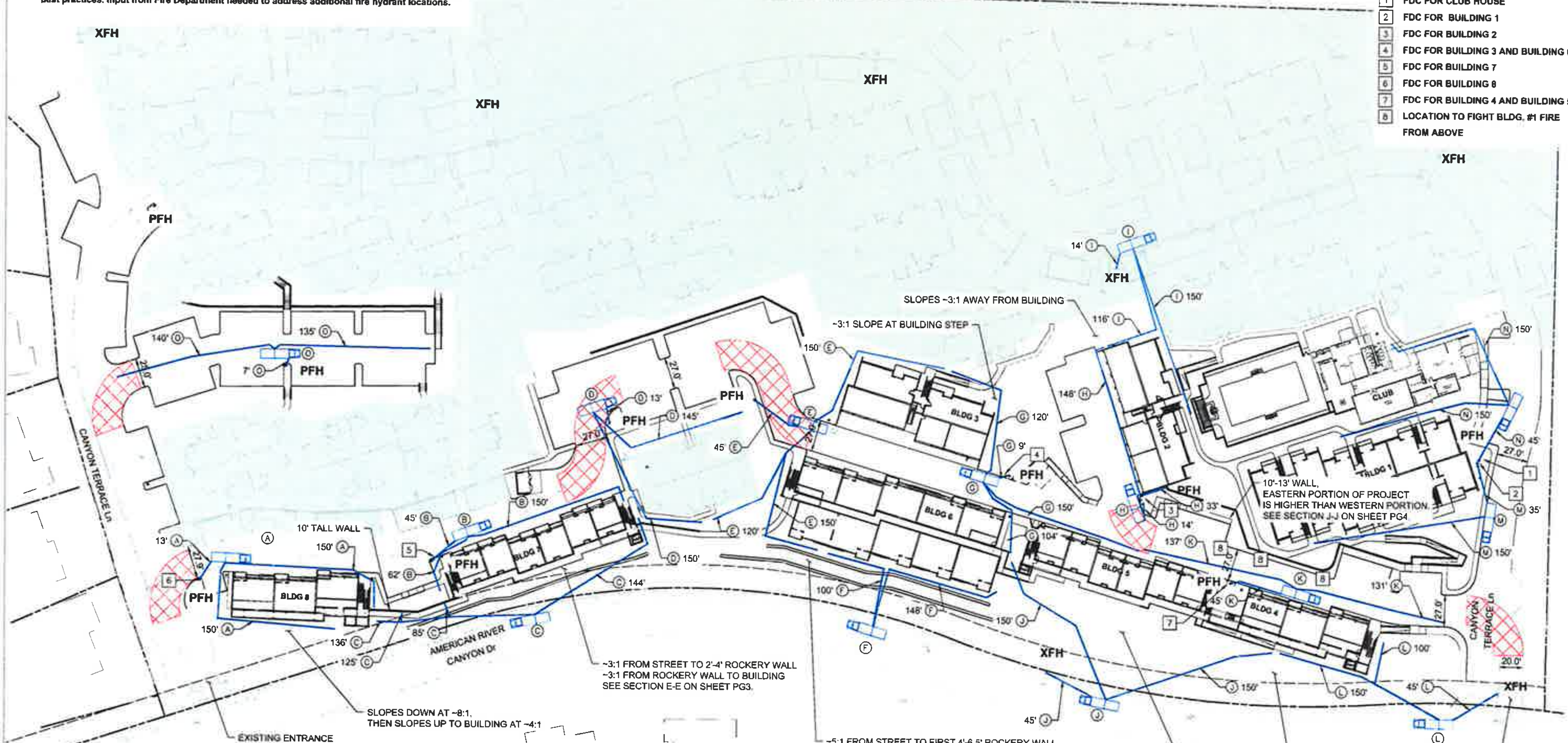
Emergency Vehicle Access

NOTES

1. Emergency Vehicle Access Plan included to inform Fire Department review officials of issues per best practices. Input from Fire Department needed to address additional fire hydrant locations.

KEYED NOTES

1. FDC FOR CLUB HOUSE
2. FDC FOR BUILDING 1
3. FDC FOR BUILDING 2
4. FDC FOR BUILDING 3 AND BUILDING 8
5. FDC FOR BUILDING 7
6. FDC FOR BUILDING 8
7. FDC FOR BUILDING 4 AND BUILDING 5
8. LOCATION TO FIGHT BLDG. #1 FIRE FROM ABOVE



EMERGENCY VEHICLE ACCESS

Emergency vehicle access will be maintained throughout the project to meet the Fire Department's standards for fire truck manuvering, location of truck to fight a fire, rescue access to the units, and the ability to pull a fire hose to all sides of the building.

LEGEND

R=50' R=25'	FIRE TRUCK TURNING RADIUS	Ⓧ	FIRE TRUCK I.D.
PFH	PROPOSED FIRE HYDRANT LOCATION		FIRE HOSE
XFH	EXISTING FIRE HYDRANT LOCATION	150'	FIRE HOSE LENGTH
	FIRE TRUCK		

CANYON TERRACE APARTMENTS - INFILL

EVA

Folsom, California

Proposed By: **Canyon Terrace Folsom, LLC**
2215 Plaza Drive
Rockin, CA 95765

In Association With: **MVE + Partners Architects**
www.mve-architects.com

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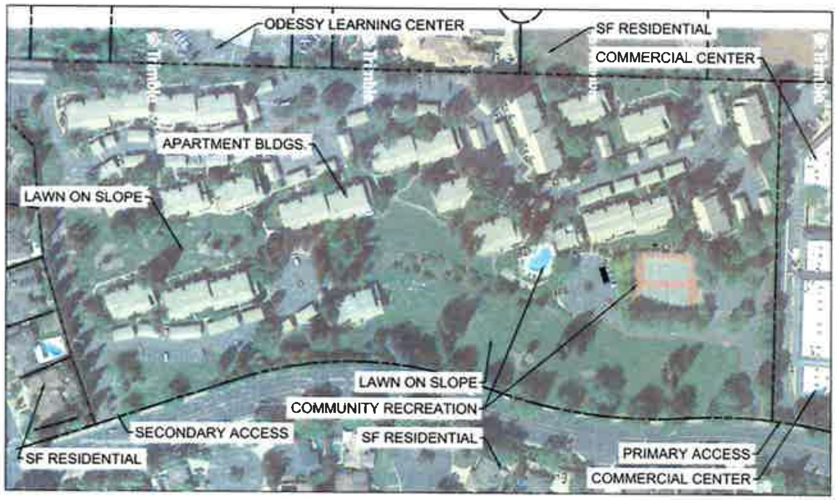
July 17, 2017 2120UPS001.dwg

Attachment 18
Existing and Proposed Conditions Exhibit
Dated April 1, 2019

Preliminary Design - Development Permit Application

Existing Conditions



EXISTING APARTMENT PROJECT

PROPOSED INFILL IMPROVEMENTS

PROJECT OVERVIEW

The existing project consists of 200 apartment units, a small club house/leasign office/laundary facility, pool, tennis courts, covered and uncovered parking, and landscaped areas consisting of shrub/ground cover areas and large lawn grass areas. The design intent is to reclaim large open space areas for development, including 96 additional units, 233 parking spaces, and a new pool / club house/lease area.

EXISTING PROJECT IMAGES

LARGE OPEN SPACE LAWN AREAS

COVERED PARKING

POOL AREA

TYPICAL APARTMENT BUILDING

NORTH

0 100 200 300 feet
SCALE: 1" = 100

CANYON TERRACE APARTMENTS - INFILL

Folsom, California

Proposed By: **Canyon Terrace Folsom, LLC**
2215 Plaza Drive
Rocklin, CA 95765

In Association With: **MVE + Partners Architects**
www.mve-architects.com

EX

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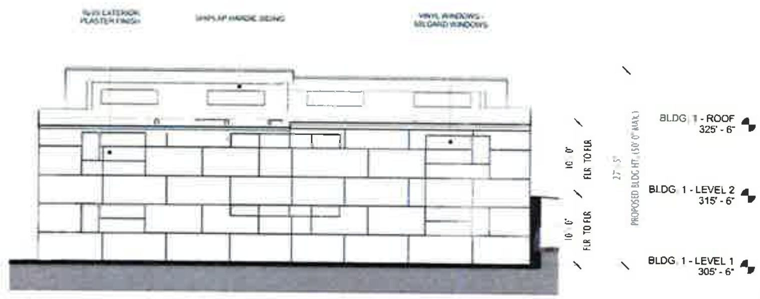
July 17, 2017 2120UPS001.dwg

Attachment 19
Building Elevations and Floor Plans
Dated April 1, 2019

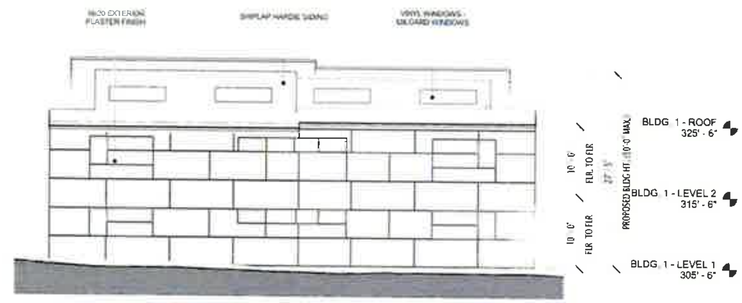
Keynote Legend

Key Value	Keynote Text
7A	SHIPLAP HARDIE SIDING
7B	HARDIE PANEL
7C	16/20 EXTERIOR PLASTER FINISH
08 15 73	SLIDING VINYL DOORS
08 53 13	VINYL WINDOWS - MILGARD WINDOWS
08 81 00.1	GLAZED RAILING
09 22 34	EXTERIOR 3/4" PLASTER CONTROL JOINT

BUILDING 1 - EAST ELEVATION 4



BUILDING 1 - SOUTH ELEVATION 3



BUILDING 1 - NORTH ELEVATION 2

NOTE:
PER CITY OF FOLSOM MUNICIPAL CODE 17.17.120, THE "BUILDING HEIGHT REQUIREMENT IS FOUR STORIES, BUT NOT TO EXCEED FIFTY FEET."

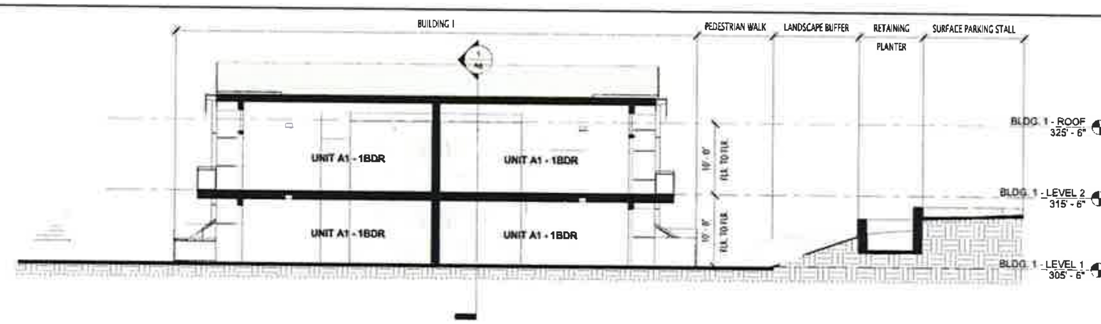
BUILDING 1 - WEST ELEVATION 1

THE EZRALOW COMPANY | MVE + PARTNERS

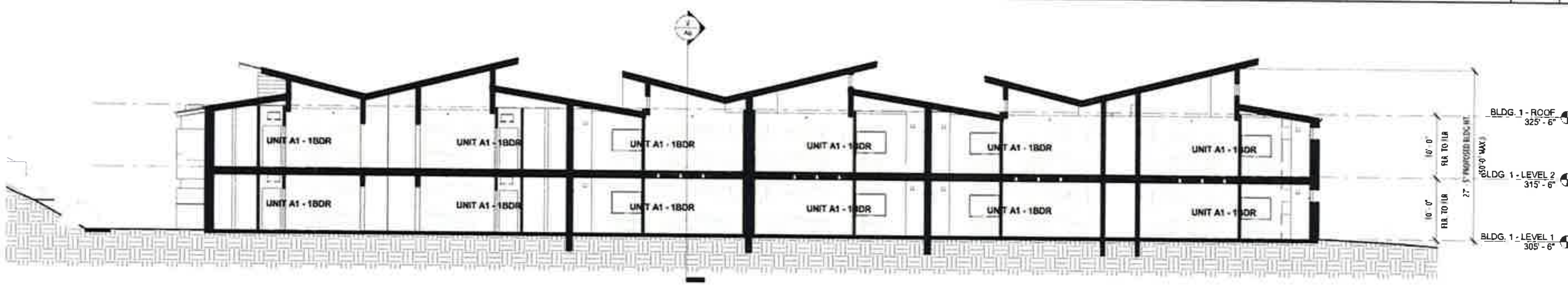
Canyon Terrace Apartments

BLDG 1 - ELEVATIONS

A5



BLDG 1 - EAST-WEST SECTION 2



BLDG 1 - NORTH-SOUTH SECTION 1

THE EZRALOW COMPANY

MVE + PARTNERS

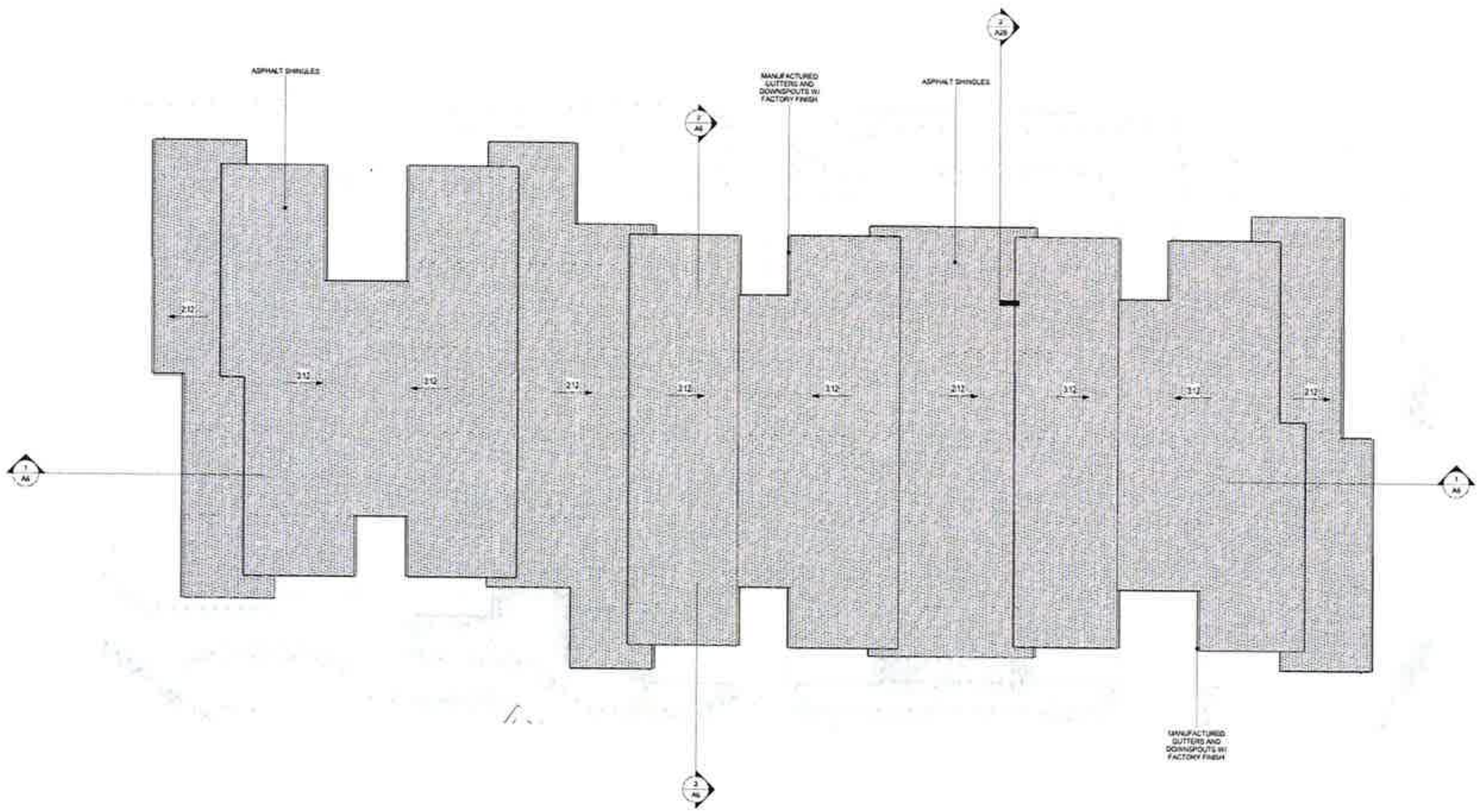
Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

BLDG 1 - SECTION

A6

Keynote Legend

Key Value	Keynote Text
07 31 13	ASPHALT SHINGLES
07 71 23	MANUFACTURED GUTTERS AND DOWNSPOUTS W/ FACTORY FINISH



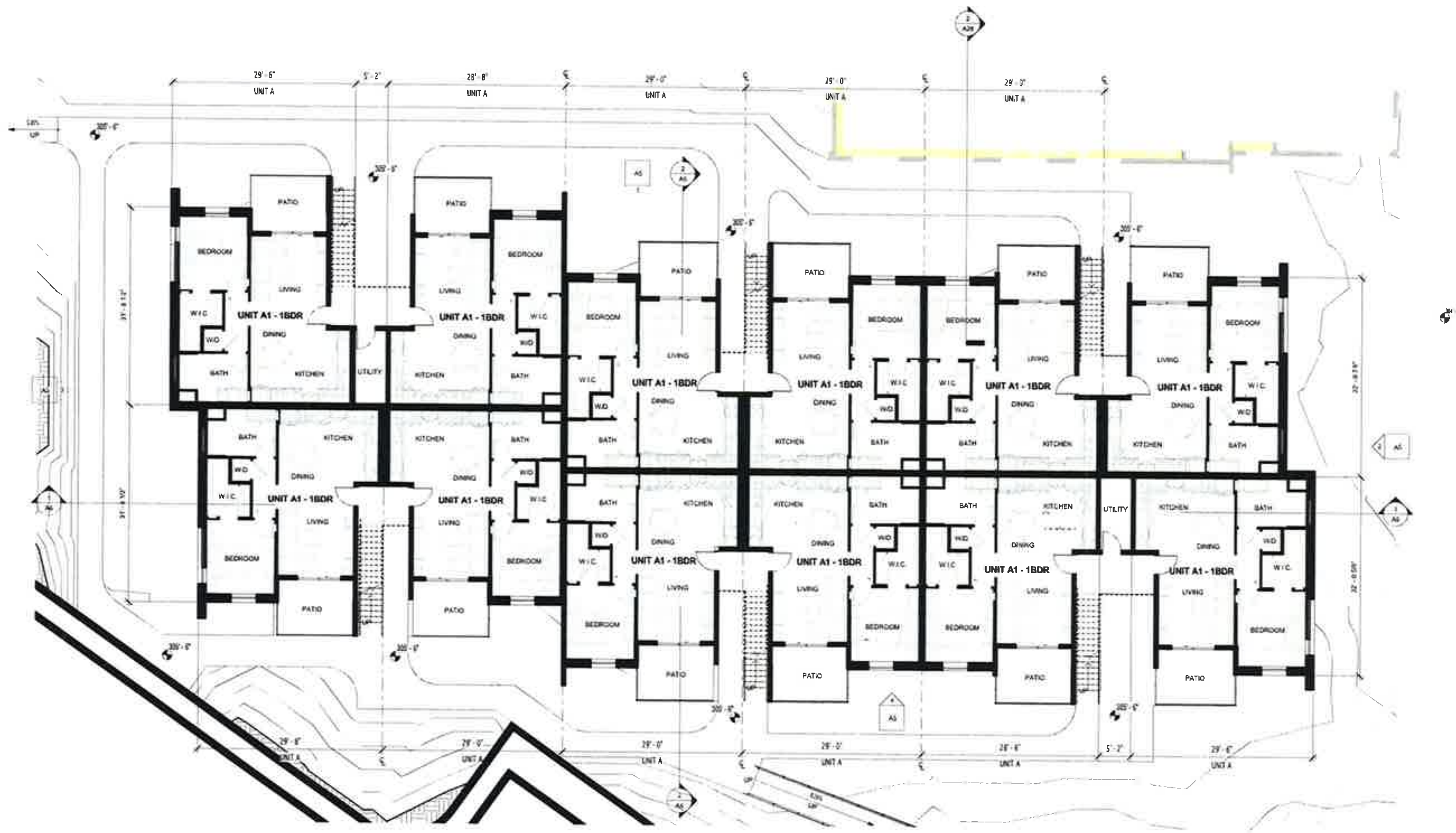
BLDG. 1 - ROOF | 1

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

BLDG 1 - ROOF LEVEL

A4



BLDG. 1 - LEVEL 1

1

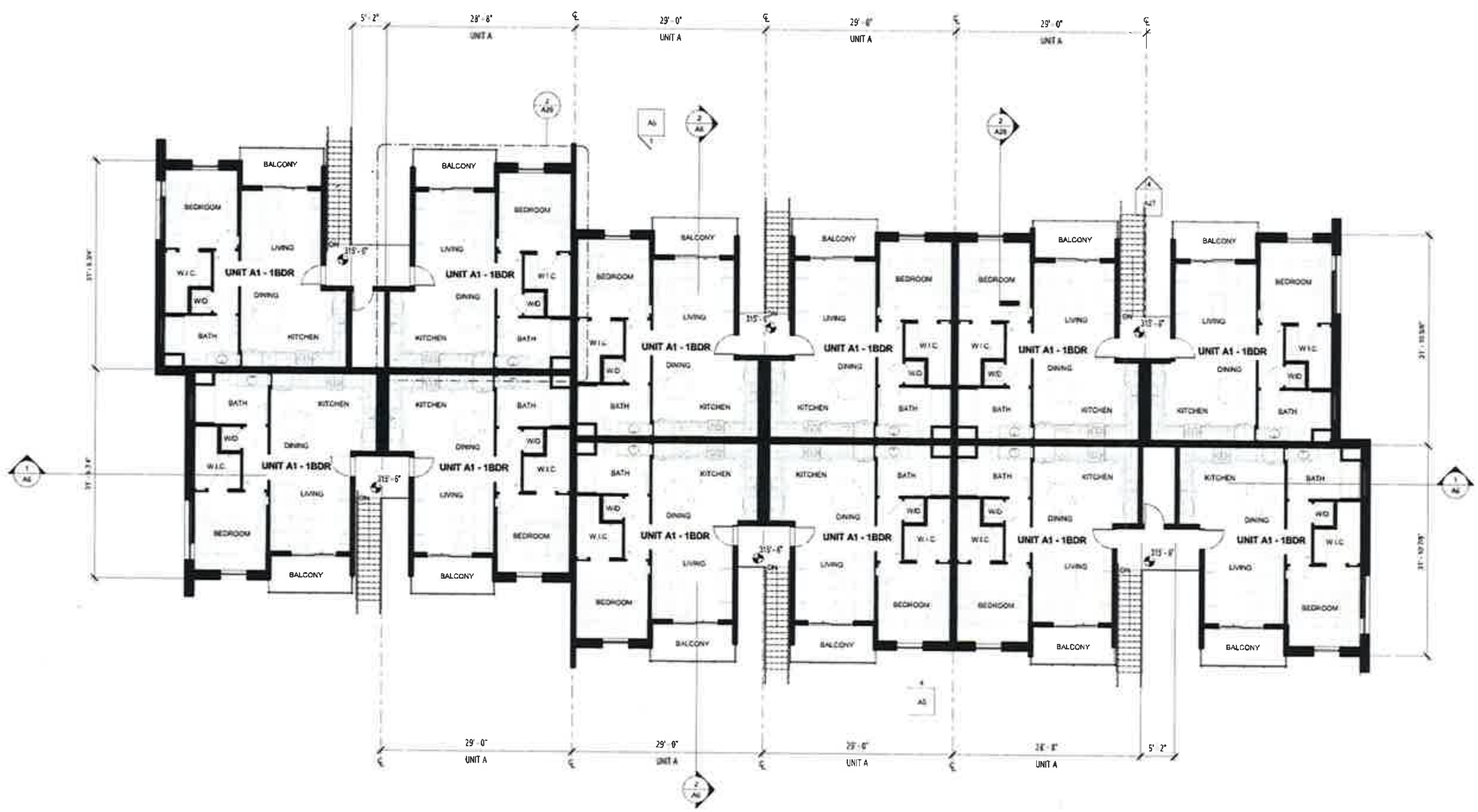
THE EZRALOW COMPANY

MVE + PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

BLDG 1 - LEVEL 1

A2



BLDG. 1 - LEVEL 2

1

THE EZRALOW COMPANY

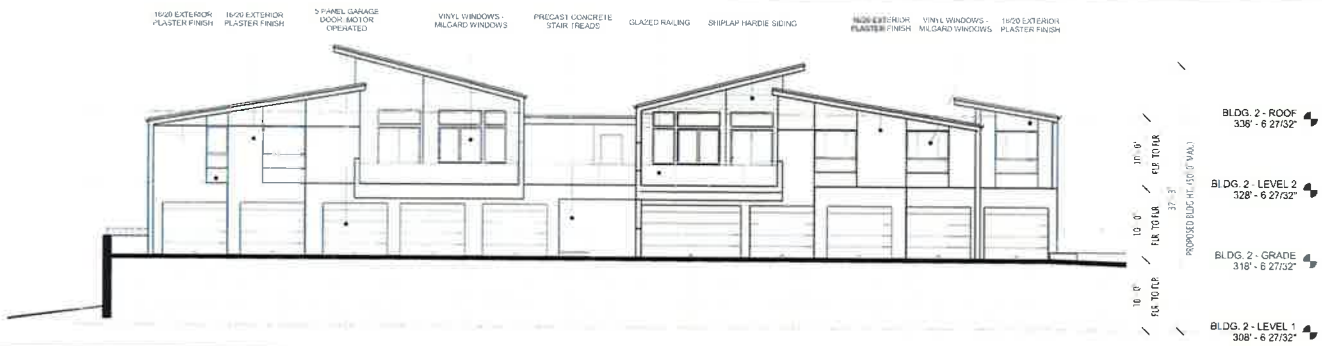
MVE + PARTNERS

Canyon Terrace Apartments

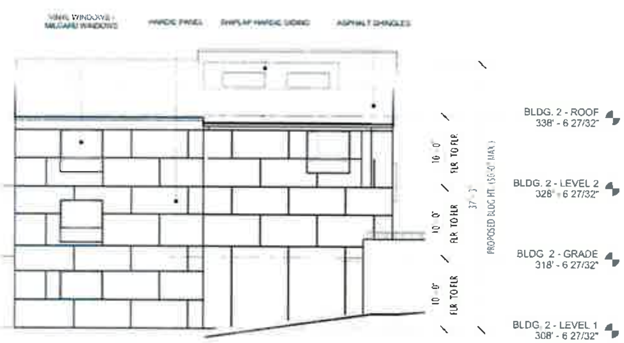
1500 Canyon Terrace Lane
Folsom, CA

BLDG 1 - LEVEL 2

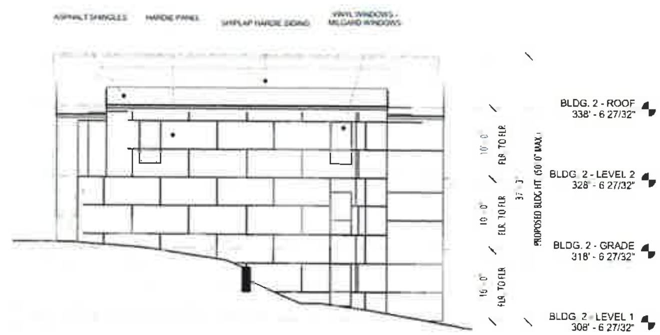
A3



BUILDING 2 - SOUTH ELEVATION 4



BUILDING 2 - WEST ELEVATION 3



BUILDING 2 - EAST ELEVATION 2

BUILDING 2 - NORTH ELEVATION 1

Keynote Legend

Key Value	Keynote Text
03 48 19	PRECAST CONCRETE STAIR TREADS
07 31 13	ASPHALT SHINGLES
7A	SHIPLAP HARDIE SIDING
7B	HARDIE PANEL
7C	16/20 EXTERIOR PLASTER FINISH
08 36 10	5 PANEL GARAGE DOOR, MOTOR OPERATED
08 53 13	VINYL WINDOWS - MILGARD WINDOWS
08 81 00.1	GLAZED RAILING

NOTE:
BUILDING 2 AND BUILDING 3 SIMILAR

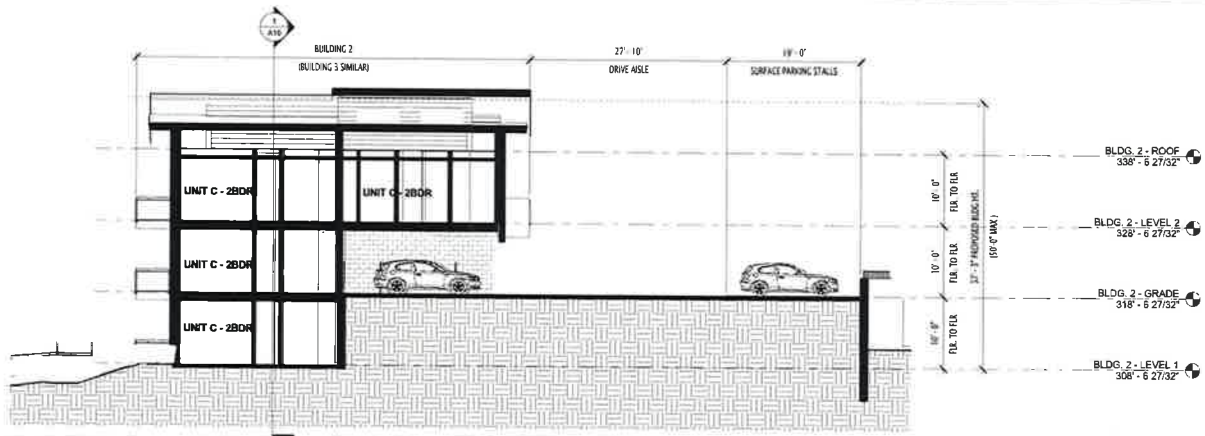
NOTE:
PER CITY OF FOLSOM MUNICIPAL CODE 17.17.120, THE "BUILDING HEIGHT REQUIREMENT IS FOUR STORIES, BUT NOT TO EXCEED FIFTY FEET."

THE EZRALOW COMPANY
MVE + PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

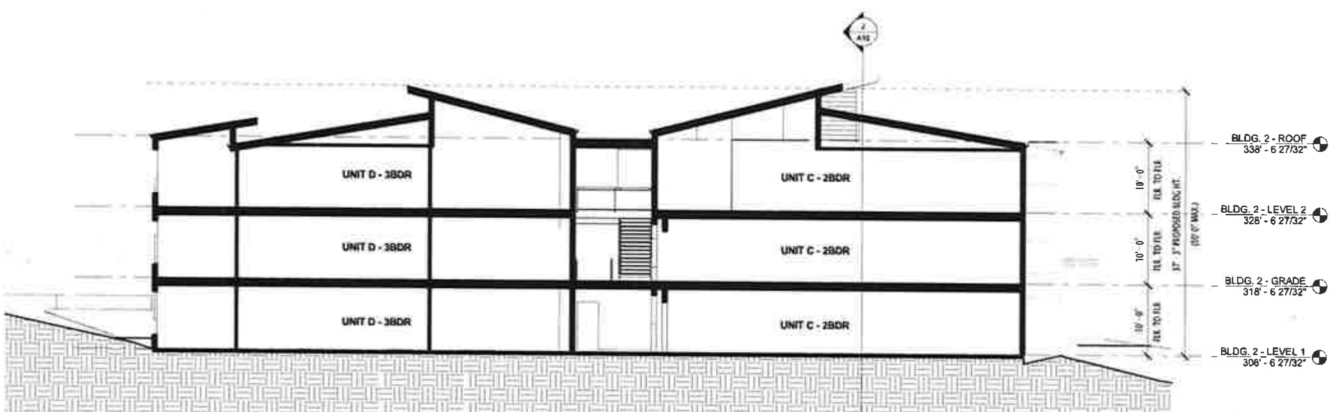
BLDG 2 - ELEVATIONS

A9



NOTE:
BUILDING 2 AND BUILDING 3 SIMILAR

BLDG 2 - NORTH-SOUTH SECTION 2



NOTE:
BUILDING 2 AND BUILDING 3 SIMILAR

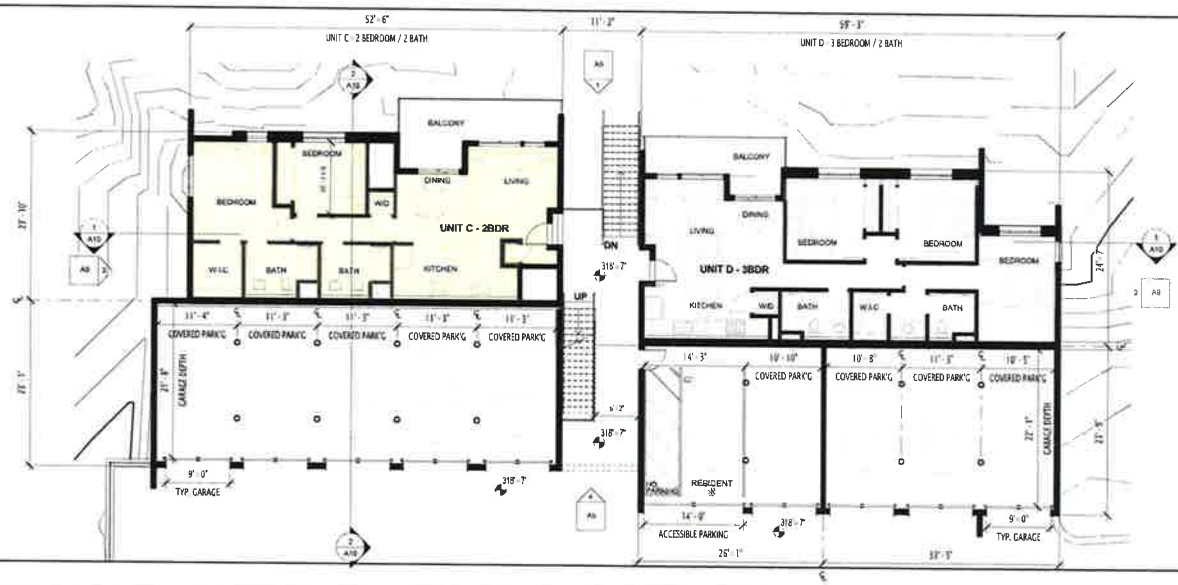
BLDG 2 - EAST-WEST SECTION 1

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

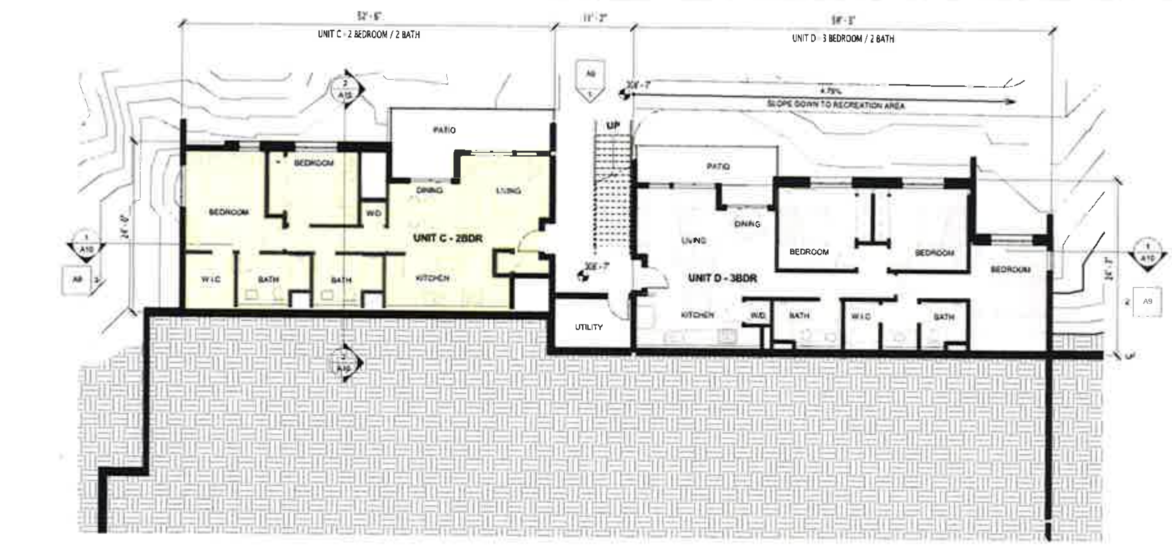
BLDG 2 - SECTIONS

A10



NOTE:
BUILDING 2 AND BUILDING 3 SIMILAR

BLDG. 2 - GRADE 2



NOTE:
BUILDING 2 AND BUILDING 3 SIMILAR

BLDG. 2 - LEVEL 1 1

THE EZRALOW COMPANY | MVE + PARTNERS

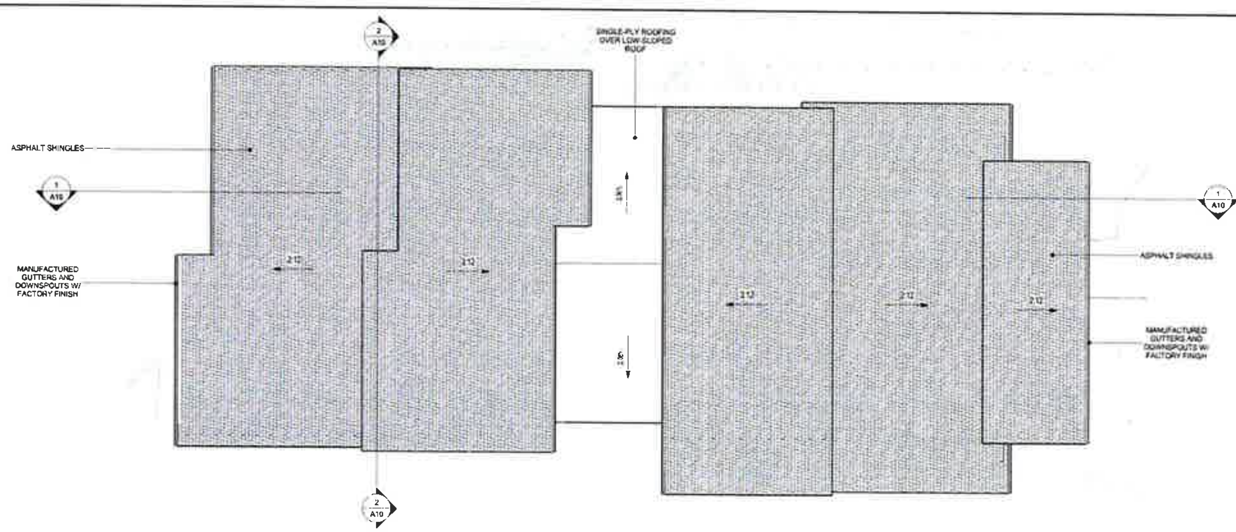
Canyon Terrace Apartments
1500 Canyon Terrace Lane
Folsom, CA

BLDG 2 - LEVEL 1 & GRADE

A7

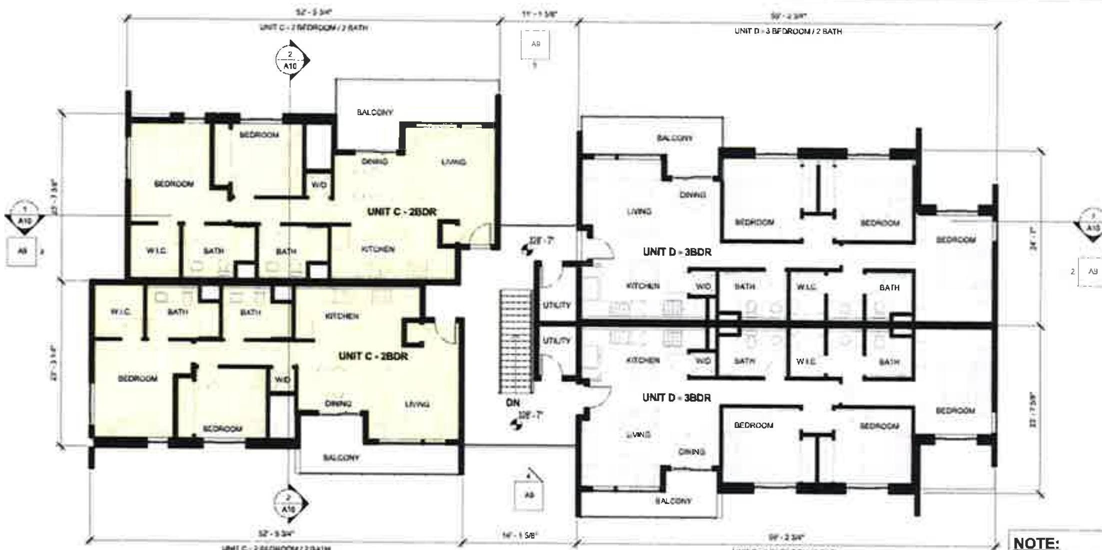
Keynote Legend

Key Value	Keynote Text
07 31 13	ASPHALT SHINGLES
07 71 23	MANUFACTURED GUTTERS AND DOWNSPOUTS W/ FACTORY FINISH
7D	SINGLE-PLY ROOFING OVER LOW-SLOPED ROOF



NOTE:
BUILDING 2 AND BUILDING 3 SIMILAR

BLDG. 2 - ROOF | 2

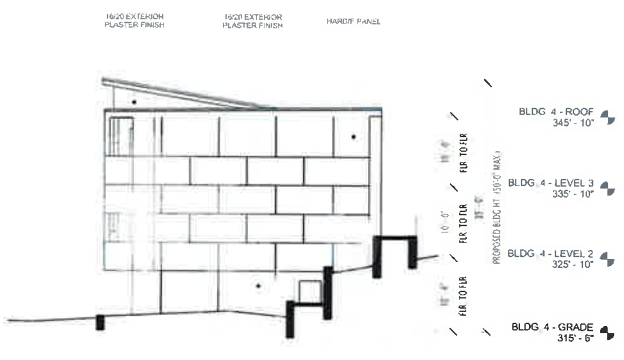


NOTE:
BUILDING 2 AND BUILDING 3 SIMILAR

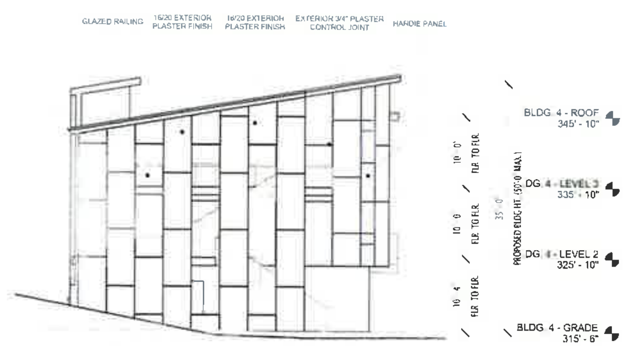
BLDG. 2 - LEVEL 2 | 1

Keynote Legend

Key Value	Keynote Text
7A	SHIPLAP HARDIE SIDING
7B	HARDIE PANEL
7C	16/20 EXTERIOR PLASTER FINISH
08 36 10	5 PANEL GARAGE DOOR, MOTOR OPERATED
08 53 13	VINYL WINDOWS - MILGARD WINDOWS
08 81 00.1	GLAZED RAILING
09 22 34	EXTERIOR 3/4" PLASTER CONTROL JOINT



BUILDING 4 - WEST ELEVATION 3



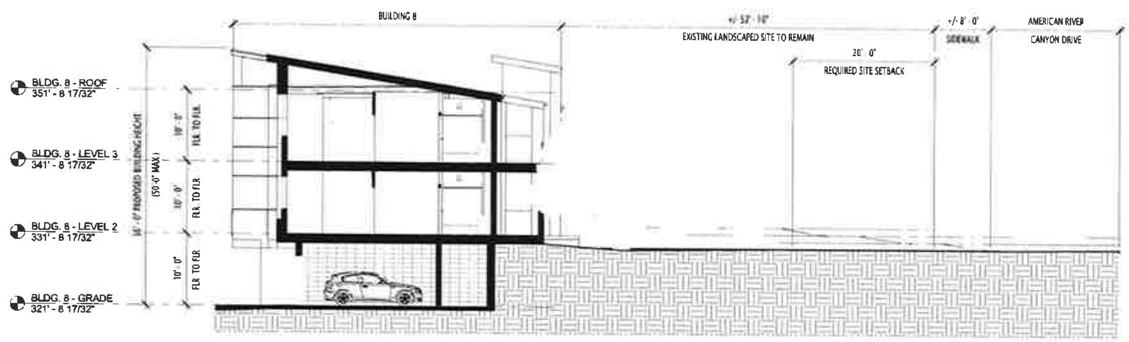
BUILDING 4 - EAST ELEVATION 2

BUILDING 4 - NORTH ELEVATION 1

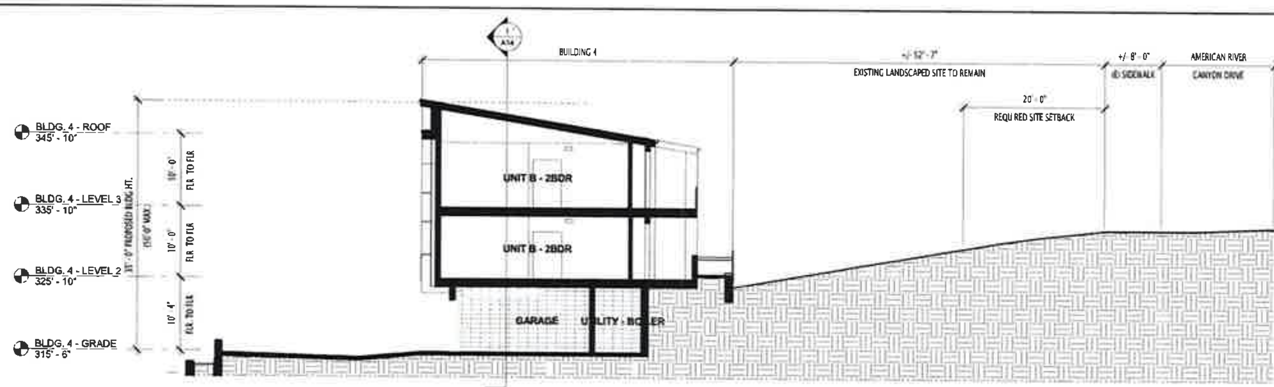
NOTE:
BUILDING 4 AND BUILDING 8 SIMILAR

NOTE:
PER CITY OF FOLSOM MUNICIPAL CODE 17.17.120, THE "BUILDING HEIGHT REQUIREMENT IS FOUR STORIES, BUT NOT TO EXCEED FIFTY FEET."

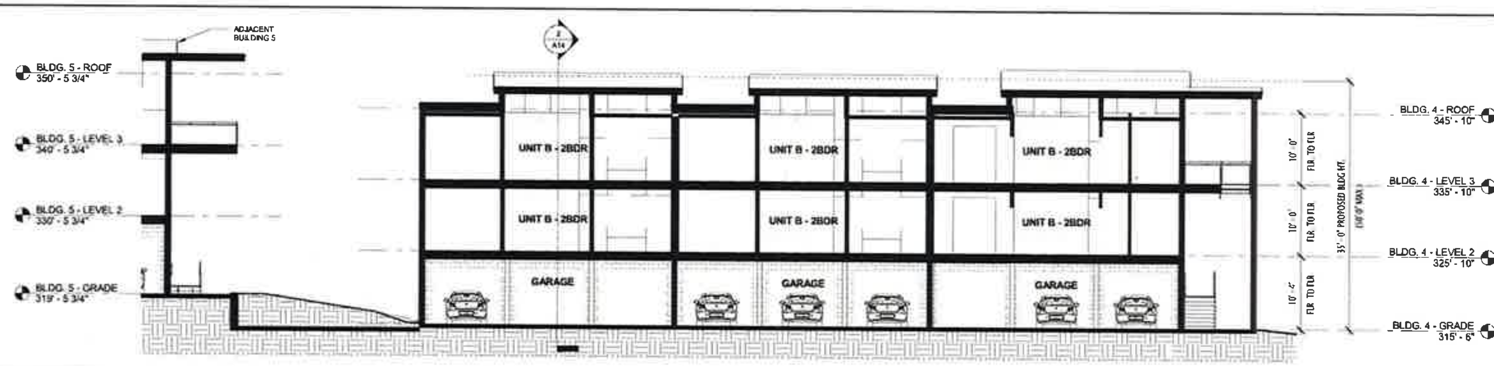
THE EZRALOW COMPANY | MVE + PARTNERS | Canyon Terrace Apartments | BLDG 4 - ELEVATIONS | A13



BLDG 8 - EAST-WEST SECTION 3



BLDG 4 - EAST-WEST SECTION 2



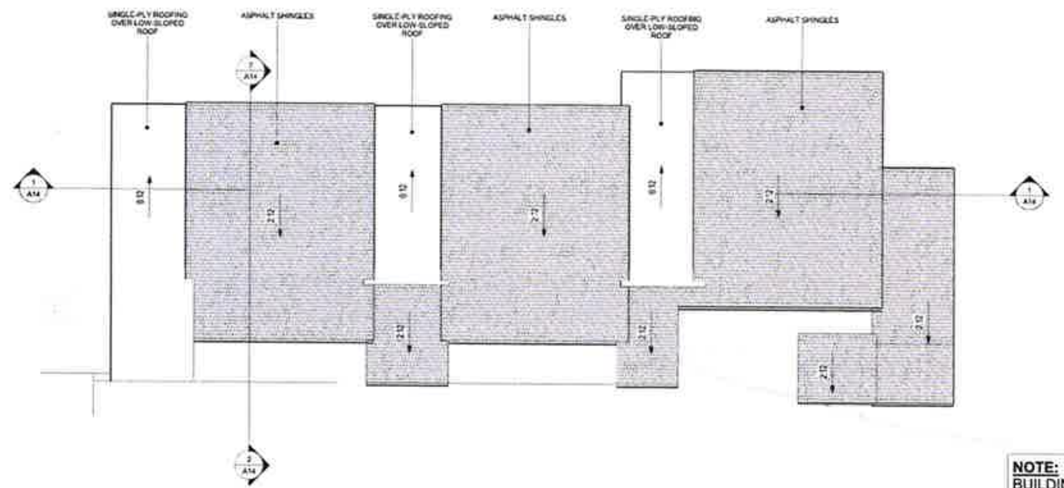
BLDG 4 - NORTH-SOUTH SECTION 1

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

BLDGS 4 & 8 - SECTIONS

A14



NOTE:
BUILDING 4 AND BUILDING 8 SIMILAR

BLDG. 4 - ROOF 2

NOTE:
BUILDING 4 AND BUILDING 8 SIMILAR

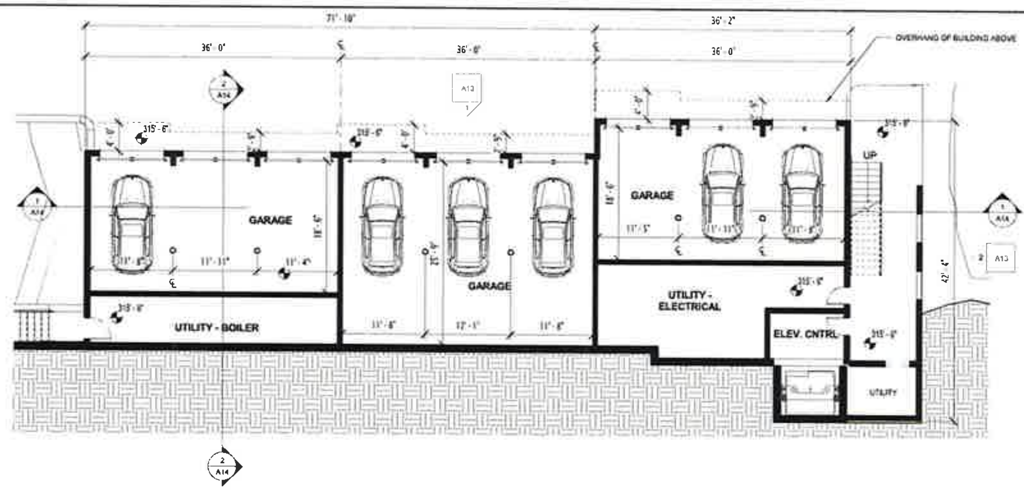
BLDG. 4 - LEVEL 3 1

Keynote Legend

Key Value	Keynote Text
07 31 13	ASPHALT SHINGLES
7D	SINGLE-PLY ROOFING OVER LOW-SLOPED ROOF

NOTE:
BUILDING 4 AND BUILDING 8 SIMILAR

BLDG. 4 - LEVEL 2 | 2



NOTE:
BUILDING 4 AND BUILDING 8 SIMILAR

BLDG. 4 - GRADE | 1

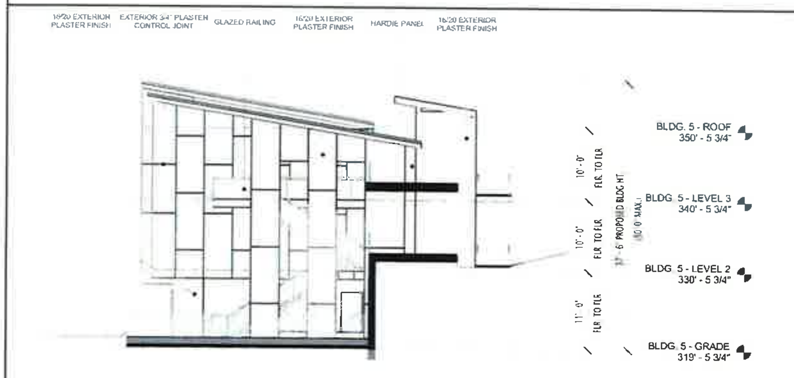
THE EZRALOW COMPANY

MVE + PARTNERS

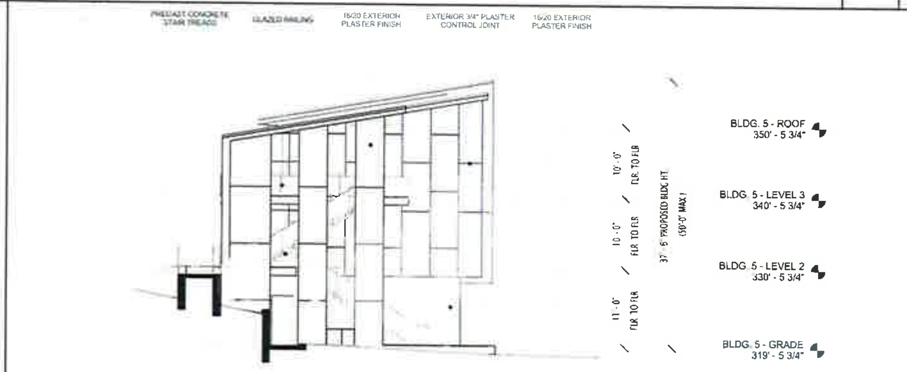
Canyon Terrace Apartments

BLDG 4 - GRADE & LEVEL 2

A11



BUILDING 5 - SOUTH ELEVATION 3



BUILDING 5 - NORTH ELEVATION 2

BUILDING 5 - WEST ELEVATION 1

Keynote Legend

Key Value	Keynote Text
03 48 19	PRECAST CONCRETE STAIR TREADS
7A	SHIPLAP HARDIE SIDING
7B	HARDIE PANEL
7C	16/20 EXTERIOR PLASTER FINISH
08 36 10	5 PANEL GARAGE DOOR, MOTOR OPERATED
08 53 13	VINYL WINDOWS - MILGARD WINDOWS
08 81 00.1	GLAZED RAILING
09 22 34	EXTERIOR 3/4" PLASTER CONTROL JOINT

NOTE:
BUILDING 5 AND BUILDING 7 SIMILAR

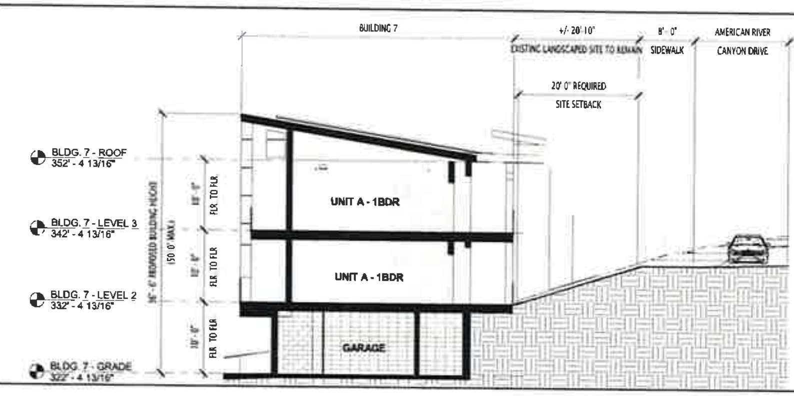
NOTE:
PER CITY OF FOLSOM MUNICIPAL CODE 17.17.120, THE "BUILDING HEIGHT REQUIREMENT IS FOUR STORIES, BUT NOT TO EXCEED FIFTY FEET."

THE EZRALOW COMPANY | MVE + PARTNERS

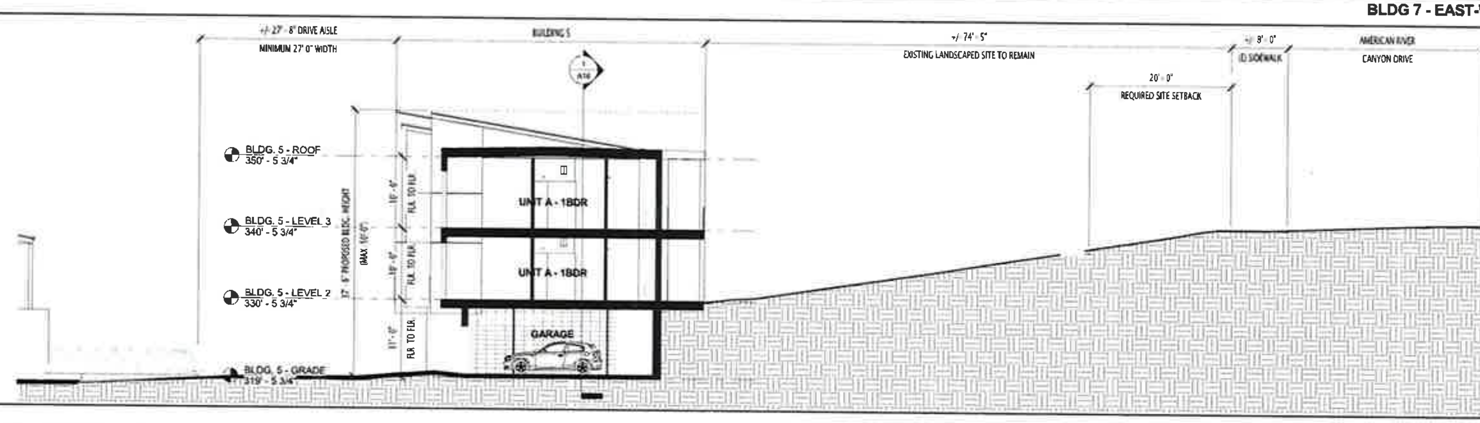
Canyon Terrace Apartments
1000 Canyon Terrace Lane
Folsom, CA

BLDG 5 - ELEVATIONS

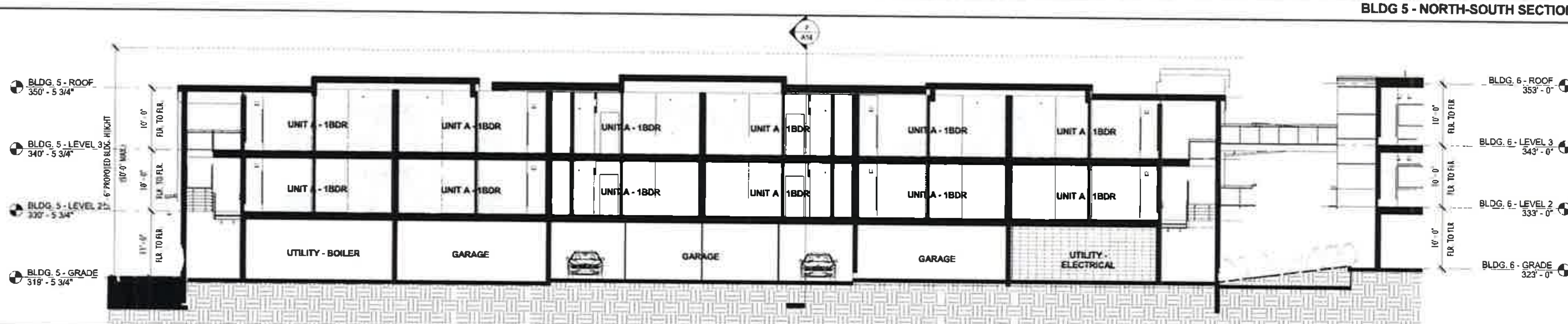
A17



BLDG 7 - EAST-WEST SECTION 3



BLDG 5 - NORTH-SOUTH SECTION 2



BLDG 5 - EAST-WEST SECTION 1

THE EZRALOW COMPANY

MVE + PARTNERS

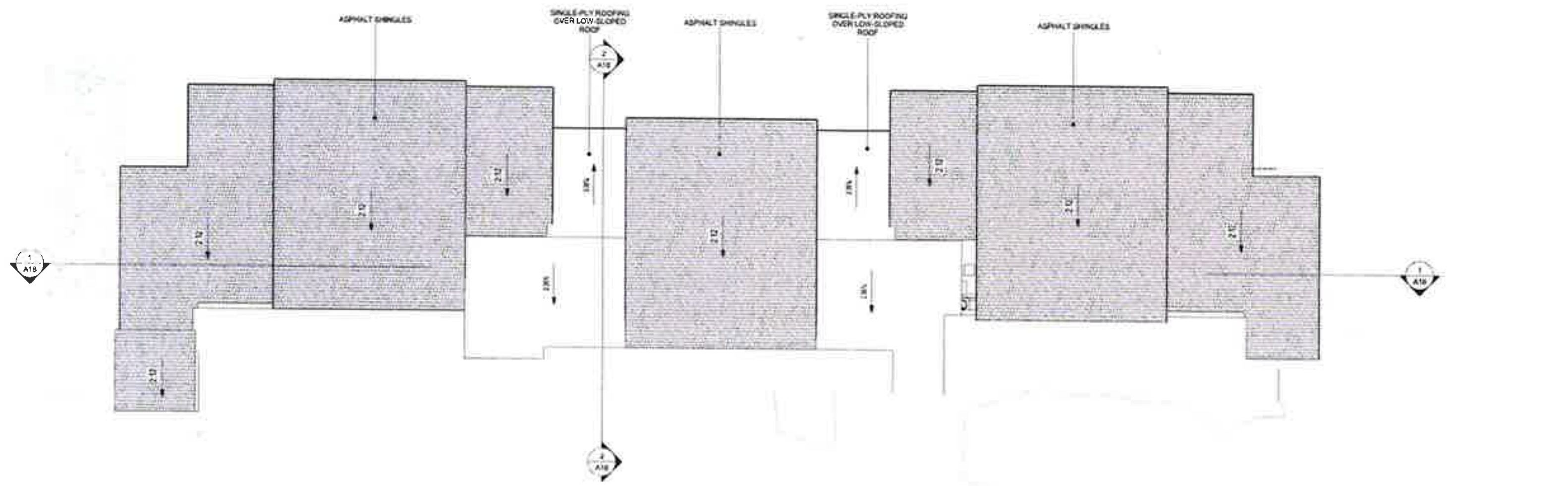
Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

BLDG 5 &7 - SECTIONS

A18

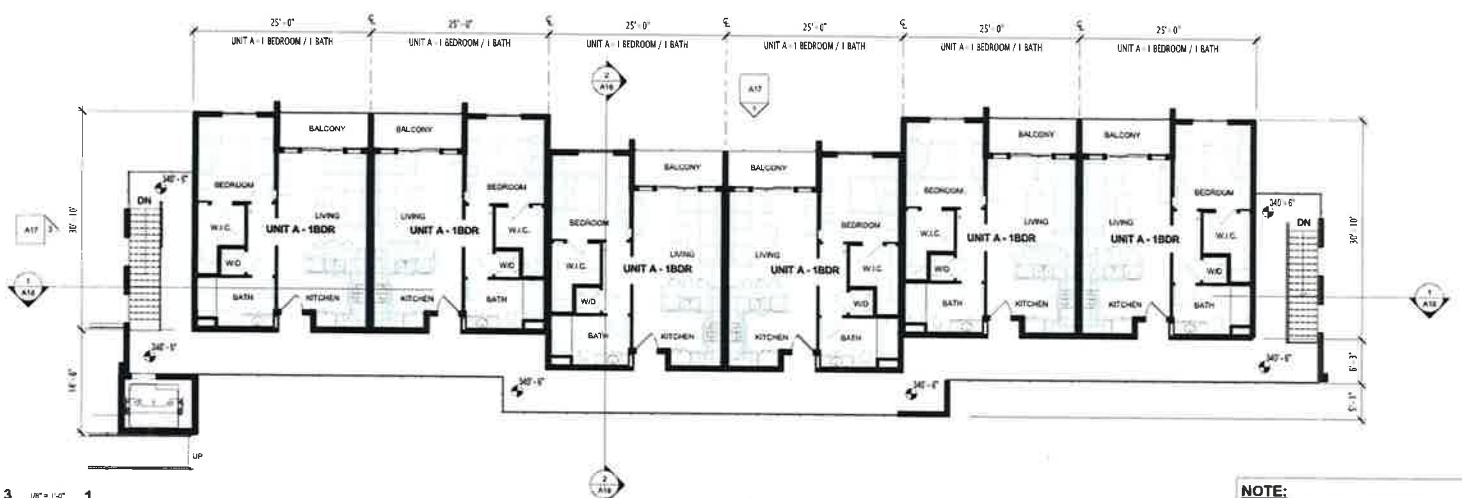
Keynote Legend

Key Value	Keynote Text
07 31 13	ASPHALT SHINGLES
7D	SINGLE-PLY ROOFING OVER LOW-SLOPED ROOF



NOTE:
BUILDING 5 AND BUILDING 7 SIMILAR

BLDG. 5 - ROOF 1/8" = 1'-0" 2



BLDG. 5 - LEVEL 3 1/8" = 1'-0" 1

NOTE:
BUILDING 5 AND BUILDING 7 SIMILAR

THE EZRALOW COMPANY | MVE + PARTNERS

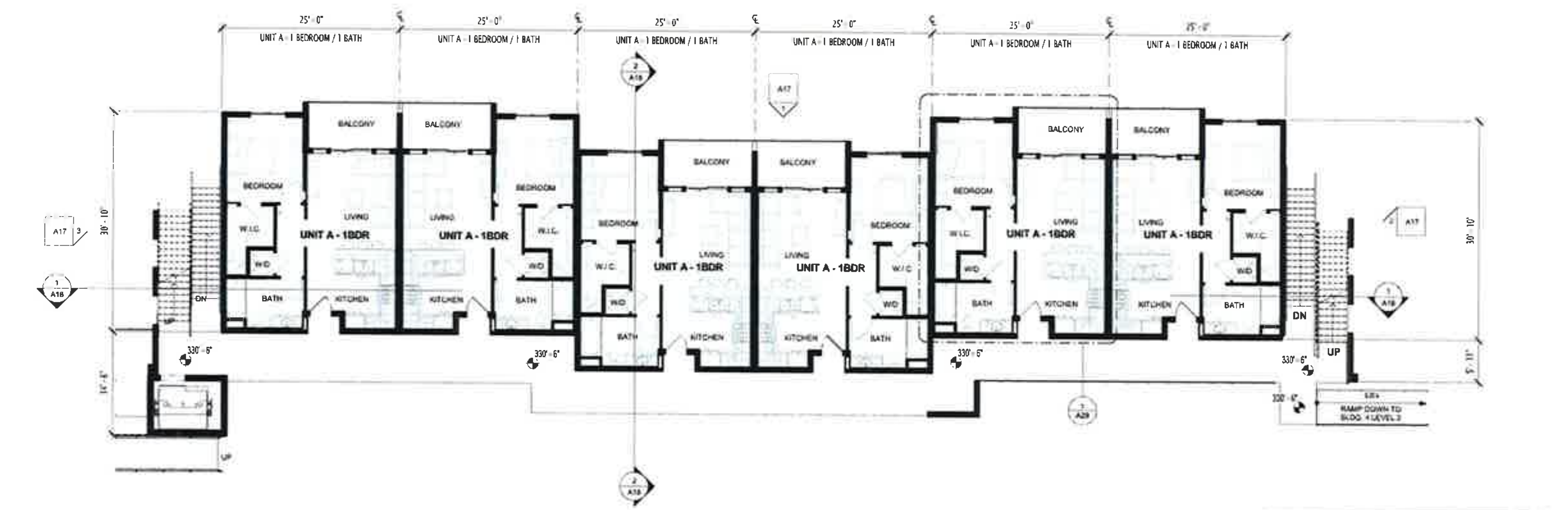
Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

BLDG 5 - LEVEL 3 & ROOF

A16

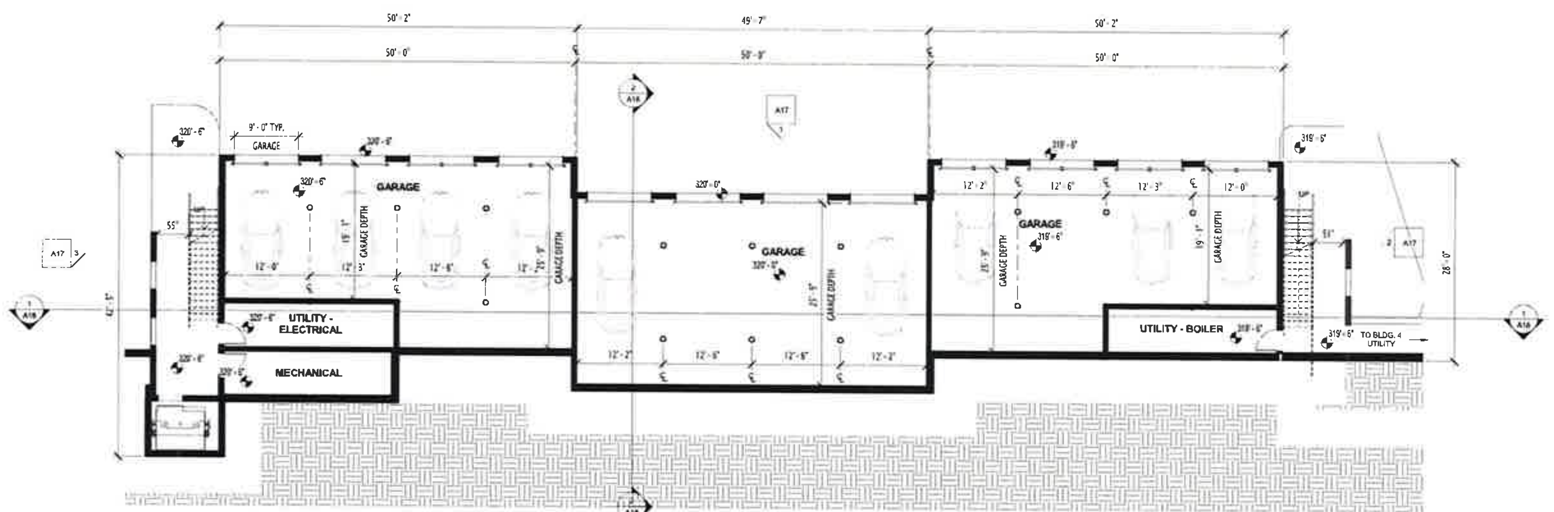
Keynote Legend

Key Value	Keynote Text



NOTE:
BUILDING 5 AND BUILDING 7 SIMILAR

BLDG. 5 - LEVEL 2 1/8" = 1'-0" 2



NOTE:
BUILDING 5 AND BUILDING 7 SIMILAR

BLDG. 5 - GRADE 1/8" = 1'-0" 1

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments

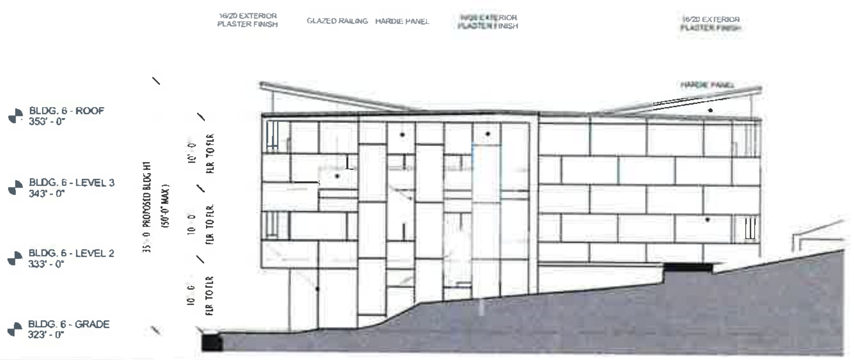
BLDG 5 - GRADE & LEVEL 2

A15

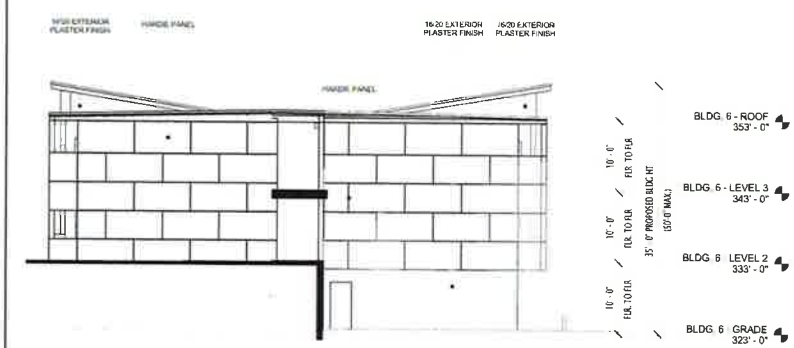
Keynote Legend

Key Value	Keynote Text
7A	SHIPLAP HARDIE SIDING
7B	HARDIE PANEL
7C	16/20 EXTERIOR PLASTER FINISH
08 36 10	5 PANEL GARAGE DOOR, MOTOR OPERATED
08 53 13	VINYL WINDOWS - MILGARD WINDOWS
08 81 00.1	GLAZED RAILING
09 22 34	EXTERIOR 3/4" PLASTER CONTROL JOINT

BUILDING 6 - EAST ELEVATION 4



BUILDING 6 - SOUTH ELEVATION 3



BUILDING 6 - NORTH ELEVATION 2

BUILDING 6 - WEST ELEVATION 1

NOTE:
PER CITY OF FOLSOM MUNICIPAL CODE 17.17.120, THE "BUILDING HEIGHT REQUIREMENT IS FOUR STORIES, BUT NOT TO EXCEED FIFTY FEET."

THE EZRALOW COMPANY | MVE + PARTNERS

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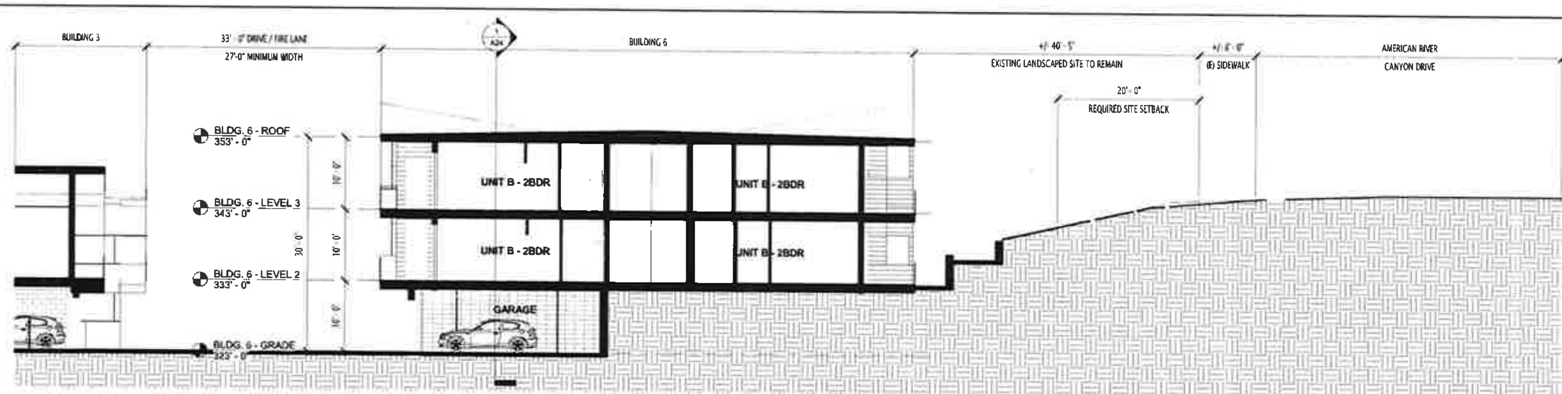
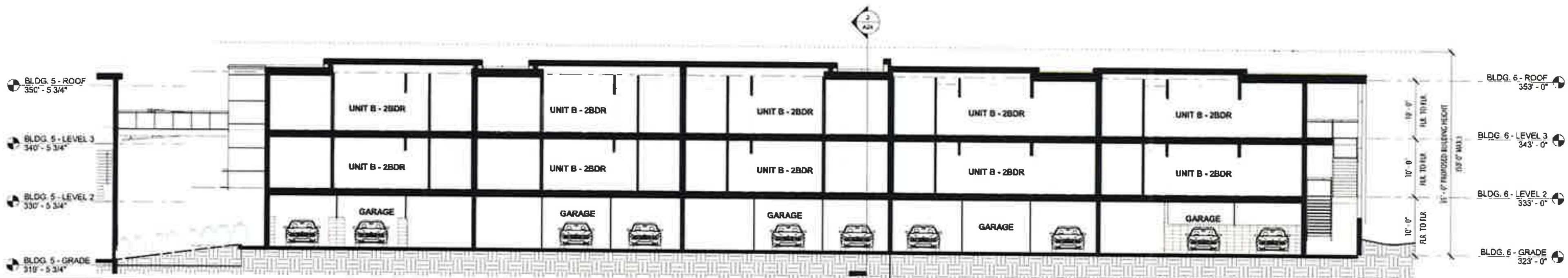
1606 Canyon Terrace Lane
Folsom, CA

BLDG 6 - ELEVATIONS

A23



BLDG 6 - NORTH-SOUTH SECTION 2



BLDG 6 - EAST-WEST SECTION 1

THE EZRALOW COMPANY

MVE + PARTNERS

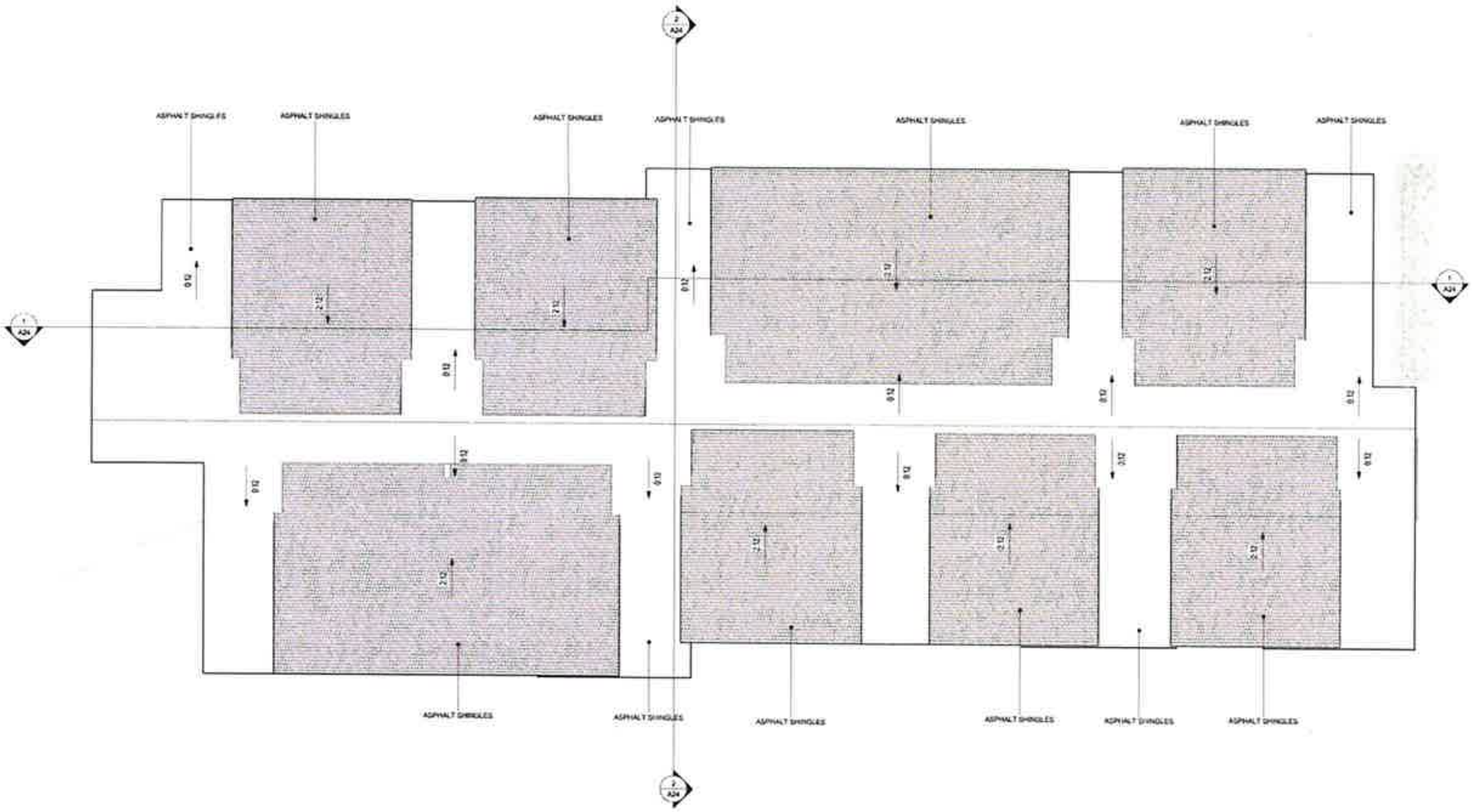
Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

BLDG 6 - SECTIONS

A24

Keynote Legend

Key Value	Keynote Text
07 31 13	ASPHALT SHINGLES



BLDG. 6 - ROOF 1/4" = 1'-0" 1

THE EZRALOW COMPANY

MVE + PARTNERS

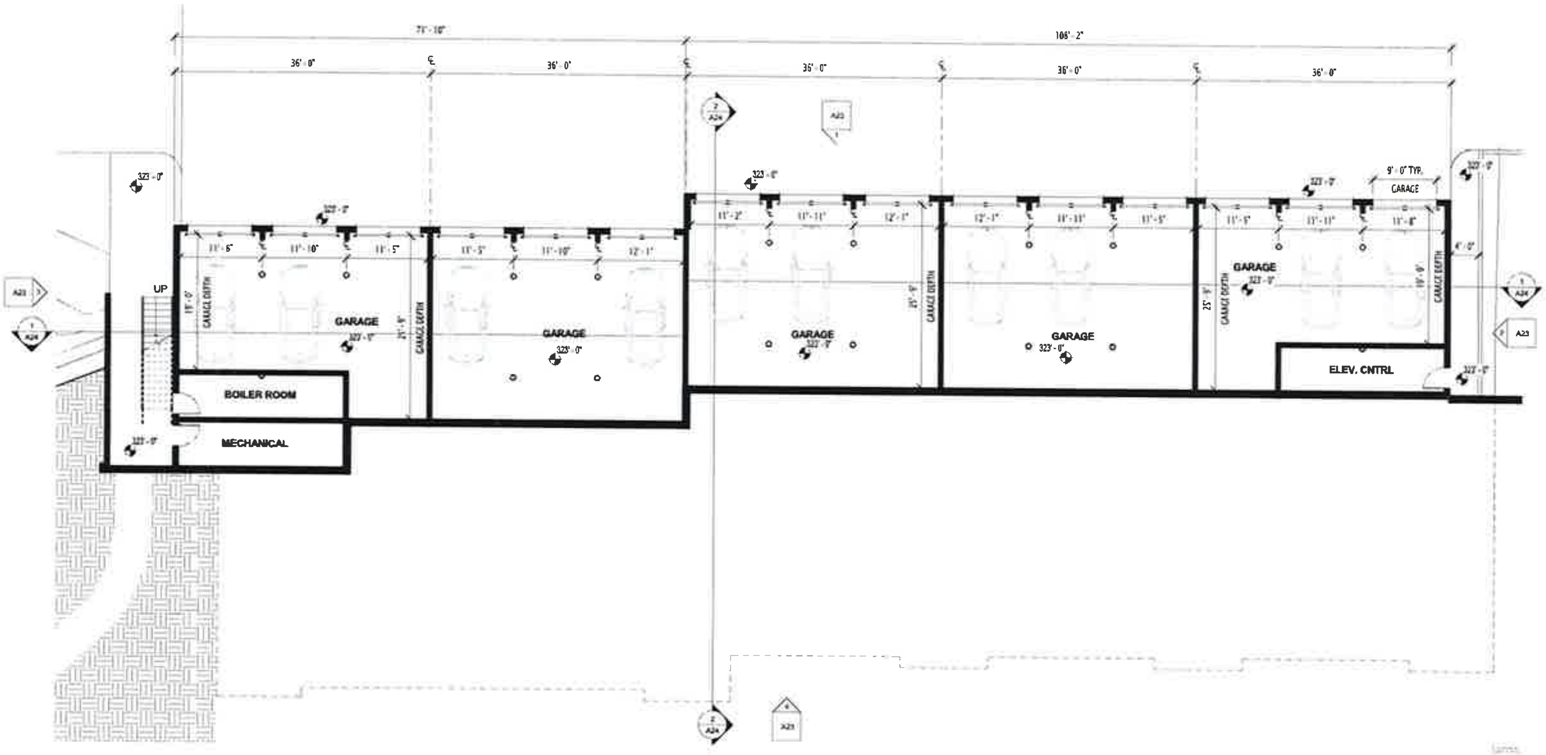
Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

BLDG 6 - ROOF

A22

Keynote Legend

Key Value	Keynote Text



BLDG. 6 - GRADE 1

THE EZRALOW COMPANY

MVE + PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

BLDG 6 - GRADE LEVEL

A19

Keynote Legend

Key Value	Keynote Text

BLDG. 6 - LEVEL 2

1/8" = 1'-0"

1

THE EZRALOW COMPANY

MVE + PARTNERS

Canyon Terrace Apartments

1600 Canyon Terrace Lane
Folsom, CA

NORTH

BLDG 6 - LEVEL 2

A20

Keynote Legend

Key Value	Keynote Text

THE EZRALOW COMPANY

MVE + PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

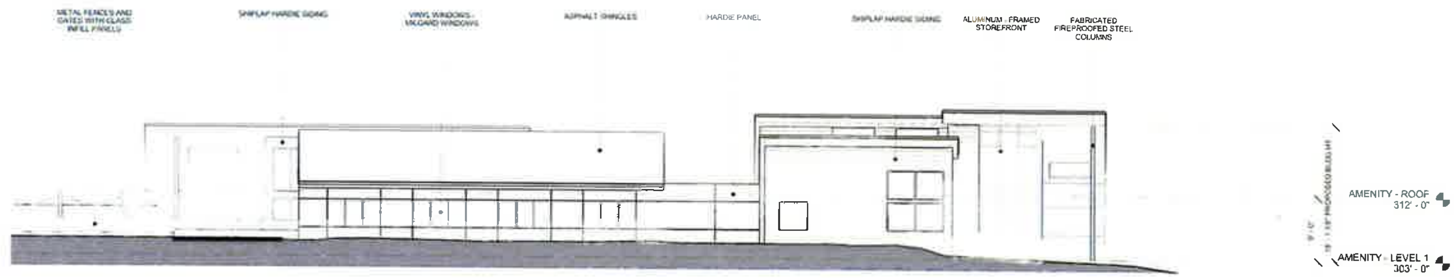
BLDG. 6 - LEVEL 3 | 1

BLDG 6 - LEVEL 3

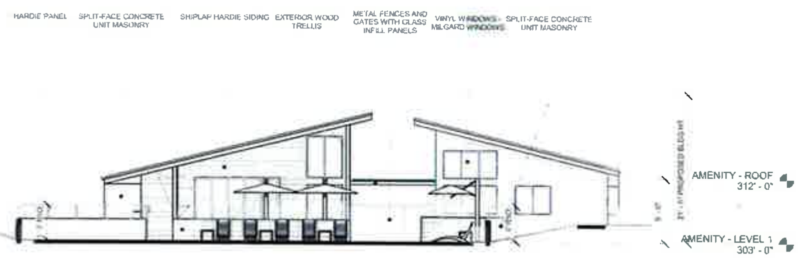
A21

Keynote Legend

Key Value	Keynote Text
04 22 23 29	SPLIT-FACE CONCRETE UNIT MASONRY
05 12 16	FABRICATED FIREPROOFED STEEL COLUMNS
06 40 14	EXTERIOR WOOD TRELLIS
07 31 13	ASPHALT SHINGLES
7A	SHIPLAP HARDIE SIDING
7B	HARDIE PANEL
08 43 13	ALUMINUM - FRAMED STOREFRONT
08 53 13	VINYL WINDOWS - MILGARD WINDOWS
32 31 20	METAL FENCES AND GATES WITH GLASS INFILL PANELS

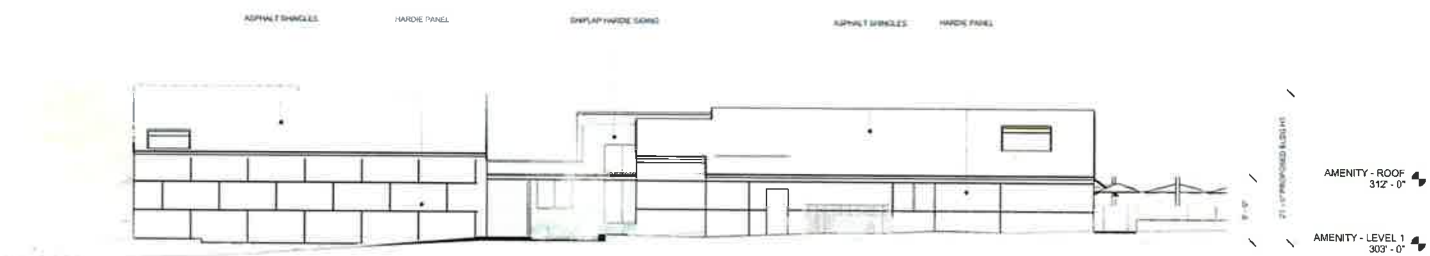


AMENITY - SOUTH ELEVATION 4



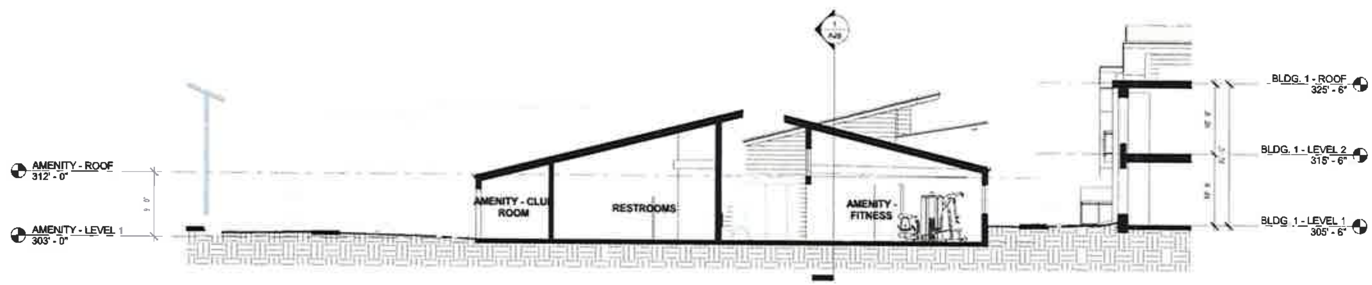
AMENITY - WEST ELEVATION 3

AMENITY - EAST ELEVATION 2

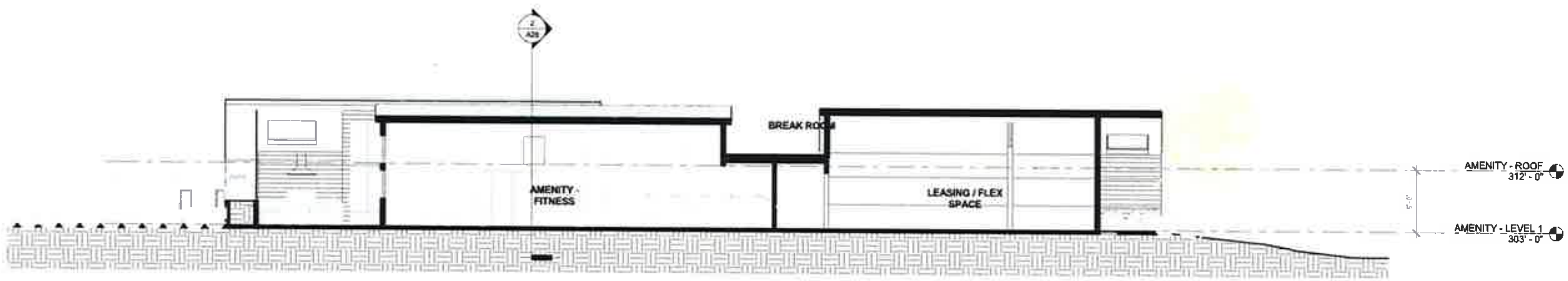


AMENITY - NORTH ELEVATION 1

NOTE:
PER CITY OF FOLSOM MUNICIPAL CODE 17.17.120, THE "BUILDING HEIGHT REQUIREMENT IS FOUR STORIES, BUT NOT TO EXCEED FIFTY FEET."



AMENITY - NORTH-SOUTH SECTION 2



AMENITY - WEST-EAST SECTION 1

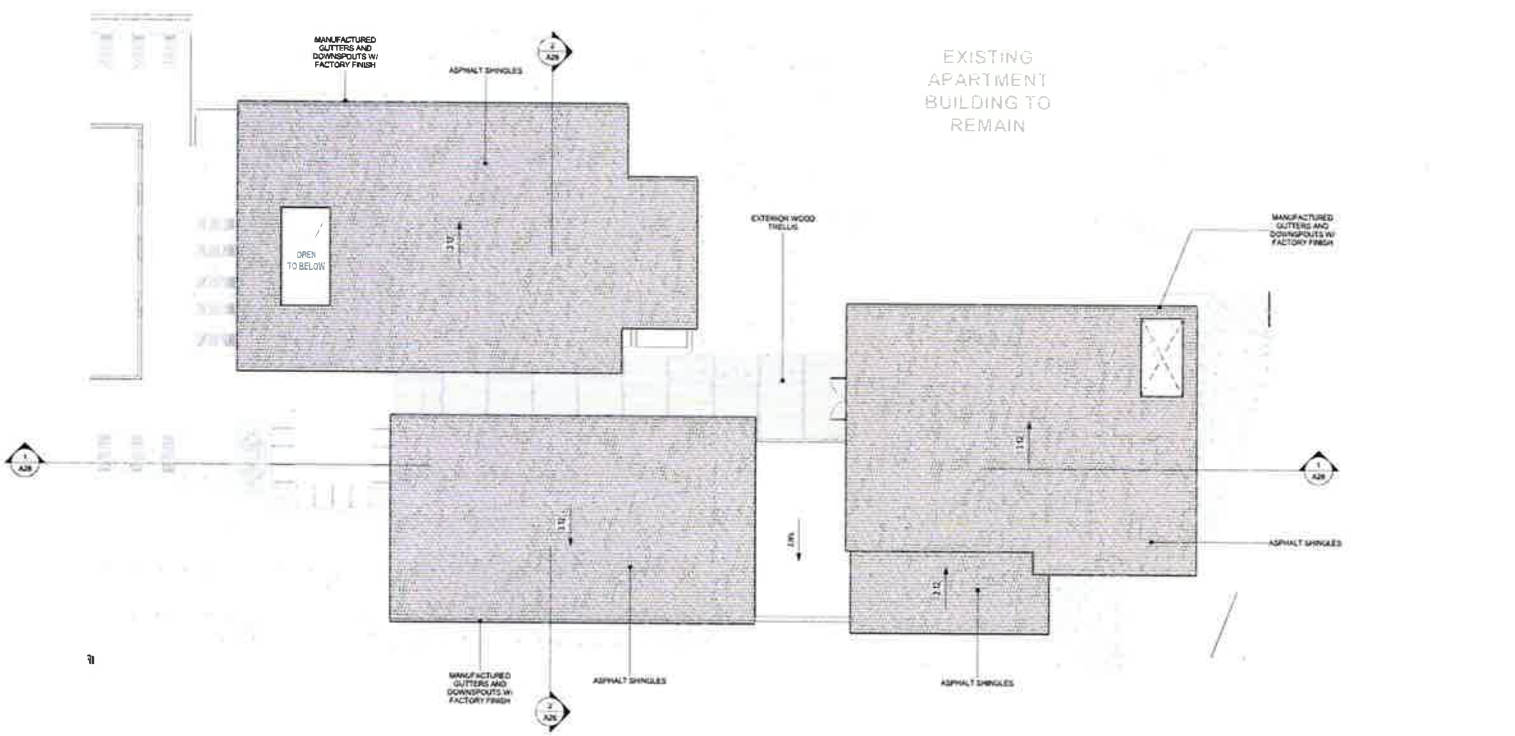
THE EZRALOW COMPANY

MVE + PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

AMENITY - SECTIONS

A28



AMENITY - ROOF 1/8" = 1'-0" 1

Keynote Legend

Key Value	Keynote Text
06 40 14	EXTERIOR WOOD TRELLIS
07 31 13	ASPHALT SHINGLES
07 71 23	MANUFACTURED GUTTERS AND DOWNSPOUTS W/ FACTORY FINISH

THE EZRALOW COMPANY

MVE + PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

AMENITY - ROOF

A26

Keynote Legend

Key Value	Keynote Text

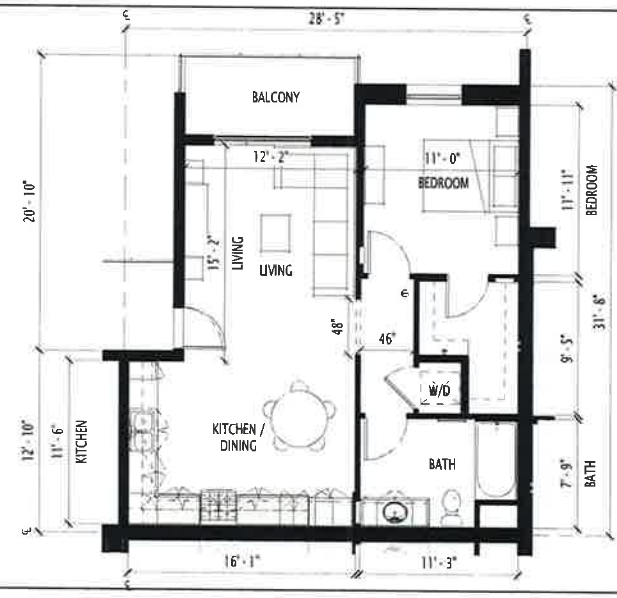
AMENITY - LEVEL 1. | 1

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

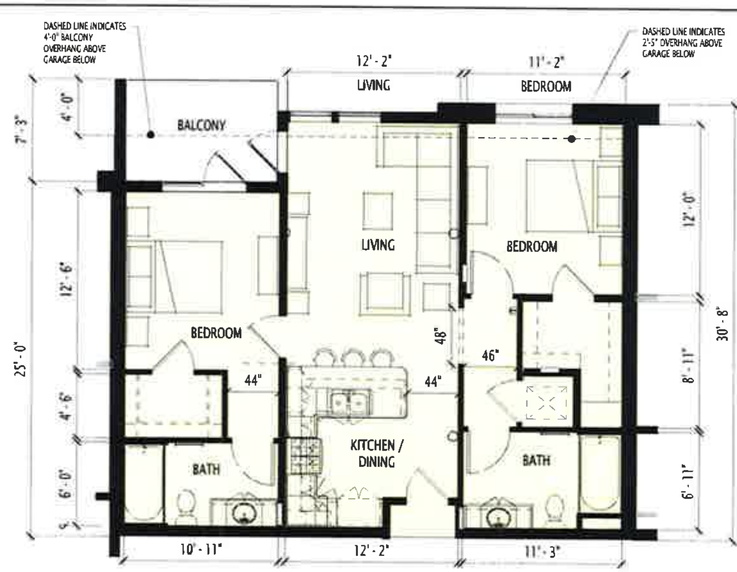
AMENITY - LEVEL 1

A25



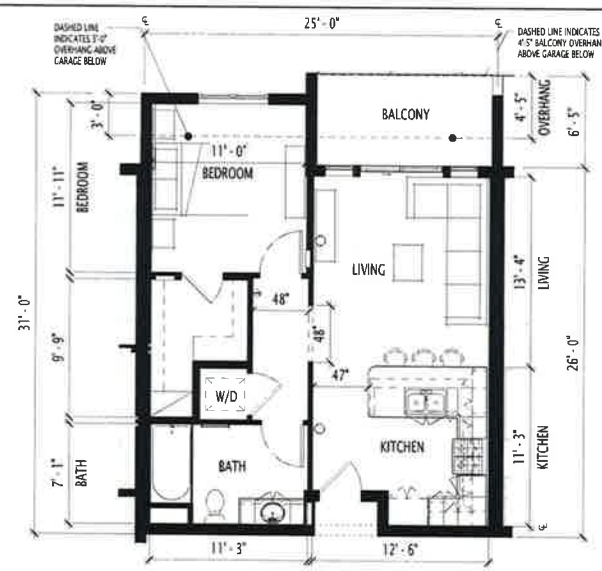
UNIT A1
NET AREA: 781SF
24 UNITS
LOCATED IN BUILDING 1

UNIT PLAN - UNIT A1 2



UNIT B
NET AREA: 1,012SF
32 UNITS
LOCATED IN BUILDINGS 4, 6 & 8

UNIT PLAN - UNIT B 3



UNIT A
NET AREA: 700SF
24 UNITS
LOCATED IN BUILDINGS 5 & 7

UNIT PLAN - UNIT A 1

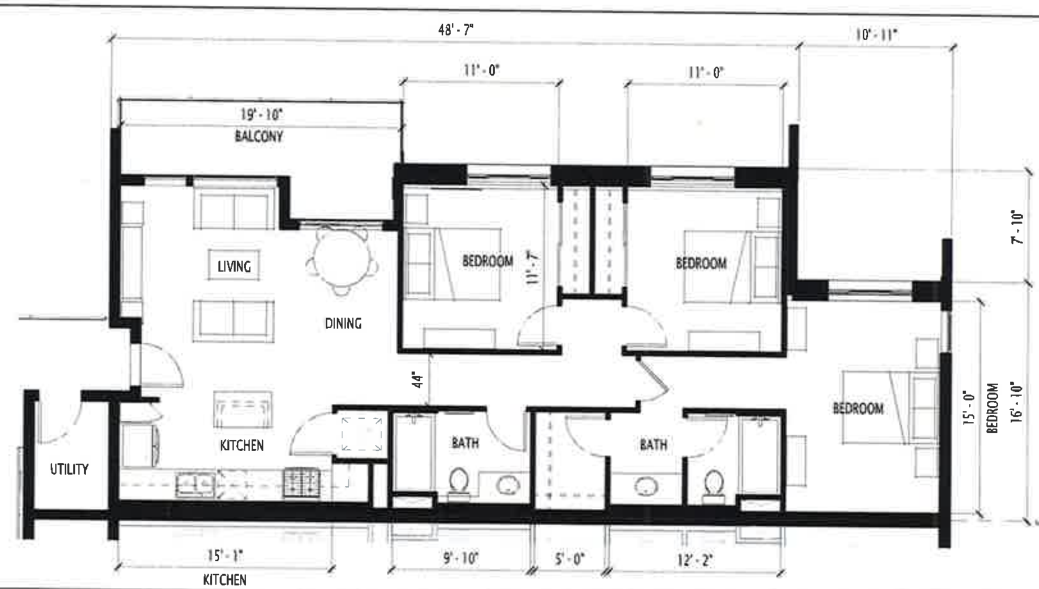
THE EZRALOW COMPANY

MVE + PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

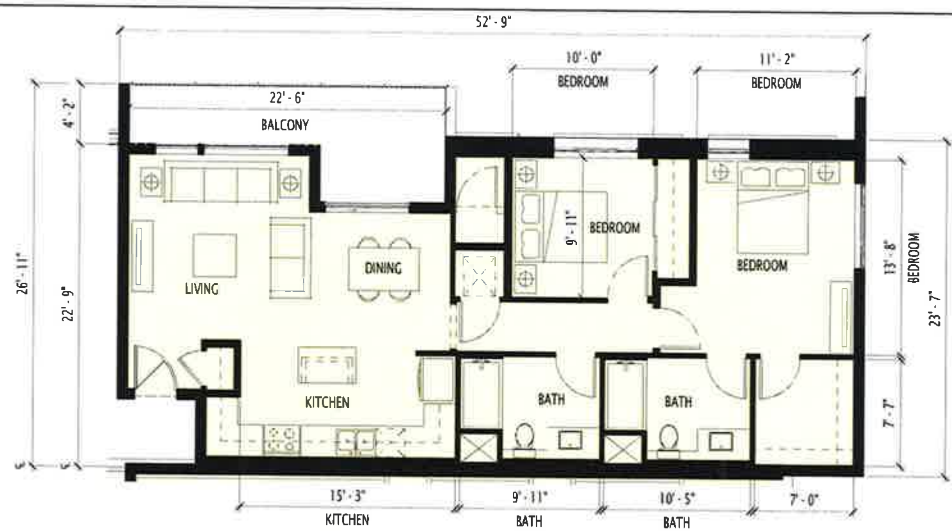
UNIT PLANS

A29



UNIT D
NET AREA: 1,322SF
8 UNITS
LOCATED IN BUILDINGS 2 & 3

UNIT PLAN - UNIT D 2



UNIT C
NET AREA: 1,100SF
8 UNITS
LOCATED IN BUILDINGS 2 & 3

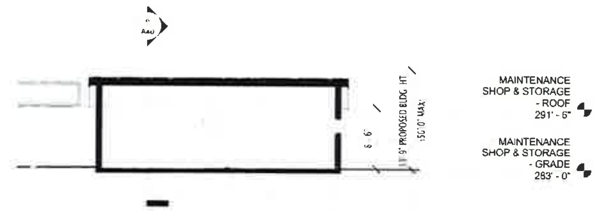
UNIT PLAN - UNIT C 1

THE EZRALOW COMPANY | MVE + PARTNERS

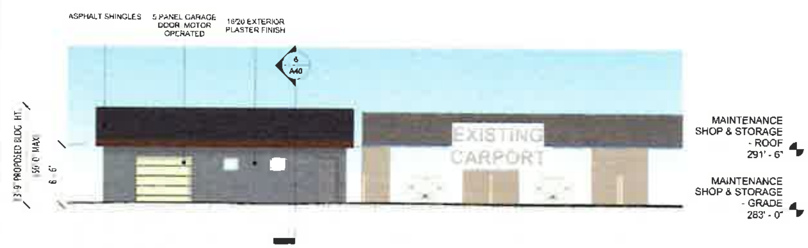
Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA

UNIT PLANS

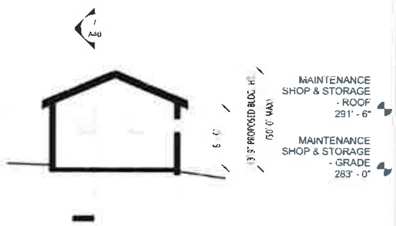
A30



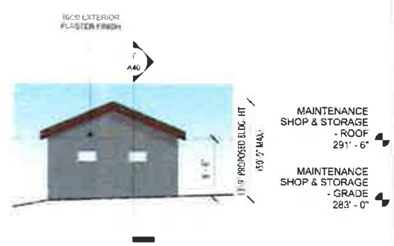
MAINTENANCE SHOP & STORAGE - NORTH-SOUTH SECTION 7



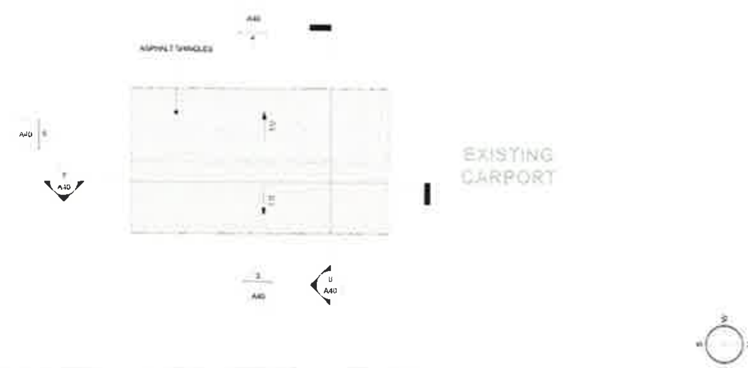
MAINTENANCE SHOP & STORAGE - EAST ELEVATION 3



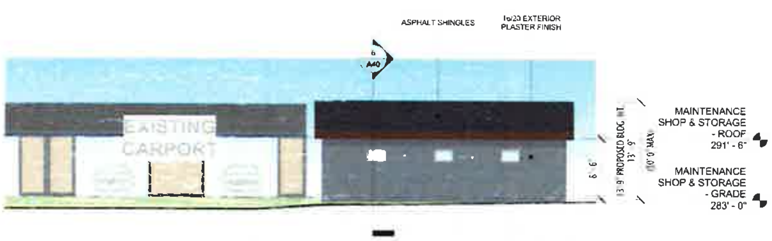
MAIN. SHOP & STORAGE - WEST-EAST SECTION 6



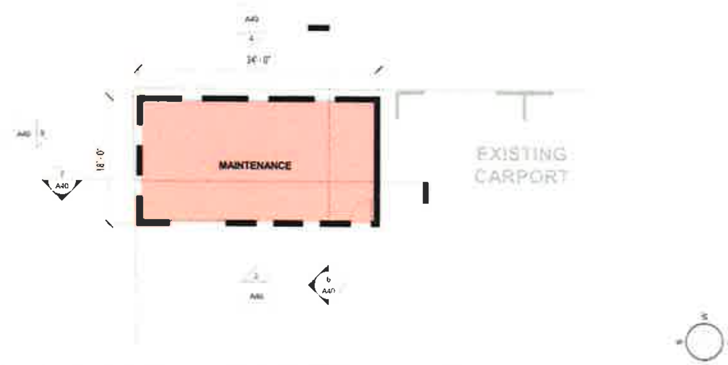
MAIN. SHOP & STORAGE - SOUTH ELEVATION 5



MAINTENANCE SHOP & STORAGE - ROOF 2



MAINTENANCE SHOP & STORAGE - WEST ELEVATION 4



MAINTENANCE SHOP & STORAGE - GRADE 1

Keynote Legend

Key Value	Keynote Text
07 31 13	ASPHALT SHINGLES
7C	16/20 EXTERIOR PLASTER FINISH
08 38 10	5 PANEL GARAGE DOOR, MOTOR OPERATED

NOTE:
PER CITY OF FOLSOM MUNICIPAL CODE 17.17.120, THE "BUILDING HEIGHT REQUIREMENT IS FOUR STORIES, BUT NOT TO EXCEED FIFTY FEET."

THE EZRALOW COMPANY | MVE + PARTNERS

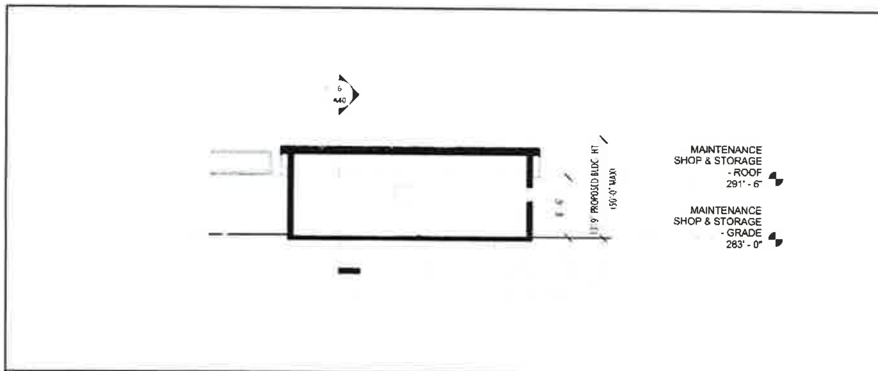
Canyon Terrace Apartments

MAINTENANCE SHOP & STORAGE DRAWINGS

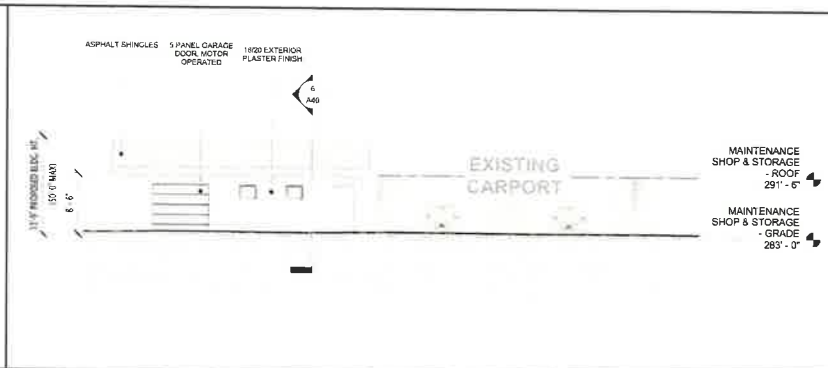
A40

Keynote Legend

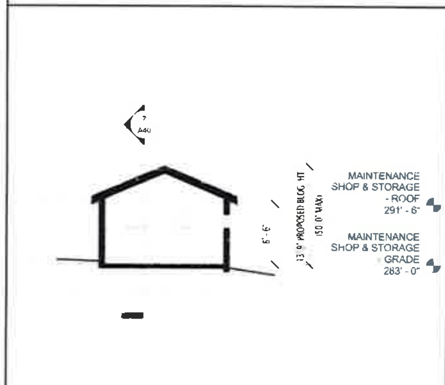
Key Value	Keynote Text
07 31 13	ASPHALT SHINGLES
7C	16/20 EXTERIOR PLASTER FINISH
08 36 10	5 PANEL GARAGE DOOR, MOTOR OPERATED



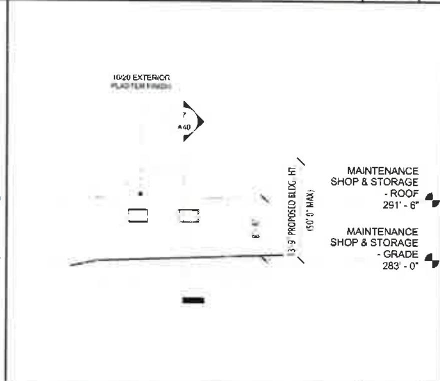
MAINTENANCE SHOP & STORAGE - NORTH-SOUTH SECTION 7



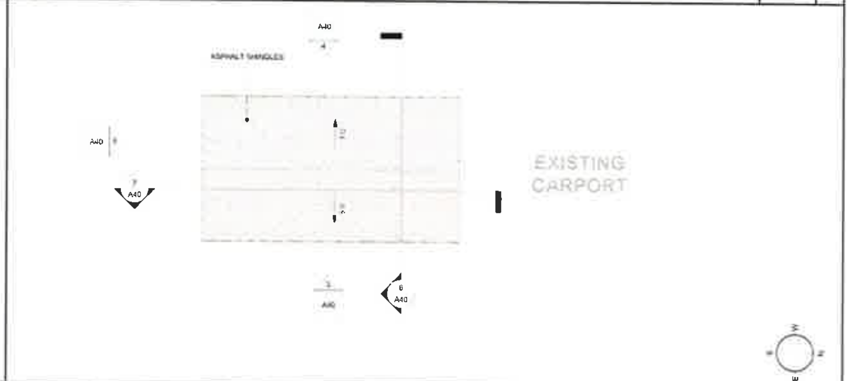
MAINTENANCE SHOP & STORAGE - EAST ELEVATION 3



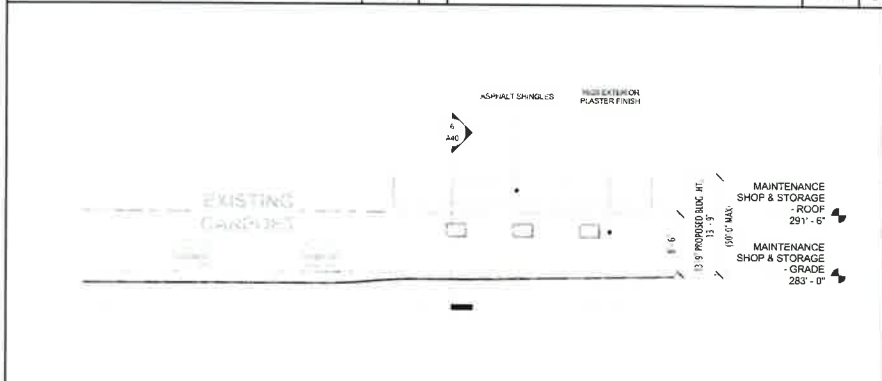
MAIN. SHOP & STORAGE - WEST-EAST SECTION 6



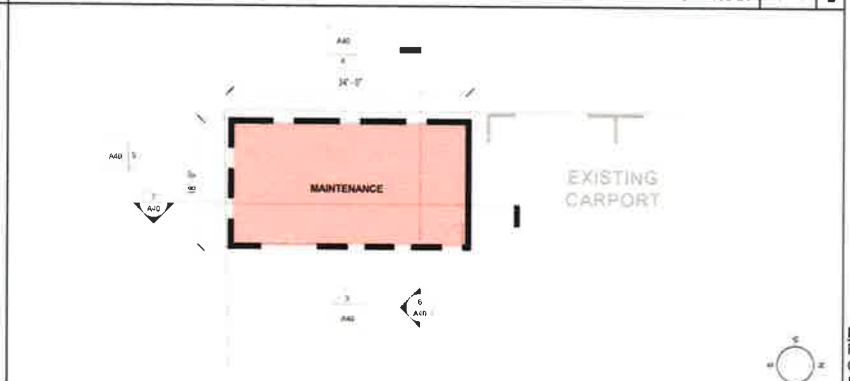
MAIN. SHOP & STORAGE - SOUTH ELEVATION 5



MAINTENANCE SHOP & STORAGE - ROOF 2



MAINTENANCE SHOP & STORAGE - WEST ELEVATION 4



MAINTENANCE SHOP & STORAGE - GRADE 1

NOTE:
PER CITY OF FOLSOM MUNICIPAL CODE 17.17.120, THE "BUILDING HEIGHT REQUIREMENT IS FOUR STORIES, BUT NOT TO EXCEED FIFTY FEET."

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments

MAINTENANCE SHOP & STORAGE DRAWINGS

A40

PROPOSED CARPORT - WEST ELEVATION | 1/8" = 1'-0" | 4

PROPOSED CARPORT - EAST ELEVATION | 1/8" = 1'-0" | 2

Keynote Legend	
Key Value	Keynote Text
07 31 13	ASPHALT SHINGLES
7A	SHIPLAP HARDIE SIDING
7E	BEVEL GUTTER

PROPOSED CARPORT - NORTH ELEVATION | 1/8" = 1'-0" | 3

PROPOSED CARPORT - SOUTH ELEVATION | 1/8" = 1'-0" | 1

**NOTE: SIDING TO BE PAINTED PER SW 9170 ACIER TO MATCH PROPOSED COLOR SCHEME.

THE EZRALOW COMPANY

MVE PARTNERS

Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, CA
April 1, 2019

PROPOSED CARPORT ELEVATIONS

0' 8' 16' 32'

A41

Attachment 20
Building Renderings, dated April 1, 2019

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments

PERSPECTIVE - BLDG 1

A31

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments

PERSPECTIVE - BLDG 2

A32

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments

PERSPECTIVE - BLDG 4

A33

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments

PERSPECTIVE - BLDG 5

A34

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments

PERSPECTIVE - AMENITY

A35

THE EZRALOW COMPANY | MVE + PARTNERS

Canyon Terrace Apartments

PERSPECTIVE - AMENITY

A36

Attachment 21
Existing Building Renderings and Renovation Details, dated April 1, 2019

EXISTING BUILDING RENOVATION NOTES

A	EXISTING ROOFING TILE TO REMAIN IN PLACE; GUTTERS AND FACIA TO RECEIVE PAINTING UPGRADE
B	EXISTING BUILDING COLORBLOCKING: FIELD A COLOR TO BE SW 9170 "ACIER"
C	EXISTING BUILDING COLORBLOCKING: TRIM A COLOR TO BE SW 7006 "EXTRA WHITE"
D	EXISTING BUILDING COLORBLOCKING: TRIM B COLOR TO BE SW 7598 "SIERRA REDWOOD"
E	EXISTING RAILINGS TO BE REPLACED WITH PERFORATED ALUMINUM RAILING. POSTS AND RAILINGS TO BE PAINTED TO MATCH SW 7006 "EXTRA WHITE"

THE EZRALOW COMPANY MVE PARTNERS

IMAGERY - LEASING OFFICE

CANYON TERRACE APARTMENTS

EXISTING BUILDING RENOVATION NOTES

A	EXISTING ROOFING TILE TO REMAIN IN PLACE; GUTTERS AND FACIA TO RECEIVE PAINTING UPGRADE
B	EXISTING BUILDING COLORBLOCKING: FIELD A COLOR TO BE SW 9170 "ACIER"
C	EXISTING BUILDING COLORBLOCKING: TRIM A COLOR TO BE SW 7006 "EXTRA WHITE"
D	EXISTING BUILDING COLORBLOCKING: TRIM B COLOR TO BE SW 7598 "SIERRA REDWOOD"
E	EXISTING RAILINGS TO BE REPLACED WITH PERFORATED ALUMINUM RAILING. POSTS AND RAILINGS TO BE PAINTED TO MATCH SW 7006 "EXTRA WHITE"

EXISTING BUILDING RENOVATION NOTES

A	EXISTING ROOFING TILE TO REMAIN IN PLACE; GUTTERS AND FACIA TO RECEIVE PAINTING UPGRADE
B	EXISTING BUILDING COLORBLOCKING: FIELD A COLOR TO BE SW 9170 "ACIER"
C	EXISTING BUILDING COLORBLOCKING: TRIM A COLOR TO BE SW 7006 "EXTRA WHITE"
D	EXISTING BUILDING COLORBLOCKING: TRIM B COLOR TO BE SW 7598 "SIERRA REDWOOD"
E	EXISTING RAILINGS TO BE REPLACED WITH PERFORATED ALUMINUM RAILING. POSTS AND RAILINGS TO BE PAINTED TO MATCH SW 7006 "EXTRA WHITE"

Attachment 22
Energy Efficiency and Sustainability Details

Canyon Terrace Apartments – Energy Efficiency/Sustainability

Solar:

Applicant proposes to install a solar photovoltaic system on the rooftops of the new Clubhouse/Leasing Office/Fitness Center Building and Building No. 1. The Solar Energy System will be approximately 70,000 KWDC and will generate 100,000 kWh annually. The proposed system is expected to generate sufficient energy to offset 100% the energy requirements for the common area amenities, including the clubhouse, the pool and all common area lighting needs on the property. To the extent feasible, Applicant proposes to engage installers and manufacturers located in the Greater Sacramento region for the solar system.

Electric Vehicle Charging:

Applicant proposes to install a minimum of three (3) electric vehicle charging stations at the Project. Per attached memorandum from DeNovo Planning Group, the Project's Air Quality and Greenhouse Gas Consultant, "*Project demand is fully met by 3 electric vehicle charging stations (consistent with the California Green Buildings Standard Code's provisions for electric vehicle charging infrastructure: new multi-family buildings with 17 or more units should allocate 3 percent or more of the total number of parking spaces for future installation of electric vehicle supply equipment).*" The charging stations will be located in surface parking spaces close to the new leasing office so property management can ensure that the parking spaces and charging stations are utilized for their intended use.

Electric Vehicle Car Sharing:

Applicant proposes to implement electric vehicle car sharing at the Project, through a company that Applicant is already working with in the region, called Envoy. Envoy shared cars have been shown to reduce vehicle miles traveled (VMT), car ownership (parking spaces) and GHG Emissions. Additional literature from Envoy is attached.

Attachments:

- Rendering showing potential solar panel locations.
- Electric Vehicle Car Sharing and the Environment
- E-Mobility: Research
- Memorandum "Canyon Terrace Apartments Project – Air Quality and Greenhouse Gas Emissions Reduction Calculation for the Installation of Electric Vehicle Charging Stations within the Project Site"

Electric Vehicle (EV) Car Sharing and the Environment

EV car sharing presents a double-win scenario. It increases per passenger use of a single vehicle, which contributes to vehicle miles traveled (VMT) reductions. Further, by being all electric, EVs contribute directly to gasoline displacement.

Both of these trends are discussed:

- **Greenhouse gas (GHG) and pollution emissions reduction.** We provide the following illustrative example of GHG and pollution reduction, from data provided by Envoy Technologies Inc. ("Envoy"). Envoy's all-electric fleet (1 vehicle, per month) is shared across approximately 50 members, which generally creates over 30 individual rides, and creates approximately 300 to 500 e-miles. This equates to an electricity demand of ***95 to 160 kWhs per month,*** in lieu of gasoline demand.

  In petroleum reduction, these Envoy displaces at minimum 12 gallons of gasoline (240 pounds of CO2),[1] when comparing to average vehicle fuel economy of 24.7 miles per gallon for new vehicles (link). There are also additional pollution reduction gains which can be attributed to the use of electricity from a low carbon intensity grid, which can be measured.

- **VMT Reductions.** There are strong research trends which connect car sharing to VMT and car ownership reduction. These research trends suggest that adding a vehicle to car sharing fleets replaces 9 to 13 privately-owned vehicles among members of carsharing services, and contributes to a 27-43 percent reduction in VMT, and 34-41 percent reduction in GHG.[2] Moreover, round-trip carsharing has been documented as a strategy to reduce car ownership and VMT in urban areas, and is suggested as an efficient tool to achieve VMT reductions and GHG emissions targeted in California State by 2040,[3] which forecasts that a 5% increase in carsharing adoption can reduce statewide VMT by 1.1%.[4]

---

[1] *https://www.fueleconomy.gov/feg/contentIncludes/co2_inc.htm*

[2] *Martin and Shaheen (2011) surveyed more than 6,000 members of carsharing programs in the United States and Canada, and arrived at this conclusion; See: The Adoption of Shared Mobility in California and Its Relationship with Other Components of Travel Behavior; A National Center for Sustainable Transportation Research Report; March 2018; Website Access: https://rosap.ntl.bts.gov/view/dot/35032.*

[3] *See: Caltrans California Transportation Plan 2040, 2015.*

[4] *As noted within: The Adoption of Shared Mobility in California and Its Relationship with Other Components of Travel Behavior; A National Center for Sustainable Transportation Research Report; March 2018; Website Access: https://rosap.ntl.bts.gov/view/dot/35032*

E-MOBILITY: Research

Reduction in Car Ownership

There is widespread research that links carsharing to the reduction in both vehicle miles traveled (VMT), car ownership, and GHG Emissions reduction:

- Evidence from this North American carsharing member survey demonstrates that carsharing facilitates a substantial reduction in household vehicle holdings, despite the fact that 60% of all house-holds joining carsharing are carless.[1]
- Round trip carsharing has been documented as a strategy to reduce car ownership and VMT in urban areas, and is suggested as an efficient tool to achieve the reductions in VMT and GHG emissions targeted in California State by 2040,[i] which forecasts that a 5% increase in the adoption of carsharing can reduce statewide VMT by 1.1%.[ii]
- Researchers attest that by reducing the importance of car ownership among users (i.e., those that already own one or more vehicles), carsharing may help to reduce vehicle ownership, allowing, at least, a portion of their users to get rid of one (or all) of their vehicles.[iii]
- Research[iv] found that 30% of the members of carsharing programs were willing to sell one or more of their vehicles, while other members postponed the purchase of an additional vehicle for about two years.[v]
- Research[vi] suggests that car2go has reduced the net number of vehicles on the road in five cities studied within North America. Approximately 2% to 5% of members sold a vehicle due to car2go, with another 7% to 10% suppressed or avoided a vehicle purchase due to car2go.[vii]
- Research also suggests that adding another vehicle to the fleet of shared cars would replace 9 to 13 privately-owned vehicles among members of carsharing services, and would contribute to a 27-43 percent reduction in VMT as well as a 34-41 percent reduction in GHG.[viii]
- Recent research found that users of two popular car sharing platforms reported reduced vehicle ownership after joining carsharing services. Round-trip service users were close to 5 times more likely to shed a car, and mean car ownership dropped from 44% to 22%.[ix]
- ***Regarding market impact,*** as a result of this shift to diverse mobility solutions, it is anticipated that up to one out of ten new cars sold in 2030 may likely be a shared vehicle, which could reduce private-use vehicle sales, an effect partially offset by a faster replacement rate for shared vehicles. This would mean that more than 30 percent of miles driven in new cars sold could be from shared

[1] http://sfpark.org/wp-content/uploads/carshare/Impact_of_Carsharing_on_Household_Vehicle_Holdings.pdf

mobility. On this trajectory, one out of three new cars sold could potentially be a shared vehicle as soon as 2050.[x]

Reduced Need for Parking Spots

- ***Caltrans*** (California Transportation Plan 2040) notes that shared-use mobility has the capability to improve road capacity and parking.[xi]
- Researchers state that reduced vehicle ownership may create a positive feedback loop in which even larger VMT reductions are achieved if limit requirements for parking space are revised, which may allow construction of denser urban areas.[xii]
- ***Universities*** have been enthusiastic to partner with carsharing services for multiple reasons, including the reduction in on-campus parking demand (Zheng et al., 2009).[xiii]
- Research also suggests that the presence of dedicated carshare vehicles is associated with reduced vehicle ownership and parking demand at the building level.[xiv]
- User surveys suggest traditional and point-to-point carsharing models continue to remove more cars from the road than they add, and recent research has shown vehicle ownership is significantly lower in buildings with both carsharing nearby and unbundled parking.[xv]
- UCB Research found that the availability of car sharing in their campus allowed 30 percent of students who lived on campus to leave their personal cars at home.[2]

Attraction to Leasing at a Building

- The car sharing and mobility-as-a-service market is rapidly growing, which suggests that future leasers will be attracted to mobility options that are provided on site.
- Car-sharing is the most mature of the shared mobility offerings and is most widespread in markets where private vehicle ownership is already widespread.[xvi]
- Responses to McKinsey's 2017 consumer survey showed that the majority of existing carsharing members expect to increase their usage rates in the next two years (Grosse-Ophoff et al. 2017). In this study, 67 percent of respondents

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[2] https://www.universityofcalifornia.edu/news/car-sharing-campuses-improves-quality-life-takes-cars-road; https://www.zipcar.com/press/releases/universitystudy;

predicted that they will increase their use of carsharing memberships over the next two years.[xvii]

- Fujitsu America, Inc. expects that by 2030, a majority of shared cars on the road will have utilization rates above 50 percent—a significant jump from the current utilization rate of five percent.[xviii]
- It should also be noted that investments in e-mobility are ideal to prepare for future clientele needs. EV adopters tend to be wealthier and highly-educated; 47% of PEV driver's households make more than $150,000 per year, and many hold advanced degrees[xix] which suggests major opportunity for property owners to attract such clientele. Moreover, EV adopters also express concern with the current charging infrastructure availability, which can be addressed with deployment in various settings.

Value Add to Site Host

- ***Carsharing creates additional value for parking spots.***
- A recent host focus group[xx] noted that all participants in a carshare host focus group agreed that one of the biggest advantages of sharing their vehicles was the income derived from doing so.[xxi]
- Shaheen notes the opportunity to earn revenue on existing, often little-used assets[xxii]
- Regarding electricity costs, site hosts can expect customers to pay a premium to charge vehicles, according to the Center for Sustainable Energy, Two-thirds of respondents reported a willingness to pay up to $1.00 per hour for occasional public charging, but less than one-third were willing to pay $1.50 per hour.[xxiii]

Other Key Trends

- More broadly, research connects parking requirements to pollution. Chester et al. (2010) indicate that parking currently adds from 1.3 to 25 grams of carbon dioxide equivalent/passenger-kilometer (km) to total lifecycle greenhouse gas (GHG) emissions of vehicle transport, depending on the scenario, and from 24% to 89% to sulfur dioxide and particulate matter emissions; with a large decrease in parking requirements, a substantial fraction of these emissions could be eliminated.[xxiv]
- **Generally, it should be noted that researchers are seeking to solve challenges associated with parking spot utilization.** Case study research of Davis apartment complexes suggests that a minimum of 34% and a maximum of 55% of parking spaces, on average, are occupied over the course of a day. Consequently, 45% of spaces sit unused across an entire day and 34% of spaces are underused (sit full the entire day).[xxv]

Attachment 23
Affordable Housing Proposal, dated May 6, 2019

BREWER LOFGREN LLP

ATTORNEYS AT LAW
650 UNIVERSITY AVENUE
SUITE 220
SACRAMENTO CA 95825

www.brewerlofgren.com

May 7, 2019

Pam Johns
Community Development Director
50 Natoma Street
Folsom, CA 95630

RE: Canyon Terrace Affordable Housing Proposal

Dear Pam:

The applicant notes that the City has no provision in its Municipal Code requiring the allocation of affordable housing in new or expanding rental residential communities, unlike the provisions in the Inclusionary Housing chapter of the City's Municipal Code (Chapter 17.104) related to single family residential development and in the Housing Trust Fund chapter of the Code related to non-residential development (Chapter 3.90). The applicant believes that multifamily, rental residential development is, as a practical matter, an affordable housing alternative for those individuals and families transitioning to or from home ownership, downsizing or simply preferring an alternative to ownership.

The applicant also knowledges the need for affordable housing as that term is defined by local, regional and state government agencies, and offers a proposal in alternative parts to assist the City achieve its RHNA objectives:

> A. The applicant will allocate ten percent (10%) of the 96 proposed new units, thus ten (10) units, as affordable units, seven (7) of which will be for low income residents and three (3) of which will be for very low income residents, as those income terms are defined in the City's Municipal Code, and which units may be distributed throughout the entirety of the rental residential community as the applicant elects; or
>
> B. In the alternative, the applicant will pay into the City's Housing Trust Fund at the per square foot rate set forth in the City's Municipal Code as of the date of the Planning Commission's first hearing on the applicant's application, thus, May 15, 2019. This alternative would result in a one-time fee payment of approximately $139,000 by the applicant to the City and would constitute applicant's satisfaction in full of its affordable housing contribution.

C. The City may select only one of the alternatives proposed by the applicant.

Please contact me if you have any questions about or need clarification of this proposal.

Thank you.

Sincerely,

Roy E. Brewer
Attorney at Law

Attachment 24
Initial Study, Mitigated Negative Declaration, and Mitigation Monitoring and Reporting Program

Canyon Terrace Apartments

Initial Study/Mitigated Negative Declaration

Prepared for:
City of Folsom
Community Development Department
50 Natoma Street
Folsom, CA 95630

Prepared by:
HELIX Environmental Planning, Inc.
11 Natoma Street, Suite 155
Folsom, CA 95630

April 2019 | COF-25

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LIST OF TABLES

1.0 INTRODUCTION

This Initial Study (IS) addresses the proposed Canyon Terrace Apartments project (proposed project) and whether it may cause significant effects on the environment. The IS also assesses whether any environmental impacts of the project are susceptible to substantial reduction or avoidance by project revision, imposition of conditions, or any other means [§15152(b)(2)] of the California Environmental Quality Act (CEQA) Guidelines. If such revisions, conditions, or other means are identified, they will be included as mitigation measures.

This Initial Study relies on State CEQA Guidelines Sections §15064 and 15064.4 in its determination of the significance of the environmental impacts. Per §15064, the finding as to whether a project may have one or more significant impacts shall be based on substantial evidence in the record, and that controversy alone, without substantial evidence of a significant impact, does not trigger the need for an Environmental Impact Report (EIR).

2.0 PROJECT BACKGROUND

The following project specific technical reports quantified analysis and or surveys were used in preparation of this Initial Study and are incorporated by reference:

- Air Quality and Greenhouse Gas Analysis, prepared by De Novo Planning Group (February 2019).
- Consulting Arborist Report, prepared by ABACUS Consulting Arborists (March 2016, revised September 2018).
- Cultural Resources Assessment for the Canyon Terrace Apartments Project, prepared by HELIX Environmental Planning (September 2018).
- Energy Technical Memorandum, prepared by De Novo Planning Group (March 2019).
- Geotechnical Exploration, prepared by ENGEO Inc. (June 2017).
- Environmental Noise Analysis, prepared by J.C. Brennan & Associates, Inc. (September 2018).
- Tribal Consultation Record for Compliance with Assembly Bill 52 and CEQA for the Canyon Terrace Apartments Project, prepared by ECORP Consulting, Inc. (October 2018).
- Traffic Impact Analysis Report, prepared by GHD (February 2019).

3.0 PROJECT DESCRIPTION

3.1 Project Location

The proposed project would be constructed on an approximately 17-acre parcel situated near the northwestern boundary of the City of Folsom in Sacramento County, California. The project site is located southwest of the intersection of Oak Avenue Parkway and American River Canyon Drive, within the existing Canyon Terrace Apartment community. The project site is located on Assessor's Parcel Number (APN) 213-0060-025. Refer to **Figure 1** for the regional location and **Figure 2** for an aerial view of the project site in **Appendix A**.

3.2 Project Setting and Surrounding Land Uses

The project site is currently developed and located within the existing Canyon Terrace Apartment community. The project site is bounded by a shopping center to the north, American River Canyon Drive and single-family residential dwellings to the east, single-family residential dwellings to the south, and Odyssey Learning Center and single-family residential to the west. The more regional setting is primarily characterized by residential development with a commercial shopping center immediately adjacent to the north.

The project site gently slopes downward from both east to west and from south to north. There are no wetlands or streams located on the project site.

3.3 Project Characteristics

The Canyon Terrace Apartment community currently consists of 200 existing apartment units allocated within 25 two-story apartment buildings. The proposed project includes the construction of 96 new apartment units within eight new apartment buildings in the existing Canyon Terrace Apartment community. Refer to **Figure 3** for the site design plan in Appendix A.

The proposed apartment buildings would be three-stories tall and feature garages on the first level of the buildings. The proposed apartment building would be wood-framed structures with concrete slab-on-grade first floors. Five of the eight proposed apartment buildings would be cut into the slope along the eastern portion of the project site, and the bottom of these apartment buildings would be used as garage space.

A small community building, pool area, and two tennis courts would be demolished as part of the proposed project. However, the proposed project includes a new swimming pool, clubhouse/leasing office/fitness center building, and new paved parking areas and drive lanes. The applicant proposes to install a solar photovoltaic system on the rooftops of the proposed clubhouse/leasing office/fitness center building and adjacent apartment building (Building 1 in Figure 3).

Parking and Circulation

Parking areas throughout the apartment community would be retained, except in areas of the new development where displaced parking spaces would be replaced with the proposed infill project. The proposed project would include a total of 233 new parking spaces to the Canyon Terrace Apartment community. The additional parking proposed would be allocated as follows:

- 127 surface stalls (including three Americans with Disabilities Act (ADA) compliant spaces)
- 79 garage stalls
- 27 carport stalls

The applicant proposes to install a minimum of three electric vehicle charging stations at the project site. The charging stations would be located in the surface parking spaces closest to the proposed clubhouse/leasing office/fitness center building. Additionally, the project applicant proposes to implement electric vehicle car sharing at the project site through a company called Envoy.

Access to the project site would continue to be provided by two existing driveways located on the west side of American River Canyon Drive, and pedestrian facilities with ADA compliant features are provided adjacent to the residential and community recreation facilities of the existing apartment complex. The proposed project includes the construction of new on-site sidewalks and pedestrian pathways containing ADA compliant features to provide connectivity between the proposed buildings, community recreation facilities and the parking lots. The sidewalks would adhere to California Title 24 code requirements regarding site accessibility with vertical slopes no greater than five percent and cross slopes no greater than two percent.

Emergency Vehicle Access

Emergency vehicle access would be maintained throughout the project site to meet the Fire Department standards for fire truck maneuvering, location of fire truck to fight a fire, rescue access to the units, and fire hose access to all sides of the building.

Utilities

On-site domestic water would connect to the existing (looped) water system on-site. All domestic water pipelines include a 20-foot wide SJSWD easement for service.

On-site fire water would connect to the City of Folsom water supply on American River Canyon Drive at the existing north and south driveways and would include two double detector check valves (one on each end of the looped system), providing fire water to the proposed hydrants, exterior Fire Department Connection assemblies, and fire riser rooms.

The on-site sewer system would be privately owned, operated, and maintained. The proposed sewer system would run south to north across the project site to Canyon Terrace Lane, then east to west to the connection to the public sewer system in the northwest corner of the Canyon Terrace Apartment community. The proposed sewer line would function as a standalone system (no tie-ins from the existing network) until it would connect to the outgoing manhole in the northwest corner of the property.

All new proposed trash enclosures would include a drain that connects to the sanitary sewer system in conformance with Storm Water Quality Guidance.

The on-site storm drain design would conform to City of Folsom standards and include design features consistent with the Stormwater Quality Design Manual for the Sacramento and South Placer Regions (updated June 2007). Low Impact Design features have been identified for each drainage management area within the proposed expansion.

Landscaping

The proposed landscape design would replace large existing areas of high water use lawn grass with a combination of low to medium water use shrub/ground cover areas and a low water use native grass mix. The native grass mix would look like long meadow grass and be retained in a green state year-round with low volume irrigation.

The existing oleander hedge in the southern portion of the project site near American River Canyon Drive would not be removed. Existing trees and vegetation outside of the project grading limits would not be removed. The project would blend proposed landscaping in with the existing surrounding landscaping.

Parking areas would be shaded by deciduous broadleaf and flowering canopy trees.

Fencing

Four- to seven-foot rock retaining walls are proposed on portions of the eastern property line, between the proposed Buildings 6 and 7 and American River Canyon Drive. Faux stone retaining walls ranging between 3-13 feet are proposed on the western edge of the project site boundary between the new proposed surface parking areas and existing apartment buildings. Stem walls are proposed along ramps throughout the proposed development.

Additionally, a minimum of a 5-foot tall security fence/wall would be installed around the proposed pool area.

Grading

Construction of the proposed project would disturb more than one acre of soil and would conform to the California General Construction Permit. Site grading would require the removal of all on-site trees within the development area. No oak trees or trees protected by the Folsom Tree Ordinance would be removed.

3.4 City Regulation of Urban Development

General Plan

The City of Folsom updated and adopted its current comprehensive General Plan in August 2018. The General Plan is a long-term planning document that guides growth and land development in the City. It provides the foundation for establishing community goals and supporting policies, and directs appropriate land uses for all land parcels within the City. The project site is designated as Multi-Family Low Density (MLD) in the City of Folsom General Plan. However, the proposed land use for the project is Multi-Family Medium Density (MMD). A General Plan Amendment would be required for the proposed development.

Zoning Ordinance

Developed land uses in the City of Folsom are regulated specifically by the City's Zoning Code (Title 17 of the City's Municipal Code), in addition to the other adopted regulations and programs that apply to all proposed development within the City. In more detail than the General Plan, the Zoning Code regulates land uses on a parcel-by-parcel basis throughout the City. In order to achieve this regulation, the City assigns each parcel within the City to a zoning district, such as a district for single-family homes. Regulations for each district apply equally to all properties within the district.

The project site is currently zoned for Residential Multi-Family Dwelling District (R-M), but a Rezone and Planned Development Permit would be required for the proposed development to change the zoning to Residential Multi-Family Planned Development (RM-PD). Chapter 17.38 of the Zoning Code outlines use standards for a Planned Development District.

3.5 Other City Regulation of Urban Development

The City of Folsom further regulates urban development through standard construction conditions and through mitigation, building, and construction requirements set forth in the Folsom Municipal Code. Required of all projects constructed throughout the City, compliance with the requirements of the City's standard conditions and the provisions of the Municipal Code avoids or reduces many potential environmental effects. City procedures to minimize negative environmental effects and disruptions include an analysis of existing features, responsible agency and public input to the design process, engineering and design standards, and construction controls. The activities that mitigate typical environmental impacts to be implemented by the City during the project review, design, and construction phases are described in greater detail below.

Community Development Department Standard Construction Conditions

The City's standard construction requirements are set forth in the City of Folsom, Community Development Standard Construction Specifications updated in April 23, 2015. A summary of these requirements is set forth below and incorporated by reference into the project description. Copies of these documents may be reviewed at the City of Folsom, Community Development Department, 50 East Natoma Street, Folsom, California 95630.

The Department's standard construction specifications are required to be adhered to by any contractor constructing a public or private project within the City.

Use of Pesticides – Requires contractors to store, use, and apply a wide range of chemicals consistent with all local, state, and federal rules and regulations.

Air Pollution Control – Requires compliance with all Sacramento Metropolitan Air Quality Management District (SMAQMD) and City air pollution regulations.

Water Pollution – Requires compliance with City water pollution regulations, including National Pollutant Discharge Elimination System (NPDES) provisions.

Noise Control – Requires that all construction work comply with the Folsom Noise Ordinance (discussed further below), and that all construction vehicles be equipped with a muffler to control sound levels.

Naturally Occurring Asbestos – Requires compliance with all SMAQMD and City air pollution regulations, including preparation and implementation of an Asbestos Dust Mitigation Plan consistent with the requirements of Section 93105 of the State Government Code.

Weekend, Holiday, and Night Work – Prohibits construction work during evening hours, or on Sunday or holidays, to reduce noise and other construction nuisance effects.

Public Convenience – Regulates traffic through the work area, operations of existing traffic signals, roadway cuts for pipelines and cable installation, effects to adjacent property owners, and notification of adjacent property owners and businesses.

Public Safety and Traffic Control – Regulates signage and other traffic safety devices through work zones.

Existing Utilities – Regulates the relocation and protection of utilities.

Preservation of Property – Requires preservation of trees and shrubbery and prohibits adverse effects to adjacent property and fixtures.

Cultural Resources – Requires that contractors stop work upon the discovery of unknown cultural or historic resources, and that an archaeologist be retained to evaluate the significance of the resource and to establish mitigation requirements, if necessary.

Protection of Existing Trees – Specifies measures necessary to protect both ornamental and native oak trees.

Clearing and Grubbing – Specifies protection standards for signs, mailboxes, underground structures, drainage facilities, sprinklers and lights, trees and shrubbery, and fencing. Also requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) to control erosion and siltation of receiving waters.

Reseeding – Specifies seed mixes and methods for reseeding of graded areas.

City of Folsom Municipal Code

The City regulates many aspects of construction and development through requirements and ordinances established in the Folsom Municipal Code. These requirements are summarized in **Table 1** and incorporated by reference into the project description. Copies of these documents may be reviewed at the City of Folsom, Office of the City Clerk, 50 East Natoma Street; Folsom, California 95630.

Table 1. City of Folsom Municipal Code Regulating Construction and Development

CODE SECTION	CODE NAME	EFFECT OF CODE
8.42	Noise Control	Establishes interior and exterior noise standards that may not be exceeded within structures, including residences; establishes time periods for construction operations.
8.70	Stormwater Management and Discharge Control	Establishes conditions and requirements for the discharge of urban pollutants and sediments to the storm-drainage system; requires preparation and implementation of Stormwater Pollution Prevention Plans.
9.34	Hazardous Materials Disclosure	Defines hazardous materials; requires filing of a Hazardous Material Disclosure Form by businesses that manufacture, use, or store such materials.
9.35	Underground Storage of Hazardous Substances	Establishes standards for the construction and monitoring of facilities used for the underground storage of hazardous substances and establishes a procedure for issuance of permits for the use of these facilities.
12.16	Tree Preservation	Regulates the cutting or modification of trees, including oaks and specified other trees; requires a Tree Permit prior to cutting or modification; establishes mitigation requirements for cut or damaged trees.
13.26	Water Conservation	Prohibits the wasteful use of water; establishes sustainable landscape requirements; defines water use restrictions.
14.19	Energy Code	Adopts the California Energy Code, 2010 Edition, published as Part 6, Title 24, C.C.R. to require energy efficiency standards for structures.
14.20	Green Building Standards Code	Adopts the California Green Building Standards Code (CALGreen Code), 2010 Edition, excluding Appendix Chapters

CODE SECTION	CODE NAME	EFFECT OF CODE
		A4 and A5, published as Part 11, Title 24, C.C.R. to promote and require the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices.
14.29	Grading Code	Requires a grading permit prior to the initiation of any grading, excavation, fill or dredging; establishes standards, conditions, and requirements for grading, erosion control, stormwater drainage, and revegetation.
14.32	Flood Damage Prevention	Restricts or prohibits uses that cause water or erosion hazards, or that result in damaging increases in erosion or in flood heights; requires that uses vulnerable to floods be protected against flood damage; controls the modification of floodways; regulates activities that may increase flood damage or that could divert floodwaters.

4.0 PROJECT OBJECTIVES

The project objectives, as expressed by the applicant, are to:

- Provide rental residential units to northwestern portion of City residents that either prefer rental living or are in transition to or from for-sale residential units;
- Provide infill rental residential units by adding units to an existing rental community;
- Provide rental residential units in an area of the City that has few opportunities for new residential development; and,
- Redevelop the existing project amenities and provide the entire Canyon Terrace community with a modern, up-to-date pool, clubhouse, and fitness center.

5.0 REQUIRED APPROVALS

A listing and brief description of the project approvals required to implement the proposed project is provided below. This environmental document is intended to address the environmental impacts associated with all the following decision actions and approvals:

- General Plan Amendment
- Rezone
- Planned Development Permit

The City of Folsom has the following discretionary powers related to the proposed project:

- **Certification of the environmental document:** The Folsom City Council will act as the lead agency as defined by the California Environmental Quality Act (CEQA) and will have authority to determine if the environmental document is adequate under CEQA.

- **Approval of project:** The Folsom City Council will consider approval of the project and all entitlements as described above.

6.0 PREVIOUS RELEVANT ENVIRONMENTAL ANALYSIS

6.1 City of Folsom General Plan

The Program EIR for the City of Folsom General Plan (2018) provides relevant policy guidance for this environmental analysis. The EIR evaluated the environmental impacts that could result from implementation of the City of Folsom 2035 General Plan (2035 General Plan) (City of Folsom 2018a). The Program EIR is intended to provide information to the public and to decision makers regarding the potential effects of adoption and implementation of the 2035 General Plan, which consists of a comprehensive update of Folsom's current General Plan. The 2035 General Plan consists of a policy document, including Land Use and Circulation Diagrams.

6.2 Tiering

"Tiering" refers to the relationship between a Program EIR (where long-range programmatic cumulative impacts are the focus of the environmental analysis) and subsequent environmental analyses such as the subject document, which focus primarily on issues unique to a smaller project within the larger program or plan. Through tiering a subsequent environmental analysis can incorporate, by reference, discussion that summarizes general environmental data found in the Program EIR that establishes cumulative impacts and mitigation measures, the planning context, and/or the regulatory background. These broad-based issues need not be reevaluated subsequently, having been previously identified and evaluated at the program stage.

Tiering focuses the environmental review on the project-specific significant effects that were not examined in the prior environmental review, or that are susceptible to substantial reduction or avoidance by specific revisions in the project, by the imposition of conditions or by other means. Section 21093(b) of the Public Resources Code requires the tiering of environmental review whenever feasible, as determined by the Lead Agency.

In the case of the proposed project, this Initial Study tiers from the Program EIR for the City of Folsom 2035 General Plan. The Folsom 2035 General Plan is a project that is related to the proposed project and, pursuant to §15152(a) of the State CEQA Guidelines, tiering of environmental documents is appropriate. State CEQA Guidelines §15152(e) specifically provides that:

"[w]hen tiering is used, the later EIRs or Negative Declarations shall refer to the prior EIR and state where a copy of the prior EIR may be examined. The later [environmental document] should state that the Lead Agency is using the tiering concept and that the [environmental document] is being tiered with the earlier EIR."

The above mentioned Program EIR can be reviewed at the following location:

City of Folsom
Community Development Department
50 East Natoma Street
Folsom, CA 95630
Contact: Mr. Steve Banks, Principal Planner
(916) 461-6207

6.3 Incorporation of the Folsom General Plan and East Area Facilities Plan EIRs by Reference

The Program EIR for the Folsom 2035 General Plan is a comprehensive document. Due to various references to the Folsom 2035 General Plan Program EIR in this proposed project, and to its importance relative to understanding the environmental analysis that has occurred to date with respect to development in the Folsom area, the program EIR document is hereby incorporated by reference pursuant to State CEQA Guidelines Section 15150.

6.4 Summary of Folsom 2035 General Plan EIR

The 2035 General Plan Program EIR focused on the secondary or indirect effects of implementing the 2035 General Plan 1. Indirect physical changes to the environment (impacts) that could result from implementation of 2035 General Plan are addressed in the appropriate technical chapters of the Program EIR. Likewise, inconsistency with an adopted plan, in general, is not considered a direct physical impact to the environment, but may result in impacts, which are discussed in the appropriate technical chapters. According to this definition, potential secondary or indirect environmental effects may be divided into two broad classes:

- Coverage Impacts - Those that result from development or other activities covering land or otherwise physically interfering with a resource (e.g., constructing a paved parking lot over a sensitive biological resource); and,

- Intensity Impacts - Those that result from increased levels of human activity (e.g., increases in traffic levels leading to increased emissions of criteria air pollutants).

The 2035 General Plan does not identify any additional areas designated for urban uses beyond those set forth in the 1988 General Plan as amended through fall 2017. Therefore, the environmental analysis concentrates its evaluation on those undeveloped areas designated for urban uses and the resources still present within them, including within the Folsom Plan Area Specific Plan (FPASP) area, south of Highway 50.

Coverage Impacts

These impacts are based on the conversion of existing vacant parcels to a developed land use. Conversion can result in the eradication of, or damage to, a resource, revealing of environmental conditions detrimental to a developed land use, or exposure of the developed use to an existing environmental hazard. For the purposes of evaluating these effects, the Program EIR assumed that all land identified for urban uses in the 2035 General Plan would be developed with such uses within the 20 year planning horizon.

For areas designated for urban or infrastructure uses by the 2035 General Plan, potential coverage effects for certain environmental topics were assessed in a multi-step process. Quantitative evaluations began with a review of resources potentially affected by the implementation of the 2035 General Plan project, and the areal extent of identified resources.

To determine the locations where a resource could be converted to developed uses under the proposed 2035 General Plan, an inventory of each environmental resource within each urban area project boundary was completed. Using geospatial data, or geographic information systems (GIS), all parcels or lots within the 2035 Plan Evaluation Area were identified as developed or vacant. Vacant parcels were further identified as being located north of Highway 50, or south of Highway 50 within the FPASP area.

For vacant parcels north of Highway 50, the analysis identified 453 total vacant parcels encompassing 441 acres. Of these 453 parcels, 377 are lots within existing single-family residential subdivisions totaling 163 acres, with a gross median lot size of 16,125 square feet. Of the remaining 76 parcels, the majority are designated for commercial or multi-family uses. For these uses, the total acreage is 278 acres with a gross median parcel size of 37,150 square feet. Once the 453 parcels were identified, each was evaluated using aerial photographs to determine its condition. As evidenced on the aerial photographs, the overwhelming majority of both the single-family residential and commercial/multi-family residential parcels are remnant areas within subdivisions or larger development projects, and most have been disturbed by prior rough grading and/or the construction of roads and utilities.

There are a total of 3,336 acres in the FPASP area south of Highway 50, of which 1,118 acres would remain in open space. The remaining 2,218 acres would be developed with a variety of urban land uses and supporting infrastructure. Although potential environmental impacts could occur throughout the 2035 Plan Evaluation Area, the majority of the land available for new development of urban uses (77 percent of the citywide total or 2,218 acres) would be located within the FPASP area.

The possibility of potential coverage impacts was determined by layering maps of sensitive resources (e.g., sensitive species, areas of naturally occurring asbestos, flood hazards) over the map of vacant parcels. The results of this type of analysis are reported in the following chapters of the PEIR: 6. Aesthetics and Visual Resources, 7. Agricultural and Forestry Resources, 9. Biological Resources, 10. Cultural Resources, 11. Geology, Soils, and Mineral Resources, 13. Hazards and Hazardous Materials, 14. Hydrology and Water Quality, and 18. Tribal Cultural Resources.

Intensity Impacts

Intensity impacts, such as those for traffic, air quality, greenhouse gas emissions, and noise, depend upon both the location and level of human activity. Other impacts, such as those to public services and utilities depend upon the size of the served population.

The 2035 General Plan proposed no increases in the amount of land identified for urban uses beyond that currently identified in the 1988 General Plan as amended. However, the development of urban uses on vacant land designated and available for residential and employment uses would result in an increase in the number of people and jobs in the City over existing (2015/2017) conditions. For intensity impacts, the PEIR evaluated a forecast of 2035 conditions consistent with the land uses identified in the 2035 General Plan.

The 2035 development forecast is based on a buildout model for use in the analysis of future traffic conditions. Summarily, the buildout model forecasts full development of all planned land uses within the existing city limits, full buildout of the Easton and Glenborough projects as approved by Sacramento County, and background land use assumptions outside of the City, Glenborough, and Easton consistent with the land use assumptions of Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). Because the MTP/SCS forecasts conditions for the year 2036, the buildout model used in the Program EIR interpolates 2035 conditions, the horizon year for the proposed Folsom General Plan.

As with the Coverage Impact analysis, the Intensity Impact Analysis focused on the difference between the location and level of human activity currently existing (2015/2017), and the level of activity that would exist with implementation of the 2035 General Plan. The results of this type of analysis are reported in the following chapters of the Program EIR: 8. Air Resources, 12. Global Climate Change, 15. Noise and Vibration, 16. Public Services and Recreation, 17. Transportation, and 19. Utilities and Service Systems.

7.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that may require mitigation to reduce the impact from "Potential Impact" to "Less than Significant" as indicated by the checklist on the following pages. The potential impacts and any potential mitigation required will be addressed in the Environmental Impact Report.

An Initial Study is conducted by a Lead Agency to determine if a project may have a potentially significant effect on the environment (CEQA Guidelines Section 15063). An Environmental Impact Report (EIR) must be prepared if an Initial Study indicates that further analysis is needed to determine whether a significant impact will occur or if there is substantial evidence in the record that a project may have a significant effect on the environment (CEQA Guidelines Section 15064(f)).

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

8.0 DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
■	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an environmental impact report is required.
☐	I find that the proposed project MAY have a "potential impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect I) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: [signature]

Date: 4/26/19

Printed Name: Pamela Johns

For: City of Folsom

9.0 ENVIRONMENTAL INITIAL STUDY CHECKLIST

Responses to the following questions and related discussion indicate if the proposed project will have or will potentially have a significant adverse impact on the environment, either individually or cumulatively with other projects. All phases of project planning, implementation, and operation are considered. Mandatory Findings of Significance are located in Section 9.XXI below.

A. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

B. "Less Than Significant with Mitigation" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).

C. "Less Than Significant Impact" applies where the project creates no significant impacts, only less than significant impacts.

D. "No Impact" applies where a project does not create an impact in that category. "No Impact" answers do not require an explanation if they are adequately supported by the information sources cited by the lead agency which show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project specific screening analysis).

I. AESTHETICS

AESTHETICS:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	■
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	■	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	■	☐

Environmental Setting

The project site is currently developed and located within the existing Canyon Terrace Apartment community. The project site is bounded by a shopping center to the north, American River Canyon Drive and single-family residential to the east, single-family residential units to the south, and Odyssey Learning Center and single-family residential to the west. The more regional setting is primarily characterized by residential development with a commercial shopping center immediately adjacent to the north.

The proposed project includes the construction of ninety-six new apartment units within eight new apartment buildings within the existing Canyon Terrace Apartment community. The Canyon Terrace Apartment community currently consists of 200 existing apartment units allocated among 25 two-story apartment buildings. The proposed apartment buildings would be three-stories tall and feature garages on the first level of the buildings.

The proposed landscape design would replace large existing areas of high water use lawn grass with a combination of low to medium water use shrub/ground cover areas and a low water use native grass mix. The native grass mix would look like long meadow grass and be retained in a green state year-round with low volume irrigation.

The existing oleander hedge in the southern portion of the project site near American River Canyon Drive would not be removed. Existing trees and vegetation outside of the project grading limits would not be removed. The project would blend proposed landscaping in with the existing surrounding landscaping.

Parking areas would be shaded by deciduous broadleaf and flowering canopy trees.

Four- to 7-foot rock retaining walls are proposed on portions of the eastern property line, between the proposed Buildings 6 and 7 and American River Canyon Drive. Faux stone retaining walls ranging between 3-13 feet are proposed on the western edge of the project site boundary between the new proposed surface parking areas and existing apartment buildings. Stem walls are proposed along ramps throughout the proposed development.

Additionally, a minimum of a 5-foot tall security fence/wall would be installed around the proposed pool area.

Evaluation of Aesthetics

a) Have a substantial adverse effect on a scenic vista?

No Impact. Neither the project site nor the surrounding areas are scenic vistas due to the existing nearby commercial and residential developments. Further, neither the project site, nor views to or from the project site, have been designated as important scenic resources by the City of Folsom or any other public agency. Therefore, the proposed development would not interfere with or degrade a scenic vista, and no impact would occur.

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

No Impact. There are no state or locally designated scenic highways in the vicinity of the proposed project site (Caltrans 2018). Implementation of the proposed project would not adversely affect scenic resources within a designated scenic highway, and no impact would occur.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant Impact. Implementation of the proposed project would result in the demolition of a small community building, pool area, and two tennis courts and construction of eight three-story apartment buildings in an existing apartment community, altering the existing visual character to a slightly more developed character than is currently experienced by viewers.

Residents of the Canyon Terrace Apartment community may be affected by the proposed project, particularly because the proposed project would increase lot coverage, develop open space areas within the apartment community, and eliminate existing views of activity along American River Canyon Drive.

While the proposed project would result in a change in visual character on-site, the proposed land use is consistent with the overall characteristic of the area and does not conflict with other regulations governing scenic quality. Therefore, project impacts would be less than significant, and no mitigation is necessary.

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

Less Than Significant Impact. Any new lighting associated with the development of the proposed project would be subject to City standard practices regarding night lighting that would be made a condition of approval of the Planned Development Permit. The proposed apartment buildings and other project features would comply with design standards outlined in the Folsom Municipal Code. The exterior of the proposed apartment buildings would not be made of reflective materials that would introduce a new source of glare, and existing City standards would limit light spillover and intensity. Therefore, impacts would be a less than significant impact, and no mitigation is necessary.

II. AGRICULTURE AND FORESTRY RESOURCES

AGRICULTURE AND FORESTRY RESOURCES:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	■
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	■
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non- forest use?	☐	☐	☐	■

Environmental Setting

No agricultural activities or timber management occur on the project site or in adjacent areas, and the project site is not designated for agricultural or timberland uses. The California Important Farmland Finder prepared for Sacramento County classifies the project site as urban and built up (CDC 2016). Urban and built up land is land occupied by structures or infrastructure to accommodate a building density of at least one unit to one and one-half acres, or approximately six structures to 10 acres (CDC 2016).

The Natural Resources Conservation Service (NRCS) soil survey report generated for the project site indicates that no Prime or Unique Farmland or Farmland of Statewide Importance occurs on the project site (NRCS 2018).

Evaluation of Agriculture and Forestry Resources

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

No Impact. The project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide importance (Farmland), pursuant to the California Important Farmland Finder (CDC 2016a). Therefore, the project would have no impact for question a).

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

No Impact. The project site is not zoned for agricultural use or enacted into a Williamson Act contract. Therefore, the project would have no impact for question b).

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

No Impact. The project site is not zoned or designated as farmland, and the surrounding land uses are primarily residential developments. Therefore, the nature and location of the project would not directly or indirectly result in the conversion of Farmland to non-agricultural uses. No impact would occur.

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

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

No Impact. Because no portion of the City or the project site are zoned for forest land or timberland, no impact would occur for questions d) and e).

III. AIR QUALITY

AIR QUALITY:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	■	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	■	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	■	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	■	☐

The Air Quality section of this document is based upon the approach, methodology, results, and conclusions outlined in the project-specific Air Quality and Greenhouse Gas Analysis prepared by De Novo Planning Group (De Novo 2019). The Air Quality and Greenhouse Gas Technical Report is included as **Appendix B**.

Environmental Setting

Climate in the Folsom area is characterized by hot, dry summers and cold, rainy winters. During summer's longer daylight hours, plentiful sunshine provides the energy needed to fuel photochemical reactions between Oxides of Nitrogen (NO_X) and Reactive Organic Gasses (ROG), which result in Ozone (O_3) formation. High concentrations of O_3 are reached in the Folsom area due to intense heat, strong and low morning inversions, greatly restricted vertical mixing during the day, and daytime subsidence that strengthens the inversion layer. Currently, the greatest pollution problem in the Folsom area is from NO_X.

The City of Folsom lies within the eastern edge of the Sacramento Valley Air Basin (SVAB). The Sacramento Metropolitan Air Quality Management District (SMAQMD) is responsible for implementing emissions standards and other requirements of federal and state laws in the project area. As required by the California Clean Air Act (CCAA), SMAQMD has published various air quality planning documents as discussed below to address requirements to bring the District into compliance with the federal and state ambient air quality standards. The Air Quality Attainment Plans are incorporated into the State Implementation Plan, which is subsequently submitted to the US Environmental Protection Agency (EPA), the federal agency that administrates the Federal Clean Air Act of 1970, as amended in 1990.

Ambient air quality is described in terms of compliance with state and national standards, and the levels of air pollutant concentrations considered safe, to protect the public health and welfare. These standards are designed to protect people most sensitive to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. The EPA has established national ambient air quality standards (NAAQS) for seven air pollution constituents. As permitted by the Clean Air Act, California has adopted the more stringent California ambient air quality standards (CAAQS) and expanded the number of regulated air constituents.

The California Air Resources Board (CARB) is required to designate areas of the state as attainment, nonattainment, or unclassified for any state standard. An "attainment" designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once. The air quality attainment status of the SVAB, including the City of Folsom, is shown in **Table 2.**

Table 2. Sacramento Valley Air Basin – Attainment Status

POLLUTANT	STATE OF CALIFORNIA ATTAINMENT STATUS	FEDERAL ATTAINMENT STATUS
Ozone	Nonattainment	Nonattainment
Suspended Particulate Matter (PM_{10})	Nonattainment	Attainment
Fine Particulate Matter ($PM_{2.5}$)	Attainment	Nonattainment
Carbon Monoxide	Attainment	Attainment/Unclassified
Nitrogen Dioxide	Attainment	Attainment/Unclassified
Lead	Attainment	Attainment/Unclassified
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	No Federal Standard
Hydrogen Sulfide	Unclassified	No Federal Standard
Visibility Reducing Particles	Unclassified	No Federal Standard

Source: CARB 2017a

The Sacramento County/Sacramento Metropolitan Area portion of the SVAB is currently in nonattainment for federal and/or state ozone, respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) standards. Concentrations of all other pollutants meet state and federal standards.

Ozone is not emitted directly into the environment, but is generated from complex chemical reactions between ROG, or non-methane hydrocarbons, and NO_X that occur in the presence of sunlight. ROG and NO_X generators in Sacramento County include motor vehicles, recreational boats, other transportation sources, and industrial processes. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations and windblown dust.

Air Quality Monitoring

CARB's air quality monitoring network provides information on ambient concentrations of air pollutants in the SVAB. SMAQMD operates a monitoring station in Folsom, where the air quality data for ozone and $PM_{2.5}$ were obtained. Other data are reported from one additional location in Sacramento County. **Table 3** compares a three-year summary of the highest annual criteria air pollutant emissions collected at these monitoring stations with applicable CAAQS, which are more stringent than the corresponding NAAQS. The concentrations of the pollutants ozone, $PM_{2.5}$, and PM_{10} are expected to be fairly representative of the project site, due to the regional nature of these pollutants.

Table 3. Summary of Annual Air Quality Data for Folsom Area Air Quality Monitoring Stations

POLLUTANT	2015	2016	2017
***Ozone (O_3) 1-hour:** Monitoring location: Folsom – Natoma Street*			
Maximum Concentration (ppm)	0.114	0.111	0.107
Days Exceeding State Standard (1-hr avg. 0.09 ppm)	3	6	4
***Ozone (O_3) 8-hour:** Monitoring location: Folsom – Natoma Street*			
Maximum Concentration (ppm)	0.093	0.095	0.087
Days Exceeding State Standard (8-hr avg. 0.070 ppm)	11	24	19
Days Exceeding National Standard (8-hr avg. 0.075 ppm)	5	13	7
***PM_{10}:** Monitoring location: North Highlands Blackfoot Way*			
Maximum State 24-Hour Concentration (µg/m3)	46.0	31.0	65.0
Days Exceeding State Standard (Daily Standard 50 µg/m^3)	*	0	3
Maximum Federal 24-Hour Concentration (µg/m3)	45.0	31.0	66.0
Days Exceeding Federal Standard (Daily Standard 150 µg/m^3)	*	0	0
***$PM_{2.5}$:** Monitoring location: Folsom – Natoma Street*			
Maximum National 24-Hour Concentration (µg/m^3)	38.1	25.7	33.2
Days Exceeding National 2006 Standard (Daily Standard 35 µg/m^3)	1	0	0

*Insufficient data to determine the value
Source: CARB 2018.

As indicated in Table 3, 1-hour and 8-hour ozone standards have been exceeded numerous times over the past three years. PM_{10} concentrations exceeded state standards in 2017 and have not exceeded federal standards in the past three years. $PM_{2.5}$ federal standards were exceeded in 2015.

Air Quality Attainment Planning

In order to work towards attainment for ozone, PM_{10} and $PM_{2.5}$, the EPA Office of Air Quality Planning and Standards requires that each state containing nonattainment areas develop a written plan for cleaning the air in those areas. The plans developed are called State Implementation Plans (SIP). Through these plans, states outline efforts they will make to try to correct the levels of air pollution and bring their areas back into attainment. The status of air quality attainment planning for the Sacramento area is listed below (SMAQMD 2018a):

- **8-Hour O_3.** The Sacramento region was classified by the EPA as a "serious" nonattainment area on June 15, 2004 for the federal 8-hour ozone standard, with an attainment deadline of June 15, 2013. An evaluation of proposed control measures and associated ROG and NO_X emission reductions concluded that no set of feasible controls were available to provide the needed emission reductions before the attainment deadline year. Given the magnitude of the shortfall in emission reductions, and the schedule for implementing new control measures, the earliest possible attainment demonstration year for the Sacramento region is determined to be the "severe" area deadline of 2019. Section 181(b)(3) of the Clean Air Act permits a state to request that the EPA reclassify a nonattainment area to a higher classification and extend the time allowed for attainment. This process is appropriate for areas that must rely on longer-term strategies to achieve the emission reductions needed for attainment. The EPA approved this request on May 5, 2010. In 2013, the region developed an Ozone Attainment and Reasonable Further Progress Plan. This plan was approved and effective March 2, 2015 and addresses how the region would attain the 1997 8-hour standard.

- **1-Hour O_3.** On May 9, 2011, EPA proposed to determine that California is no longer required to implement or submit a CAA Section 185 fee program for 1-hour ozone as a revision to the SIP for the Sacramento Metro 1-hour ozone nonattainment area. EPA has also taken an "interim final" action to stop sanctions from applying to the Sacramento Metro Area.

- **PM_{10}.** In March 2002, the EPA officially determined that Sacramento County had attained the PM_{10} standards. In November 2010, the SMAQMD formally requested that the EPA redesignate Sacramento County from nonattainment to attainment for PM_{10}. The EPA approved this request effective October 28, 2013. The SMAQMD additionally adopted a PM_{10} Maintenance Plan. The first Maintenance Plan showed maintenance from 2012 through 2022. A Second Maintenance Plan will be prepared and submitted by the SMAQMD to demonstrate maintenance for ten additional years, through 2032.

- **$PM_{2.5}$.** The Sacramento $PM_{2.5}$ nonattainment area designation met the $PM_{2.5}$ NAAQS by December 31, 2011. On May 9, 2012, CARB submitted a request that EPA find the Sacramento region in attainment for the 2006 24-hour $PM_{2.5}$ NAAQS. EPA issued a proposed rule for Determination of Attainment for the Sacramento Nonattainment Area on October 26, 2012 and a final rule for Determination of Attainment on July 15, 2013. EPA used the updated 2010-2012 ambient air quality data for determination and the final rule became effective on August 14, 2013. On May 10, 2017, the EPA found the area attained the 2006 24-hour NAAQS by the attainment date of December 31, 2015 based on monitoring data for 2013-2015. Contents of the PM2.5 Implementation/Maintenance Plan include demonstration that the NAAQS was met and that all requirements have been met for a redesignation to attainment, specification of actions to be taken if the standards are violated in the future, and establishment of regional motor vehicle emission budgets. The 2013 Maintenance Plan will be updated and submitted in the future based on the clean data finding made by the EPA.

- **CO.** The region is currently designated attainment for 1-hour and 8-hour CO standards. The Maintenance Plan developed for CO in 1996 was revised in 2004 to extend the 1996 CO Maintenance Plan demonstration to 2018.

Sacramento Metropolitan Air Quality Management District

At the county level, air quality is managed through land use and development planning practices that are implemented by Sacramento County and the incorporated Cities and through permitted source controls that are implemented by the SMAQMD.

The SMAQMD is responsible for (1) implementing air quality regulations, including developing plans and control measures for stationary sources of air pollution to meet the NAAQS and CAAQS, (2) implementing permit programs for the construction, modification, and operation of sources of air pollution, and (3) enforcing air pollution statutes and regulations governing stationary sources. With CARB oversight, the SMAQMD administers local regulations.

SMAQMD also has a set of rules and regulations applicable to construction, of which the following are relevant to this project:

- **Rule 402: Nuisance.** A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.

- **Rule 403: Fugitive Dust.** The responsible person or entity is required to implement every reasonable method to control dust emissions from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation to prevent fugitive dust generated through those activities from escaping the project site. Actions include but are not limited to application of water or chemicals, asphalt, and/or oil depending on the dust-generating activity.

- **Rule 442: Architectural Coatings.** The responsible person or entity may not use a coating with a volatile organic compound content in excess of the corresponding limits specified in this rule.

- **Rule 453**: **Cutback and Emulsified Asphalt Paving Materials**: Asphalt paving operations that may be associated with implementation of the project would be subject to Rule 453. This rule applies to the manufacture and use of cutback asphalt and emulsified asphalt for paving and maintenance operation.

Evaluation of Air Quality

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

Less Than Significant Impact. In accordance with SMAQMD's Guide, construction-generated NO_X and operational-generated ROG and NO_X (all ozone precursors), and all PM_{10} and $PM_{2.5}$ emissions, are used to determine consistency with the Ozone Attainment Plan. The Guide states:

> *By exceeding the District's mass emission thresholds for operational emissions of ROG, NO_X, PM_{10}, or $PM_{2.5}$, the project would be considered to conflict with or obstruct implementation of the District's air quality planning efforts.*

The proposed project would not conflict with or obstruct implementation of the applicable air quality plans (including the 2018 Updates to the California State Implementation Plan, the $PM_{2.5}$ Implementation/Maintenance Plan, and the 2009 Triennial Report and Plan Revision) during project construction or operation. Further, the proposed project is consistent with all applicable SMAQMD rules and regulations, including Rule 402, Rule 403, Rule 442, and Rule 453. The proposed project is also consistent with the goals and policies contained within the City of Folsom General Plan (see Appendix B). Therefore, impacts would be less than significant, and no mitigation would be necessary.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards in a region. Instead, a project's individual criteria pollutant and precursor emissions contribute to existing cumulatively significant adverse air quality impacts in the region.

Construction Emissions

Regional Emissions

Construction activities would result in temporary short-term emissions associated with vehicle trips from construction workers, operation of construction equipment, and the dust generated during construction activities. Construction was assumed to occur from year 2019 through year 2021. The proposed project would include demolition, site preparation, grading, building construction, paving, and architectural coating phases. Demolition was assumed to occur over two phases (for the purposes of modeling), based on how CalEEMod treats the demolition of buildings versus non-buildings.

SMAQMD's Guide includes a construction screening level to determine if a project would exceed the NO_X threshold of significance. However, because the proposed project includes demolition activities and grading activities, the NO_X construction screening level is not recommended for use. As such, the California Emissions Estimator Model (CalEEMod) version 2016.3.2 was used to quantify project-generated construction emissions (De Novo 2019). The analysis methodology, assumptions, and CalEEMod output are provided in Appendix B.

The SMAQMD does not have a recommended threshold for construction-generated ROG; therefore, the maximum daily emissions of NO_X are displayed below. As shown in **Table 4**, the proposed project would generate less than significant levels of the ozone precursor NO_X.

Table 4. Estimated Project Construction NO_x Emissions

CONSTRUCTION YEAR	NO_X (lbs./day)
2019	46
2020	21
2021	2
SMAQMD Threshold	*85*
Threshold exceeded?	**No**

Source of emissions: De Novo 2019 (Appendix B).
Source of threshold: SMAQMD 2015.

Local Emissions

The SMAQMD utilizes the same screening level as the NO_X emission screening level to assist a project proponent or lead agency in determining if PM_{10} or $PM_{2.5}$ emissions from constructing a project in Sacramento County will exceed the SMAQMD's construction significance thresholds. As with the NO_X screening presented above, because the proposed project includes demolition and grading activities, the PM_{10} and $PM_{2.5}$ construction screening level is not recommended for use. As such, CalEEMod 2016.3.2 was used to quantify project-generated construction emissions as discussed previously (De Novo 2019).

The maximum daily and annual emissions of PM_{10} and $PM_{2.5}$ are analyzed below. As shown in **Table 5**, the proposed project would generate less than significant levels of PM_{10} and $PM_{2.5}$. Impacts related to construction-generated PM_{10} and $PM_{2.5}$ emissions would be less than significant.

Table 5. Estimated Project Construction PM Emissions

CONSTRUCTION YEAR	PM_{10}		$PM_{2.5}$	
	(lbs./day)	(tons/year)	(lbs./day)	(tons/year)
2019	21	0.3	12	0.2
2020	2	0.2	1	0.1
2021	<0.5	<0.05	<0.5	<0.05
SMAQMD Threshold	*80*	*14.6*	*82*	*15*
Threshold exceeded?	**No**	**No**	**No**	**No**

Source of emissions: De Novo 2019 (Appendix B).
Source of threshold: SMAQMD 2015.

Operational Emissions

Regional Emissions

The proposed project would result in a direct and indirect source of air pollution, in that it would generate and attract vehicle trips in the region (mobile source emissions) and increase area source emissions and energy consumption. The mobile source emissions would be entirely from vehicles, while the area source emissions would be primarily from the use of natural gas fuel combustion, hearth fuel combustion, landscape fuel combustion, consumer products, and architectural coatings.

SMAQMD provides operational screening levels to identify when additional analysis is necessary to determine potential significance for operational ROG, NO_X, PM_{10}, or $PM_{2.5}$ emissions. The operational screening levels represent the development size at which the operational emissions thresholds of significance would not be exceeded. The proposed residential development would qualify as the CalEEMod Land Use of low-rise apartments under the general land use category of residential. According to the screening thresholds for low-rise apartments, the operational screening level for ozone is 682 dwelling units and for particulate matter is 1,385 dwelling units (SMAQMD 2018b). The proposed project would develop 96 dwelling units and would therefore not have the potential to exceed SMAQMD's recommended mass emission thresholds for NO_X, ROG, PM_{10}, or $PM_{2.5}$. Therefore, the proposed project would generate less than significant quantities of operational ROG, NO_X, PM_{10}, and $PM_{2.5}$, and project-specific modeling for operational emissions is not required. However, as a conservative analysis, operational emissions are presented below and further detailed in Appendix B. As displayed in **Table 6**, operational emissions would not exceed SMAQMD thresholds and impacts would be less than significant.

Table 6. Estimated Project Operation Emissions

	NO_x	ROG	PM_{10}		$PM_{2.5}$	
	(lbs./day)	(lbs./day)	(lbs./day)	(tons/year)	(lbs./day)	(tons/year)
Area	<0.5	2.6	<0.05	<0.05	<0.05	<0.05
Energy	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05
Mobile	1.4	<0.5	1.0	0.2	<0.5	<0.05
Total	**1.8**	**3.1**	**1.1**	**0.2**	**<0.5**	**0.1**

	NO_x	ROG	PM_{10}		$PM_{2.5}$	
	(lbs./day)	(lbs./day)	(lbs./day)	(tons/year)	(lbs./day)	(tons/year)
SMAQMD Threshold	*65*	*65*	*80*	*14.6*	*82*	*15*
Threshold exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source of emissions: De Novo 2019 (Appendix B).
Source of threshold: SMAQMD 2015.
Note: totals may not sum due to rounding.

Local Emissions

The primary pollutant of localized concern is mobile-source CO. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Long-distance transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. Under specific meteorological conditions and traffic conditions, CO concentrations at receptors located near roadway intersections may reach unhealthy levels, when combined with background CO levels.

The SMAQMD's two-tiered screening criteria identifies when a project has the potential to contribute to a CO hotspot and if CO dispersion modeling is necessary. According to the first screening tier, the proposed project will result in a less-than-significant impact to air quality for local CO if:

1. Traffic generated by the proposed project will not result in deterioration of intersection level of service (LOS) to LOS E or F; and
2. The project will not contribute additional traffic to an intersection that already operates at LOS E or F.

According to the Canyon Terrace Apartments Traffic Impact Analysis Report (GHD 2019), the proposed project would result in a deterioration of one intersection from LOS D to LOS E. Specifically, the intersection of Oak Avenue Parkway/Baldwin Dam Road is projected to deteriorate from an acceptable LOS of D to an unacceptable LOS of E in the AM peak hour, under the Cumulative Plus Project condition. Therefore, the proposed project would not satisfy the first criterion under the first tier of the SMAQMD's recommended screening criteria.

The SMAQMD guidance states that, if the first tier of screening criteria is not met, then a second tier of screening criteria shall be examined. The second tier of screening criteria is listed below. According to the SMAQMD, the proposed project would result in a less than significant impact to air quality for local CO if all of the following criteria are met:

- The project will not result in an affected intersection experiencing more than 31,600 vehicles per hour;
- The project will not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air will be substantially limited; and
- The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average (as identified by the EMFAC or CalEEMod models).

The proposed project meets each of these three criteria. The proposed project does not result in an affected intersection experiencing more than 31,600 vehicles per hour, would not contribute traffic at a location where horizontal or vertical mixing of air will be substantially limited, and the mix of vehicles types at the intersection would not be substantially different than the County average. Therefore, the potential for a carbon monoxide hotspot impact represents a less than significant impact.

As shown in Tables 4, 5, and 6, all emissions would be reduced to a level that does not exceed the project-level thresholds of significance. However, the SMAQMD requires all projects within its jurisdiction to implement all feasible best management practices (BMP) for PM. The following BMP would be implemented to further reduce PM emissions:

- The project applicant shall ensure the project operations meet all requirements of SMAQMD District Rule 403 (Fugitive Dust).
- The project applicant shall ensure that project operations comply with the mandatory measures contained in the California Building Energy Efficiency Standards (Title 24, Part 6) that pertain to efficient use of natural gas for space and water heating and other uses.
- The project applicant shall ensure the project operations comply with the mandatory measures contained in the California Green Building Code (Title 24, Part 11). Current mandatory measures related to operational PM include requirements for electric vehicle charging and fireplaces.

As discussed above, no exceedance of the SMAQMD's emission thresholds for criteria pollutants would be expected for the proposed project, and the project would not result in a cumulatively considerable net increase in any criteria pollutant. Impacts would be less than significant, and implementation of the BMP listed above would further reduce PM emissions from project construction and operation. No mitigation is necessary.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Emissions of criteria air pollutants during project construction would be temporary over a relatively short time period and therefore would be expected to be less than significant. Sensitive receptors in the vicinity of the project include nearby residents in the immediate surroundings. Other than emissions from vehicle trips by residents, and potential emissions from natural gas used for space heating, no other air emissions would be released during operation of the proposed development. In addition, as displayed in the tables above, construction and operational emissions would be substantially less than the identified emission thresholds. Normal activities associated with operation of the development would not result in the release of any toxic substances into the air.

Thus, overall air emissions would not expose sensitive receptors to substantial air pollutant concentrations. Impacts would be a less than significant impact, and no mitigation would be necessary.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. Heavy diesel equipment could generate odors during construction activities. The generation of odors during the construction period would be temporary and would tend to be dispersed within a short distance from the active work area, and therefore, would be less than significant.

Common sources of operational odor complaints include sewage treatment plants, landfills, recycling facilities, and agricultural uses (SMAQMD 2016). The proposed project would not include any of these uses. Solid waste generated by the proposed on-site uses would be collected by a contracted waste hauler, ensuring that any odors resulting from on-site waste would be managed and collected in a manner to prevent the proliferation of odors.

Therefore, odor impacts from project construction and operation would be less than significant, and no mitigation is required.

IV. BIOLOGICAL RESOURCES

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

Environmental Setting

The project site features urban/developed habitat. The proposed project includes the demolition of a small community building, pool area, and two tennis courts and the clearing of existing landscaping in the project development area. There are no jurisdictional wetlands, riparian, or other special status habitats located on or immediately adjacent to the project site.

Regulatory Framework Related to Biological Resources

The City of Folsom regulates urban development through standard construction conditions and through mitigation, building, and construction requirements set forth in the Folsom Municipal Code. Required of all projects constructed throughout the City, compliance with the requirements of the City's standard conditions and the provisions of the Municipal Code avoids or reduces many potential environmental effects. No Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan has been approved for the City of Folsom.

State and Federal Endangered Species Acts

Special status species are protected by state and federal laws. The California Endangered Species Act (CESA; California Fish and Game Code Sections 2050 to 2097) protects species listed as threatened and endangered under CESA from harm or harassment. This law is similar to the Federal Endangered Species Act of 1973 (FESA; 16 USC 1531 et seq.) which protects federally threatened or endangered species (50 CFR 17.11, and 17.12; listed species) from take. For both laws, take of the protected species may be allowed through consultation with and issuance of a permit by the agency with jurisdiction over the protected species.

California Code of Regulations and California Fish and Game Code

The official listing of endangered and threatened animals and plants is contained in the California Code of Regulations Title 14 § 670.5. A state candidate species is one that the California Fish and Game Code has formally noticed as being under review by CDFW for inclusion on the state list pursuant to Sections 2074.2 and 2075.5 of the California Fish and Game Code. CDFW also designates Species of Special Concern that are not currently listed or candidate species.

Legal protection is also provided for wildlife species in California that are identified as "fully protected animals." These species are protected under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fishes) of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species at any time. The CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by these species. The CDFW has informed non-federal agencies and private parties that they must avoid take of any fully protected species. However, Senate Bill (SB) 618 (2011) allows the CDFW to issue permits authorizing the incidental take of fully protected species under the CESA, so long as any such take authorization is issued in conjunction with the approval of a Natural Community Conservation Plan that covers the fully protected species (California Fish and Game Code Section 2835).

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (California Fish and Game Code Sections 1900 to 1913) requires all state agencies to use their authority to implement programs to conserve endangered and otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use other than changing from one agricultural use to another, which allows CDFW to salvage listed plants that would otherwise be destroyed.

Nesting and Migratory Birds

Nesting birds are protected by state and federal laws. California Fish and Game Code (§3503, 3503.5, and 3800) prohibits the possession, incidental take, or needless destruction of any bird nests or eggs; Fish and Game Code §3511 designates certain bird species "fully protected" (including all raptors), making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. Under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USF §703-711), migratory bird species and their nests and eggs that are on the federal list (50 CFR §10.13) are protected from injury or death, and project-related disturbance must be reduced or eliminated during the nesting cycle.

City of Folsom Tree Preservation Ordinance

Requirements related to biological resources also include protection of existing trees and specifies measures necessary to protect both ornamental and native oak trees.

Chapter 12.16 of the Folsom Municipal Code, Tree Preservation, further regulates the cutting or modification of trees, including oaks and specified other trees; requires a Tree Permit prior to cutting or modification; and establishes mitigation requirements for cut or damaged trees (City of Folsom 2018b). The Tree Preservation Ordinance establishes policies, regulations, and standards necessary to ensure that the City will continue to preserve and maintain its "urban forests". Anyone who wishes to perform "Regulated Activities" on "Protected Trees" must apply for a permit with the City. Regulated activities include:

- Removal of a Protected Tree
- Pruning/trimming of a Protected Tree
- Grading or trenching within the Protected zone

Protected trees include:

- Native oak trees with a diameter of 6 inches or larger at breast height for single trunk trees or 20 inches or larger at combined diameter at breast height of native oak multi-trunk trees
- Heritage oak trees are native oaks with a trunk diameter of 19 inches or larger at breast height or native oaks with a multi-trunk diameter of 38 inches or larger at breast height
- Landmark trees are a tree or group of trees determined by the City Council to be a significant community benefit
- Street trees within the tree maintenance strip or contained on the master tree list

Jurisdictional Waters

Any person, firm, or agency planning to alter or work in "waters of the U.S.," including the discharge of dredged or fill material, must first obtain authorization from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA). Section 401 requires an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. must obtain a state certification that the discharge complies with other provisions of the CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California. The RWQCB also regulates discharges of pollutants or dredged or fill material to waters of the State which is a broader definition than waters of the U.S.

Biological Resources Present in the Project Site

Land Cover Type

The land cover type present on the project site is developed. Developed land is land that has been built upon or otherwise modified to the point that it no longer naturally supports vegetation. Developed land includes pavement, structures, irrigated landscaping, hardscape, and areas where materials or debris have been permanently placed.

Wildlife

The project site provides habitat for disturbance-tolerant wildlife species typical of urban and suburban areas.

Special-Status Species with the Potential to Occur

The regionally-occurring special-status species in the Folsom area are typically associated with aquatic habitats including perennial waterbodies, wetlands, and/or vernal pools, or are associated with relatively undisturbed contiguous stands of oak or riparian woodland. The project site is developed and lacks any of these aquatic habitats. Species expected to use the site would be highly adaptable common species tolerant of disturbance and urban areas.

No special-status wildlife species are expected to occur on the project site with the possible exception of a special-status bird using the project site as a temporary stopover in transit to or from more suitable habitats.

Other Migratory Birds and Nesting Birds

While no special-status bird species are expected to nest on the project site, marginal habitat is present on the site for a variety of common bird species that nest in trees, on buildings, or on the ground in urban and suburban areas.

Protected Trees

Site grading would require the removal of all on-site trees within the development area. No oak trees or trees protected by the Folsom Tree Ordinance would be removed (ABACUS 2018).

Jurisdictional Waters

No potential waters of the U.S. and/or State are present on the project site.

Evaluation of Biological Resources

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

Less Than Significant with Mitigation. The proposed project would not affect special-status species. However, common bird species protected by the MBTA and/or Fish and Game Code may nest on the buildings and trees present on the project site. If active nests are present at the time of demolition, demolition activities may result in injury or death of individual birds (e.g., if trees or limbs containing active nests are removed), or harassment which may cause nesting birds to abandon active nests resulting in the loss of eggs or young. The loss of foraging habitat in the vicinity of an active nest may result in the reduced health and vigor of eggs and/or nestlings, resulting in reduced survival rates. Any harassment, injury, or death of nesting birds, their nestlings, or eggs would be considered a significant impact.

The following mitigation measures would be implemented to avoid and minimize impacts to nesting birds:

Mitigation Measure BIO-01: Avoid and minimize impacts to nesting birds.

- If demolition activities occur during the typical bird nesting season (February 15 through August 31), pre-construction nesting bird surveys shall be conducted by a qualified biologist on the project site and within a 500-foot radius of proposed demolition or construction areas, where access is available, no more than 14 days prior to the initiation of demolition or construction. If no nests are found, no further mitigation is required.

- If active nests are identified in these areas, the City shall coordinate with CDFW to develop measures to avoid disturbance of active nests prior to the initiation of any demolition or construction activities, or demolition or construction could be delayed until the young have fledged. Avoidance measures may include establishment of a buffer zone and monitoring of the nest by a qualified biologist until the young have fledged the nest and are independent of the site. If a buffer zone is implemented, the size of the buffer zone shall be determined by a qualified biologist in coordination with CDFW and shall be appropriate for the species of bird and nest location.

With implementation of the above mitigation measure, impacts to nesting birds would be less than significant.

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

No Impact. No riparian habitats, sensitive natural communities, or other protected habitats are located on or adjacent to the project site. Therefore, no impact would occur.

c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. No potential waters of the U.S. or State exist on the project site. Therefore, there would be no impact.

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

Less Than Significant Impact. The project site is developed and surrounded by other residential developments and a commercial shopping center. The project site does not provide features most likely to be used as a wildlife movement corridor. Therefore, impacts to wildlife corridors or the use of native wildlife nursery sites would be less than significant.

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

No Impact. Construction of the proposed project would require the removal of all on-site trees within the development area. No oak trees or trees protected by the Folsom Tree Ordinance would be removed (see **Appendix C** for the Arborist Report). Therefore, no impact would occur.

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

No Impact. No Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan has been approved for the City of Folsom. Therefore, no impacts to an existing adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan would occur.

V. CULTURAL RESOURCES

CULTURAL RESOURCES:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	■	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	■	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	■	☐	☐

The Cultural Resources section of this document is based upon the approach, methodology, results, and conclusions outlined in the project-specific Cultural Resources Assessment prepared by HELIX (2018; **Appendix D**).

Environmental Setting

State and federal legislation requires the protection of historical and cultural resources. In 1971, President's Executive Order No. 11593 required that all federal agencies initiate procedures to preserve and maintain cultural resources by nomination and inclusion on the National Register of Historic Places. In 1980, the Governor's Executive Order No. B-64-80 required that state agencies inventory all "significant historic and cultural sites, structures, and objects under their jurisdiction which are over 50 years of age and which may qualify for listing on the National Register of Historic Places." Section 15064.5(b)(1) of the CEQA Guidelines specifies that projects that cause "...physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historic resource would be materially impaired" shall be found to have a significant impact on the environment. For the purposes of CEQA, an historical resource is a resource listed in, or determined eligible for listing in the California Register of Historical Resources. When a project could impact a resource, it must be determined whether the resource is an historical resource, which is defined as a resource that:

> (A) is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and,
>
> (B) Meets any of the following criteria: 1) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; 2) is associated with the lives of persons important in our past; 3) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or 4) has yielded, or may be likely to yield, information important in prehistory or history. The City of Folsom Standard Construction Specifications were developed and approved by the City of Folsom in May 2004 and updated in April 2015. They include Article 11 - Cultural Resources, which provides direction on actions to

be taken in the event that materials are discovered that may ultimately be identified as a historical or archaeological resource, or human remains (City of Folsom 2015).

Cultural Background

Following is a brief summary providing a context in which to understand the background and relevance of resources that may occur in the general project area. This section is not intended to be a comprehensive review of the current resources available; rather, it serves as a general overview. Further details can be found in ethnographic studies, mission records, and major published sources.

Southern Maidu

At the time of European contact, the Southern Maidu tribe of California Native Americans, previously referred to as the Nisenan, occupied the project vicinity. The Southern Maidu occupied the drainages of the Yuba, Bear, and American rivers and the lower drainages of the Feather River, bounded by the west bank of the Sacramento River to the west, the crest of the Sierra Nevada to the east, a few miles south of the American River to the south. The northern boundary is not well established due to the Southern Maidu's linguistic similarity with neighboring groups but extended somewhere between the Feather and Yuba rivers (Kroeber 1925; Wilson and Towne 1978).

The Southern Maidu constructed villages on natural rises along streams and rivers ranging in size from three to fifty houses. The houses were typically dome or conical shaped and covered with earth, tule mats, or grasses, and major villages contained a semi-subterranean dance house structure covered by earth, tule, and brush (Wilson and Towne 1978). The Southern Maidu subsistence base varied and included gathering seeds and seasonal plant resources, hunting, and fishing. The Southern Maidu were not dependent on one staple, as their territory provided abundant year-round sources of different food. Acorns were a primary food source and were stored in granaries, in addition to buckeye nuts, digger and sugar pine nuts, and hazelnuts. Ethnographic reports indicate the Southern Maidu obtained large game such as deer, antelope, tule elk, mountain lions, and black bears, by game drives, snares, decoys, deadfalls, and bows and arrows. Rabbits and other small game were hunted with sticks, blunted arrows, traps, snares, nets, fire, and rodent hooks.

The Southern Maidu political organization was centered on the tribelet and each village was governed by a headman who served as an advisor and whose position was typically passed on patrilineally, although some chiefs were chosen by the villagers (Beals 1933; Wilson and Towne 1978). Very little contact existed for the Southern Maidu outside of their tribelet area, and outside contact was typically only for ceremonies, trade, and warfare (Beals 1933). Southern Maidu disposed of their dead by cremation and then burial, usually on the morning after the person died. The deceased person's property would be burned and their house moved or destroyed. After the cremation, the bones and ashes would be gathered and buried in the village cemetery. When a death occurred away from the person's village, they would be cremated where they died and their remains returned to their village to be buried (Wilson and Towne 1978).

Historic Background

The history of the northern Central Valley and Sierra Nevada foothills can be divided into several periods of influence; pertinent historic periods are briefly summarized below.

Spanish Period

The arrival and expansion of the Spanish did not have a significant effect on the Southern Maidu way of life, as contact with the Spanish was limited, and only in the southern edge of their territory. Spanish exploration of the greater Southern Maidu territory occurred when José Canizares explored the adjacent Plains Miwok territory in 1776. There is no recorded history of any Southern Maidu being removed and forced into the Spanish Mission system as neophytes, unlike their Miwok neighbors (Wilson and Towne 1978). There are numerous accounts of neophytes fleeing the missions, and a series of "Indian Wars" broke out when the Spanish tried to return them to the missions (Johnson 1978). The Southern Maidu received some of the escaped mission neophytes and felt pressure on their southern borders from displaced Miwok villages.

Mexican Period

With the declaration of Mexican independence in 1821, Spanish control of Alta California ended, although little change actually occurred. Political change did not take place until mission secularization in 1834, when Native Americans were released from missionary control and the mission lands were granted to private individuals. Shoup and Milliken (1999) state that mission secularization exposed Native Americans to further exploitation by outside interests, often forcing them into a marginal existence as laborers for large ranchos. Following mission secularization, the Mexican population grew as the native population continued to decline. Anglo-American settlers began to arrive in Alta California during this period and often married into Mexican families, becoming Mexican citizens, which made them eligible to receive land grants. In 1846, on the eve of the U.S.-Mexican War (1846 to 1848), the estimated population of Alta California was 8,000 non-natives and 10,000 Native Americans. However, these estimates have been debated. Cook (1976) suggests the Native American population was 100,000 in 1850; the U.S. Census of 1880 reports the Native American population as 20,385.

European Expansion

Jedediah Smith was the first to explore the Central Valley in 1828, but other fur-trapping expeditions soon followed. In the late 1820s, American trappers, as well as ones from the Hudson's Bay Company, began establishing camps in the Southern Maidu territory to trap beavers, an occupation that was said to have been peaceful (Wilson and Towne 1978). During this period, Native American populations were declining rapidly, due to an influx of Euro-American diseases. In 1832, a party of trappers from the Hudson's Bay Company, led by John Work, traveled down the Sacramento River unintentionally spreading a malaria epidemic to Native Californians. This epidemic wiped out much of the Southern Maidu, and survivors moved into the hills. Four years later, a smallpox epidemic decimated local populations, and it is estimated that up to 75 percent of the Southern Maidu population died (Cook 1955).

After the upheaval of the Bear Flag Revolt in 1846, John Sutter sent James Marshall to construct a sawmill in the Sierra Nevada foothills at Coloma in 1847 (Severson 1973). In January of 1848, Marshall discovered gold near the Southern Maidu village of "Culloma", (Coloma) which marked the start of the Gold Rush. The influx of miners and entrepreneurs increased the population of California, not including Native Californians, from 14,000 to 224,000 in just four years. This, in turn, stimulated commercial growth in the Sacramento Valley as eager entrepreneurs set up businesses to support the miners and mining operations. When the Gold Rush was over, many miners settled in the area and established farms, ranches, and lumber mills.

City of Folsom

The City of Folsom's history can be traced back to 1847 when William Leidesdorff traveled to the Sacramento area to see the 35,000 acres he had purchased years earlier. Following Leidesdorff's death in 1848, US Army Captain Joseph Folsom purchased the land from Leidesdorff's heirs and with the help of Theodore Judah established a town site near the Negro Bar mining spot on the American River. Naming the town Granite City, the original plans were for a railroad terminus although at that time there were no railroad trains in northern California. Folsom died before the first railroad arrived in 1856 but the name of the town was changed Granite City to "Folsom" in his honor.

The town soon began to prosper with new hotels and businesses but the real boost to local economy came with the establishment of Folsom Prison in 1880 and the Folsom Powerhouse in 1895. Plans for Folsom Prison moved forward when the wealthy, Robert Livermore family offered to donate land in exchange for prison labor to build a hydro-electric dam across the American River to power a sawmill. Although the sawmill was never established, the family soon realized that force of the dammed water could be used to provide power to Sacramento and in 1895, Folsom made history when the first long-distance transmission of electricity spanned 22 miles from Folsom to Sacramento.

As Folsom continued to grow in size, bridges were constructed across the American River including the Truss Bridge in 1895 and the Rainbow Bridge in 1919. In 1945, the City of Folsom was incorporated and in 1955, Folsom Dam was constructed to provide hydroelectric power and recreation for the burgeoning local population. In the mid-1960s, Johnny Cash made the City of Folsom famous with his hit single "Folsom Prison Blues" coinciding with a time when the city's economy was centered around the prison. A huge economic boom came to Folsom in 1984 when Intel opened its vast campus and established itself as the largest private employer in the Sacramento area. In the 1990s, Folsom grew rapidly as a suburb community to Sacramento and it continues to grow today as an upscale community.

Cultural Resources Records Search

On August 3, 2018, HELIX conducted a cultural resource records search at the NCIC to identify any resources, sites, or features within a 0.50-mile radius of the project boundaries. The search included current inventories of the National Register of Historic Places (NR), the California Register of Historical Resources (CRHR), the California Historical Landmarks listings (CHL), and the California Points of Historical Interest list. The California State Historic Property Data File (HPDF) for Sacramento County was also reviewed to determine if any local resources have been previously evaluated for historic significance within the search radius.

The results of the records search indicate that six precontact resources and seven historic-age resources have been recorded within the 0.50-mile search radius; none have been recorded within the project area. Details of the recorded resources are noted in **Table 7**. In addition, 14 reports are on file with the NCIC for the 0.50-mile radius (**Table 8**). None of the reports addressed the project area.

Table 7.
Resources Within 0.50-Mile Search Radius

Resource Number	Description	Recorded By/Date	Within Project Area?
P-31-000896	Multicomponent precontact site including a lithic scatter and a bedrock milling site	S.G Lindstrom and M. Panelli/1990	No
P-34-000440	Baldwin Reservoir Main Ditch	Sean Dexter and William Hoyle/1967	No
P-34-000439	Hinkle Creek Park Railroad Segment	Has been recorded since the late 1980's, but most recent recordation was by M. Nolte and J. Dougherty/2006	No
P-34-001677	Precontact midden site that includes bedrock mortar pits	P. Johnson and J. Johnson/1973	No
P-34-001505	Hinkle Creek #6, which includes two bedrock outcroppings	M. Nolte and J. Dougherty/2006	No
P-34-001501	Hinkle Creek #2, which is feature related to mining activities	M. Nolte and J. Dougherty/2006	No
P-34-001502	Hinkle Creek #3, which is a mining site	M. Nolte and J. Dougherty/2006	No
P-34-001503	Hinkle Creek #4, which includes bedrock outcroppings	M. Nolte and J. Dougherty/2006	No
P-34-001504	Hinkle Creek #5, which includes mortar cups in an outcrop of bedrocks near Hinkle Creek	M. Nolte and J. Dougherty/2006	No
P-34-002209	Hinkle Creek District #1, which includes two mining features in a historic district	PAR Environmental/2008	No
P-34-000911	Historic road	Eleanor H. Derr and Richard K. Derr/1993	No
P-34-000372	Railroad bed from 1860's	John H. Madsen/1977	No
P-34-000437	Bedrock mortar pits	J. Foster, D. Foster/1986	No

Table 8.
Reports Within 0.50-Mile Search Radius

Report Number/Title	Recorded By/Date	Includes Project Area?
S-000042/ An Intensive Archaeological Survey of Both Banks of Portions of Miners and Strap Ravines and the Linda Creek Drainage in Placer and Sacramento Counties	Jerald J. Johnson/1976	No
S-000155/ An Archaeological Survey of the Oak Avenue Parkway, Ashland Water Transmission Main, and Storage, Blue Ravine Water Transmission Main, and the Lew Howard Memorial Park for the City of Folsom, Sacramento County, California	Gregory Greenway/1977	No
S-002041/Draft Environmental Impact Report for Oak Avenue-North, General Plan Amendment, Community Plan Amendment, and Rezone	Laurie Warner/1993	No
S-004485/ Negative Cultural Resources Survey Report for the Ottoman Hills Project	Margaret Keefer/2003	No
S-006291/A Cultural Resources Study for the San Juan Suburban Water District Pipeline Project Initial Study	Eleanor H. Derr/1993	No
S-006522/Sprow Ranch Tentative Subdivision Map, Special Development Permit and Affordable Housing Plan (Cultural Resources)	G. Erwin/ 2005	No
S-006545/Archaeological Survey of Illiescu Tentative Parcel Map	PAR Environmental/2005	No
S-007056/Cultural Resources Inventory Hinkle Creek Center City of Folsom Sacramento County, CA	John W. Dougherty and Cindy L. Baker/2006	No
S-009055/Archaeological Reconnaissance, Spring 1973; Part 1: Proposed Penryn 115KV Transmission Line, Pat 2: Proposed Table Mt. -Rancho Seco-Tesla 500KW Transmission Line	Patti Johnson/ 1973	No
S-011163/Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SC15328B (Baldwin Dam), American River Canyon Drive, Folsom, Sacramento County, California	Carrie D. Wills/2012	No
S-011526/Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SC15328B (Baldwin Dam), American River Canyon Drive, Folsom, Sacramento County, California	Carrie D. Wills and Kathleen A. Crawford/2014	No
S-011573/Cultural Resources Assessment Manhole Access Roads Improvement Project, Folsom, Sacramento County, California	Ric Windmiller, Dana E. Supernowicz, Kenneth L. Finger/2014	No
S-011578/Direct APE Architectural Assessment for T-Mobile West, LLC Candidate SC15328B (Baldwin Dam), American River Canyon Drive, Folsom, Sacramento County, California	Wayne H. Bonner and Kathleen A. Crawford/2012	No
S-011887/Cultural Resources Constraints Report. Rio Oso-Gold Hill 230kV: Install top cage extension at structure 024/102. PM Number 30945905	Ben Elliot/2013	No

Source: NCIC Record Search August 3, 2018.

Native American Heritage Commission Sacred Lands File Search

On August 2, 2018, HELIX sent a letter to the NAHC to determine if any sacred sites listed on the SLF are located within the project area. On August 6, 2018 a response was received stating that the search was negative for Sacred Lands within the project area. Included with the response was a list of 10 Native Americans who may have additional information about the project area. On September 4, 2018, information request letters were sent to each of the Native Americans requesting any additional information they may have about the project area. As of the date of this Initial Study, no responses have been received.

Senate Bill (SB 18) Consultation Request

On August 17, 2018, consultation request letters were sent by the City of Folsom (City) to 10 Native American tribal representatives specified by the NAHC as wishing to consult with the City regarding this project under SB 18. The letters included a detailed project description and stated:

> "In conjunction with the proposed General Plan Amendment, and in accordance with Senate Bill 18 (SB 18), we contacted the California Native American Heritage Commission (NAHC) on August 2, 2018 to request a list of Native American tribes and individuals who may wish to consult with the City under SB 18. Your name and contact information was provided to us by the NAHC in its response, which we received on August 6, 2018.
>
> The purposes of consultation under SB 18 are to consult on the preservation of, or the mitigation of impacts to, Native American Cultural Places, as defined in Public Resources Code 5097.993, and to protect the confidentiality of information concerning the same. Tribal participation is, therefore, important and we are hereby notifying you of the opportunity to consult with the City under SB 18 during our consideration of the General Plan Amendment."

HELIX is assisting the City in keeping the administrative records of the SB 18 consultation efforts.

Pedestrian Survey

On August 27, 2018, HELIX conducted a pedestrian survey of the project area. The general topography is rolling hills within a completely built urban environment. The overall visibility was poor to non-existent as the entire project area was planted with various types of landscape elements. Survey transects were not utilized because of the poor visibility, instead, the very few open areas with no vegetation were examined.

No historical or precontact resources were discovered during the course of the survey.

Evaluation of Cultural Resources

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

Less Than Significant Impact. No precontact or historic resources have been previously recorded within the project area, and none were discovered during the pedestrian survey conducted by Senior Archaeologist, Carrie Wills. Therefore, project impacts to historic resources would be less than significant.

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

Less Than Significant Impact with Mitigation. In accordance with State CEQA Guidelines, HELIX has assessed the project area for the presence of archaeological resources. Since the entire project area has been subject to extensive excavation for plants, grass and irrigation systems, it is highly unlikely that any intact resources are present within the project area. Still, the potential exists for inadvertent discovery of archaeological resources during project construction. The implementation of standard archaeological resource construction mitigation (Mitigation Measure CUL-01) would ensure that potential impacts would be less than significant.

Mitigation Measure CUL-01: Avoid and minimize impacts to previously unknown archaeological resources.

In accordance with Section 15064.5 of the State CEQA Guidelines, if buried archaeological resources are discovered during demolition or construction, operations shall stop within 50 feet of the find, and a qualified archaeologist shall be consulted to determine whether the resource is significant and requires further study. The archaeologist shall make recommendations to the Lead Agency concerning appropriate measures that will be implemented to protect the resource(s), including but not limited to excavation and evaluation of the finds, consistent with Section 15064.5 of the CEQA Guidelines and 36 CFR 800. Cultural resources could consist of but are not limited to stone, bone, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. Any previously undiscovered resources found during demolition or construction within the project area should be recorded on appropriate Department of Parks and Recreation (DPR) 523 forms and evaluated for significance in terms of CEQA criteria.

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

Less Than Significant Impact with Mitigation. No human remains are known to exist within the project area nor were there any indications of human remains found during the field survey. However, there is always the possibility that subsurface construction activities associated with the proposed project, such as trenching and grading, could potentially damage or destroy previously undiscovered human remains. This is a potentially significant impact. However, if human remains are discovered, implementation of Mitigation Measure CUL-02 would reduce this potential impact to a less than significant level.

Mitigation Measure CUL-02: Avoid and minimize impacts related to accidental discovery of human remains.

If human remains are encountered during excavations associated with this project, all work will halt within 50 feet of the find, and the County Coroner will be notified (per Section 7050.5 of the California Health and Safety Code and Section 15064.5 of the State CEQA Guidelines). If the coroner determines that the remains are of Native American origin, he/she will contact the NAHC. The NAHC will be responsible for designating the most likely descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Public Resources Code Section 5097.98. The MLD will make his/her recommendations within 48 hours of their notification by the NAHC.

VI. ENERGY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	■	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	■

An Energy Technical Memorandum was prepared for the proposed project to analyze the proposed energy efficient and sustainable project features and calculate the estimated reduction in air quality and GHG emissions from implementation of the proposed features. The memorandum and supporting information are included as **Appendix E** (De Novo Planning 2019).

Environmental Setting

Electricity

California's electricity needs are satisfied by a variety of entities, including investor-owned utilities, publicly owned utilities, electric service providers and community choice aggregators. In 2017, the California power mix totaled 292,039 gigawatt hours (GWh). In-state generation accounted for 206,336 GWh, or 71 percent, of the state's power mix. The remaining electricity came from out-of-state imports (CEC 2018). **Table 9** provides a summary of California's electricity sources as of 2017.

Table 9. California Electricity Sources 2017

Fuel Type	Percent of California Power
Coal	4.13%
Large Hydro	14.72%
Natural Gas	33.67%
Nuclear	9.08%
Oil	0.01%
Other (Petroleum Coke/Waste Heat)	0.14%
Renewables	29%

Source: CEC 2018

The project applicant proposes to install a solar photovoltaic system on the rooftops of the proposed clubhouse/leasing office/fitness center building and adjacent apartment building (Building 1). The solar energy system would be approximately 70,000 kilowatt direct current and would generate 100,000 kilowatt-hours annually.

Natural Gas

Natural gas provides the largest portion of the total in-state capacity and electricity generation in California, with nearly 50 percent of the natural gas burned in California used for electricity generation in 2017. Much of the remainder was consumed in the residential, industrial, and commercial sectors for uses such as cooking, space heating, and as an alternative transportation fuel. In 2012, total natural gas demand in California for industrial, residential, commercial, and electric power generation was 2,313 billion cubic feet per year (bcf/year), up from 2,196 bcf/year in 2010 (CEC 2017a).

Transportation Fuels

Transportation accounts for a major portion of California's energy budget. Automobiles and trucks consume gasoline and diesel fuel, which are nonrenewable energy products derived from crude oil. Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles (SUVs). In 2015, 15.1 billion gallons of gasoline were sold in California (CEC 2017b). Diesel fuel is the second most consumed fuel in California, used by heavy-duty trucks, delivery vehicles, buses, trains, ships, boats, and farm and construction equipment. In 2015, 4.2 billion gallons of diesel were sold in California (CEC 2017c).

The applicant proposes to install a minimum of three electric vehicle charging stations at the project site, consistent with the California Green Buildings Standard Code's provisions for electric vehicle charging infrastructure. In addition, the project applicant proposes to implement electric vehicle car sharing at the project site.

Regulatory Framework

State Regulations

California Building Standards Code (California Code of Regulations, Title 24)

The 2016 Building Energy Efficiency Standards, comprising Title 24, Parts 1 and 6, of the California Code of Regulations, is mandatory statewide. Local government agencies may adopt and enforce energy efficiency standards for newly constructed buildings, additions, alterations, and repairs provided the California Energy Commission finds that the standards will require buildings to consume no more energy than permitted by Title 24, Part 6. Such local standards may include adopting the requirements of Title 24, Part 6 before their effective date, requiring additional energy conservation measures, or setting more stricter energy budgets.

Local Regulations

City of Folsom General Plan

The City of Folsom 2035 General Plan Utilities Element provides the following goals and policies relative to energy.

Goal PFS 8.1: Provide for the energy and telecommunications needs of Folsom and decrease the dependence on nonrenewable energy sources through energy conservation, efficiency, and renewable resource strategies now and in the future.

- PFS 8.1.3 Renewable Energy: Promote efforts to increase the use of renewable energy resources such as wind, solar, hydropower, and biomass both in the community and in City operations, where feasible.

- PFS 8.1.4 Regional Energy Conservation: Partner with neighboring jurisdictions and local energy utilities (e.g., SMUD and PG&E) to develop, maintain, and implement energy conservation programs.

- PFS 8.1.5 PACE Program: Assist in implementing the Property Assessed Clean Energy (PACE) financing programs to provide residential and commercial property owners with energy efficiency and renewable energy financing opportunities.

- PFS 8.1.6 Energy-Efficient Lighting: Reduce the energy required to light Folsom's parks and public facilities by employing energy-efficient lighting technology.

- PFS 8.1.7 Energy Conservation in City Operations: Strive to achieve an overall 20 percent reduction in City facility energy usage by continuing to install energy efficiency upgrades in City facilities (buildings, parks, and infrastructure) and implementing programs to measure and track energy usage in City facilities.

Folsom Municipal Code

Chapter 14.19 of the City of Folsom Municipal Code, entitled ENERGY CODE, adopts by reference the California Energy Code, 2010 Edition, published as Part 6, Title 24, California Code of Regulations to require energy efficiency standards for structures.

Evaluation of Energy

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. Project construction would require the use of construction equipment for clearing and grubbing, grading, hauling, and building activities, as well as construction workers and vendors traveling to and from the project site. Construction equipment requires gasoline, diesel, and potentially other fuel sources to operate.

Construction of the project would incorporate on-site energy conservation features. The following practices would be implemented during project construction to reduce waste and energy consumption:

- Follow maintenance schedules to maintain equipment in optimal working order and rated energy efficiency, which would include, but not be limited to, regular replacement of filters, cleaning of compressor coils, burner tune-ups, lubrication of pumps and motors, proper vehicle maintenance, etc.;

- Reduce on-site vehicle idling; and,

- In accordance with CALGreen criteria as well as state and local laws, at least 50 percent of on-site construction waste and ongoing operational waste would be diverted from landfills through reuse and recycling.

The project's construction-related energy usage would not represent a significant demand on energy resources because it is temporary in nature. Additionally, with implementation of the low impact design features, project construction would avoid or reduce inefficient, wasteful, and unnecessary consumption of energy. Therefore, the project's construction-phase energy impacts would be less than significant.

Operation of the proposed project would increase the consumption of energy related to electricity, natural gas, water, and wastewater. However, implementation of low impact design, energy efficient, and sustainable features would also reduce the energy usage. As discussed above under Environmental Setting, the project applicant proposes to install a solar photovoltaic system on the rooftops of the proposed clubhouse/leasing office/fitness center building and adjacent apartment building (Building 1). The proposed system is expected to generate sufficient energy to offset 100 percent of the energy requirements for the common area amenities, including the clubhouse, pool, and all common area lighting needs on the property. To the extent feasible, the applicant proposes to engage installers and manufacturers located in the Greater Sacramento region for the solar system. Installation of the three electric vehicle charging stations is expected to reduce project-wide transportation GHG emissions by approximately 0.06 percent for ROG, 0.27 percent for NOx, 0.48 percent for SO_2, 0.49 percent for PM_{10}, 0.46 percent for $PM_{2.5}$, 0.47 percent for CO_2, and 0.36 percent for CO_2e (See Appendix E for detailed analysis). Implementation of the electric vehicle car sharing program would contribute directly to gasoline displacement, reduce vehicle miles traveled, car ownership (parking spaces), and GHG emissions.

Additionally, adequate energy facilities are already located within and adjacent to the site serving the existing uses. Thus, the incremental increase associated with implementation of the project would not require the construction of new energy facilities or sources of energy that would not otherwise be needed to serve the region. It is anticipated that these services would be provided from existing utilities on site, or from extensions from existing facilities immediately abutting the site. Therefore, energy impacts from project operation would be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. The proposed project would not conflict with or obstruct a state or local plan for renewable energy efficiency. The project would conform to all applicable state, federal, and local laws and codes. Therefore, the proposed project would have no impact.

VII. GEOLOGY AND SOILS

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

The Geology and Soils section of this document is based upon the approach, methodology, results, and conclusions outlined in the project-specific Geotechnical Exploration prepared by ENGEO Incorporated (ENGEO 2017). The geotechnical report is included as **Appendix F**.

Environmental Setting

Geology

The project site is located in the foothills of the Sierra Nevada geomorphic province. The Sierra Nevada Mountains are a fault block range trending generally north-northwest along the eastern portion of California. The Sierra Nevada fault block tilts to the west displaying a steep eastern slope and a gentle western slope. Generally, the western Sierra Nevada slope contains large river systems, which have led to the development of deeply incised canyons and intact ridges. The Sierra Nevada basement bedrock is dominated by Paleozoic and Mesozoic age plutonic, metasedimentary, meta-volcanics, and metamorphic rocks. In some locations, overlaying the basement rock are Tertiary volcanic deposits.

The site geology is mapped as Tertiary Mehrten Formation by the California Geological Survey (CGS) (Gutierrez 2011 in ENGEO 2017). Mehrten Formation is composed of two units, Mehrten Breccia and Mehrten Conglomerate, derived from ancient Sierra Nevada volcanic activity. Mehrten Breccia is a nearly horizontal series of pyroclastic mudflows that consist of angular andesitic cobbles and boulders surrounded by heavily cemented tuffaceous siltstone. Mehrten Conglomerate typically underlies the Breccia unit and contains primarily andesitic rounded to subrounded cobbles in a moderately cemented siltstone-sandstone matrix. The conglomerate can contain discrete to massive beds of volcanic derived siltstone and sandstone. During the geotechnical exploration, Mehrten Conglomerate and deposits indicative of the younger Pliocene Laguna Formation were encountered. Laguna Formation consists of interbedded alluvial gravel, sand, and silt dominated by metamorphic and quartz grains sourced from the Sierra Nevada.

The project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, and no known surface expression of active faults exists within the site.

The project site does lie within a seismically active region, as California has numerous faults that are considered active. An active fault is defined by the State Mining and Geology Board as one that has had surface displacement within Holocene time (about the last 11,000 years) (Hart 1997 in ENGEO 2017). **Table 10** below summarizes the distances to mapped, active faults and estimated maximum moment magnitudes within approximately 50 miles using the USGS Spatial Query tool, which is based on the 2008 USGS National Seismic Hazard Maps that were used to develop the 2016 California Building Code (CBC) seismic design parameters.

Table 10. Active Faults Capable of Producing Significant Ground Shaking at the Project Site

Fault Name	Distance from Site (Miles)	Direction from Site	Maximum Moment Magnitude
Great Valley 4a, Trout Creek	45	Southwest	6.6
Great Valley 3, Mysterious Ridge	46	Southwest	7.1
Great Valley 4b, Gordon Valley	48	Southwest	6.8

Source: ENGEO 2017.

Subsurface Conditions

ENGEO observed the excavation of eight test pits at the project site on June 8 and 13, 2017. The maximum depth penetrated by the test pits was approximately 10.5 feet. Seven of the eight test pits encountered 1.5 to 4.5 feet of fill from the ground surface down. The fill generally consisted of clayey sand and gravel with cobble, likely associated with previous grading of the existing Canyon Terrace Apartment development.

The test pits located in the northwestern portion of the project site encountered soil consistent with the Laguna Formation. The Laguna Formation soils generally consisted of cemented sandy silt and silty sand with minor amounts of fine gravel. One test pit in the northwestern portion of the project site encountered fat clay from a depth of approximately 4.5 to 7 feet, and laboratory expansion index testing indicated the clay has high expansion potential.

The test pits located on the southeastern portion of the site encountered Mehrten Conglomerate, which consisted of well-rounded cobble and gravel in a matrix of sandy clay and clayey sand. Some of these test pits encountered boulders up to approximately 16 inches in maximum dimension.

City Regulation of Geology and Soils

The City of Folsom regulates the effects of soils and geological constraints on urban development primarily through enforcement of the California Building Code, which requires the implementation of engineering solutions for constraints to urban development posed by slopes, soils, and geology. The City as additionally adopted a Grading Code (Folsom Municipal Code Section 14.29) that regulates grading citywide to control erosion, storm water drainage, revegetation, and ground movement.

Evaluation of Geology and Soils

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

  i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. There are no known active faults crossing the property, and the project site is not located within an Earthquake Fault Special Study Zone. Therefore, ground rupture is unlikely at the subject property, and impacts would be less than significant.

  ii. Strong seismic ground shaking?

Less Than Significant Impact. An earthquake of moderate to high magnitude generated within the region could cause considerable ground shaking at the site. To minimize potential ground shaking effects, structures should be designed in accordance with the 2016 California Building Code (CBC) requirements, as a minimum. Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures built in accordance with the 2016 CBC would be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage (ENGEO 2017). Conformance to the current building code recommendations would minimize potential ground shaking impacts to a less-than-significant level.

  iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. The sands that were encountered on the project site during the geotechnical exploration were generally cemented. In addition, groundwater was not encountered to the terminal depth of the test pits (ENGEO 2017). Therefore, the potential for liquefaction at the project site is low during seismic shaking, and impacts would be less than significant.

iv. Landslides?

Less Than Significant Impact. Site topography slopes downward from American River Canyon Drive on the east side of the site towards the west. The slopes are steepest near American River Canyon Drive with another steep portion towards the center of the site. Project site grades range from an elevation of 345 feet along the eastern edge of the project site to an elevation of 275 feet at the southwest corner. Based on topographic and lithologic data, the risk of landslides at the project site is considered low to negligible (ENGEO 2017). Therefore, potential impacts from the construction of the proposed project would be less than significant.

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

Less Than Significant Impact. The 2016 CBC and the City's Grading Code and standard conditions for project approval contain requirements to minimize or avoid potential effects from water erosion hazards. As a condition of approval, prior to the issuance of a grading or building permit, the City would require the applicant to prepare a soils report, a detailed grading plan, and an erosion control plan by a qualified and licensed engineer. The soils report would identify soil hazards, including potential impacts from erosion. The City would be required to review and approve the erosion control plan based on the State of California Department of Conservation's "Erosion and Control Handbook." The erosion control plan would identify protective measures to be implemented during excavation, temporary stockpiling, disposal, and revegetation activities.

Further, because the project would result in one or more acre of ground disturbance, the project applicant would be required to obtain a General Construction Activity Stormwater Permit and a NPDES permit from the State Water Resources Control Board (SWRCB). Use of the permit requires the preparation of a SWPPP for approval by the SWRCB. The plan would contain best management practices to reduce potential impacts to water quality during construction of the project. Compliance with the City's regulations, the 2016 CBC requirements, and implementation of the SWPPP would reduce potential impacts related to soil erosion from water to less than significant.

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

Less Than Significant Impact. Based on topographic and lithologic data, the risk of regional subsidence or uplift, soil liquefaction, lateral spreading, and landslides is considered low to negligible at the project site (ENGEO 2017). Therefore, potential impacts from project implementation would be less than significant.

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

Less Than Significant Impact. Highly expansive soil was encountered in one of the test pits and potentially expansive clays were encountered near the surface of four test pits during the geotechnical exploration. Laboratory testing indicated that these soils exhibit low to high shrink/swell potential with variations in moisture content. Expansive soils change in volume with changes in moisture, and can shrink or swell, causing heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations.

To reduce the potential for damage to the planned buildings, the upper 18 inches of the building pad should extend at least 10 feet laterally beyond the building areas and be underlain by non-expansive fill. The geotechnical exploration provided construction recommendations that would reduce the swell potential of the clay by compacting the soil at a high moisture content and controlling the amount of compaction. Following the recommendations of the geotechnical exploration would minimize potential impacts from project construction on expansive and potentially expansive soil, and impacts would be less than significant.

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

No Impact. The proposed sewer system would connect to the public sewer system in the northwest corner of the property and would not require septic systems or an alternative waste disposal system. No impact would occur.

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

No Impact. The proposed project area is not located in an area that is considered likely to have paleontological resources present. Paleontological resources (fossils) are the remains and/or traces of prehistoric life. Fossils are typically preserved in layered sedimentary rocks, and the distribution of fossils is a result of the sedimentary history of the geologic units within which they occur. Vertebrate fossils have been documented in nine different locations within Sacramento County. The finds encompass several hundred specimens, all within the Riverbank Formation. Because of the large number of vertebrate fossils that have been recovered from the Riverbank Formation from Sacramento County and throughout the Central Valley, this formation is considered to have high sensitivity under criteria established by the Society of Vertebrate Paleontology (1995). Likewise, the Mehrten and Ione formations located within the 2035 Plan Evaluation Area may be considered to be sensitive for the presence of paleontological resources. Other geologic formations found in the 2035 Folsom Plan Evaluation Area, such as the Laguna Formation, mine/dredge tailings, and Holocene alluvium along local drainage features, would not be expected to contain fossils.

Fossils of plants, animals, or other organisms of paleontological significance have not been discovered within the project area, nor has the project area been identified as being within any of the areas mentioned above where such discoveries are likely. Therefore, the project would not result in impacts to paleontological resources or unique geologic features.

VIII. GREENHOUSE GAS EMISSIONS

GREENHOUSE GAS EMISSIONS:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	■	☐

The Greenhouse Gas Emissions section of this document is based upon the approach, methodology, results, and conclusions outlined in the project-specific Air Quality and Greenhouse Gas Analysis prepared by De Novo Planning Group (De Novo 2019). The Air Quality and Greenhouse Gas Technical Report is included as **Appendix B**.

Environmental Setting

Climate change refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. Climate change may result from natural factors, natural processes, and human activities that change the composition of the atmosphere and alter the surface and features of the land. Significant changes in global climate patterns have recently been associated with global warming, which is an average increase in the temperature of the atmosphere near the Earth's surface; this is attributed to an accumulation of greenhouse gas (GHG) emissions in the atmosphere. GHGs trap heat in the atmosphere which, in turn, increases the Earth's surface temperature. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through fossil fuel combustion in conjunction with other human activities appears to be closely associated with global warming.

GHGs, as defined under California's Assembly Bill 32 (AB 32), include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). General discussions on climate change often include water vapor, ozone, and aerosols in the GHG category. Water vapor and atmospheric ozone are not gases that are formed directly in the construction or operation of development projects, nor can they be controlled in these projects. Aerosols are not gases. While these elements have a role in climate change, they are not considered by either regulatory bodies, such as CARB, or climate change groups, such as the Climate Registry, as gases to be reported or analyzed for control. Therefore, no further discussion of water vapor, ozone, or aerosols is provided.

GHGs vary widely in the power of their climatic effects; therefore, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, since CH_4 and N_2O are approximately 25 and 298 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO_2 has a GWP of 1). Carbon dioxide equivalent (CO_2e) is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_2e. The atmospheric lifetime and GWP of selected GHGs are summarized in **Table 11.**

Table 11. Global Warming Potentials and Atmospheric Lifetimes

GREENHOUSE GAS	ATMOSPHERIC LIFETIME (years)	GLOBAL WARMING POTENTIAL (100-year time horizon)
Carbon Dioxide (CO_2)	50.0–200.0	1
Methane (CH_4)	12.0	25
Nitrous Oxide (N_2O)	114.0	298
HFC-134a	14	1,430
PFC: Tetrafluoromethane (CF_4)	50,000.0	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000.0	12,200
Sulfur Hexafluoride (SF_6)	3,200.0	22,800

HFC: hydrofluorocarbons; PFC: perfluorocarbons.
Source: IPCC 2007.

Regulatory Framework Relating to Greenhouse Gas Emissions

AB 32, the California Global Warming Solutions Act of 2006, recognizes that California is a source of substantial amounts of GHG emissions. The statute states that:

> *Global warming poses a serious threat to the economic wellbeing, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.*

In order to help avert these potential consequences, AB 32 established a State goal of reducing GHG emissions to 1990 levels by the year 2020, which is a reduction of approximately 16 percent from forecasted emission levels, with further reductions to follow. In addition, AB 32 required CARB develop a Scoping Plan to help the state achieve the targeted GHG reductions. In 2015, Executive Order (EO) B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28 nation European Union. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in AB 32. As a follow-up to AB 32 and in response to EO-B-30-15, Senate Bill (SB) 32 was passed by the California legislature in 2016 to codify the EO's California GHG emission reduction target of 40 percent below 1990 levels by 2030.

On December 11, 2008, the CARB adopted the Scoping Plan (CARB 2008) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. Measures applicable to development projects include those related to energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategy. Relative to transportation, the Scoping Plan includes nine measures or recommended actions related to reducing vehicle miles traveled and vehicle GHGs through fuel and efficiency measures. These measures would be implemented statewide rather than on a project-by-project basis.

In response to EO B-30-15 and SB 32, all state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the Scoping Plan to reflect the 2030 target and, therefore, is moving forward with the update process (CARB 2014). The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue driving down emissions. CARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target set by EO B-30-15 and codified by SB 32. The 2017 Climate Change Scoping Plan Update, Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target, was adopted in December 2017. The Scoping Plan Update establishes a proposed framework for California to meet a 40 percent reduction in GHGs by 2030 compared to 1990 levels (CARB 2017b).

Evaluation of Greenhouse Gas Emissions

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

Less Than Significant Impact.

Construction

Construction GHG emissions are generated by vehicle engine exhaust from construction equipment, on-road hauling trucks, vendor trips, and worker commuting trips. Construction GHG emissions were calculated by using CalEEMod Version 2016.3.2; the model is described in Section III, Air Quality. Input details and output are provided in Appendix B. The results are output in metric tons (MT) of CO_2e for each year of construction. The estimated construction GHG emissions for the project are shown in **Table 12**. The estimated increase in construction GHG emissions would be substantially below the SMAQMD construction phase threshold of 1,100 MT CO_2e (SMAQMD 2015). Therefore, the project would generate less than significant levels of GHGs during construction and impacts would be less than significant.

Table 12. Estimated Annual GHG Emissions from Project Construction

YEAR	EMISSIONS (MT CO_2e)
2017	104
2018	344
SMAQMD Threshold	*1,100*
Threshold Exceeded?	**No**

Source of emissions: De Novo 2019 (Appendix B).
Source of threshold: SMAQMD 2015.

Operation

Operational GHG emissions for the proposed project are estimated by including purchased electricity; natural gas use for space and water heating; the electricity embodied in water consumption; the energy associated with solid waste disposal; and mobile source emissions. CalEEMod incorporates local energy emission factors and mitigation measures based on the California Air Pollution Control Officers Association's (CAPCOA's) publication Quantifying Greenhouse Gas Mitigation Measures (CAPCOA 2010) and the California Climate Action Registry's (CCAR's) General Reporting Protocol (CCAR 2009). CalEEMod data sheets and details of the electricity and water use calculations are included in Appendix B. The results of the calculations are shown in **Table 13**. As shown therein, the total operational GHG emissions at buildout of the proposed project are estimated at 459 MT CO_2e per year, which is less than the SMAQMD threshold of significance. Therefore, the project's impacts related to operational GHG emissions would be less than significant.

Table 13. Estimated Annual GHG Emissions from Project Operation

SOURCE	EMISSIONS (MT CO_2e)
Area	2
Energy	219
Mobile	198
Waste	22
Water	17
Total	**459**
SMAQMD Threshold	*1,100*
Threshold Exceeded?	**No**

Source of emissions: De Novo 2019 (Appendix B).
Source of threshold: SMAQMD 2015.
Note: totals may not sum due to rounding.

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

Less Than Significant Impact. In accordance with SMAQMD's Guide, project emissions should be evaluated with respect to consistency with the following plans that have been adopted to reduce GHG emissions:

1. AB 32 and the Scoping Plan; and,
2. The Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS).

The SMAQMD's recommended thresholds and mitigation measures were developed to show consistency with AB 32 and the Scoping Plan. As discussed in response to Question VII(a) above, project generated GHG emissions would be below the SMAQMD significance threshold. Therefore, the proposed project would be consistent with AB 32 and the Scoping Plan.

The MTP/SCS relies on information from the Sacramento Area Council of Governments (SACOG), including projected growth in the County. The SACOG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County. As such, projects that propose development that is consistent with the growth anticipated by SACOG would be consistent with the MTP/SCS. The project is a multi-family medium density residential development that does not extend infrastructure to previously undeveloped areas, nor is the project of a magnitude, either in terms of employment (e.g., construction and leasing/operations) or number of available units, that would cause significant numbers of people to relocate to the area solely for the purpose of being close to the site. Based on these considerations, the project would not induce population growth in the community that exceeds the levels anticipated in plans adopted by the County. Therefore, the project would not exceed SACOG's population, housing, or employment projections. The proposed project is consistent with the MTP/SCS.

IX. HAZARDS AND HAZARDOUS MATERIALS

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

Environmental Setting

The project site is currently developed and includes the demolition of a small community building, pool area, and two tennis courts within the existing Canyon Terrace Apartment community. The project site has no known past land uses associated with potentially hazardous sites.

The schools located nearest to the project site are: Odyssey Learning Center, located approximately 350 feet west of the project site and Ottomon Way Elementary School, located approximately 0.3-miles west of the project site.

The following databases were reviewed for the project site and surrounding area to identify potential hazardous contamination sites: the EPA's Envirofacts online database (EPA 2018a); California Department of Toxic Substance Control's EnviroStor online database (DTSC 2018); and the EPA's

Superfund National Priorities List (EPA 2018b). Based on the results of the databases reviewed, the project site is not listed as a hazardous waste site.

Federal and state laws include provisions for the safe handling of hazardous substances. The federal Occupational Safety and Health Administration (OSHA) administers requirements to ensure worker safety. Construction activity must also be in compliance with the California OSHA regulations (Occupational Safety and Health Act of 1970).

Evaluation of Hazards and Hazardous Materials

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

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

Less Than Significant Impact. No existing hazardous materials have been identified on the project site, and the site has no known history of past land uses associated with potentially hazardous sites. Demolition and construction of the proposed project would result in an increase in the generation, storage, and disposal of hazardous wastes. During project demolition and construction, oil, gasoline, diesel fuel, paints, solvents, and other hazardous materials may be used. If spilled, these substances could pose a risk to the environment and to human health.

Following demolition and construction, household hazardous materials such as various cleansers, paints, solvents, pesticides, pool chemicals, and automobile fluids would be expected to be used. The routine transport, use, and disposal of hazardous materials are subject to local, state, and federal regulations to minimize risk and exposure.

Further, the City has set forth its hazardous materials goals and policies in the Hazardous Materials Element of the General Plan. The preventative policies protect the health and welfare of residents of Folsom through management and regulation of hazardous materials. Consequently, use of the listed materials above for their intended purpose would not pose a significant risk to the public or environment, and impacts would be less than significant for questions a) and b).

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

Less Than Significant with Mitigation. The project site is located approximately 300 feet east of the Odyssey Learning Center and approximately 0.3-mile east of Ottomon Way Elementary School. Although no known hazardous materials are present on the project site, the proposed project involves the demolition of a small community building, pool area, and tennis courts that were constructed between 1980 and 1993 (NETRONLINE 2018), and it is assumed asbestos-containing materials and lead-based paint are present. Exposure pathways by which receptors could be exposed to hazardous materials include: 1) direct contact with hazardous materials; 2) incidental ingestion of hazardous materials (e.g., if workers fail to wash their hands before eating, drinking, or smoking); and 3) inhalation of airborne dust released from dried hazardous materials. This would be a potentially significant impact. Mitigation Measure HAZ-01 would be implemented to reduce potential impacts associated with the handling of asbestos and lead-based paint materials within one-quarter mile of a school to a less than significant level.

Mitigation Measure HAZ-01: Conduct Asbestos and Lead-Based Paint Surveys and Testing

Prior to initiating demolition activities, the project applicant shall retain a qualified inspector to survey the buildings and structures to be demolished for hazardous materials. If hazardous materials are found to be present, the project applicant shall have a licensed contractor properly remove and dispose of these hazardous materials in accordance with federal, state, and local laws.

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

No Impact. The project site is not listed as a hazardous waste site on Envirofacts (EPA 2018a), EnviroStor (DTSC 2018), or the EPA's Superfund National Priorities List (EPA 2018b). Therefore, project implementation would have no hazardous impact to the public or environment.

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

No Impact. The project site is not located within an Airport Land Use Plan area, and no public or private airfields are within two miles of the project site. Therefore, the proposed project would not result in a safety hazard or excessive noise for people residing or working in the project area, and no impact would occur.

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

Less Than Significant Impact. Consistent with the City's Multi-Hazard Emergency Management Plan, the City of Folsom maintains pre-designated emergency evacuation routes along major streets and thoroughfares (City of Folsom 2005). The proposed project would not modify any pre-designated emergency evacuation route or preclude their continued use as an emergency evacuation route. Emergency vehicle access would be maintained throughout the project site to meet the Fire Department standards for fire truck maneuvering, location of fire truck to fight a fire, rescue access to the units, and fire hose access to all sides of the building. Therefore, project impacts to the City's adopted emergency plans would be less than significant.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less Than Significant Impact. The project site is located in an urbanized area in the City of Folsom and is provided urban levels of fire protection by the City. Additionally, on-site fire water would connect to the City of Folsom water supply on American River Canyon Drive at the existing north and south driveways and would include two double detector check valves (one on each end of the looped system), providing fire water to the proposed hydrants, exterior Fire Department Connection assemblies, and fire riser rooms. Therefore, the proposed project would not expose people or structures to a significant risk of loss due to wildland fires, and impacts would be less than significant.

X. HYDROLOGY AND WATER QUALITY

HYDROLOGY AND WATER QUALITY:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	■	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	■	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site?	☐	☐	■	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off- site?	☐	☐	■	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff?	☐	☐	■	☐
iv. Impede or redirect flood flows?	☐	☐	■	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	■	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	■	☐

Environmental Setting

The regional setting of the project site is primarily characterized by residential development with a commercial shopping center immediately adjacent to the north. The project site gently slopes downward from both east to west and from south to north. Precipitation is the only apparent source of surface water as there are no wetlands or streams located on the project site.

The on-site storm drain system for the proposed project would conform to City of Folsom standards and include design features consistent with the Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Low Impact Design features, including a combination of bio-retention swales, basins, and planters, have been identified for each drainage management area within the proposed expansion. Additionally, all new proposed trash enclosures would include a drain that connects to the sanitary sewer system in conformance with Storm Water Quality Guidance. The project would incorporate standard BMP to maintain existing water quality in accordance with City regulations.

Construction of the proposed project would disturb more than one acre of soil and would conform to the California General Construction Permit, and a SWPPP would be prepared for the proposed project.

Federal Emergency Management Agency (FEMA) flood insurance rate maps were reviewed for the project's proximity to a 100-year floodplain. The proposed project is on FEMA panel 06067C0104H, effective August 16, 2012. The project site is not located within a 100-year floodplain (FEMA 2018).

The site is not located in an area of important groundwater recharge. Domestic water in the City is provided solely by surface water sources, and the City is the purveyor of water to the project area.

Regulatory Framework Relating to Hydrology and Water Quality

The City is a signatory to the Sacramento Countywide NPDES permit for the control of pollutants in urban stormwater. Since 1990, the City has been a partner in the Sacramento Stormwater Quality Partnership, along with the County of Sacramento and the Cities of Sacramento, Citrus Heights, Elk Grove, Galt, and Rancho Cordova. These agencies are implementing a comprehensive program involving public outreach, construction and industrial controls (i.e., BMP), water quality monitoring, and other activities designed to protect area creeks and rivers. This program would be unchanged by the proposed project, and the project would be required to implement all appropriate program requirements.

In addition to these activities, the City maintains the following requirements and programs to reduce the potential impacts of urban development on stormwater quality and quantity, erosion and sediment control, flood protection, and water use. These regulations and requirements would be unchanged by the proposed project.

Standard construction conditions required by the City include:

- *Water Pollution* – requires compliance with City water pollution regulations, including NPDES provisions.
- *Clearing and Grubbing* – specifies protection standards for signs, mailboxes, underground structures, drainage facilities, sprinklers and lights, trees and shrubbery, and fencing. Also requires the preparation of a SWPPP to control erosion and siltation of receiving waters.
- *Reseeding* – specifies seed mixes and methods for reseeding of graded areas.

Additionally, the City enforces the following requirements of the Folsom Municipal Code as presented in **Table 14**.

Table 14. City of Folsom Municipal Code Sections Regulating the Effects on Hydrology and Water Quality from Urban Development

CODE SECTION	CODE NAME	EFFECT OF CODE
8.70	Stormwater Management and Discharge Control	Establishes conditions and requirements for the discharge of urban pollutants and sediments to the storm-drainage system; requires preparation and implementation of Stormwater Pollution Prevention Plans.
13.26	Water Conservation	Prohibits the wasteful use of water; establishes sustainable landscape requirements; defines water use restrictions.
14.20	Green Building Standards Code	Adopts by reference the California Green Building Standards Code (CALGreen Code), 2016 Edition, excluding Appendix Chapters A4, A5, and A6.1 published as Part 11, Title 24, C.C.R. Purpose of the Folsom Green Building Standards Code is to promote and require the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices.
14.29	Grading Code	Requires a grading permit prior to the initiation of any grading, excavation, fill or dredging; establishes standards, conditions, and requirements for grading, erosion control, stormwater drainage, and revegetation.
14.32	Flood Damage Prevention	Restricts or prohibits uses that cause water or erosion hazards, or that result in damaging increases in erosion or in flood heights; requires that uses vulnerable to floods be protected against flood damage; controls the modification of floodways; regulates activities that may increase flood damage or that could divert floodwaters.
14.33	Hillside Development Standards	Regulates urban development on hillsides and ridges to protect property against losses from erosion, ground movement and flooding; to protect significant natural features; and to provide for functional and visually pleasing development of the city's hillsides by establishing procedures and standards for the siting and design of physical improvements and site grading.

Source: City of Folsom 2018b.

Evaluation of Hydrology and Water Quality

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site?
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off- site?
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff?
iv. Impede or redirect flood flows?

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. Ground disturbing activities associated with construction of the proposed project include demolition of a small community building, pool area, and two tennis courts and clearing and grading of the project site post-demolition. These ground disturbing activities could expose soil to erosion and may result in the transport of sediments which could adversely affect water quality. However, the proposed project would disturb more than one acre of soil and be subject to NPDES permit conditions which include the preparation of a SWPPP. Compliance with various State and local water quality standards would ensure the proposed project would not violate water quality standards or waste discharge permits, or otherwise substantially degrade water quality. The proposed project would also be subject to all of the City's standard code requirements, including conditions for the discharge of urban pollutants and sediments to the storm drainage system, and restrictions on uses that cause water or erosion hazards.

Construction of the proposed project would increase impervious services which may result in an increase in the total volume and peak discharges of stormwater runoff and could potentially degrade water quality associated with urban runoff. However, as mentioned in the Environmental Setting section, the on-site storm drain design would conform to City of Folsom standards and include design features consistent with the Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Low Impact Design features, including a combination of bio-retention swales, basins, and planters, have been identified for each drainage management area within the proposed expansion.

Further, prior to the issuance of grading and building permits, the applicant would be required to submit a drainage plan to the City that shows how project BMP capture storm water runoff during project operations. Compliance with these requirements would ensure that water quality standards and discharge requirements would not be violated, and water quality in the project area is protected.

Therefore, impacts would be less than significant, and no mitigation would be necessary for questions a), c), and e).

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. Implementation of the proposed project would not result in the use of groundwater supplies because domestic water in the City is provided solely from surface water sources from the Folsom Reservoir. While the proposed project would result in additional impervious surfaces on the site that could affect groundwater recharge, the site is not known to be important to groundwater recharge. Further, because the proposed project would not rely on groundwater for domestic water and irrigation purposes, and the site is not an important area of groundwater recharge, the proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge that would result in a net deficit in aquifer volume or a lowering of the local groundwater table. Therefore, impacts to groundwater supplies and recharge would be less than significant.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant Impact. The project site is not located within a 100-year floodplain, and based on topographic and lithologic data, the risk of seiches, tsunami, flooding, landslides, or mudflow at the project site is considered low to negligible (ENGEO 2017). Therefore, potential impacts would be less than significant.

XI. LAND USE AND PLANNING

LAND USE AND PLANNING:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	■	☐
b) Cause significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	■	☐

Environmental Setting

Land use in the project area is regulated by the City of Folsom through the various plans and ordinances adopted by the City. These include the City of Folsom General Plan and the City of Folsom Municipal Code, including the Zoning Code. The project site is designated as Multi-Family Low Density (MLD) in the City of Folsom General Plan. However, the proposed land use for the project is Multi-Family Medium Density (MMD). A General Plan Amendment would be required for the proposed development.

The project site is currently zoned for Residential Multi-Family Dwelling District (R-M), but a Rezone and Planned Development Permit would be required for the proposed development to change the zoning to Residential Multi-Family Planned Development (RM-PD).

Evaluation of Land Use and Planning

a) Physically divide an established community?

Less Than Significant Impact. The project site is currently developed and located within the existing Canyon Terrace Apartment community. The eight new proposed apartment buildings would be located along the eastern property boundary of the existing apartment community. The proposed project would expand an existing community and not divide an established community. Therefore, impacts would be less than significant.

b) Cause significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. The City of Folsom General Plan land use designation for the project site is Multi-Family Low Density (MLD), which is inconsistent with the proposed land use for the proposed project. Therefore, a General Plan Amendment would be required to change the land use designation for the project site to Multi-Family Medium Density (MMD). However, the proposed project is consistent with the 2035 General Plan Land Use Policy LU 1.1.12, *Infill Development*, which encourages infill development in key parcels north of U.S. Highway 50 and contributes to the overall goal to retain and enhance Folsom's quality of life, unique identity, and sense of community while continuing to grow and change (City of Folsom 2018a).

The project site is currently zoned for Residential Multi-Family Dwelling District (R-M), which is inconsistent with the proposed land use. A Rezone and Planned Development Permit would be required for the proposed development to change the zoning to Residential Multi-Family Planned Development (RM-PD).

City approval of the General Plan Amendment, Rezone, and Planned Development Permit would resolve the land use inconsistencies, and impacts would be less than significant.

XII. MINERAL RESOURCES

MINERAL RESOURCES:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	■

Environmental Setting

The Folsom area regional geologic structure is defined by the predominantly northwest- to southeast-trending belt of metamorphic rocks and the strike-slip faults that bound them. The structural trend influences the orientation of the feeder canyons into the main canyons of the North and South Forks of the American River. This trend is interrupted where the granodiorite plutons outcrop (north and west of Folsom Lake) and where the metamorphic rocks are blanketed by younger sedimentary layers (west of Folsom Dam) (Wagner et al. 1981 in Geotechnical Consultants 2003). The four primary rock divisions found in the area are: ultramafic intrusive, metamorphic, granodiorite intrusive, and volcanic mud flows (Geotechnical Consultants 2003).

The presence of mineral resources within the City has led to a long history of gold extraction, primarily placer gold. No areas of the City are currently designated for mineral resource extraction.

Evaluation of Mineral Resources

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

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

No Impact. The proposed project is not located in a zone of known mineral or aggregate resources. No active mining operations are present on or near the site. Implementation of the project would not interfere with the extraction of any known mineral resources. Thus, no impacts would result, and no mitigation would be necessary for questions a) and b).

XIII. NOISE

NOISE:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	■	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■

A project-specific acoustical analysis was prepared for the project and is included as **Appendix G** (J.C. Brennan & Associates 2018).

Environmental Setting

The project site is located southwest of the intersection of Oak Avenue Parkway and American River Canyon Drive, within the existing Canyon Terrace Apartment community. The proposed project includes the construction of 96 apartment units within eight, three-story buildings. Noise-sensitive land uses are land uses that may be subject to stress and/or interference from excessive noise, including residences, hospitals, schools, hotels, resorts, libraries, sensitive wildlife habitat, or similar facilities where quiet is an important attribute of the environment. Noise receptors (receivers) are individual locations that may be affected by noise. Noise-sensitive land uses in the project vicinity include adjacent multi-family residences within the existing apartment community and the Odyssey Learning Center approximately 350 feet to the west.

Regulatory Framework

City of Folsom General Plan

The City of Folsom 2035 General Plan Safety and Noise Element provides the following goals and policies relative to noise.

GOAL SN 6.1: Protect the citizens of Folsom from the harmful effects of exposure to excessive noise and to protect the economic base of Folsom by preventing the encroachment of incompatible land uses within areas affected by existing noise-producing uses.

- SN 6.1.2 Noise Mitigation Measures: Require effective noise mitigation for new development of residential or other sensitive land uses to reduce noise levels as follows:
    - For noise due to traffic on public roadways, railroad line operations, and aircraft; achieve compliance with the performance standards within Table SN-2 (**Table 15** of this report).

Table 15. Noise Compatibility Standards

Land Use	Exterior Noise Level Standard for Outdoor Activity Areas[a]	Interior Noise Level Standard	
	L_{dn}/CNEL, dB	L_{dn}/CNEL, dB	L_{eq}, dB[b]
Residential (Low Density Residential, Duplex, Mobile Homes)	60[c]	45	N/A
Residential (Multi Family)	65[d]	45	N/A
Transient Lodging (Motels/Hotels)	65[d]	45	N/A
Mixed-Use Developments	70	45	N/A
Schools, Libraries, Churches, Hospitals, Nursing Homes, Museums	70	45	N/A
Theaters, Auditoriums	70	N/A	35
Playgrounds, Neighborhood Parks	70	N/A	N/A
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75	N/A	N/A
Office Buildings, Business Commercial and Professional	70	N/A	45
Industrial, Manufacturing, and Utilities	75	N/A	45

Notes: Where a proposed use is not specifically listed on this table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the Community Development Department.

a. Outdoor activity areas for residential developments are considered to be the back yard patios or decks of single-family residential units, and the patios or common areas where people generally congregate for multifamily development. Outdoor activity areas for nonresidential developments are considered to be those common areas where people generally congregate, including outdoor seating areas. Where the location of outdoor activity areas is unknown, the exterior noise standard shall be applied to the property line of the receiving land use.
b. As determined for a typical worst-case hour during periods of use.
c. Where it is not possible to reduce noise in outdoor activity areas to 60 dB, Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior level of up to 65 dB, Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
d. Where it is not possible to reduce noise in outdoor activity areas to 65 dB, Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior level of up to 70 dB, Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Folsom Municipal Code

Chapter 8.42 of the City of Folsom Municipal Code, entitled NOISE CONTROL, provides exterior noise level performance standards for stationary noise sources. In addition, this chapter also provides noise source exemptions which are applicable to this project.

8.42.040 Exterior noise standards.

A. It is unlawful for any person at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any affected single- or multiple-family residence, school church, hospital or public library situated in either the incorporated or unincorporated area to exceed the noise level standards as set forth in **Table 16** below.

Table 16. Exterior Noise Level Standards

Noise Level Category	Cumulative Number of minutes in any 1-hour time period	Daytime (dB) (7 a.m. – 10 p.m.)	Nighttime (dB) (10 p.m. – 7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

Note: dB = A-weighted decibels
Source: City of Folsom Code, Noise Control 1993.

B. In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.

C. Each of the noise level standards specified above shall be reduced by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring noises.

D. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be the noise level standards as specified above.

Noise Source Exemptions (Section 8.42.060)

Section 8.42.060 of the City of Folsom Municipal Code establishes the following activities that are considered exempt from the associated exterior noise provisions:

A. Activities conducted in unlighted public parks, public playgrounds and public or private school grounds, during the hours of 7 a.m. to dusk, and in lighted public parks, public playgrounds and public or private school grounds, during the hours of 7 a.m. to 11 p.m., including but not limited to school athletic and school entertainment events;

B. Any mechanical device, apparatus, or equipment used, related to or connected with emergency activities or emergency work;

C. Noise sources associated with construction, provided such activities do not take place before 7 a.m. or after 6 p.m. on any day except Saturday or Sunday, or before 8 a.m. or after 5 p.m. on Saturday or Sunday;

D. Noise sources associated with the maintenance of residential property provided such activities take place between the hours of seven a.m. to dusk on any day except Saturday or Sunday, between the hours of 8 a.m. to dusk on Saturday or Sunday;

E. Noise sources associated with agricultural activities on agricultural property;

F. (Section Expired)

G. Noise sources associated with the collection of waste or garbage from property devoted to commercial or industrial uses;

H. Any activity to the extent regulation thereof has been preempted by state or Federal law.

Terminology

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dBA weighting, and noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting.

Traffic Noise Prediction Methodology

Prediction of traffic noise levels was accomplished using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA RD-77-108). The model is based upon the CALVENO noise emission factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

Ambient Noise Measurements

Continuous hourly ambient noise level measurements were conducted for a period of 24-hours on the project site from January 20th to January 21st, 2016. The noise level measurements were conducted to determine typical background average (L_{eq}), median (L_{50}) and maximum (L_{max}) noise levels, and to determine the effective day/night distribution of roadway traffic for inclusion in the traffic noise prediction methodology. Instrumentation consisted of a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter, which was calibrated in the field before and after use with an LDL Model CAL200 acoustical calibrator. **Table 17** shows the results of the continuous hourly ambient noise level measurements.

Table 17. Summary of Measured Ambient Noise Levels on January 20th and 21st, 2016

Site	Measured Ldn	Average Hourly Daytime & Evening (7:00am – 10:00pm)			Average Hourly Nighttime (10:00pm – 7:00 am)		
		Leq	L50	Lmax	Leq	L50	Lmax
A	64 dBA	58 dBA	53 dBA	79 dBA	57 dBA	38 dBA	68 dBA

Source: J.C. Brennan & Associates, Inc. 2018.

On Friday, June 2, 2017, short-term noise level measurements and concurrent counts of traffic on American River Canyon Drive were conducted adjacent to the project site. The purpose of the short-term traffic noise level measurements was to determine the accuracy of the FHWA model in describing the existing noise environment on the project site, while accounting for existing site conditions such as intervening structures, actual travel speeds, and roadway grade.

Noise measurement results were compared to the FHWA model results by entering the observed traffic volume, speed, and distance as inputs to the FHWA model. The FHWA model over-predicted the traffic noise levels in comparison to the measured levels. Therefore, no adjustments were made to the FHWA traffic noise prediction model.

Noise Analysis

Traffic volume predictions provided by GHD were utilized to determine the existing plus project traffic noise levels on the project site and adjacent roadways. **Table 18** shows the predicted existing plus project traffic noise levels at the nearest building facades and the common outdoor activity areas.

Table 18. Predicted American River Canyon Drive Existing Plus Project Traffic Noise Levels

Segment	Traffic Noise Level (Ldn)	Distance to Noise Contours (ft)	
		60 dB Ldn	65 dB Ldn
Apartments North of River Ridge Way	60 dB	101	47
Apartments South of River Ridge Way	62 dB	93	43
Pool Area	43 dB	22	10

Sources: J.C. Brennan & Associates 2018, GHD, and FHWA RD-77-108.

Evaluation of Noise

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. Construction of the proposed project would generate elevated noise levels that may disrupt nearby noise-sensitive land uses including the nearby apartment residents. The magnitude of the impact would depend on the type of construction activity, equipment, duration of each construction phase, distance between the noise source and receiver, and any intervening structures.

Construction noise would be regulated by Section 8.42.060 of the City's Municipal Code (Noise Ordinance), which states that construction activities are exempt from noise standards if they take place during daytime hours between 7 a.m. and 6 p.m. on weekdays and between 8 a.m. and 5 p.m. on Saturdays and Sundays. Project construction would only occur during these exempted hours. Construction noise impacts would be short-term and temporary.

Continuous hourly ambient noise level measurements were conducted on the project site from January 20 to January 21, 2016. Table 17 shows the measured L_{dn} from the measurement location along the northern boundary of the project site was 64 dBA without the project. The data presented in **Table 18** indicates that the existing plus project traffic noise levels at the nearest building facades would not exceed the 65 dB L_{dn} exterior noise level standard.

The proposed project is anticipated to comply with the City of Folsom 65 dB L_{dn} exterior and 45 dB L_{dn} interior noise level standards. Standard construction practices would be implemented and typically reduce exterior-to-interior noise levels by approximately 25 dB. The predicted existing plus project traffic noise levels for 1st floor residential facades facing American River Canyon Drive, north of River Ridge Way and south of River Ridge Way, are 60 dB L_{dn} and 62 dB L_{dn} respectively. Therefore, the interior noise levels are expected to comply with the interior noise standard of 45 dB L_{dn}. However, due to the loss of ground attenuation, a plus 3 dB offset is generally applied to the 2nd floor building facades. The predicted exterior traffic noise levels for 2nd floor building facades of the first row of buildings facing American River Canyon Drive are 63 dB L_{dn} and 65 dB L_{dn}. Therefore, it is not anticipated that 2nd floor units of the first row of buildings facing American River Canyon Drive would exceed the 45 dB L_{dn} interior noise level standard (J.C. Brennan & Associates 2018). Therefore, the proposed project would not have a substantial temporary or permanent increase in ambient noise levels, and impacts would be less than significant.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. An on-site source of vibration during project construction would be a vibratory roller (primarily used to achieve soil compaction as part of the foundation and paving construction). A vibratory roller creates approximately 0.210 inches per second peak particle velocity (PPV) at a distance of 25 feet. The City has not adopted specific standards in the General Plan or Municipal Code regarding construction vibration standards. However, Caltrans standards for construction vibration impacts use a criterion of 0.4 inches per second PPV at 25 feet (Caltrans 2013). Using these standards, the approximately 0.210 inches per second PPV vibration impact would be less than what is considered a "severe" impact. Although nearby residents may be exposed to groundborne vibration, impacts associated with the use of a vibratory roller (and other potential equipment) during construction would temporary and short-term. Therefore, impacts would be less than significant.

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

No Impact. No public airports or private airstrips are located within two miles of the project site. Therefore, residents of the proposed project would not be exposed to excessive noise levels from air activity, and no impact would occur.

XIV. POPULATION AND HOUSING

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

Environmental Setting

The proposed project includes the construction of ninety-six new apartment units within eight new apartment buildings in the existing Canyon Terrace Apartment community. The Canyon Terrace Apartment community currently consists of 200 existing apartment units allocated among 25 two-story apartment buildings. The proposed apartment buildings would be three-stories tall and feature garages on the first level of the buildings.

A small community building, pool area, and two tennis courts would be demolished as part of the proposed project. Parking areas throughout the apartment community would be retained, except in areas of the new development where displaced parking spaces would be replaced with the proposed infill project. No residential units would be demolished as part of this project.

Evaluation of Population and Housing

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

Less Than Significant Impact. Implementation of the proposed expansion project would result in the construction of 96 apartment units within the existing Canyon Terrace Apartment community. It is assumed that the majority of the individuals relocating to the apartment community would be from the area. Existing infrastructure and roads in the area would not be expanded or extended as a result of the project. The proposed project would accommodate the demand for multi-family housing and would not induce substantial growth in the City of Folsom. Therefore, impacts from project implementation would be less than significant, and no mitigation would be required.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project would demolish a small community building, pool area, and two tennis courts to expand the existing apartment community. The eight proposed apartment buildings would be constructed along the eastern property boundary of the existing apartment community and would not displace existing housing or people. Therefore, no impact would occur.

XV. PUBLIC SERVICES

PUBLIC SERVICES:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	☐	☐	■	☐
b) Police protection?	☐	☐	■	☐
c) Schools?	☐	☐	■	☐
d) Parks?	☐	☐	■	☐
e) Other public facilities?	☐	☐	■	☐

Environmental Setting

The proposed project is in an area currently served by urban levels of all utilities and services. Public services provided by the City of Folsom in the project area include fire, police, school, library, and park services. The site is served by all public utilities including domestic water, wastewater treatment, and storm water utilities.

The City of Folsom Fire Department provides fire protection services. There are four fire stations providing fire/rescue and emergency medical services within the City of Folsom with a fifth station planned near the eastern city limits. Station 36 is nearest to the project site and is located at 9700 Oak Avenue, approximately 0.3-mile east of the project site. The Fire Department responds to over 6,000 requests for service annually with an average of 16.4 per day (City of Folsom 2018c). The City of Folsom Police Department is located at 46 Natoma Street, approximately 1.7-miles southeast of the project site.

The project site is located within the Folsom Cordova Unified School District and is within the attendance area for Carl Sundahl Elementary School, Sutter Middle School, and Folsom High School. There are several parks near the project site, including the Negro Bar State Park, Lew Howard Park, and Bud and Artie Davies Park.

The Sacramento Municipal Utilities District (SMUD) would supply electricity to the project site. Pacific Gas & Electric (PG&E) provides natural gas to the area and would provide natural gas to the project site.

The City of Folsom has a program of maintaining and upgrading existing utility and public services within the City. Similarly, all private utilities maintain and upgrade their systems as necessary for public convenience and necessity, and as technology changes.

Evaluation of Public Services

a) Fire protection?

Less Than Significant Impact. On-site fire water would connect to the City of Folsom water supply on American River Canyon Drive at the existing north and south driveways and would include two double detector check valves (one on each end of the looped system), providing fire water to the proposed hydrants, exterior Fire Department Connection assemblies, and fire riser rooms. Emergency vehicle access would be maintained throughout the project site to meet the Fire Department standards for fire truck maneuvering, location of fire truck to fight a fire, rescue access to the units, and fire hose access to all sides of the building. The propose project would not significantly increase fire service demands or render the current service level to be inadequate, and impacts would be less than significant.

b) Police protection?

c) Schools?

Less Than Significant Impact. The project site is within an urbanized area of Folsom, and there is no indication that police services or nearby schools could not adequately support the proposed project. Because there are no unique aspects of the project that would increase service demands or render the current service level to be inadequate, no new public facilities would be necessary to serve the proposed project. Potential impacts from implementation of the proposed project would be less than significant for questions b) and c).

d) Parks?

e) Other public facilities?

Less Than Significant Impact. The proposed project includes the construction of a swimming pool area, gym, club, leasing facility, and landscaping for use by residents. These facilities are for use by the residents of the entire Canyon Terrace Apartment community and would not be open to the public. Construction and operation of the proposed project would not require the construction or expansion of parks and other public facilities or result in the degradation of those facilities. Potential impacts would be less than significant, and mitigation would not be necessary for questions d) and e).

XVI. RECREATION

RECREATION:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	■	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	■	☐

Environmental Setting

The Folsom Parks and Recreation Department provides and maintains a full range of recreational activities and park facilities for the community. There are several parks near the project site, including the Negro Bar State Park, Lew Howard Park, and Bud and Arties Davies Park. The proposed project additionally includes the construction of a swimming pool area, gym, club, leasing facility, and landscaping for use by the residents.

Evaluation of Recreation

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

Less Than Significant Impact. The residents of the proposed project would likely to be relocating from the general area and would not result in a substantial increase in population in relation to the overall City of Folsom. Therefore, the proposed project would not result in a substantial increase in the use or demand for neighborhood or regional parks. Further, the proposed project would include a swimming pool area, gym, club, leasing facility, and landscaping for use by residents. Impacts on existing neighborhood and regional parks or other recreational facilities would be less than significant, and no mitigation is necessary.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less Than Significant Impact. The proposed project includes construction of a swimming pool area, gym, club, leasing facility, and landscaping for use by residents. These facilities are for use by the residents of the entire Canyon Terrace Apartment community and would not be open to the public. Construction and operation of the facilities would not have an adverse impact on the environment, and construction of the proposed project would not require the construction or expansion of other recreational facilities that might have an adverse impact on the environment. Therefore, impacts would be less than significant, and mitigation would not be necessary.

XVII. TRANSPORTATION

TRANSPORTATION AND TRAFFIC:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	■	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	■	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	■	☐
d) Result in inadequate emergency access?	☐	☐	■	☐

Transportation and traffic were evaluated in a project-specific Traffic Impact Analysis Report included as **Appendix H** (GHD 2019).

Environmental Setting

Parking and Access

The existing residential development at Canyon Terrace Apartments contains 200 multi-family dwelling units and 324 parking spaces. Construction of the proposed project would add 233 new parking spaces to the existing Canyon Terrace Apartment community to accommodate the additional 96 residential units proposed for development. The additional parking proposed would be allocated as follows:

- 127 surface stalls (including three ADA compliant spaces)
- 79 garage stalls
- 27 carport stalls

Vehicular access to the Canyon Terrace Apartment community is provided by two existing driveways at American Canyon Drive.

Roadway System

Brief descriptions of the key roadways serving the project site are provided below.

Oak Avenue Parkway is a 4-6 lane, undivided arterial that operates at a posted speed limit of 45 mph. Oak Avenue Parkway traverses the cities of Citrus Heights and Folsom in the east-west direction and intersects with American River Canyon Drive in the project vicinity. Long term improvements to Oak Avenue Parkway include the extension of this roadway to the south, and a creation of the Oak Avenue Parkway interchange with US Highway 50 (known as the Lincoln Highway).

American River Canyon Drive is a 4-lane, divided collector facility that operates at a posted speed limit of 40 mph within the project vicinity. American River Canyon Drive intersects with Oak Avenue Parkway at its northern terminus and with Greenback Lane at its southern terminus. Throughout its entirety, American River Canyon Drive traverses through suburban residential developments, and provides access to neighborhood streets.

Transit, Bicycle, and Pedestrian Facilities

Transit services in the City of Folsom are provided by the Folsom Stage Line bus service operated by the City of Folsom Transit Division. The Folsom Stage Line bus service provides both Fixed-Route and Dial-A-Ride services exclusively within the Folsom city limits, Monday through Friday.

The following bus route operates along northbound American River Canyon Drive along the project frontage:

- Folsom Stage Line Fixed Route 10
    - Provides connectivity to light rail stations and bus services operated by Sacramento Regional transit District.
    - Notable stops served by Route 10 includes historic Folsom, East Bidwell, the Broadstone Market Place, Broadstone Plaza, the Folsom Aquatics Center, Folsom Lake College, Intel, Kaiser Permanente and Folsom Premium Outlets.
    - This route provides only weekday service from 6:00 a.m. and 9:00 p.m.
    - Bus stops for Route 10 are located at the following intersections along American River Canyon Drive:
        - American River Canyon Drive (Northbound) and Oak Avenue Parkway
        - American River Canyon Drive (Northbound) and River Ridge Way

The following discussion presents the off-site and on-site bicycle facilities present at the proposed project site.

Off-Site Bicycle Facilities

There are Class II bicycle facilities on both easterly and westerly sides of American River Canyon Drive along the project frontage.

The proposed project is anticipated to generate moderate bicycle traffic along roadways within the project vicinity. According to the City of Folsom Bikeways Master Plan (released July 2007), no new Class I or II bike facilities are proposed along Oak Avenue Parkway, American River Canyon Drive, or Greenback Lane.

On-Site Bicycle Facilities

There are no bike facilities within the existing apartment community and no on-site improvements are proposed as part of the project.

The following section presents the off-site and on-site pedestrian facilities present at the proposed project site.

Off-Site Pedestrian Facilities

Existing conditions indicate the presence of continuous sidewalks along the easterly and westerly sides of American River Canyon Drive along the project frontage.

At the time of the study, the proposed project is anticipated to generate moderate pedestrian traffic. As existing conditions indicate the presence of adequate pedestrian infrastructure within the project vicinity, no off-site improvements are proposed along the project frontage.

On-Site Pedestrian Facilities

Pedestrian facilities with ADA compliant features are provided adjacent to the residential and community recreation facilities of the existing apartment complex.

The proposed project includes the construction of new on-site sidewalks and pedestrian pathways containing ADA compliant features to provide connectivity between the proposed buildings, community recreation facilities and the parking lots.

Airports

No private or public airports are located within the City of Folsom. The nearest public airfield is Mather Airport, located approximately 10.5 miles southwest of the project site. Cameron Airpark is a public use airport located approximately 11 miles southeast of the project site, and McClellan Airport is a privately-owned public use airport located approximately 11 miles west of the project site.

Emergency Access

The City of Folsom identifies most major streets in the City as emergency evacuation routes. The proposed project would not modify any major street and/or preclude their continued use as an emergency evacuation route.

Existing Intersection Operations

The Existing Conditions analysis reflects the current operations at the study locations. This establishes baseline conditions. Existing weekday AM and PM peak hour intersection traffic operations were quantified utilizing the existing traffic volumes and intersection lane geometrics and control types.

Existing intersection operations are presented in **Table 19**.

Table 19. Existing Intersection Operations

#	Intersection	Traffic Control[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Oak Ave Pkwy/American River Canyon Dr	Signal	D	17.7	B	14.5	B
2	Canyon Terrace Ln (North)/American River Canyon Dr [North Dwy]	TWSC	D	10.4	B	10.0	B
3	River Ridge Way (North)/American River Canyon Dr	TWSC	D	11.5	B	10.8	B
4	Canyon Terrace Ln (South)/American River Canyon Dr [South Dwy]	TWSC	D	10.0	B	9.3	A
5	River Ridge Way (South) & Oak Canyon Way/American River Canyon Dr	TWSC	D	10.2	B	10.4	B
6	Crow Canyon Dr (North)/American River Canyon Dr	TWSC	D	11.3	B	10.1	B
7	Crow Canyon Dr (South)/ American River Canyon Dr	AWSC	D	8.6	A	8.2	A
8	Greenback Ln/American River Canyon Dr	Signal	D	11.1	B	18.2	B
9	Santa Juanita Ave/Oak Ave (West)	AWSC	D	11.8	B	15.2	C
10	Santa Juanita Ave/Oak Ave (East)	AWSC	D	15.1	C	19.4	C
11	**Oak Ave Pkwy/Baldwin Dam Rd**	**TWSC**	**D**	**35.7**	**E**	**28.1**	**D**
12	Folsom Auburn Rd/Oak Ave Pkwy	Signal	D	50.2	D	53.5	D

Source: GHD 2019 (Appendix H).
Notes:
[1]AWSC = All Way Stop Control; TWSC = Two/Three-Way Stop Control
[2]LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal
Bold = Unacceptable Conditions

As presented in Table 19, all intersections included in the study currently operate at acceptable LOS except the Oak Avenue Parkway and Baldwin Dam Road intersection.

Trip Generation

The average trip rates developed from existing conditions were used to derive the total weekday AM and PM peak hour trips for the expanded apartment complex containing a total of 296 dwelling units (i.e., addition of 96 net new dwelling units). Per the guidelines set forth in the Institute of Transportation Engineers (ITE) Trip Generation Manual 9th Edition, local data should be used when available, and the methodology used to determine project trip generation is consistent with the ITE guidelines. **Table 20** presents a summary of the project trip generation for the proposed addition of 96 dwelling units to the existing apartment community.

Table 20. Project Trip Generation

Land Use Category (ITE Code)	Unit[1]	Daily Trip Rate/Unit[2]	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Apartment (220)	DU	7.35	0.53	20	80	0.73	65	35
Project Name	**Quantity (Units)**	**Daily Trips**	**AM Peak Hour Trips**			**PM Peak Hour Trips**		
			Total	**In**	**Out**	**Total**	**In**	**Out**
Canyon Terrace Apartments (Net New Project Trips)	96	705	51	10	41	70	46	25

Source: GHD 2019 (Appendix H).
Notes:
[1] DU = dwelling unit
[2]Trip rates based on ITE Trip Generation Manual 9th edition fitted-curve equations

As presented in Table 20 above, the proposed project would generate approximately 51 AM and 70 PM peak hour trips in total.

Trip Distribution and Assignment

The directional trip distribution for the proposed project and the specific assignment of project-generated trips were established based on an understanding of existing and projected future traffic flows and travel patterns within the vicinity of the project site. Approximately 40 percent of the traffic from the project site is south bound on American River Canyon Drive. However, only 30 percent of the project traffic is expected to travel to the American River Canyon Drive/Greenback Lane intersection, which would add approximately 22 trips to the intersection in the PM peak period when the project generates the highest volume of trips. A review of the available data (2014) from the City of Folsom on the segment of Greenback Lane in the vicinity of this intersection indicated that this segment carries approximately 3,400 PM peak vehicles per hour. The project is expected to add less than 1 percent to this intersection and was therefore not included in the analysis.

From a land use perspective, the segment of American River Canyon Drive would be considered built out. Furthermore, American River Canyon Drive is not a route of regional significance. As such, traffic on this segment is expected to increase marginally and is further substantiated by the City of Folsom Travel Demand Model data which predicts a less than 1 percent per year growth for this segment. As such, use of same distribution patterns is appropriate for this study.

Evaluation of Transportation and Traffic

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less Than Significant Impact. The Existing Plus Project conditions is the analysis scenario in which trips generated by the proposed project are superimposed on existing traffic volumes and existing intersection geometries. Existing Plus Project intersection delay and LOS were calculated for the study intersections and are presented in **Table 21** below.

Table 21. Existing Plus Project Intersection Operations

#	Intersection	Traffic Control[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Oak Ave Pkwy/American River Canyon Dr	Signal	D	18.1	B	14.7	B
2	Canyon Terrace Ln (North)/American River Canyon Dr [North Dwy]	TWSC	D	10.7	B	10.3	B
3	River Ride Way (North)/American River Canyon Dr	TWSC	D	11.6	B	11.0	B
4	Canyon Terrace Ln (South)/American River Canyon Dr [South Dwy]	TWSC	D	10.2	B	9.5	A
5	River Ridge Way (South) & Oak Canyon Way/American River Canyon Dr	TWSC	D	10.3	B	10.7	B
6	Crow Canyon Dr (North)/American River Canyon Dr	TWSC	D	11.5	B	10.2	B
7	Crow Canyon Dr (south) American River Canyon Dr	AWSC	D	8.8	A	8.3	A
8	Greenback Ln/American River Canyon Dr	Signal	D	11.5	B	19.7	B
9	Santa Juanita Ave/Oak Ave (West)	AWSC	D	12.0	B	15.6	C
10	Santa Juanita Ave/Oak Ave (East)	AWSC	D	15.4	C	20.3	C
11	**Oak Ave Pkwy/Baldwin Dam Rd**	**TWSC**	**D**	**37.9**	**E**	**30.4**	**D**
12	Folsom Auburn Rd/Oak Ave Pkwy	Signal	D	52.0	D	54.9	D

Source: GHD 2019 (Appendix H).
Notes:
[1]AWSC = All Way Stop Control; TWSC = Two/Three-Way Stop Control
[2]LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal
Bold = Unacceptable Conditions

As presented in Table 21, all intersections included in the study currently operate at acceptable LOS except the Oak Avenue Parkway and Baldwin Dam Road intersection. The intersection of Oak Avenue Parkway and Baldwin Dam Road was found to be currently operating at an unacceptable LOS of E under Existing Conditions during the AM peak hour. The addition of the project traffic increases the delay at this intersection by 2.2 seconds in the AM peak hour. The project does not trigger the peak hour warrant to be met nor does it increase the delay by more than the five seconds threshold for unsignalized intersections.

Additionally, the proposed project includes the construction of new on-site sidewalks and pedestrian pathways containing ADA compliant features to provide connectivity between the proposed buildings, community recreation facilities, and the parking lots. The sidewalks would adhere to California Title 24 code requirements regarding site accessibility with vertical slopes no greater than five percent and cross slopes no greater than two percent. The proposed project would not conflict with or decrease the performance or safety of the existing bicycle, pedestrian, and public transit network in the area.

Therefore, project impacts would be less than significant impact for questions a) and b).

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

Less Than Significant Impact. Access to the project site would continue to be provided by two existing driveways located on the west side of American River Canyon Drive. A new paved drive lane would be constructed within the existing apartment community that would run parallel to American River Canyon Drive and would not introduce any sharp curves or dangerous intersections or be incompatible with the existing road network within the apartment community. Therefore, impacts would be less than significant.

d) Result in inadequate emergency access?

Less Than Significant Impact. Emergency vehicle access would be maintained throughout the project site to meet the Fire Department standards for fire truck maneuvering, location of fire truck to fight a fire, rescue access to the units, and fire hose access to all sides of the building. Therefore, impacts would be less than significant.

XVIII. TRIBAL CULTURAL RESOURCES

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

Environmental Setting

As amended in 2014, Assembly Bill (AB 52), requires that the City of Folsom (City) provide notice to any California Native American tribes that have requested notice of projects subject to CEQA review and consult with tribes that responded to the notice within 30 days of receipt with a request for consultation. Section 21073 of the Public Resources Code (PRC) defines California Native American tribes as "a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of the Statutes of 2004." This includes both federally and non-federally recognized tribes. For the City of Folsom, these include the following tribes that previously submitted general request letters, requesting such noticing:

- Wilton Rancheria (letter dated July 1, 2015 and received August 24, 2015);
- Ione Band of Miwok Indians (letter dated March 2, 2016); and,
- United Auburn Indian Community (UAIC) of the Auburn Rancheria (letter dated November 23, 2015).

The purpose of consultation is to identify Tribal Cultural Resources (TCR) that may be significantly impacted by the proposed project and to allow the City to avoid or mitigate significant impacts prior to project approval and implementation. Section 21074(a) of the PRC defines TCRs, for the purpose of CEQA, as: Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

a) Included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or
b) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or
c) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Because criteria A and B also meet the definition of a Historical Resource under CEQA, a TCR may also require additional consideration as a Historical Resource. TCRs may or may not exhibit archaeological, cultural, or physical indicators and can only be identified by a culturally-affiliated tribe, which has been determined under State law to be the subject matter expert for TCRs (ECORP 2018).

City Consultation

On September 6, 2018, the City of Folsom sent project notification letters to the three California Native American tribes named above. The only tribe to respond was the UAIC, who requested consultation on the project, copies of all existing cultural resources assessments, and GIS shapefiles for the project boundaries. UAIC also provided a suggested mitigation measure for unanticipated discoveries that the project may encounter during project construction. On September 27, 2018, the City received a follow-up letter requesting copies of documentation and tribal monitors if resources are present.

On September 21, 2018, which was within 30 days of receiving the response, the City initiated consultation with UAIC. The City invited the tribe to a consultation meeting in mid-October. On October 3, 2018, the tribe responded to the City by e-mail to indicate they were no longer interested in meeting, and instead, requested that their standard mitigation measure for sensitivity training, unanticipated discoveries, construction notification, and site inspection be adopted by the City. The tribe did not provide any information about TCRs to the City (ECORP 2018). All information relevant to the City's AB 52 consultation process is documented in **Appendix D**.

Evaluation of Tribal Cultural Resources

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
   i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?
   ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less Than Significant with Mitigation. After a review of the totality of information submitted by UAIC, the thresholds under PRC Section 21074(a)(1) have not been met and the project would not cause a significant adverse change in significance of a TCR (see Appendix D for complete record). The City made a determination that there are no known TCRs located within the project area, and that the proposed project would have a less than significant impact on unforeseeable TCRs with the incorporation of mitigation measures to address unanticipated discoveries. The three mitigation measures provided by the tribe have been tailored to this specific project and incorporated in this CEQA document for the project. With implementation of the mitigation measures identified below, the project impacts would be less than significant.

Mitigation Measure TCR-01: Avoid and minimize impacts to previously unknown Tribal Cultural Resources.

If potential tribal cultural resources or human remains are discovered by Native American Representatives or Monitors from interested Native American Tribes, qualified cultural resources specialists or other Project personnel during construction activities, work will cease in the immediate vicinity of the find (based on the apparent distribution of cultural resources), whether or not a Native American Monitor from an interested Native American Tribe is present. The City shall immediately notify a qualified archaeologist and interested Native American Tribes to consult on the significance of the find and make recommendations for further evaluation and treatment as necessary. These recommendations and actions taken (or not taken) based on consultation will be documented in the project record. If the discovery includes human remains, the procedures in Mitigation Measure CUL-02 shall be implemented.

Mitigation Measure TCR-02: Accommodate a post-ground disturbance field visit for interested tribes.

A minimum of seven days prior to beginning earthwork or other soil disturbance activities, the applicant shall notify the City of the proposed earthwork start-date, in order to provide the City representative sufficient time to contact the United Auburn Indian Community (UAIC). A UAIC tribal representative shall be invited to inspect the project location, including any soil piles, trenches, or other disturbed areas, within the first five days of ground-breaking activity. Construction activity may be ongoing during this time. Should the tribe choose not to perform a field visit within the first five days, construction activities may continue as scheduled, as long as the notification was made.

Mitigation Measure TCR-03: Provide construction personnel with procedures for unanticipated discoveries during ground-disturbing activities.

A construction worker tribal cultural resources awareness brochure and training program for personnel involved in project implementation will be developed by a qualified professional prior to the initiation of construction activities on the project. The brochure will be distributed during a training session that will be conducted by a qualified professional. Native American representatives and monitors from culturally affiliated and interested Native American tribes will be given the opportunity to contribute information to include in the program, if they so desire. The program will include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The construction worker tribal cultural resources awareness program will also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project property and will outline what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program will also underscore the requirement for confidentiality and culturally-appropriate treatment of any discovery that is determined by the City, in consultation with tribes, to be of significance to Native American tribal values.

XIX. UTILITIES AND SERVICE SYSTEMS

UTILITIES AND SERVICE SYSTEMS:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new water or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunication facilities, the construction of which could cause significant environmental effects?	☐	☐	■	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	■	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	■	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	■	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	■	☐

Environmental Setting

Existing utilities on the project site include SMUD for electricity, PG&E underground gas lines, City of Folsom for solid waste disposal, and City of Folsom water. On-site domestic water would connect to the existing (looped) water system on-site. All domestic water pipelines include a 20-foot wide easement for service by San Juan Water District. The on-site sewer system would be privately owned, operated, and maintained. The proposed sewer system would run south to north across the project site to Canyon Terrace Lane, then east to west to the connection to the public sewer system in the northwest corner of the Canyon Terrace Apartment community. The proposed sewer line would function as a standalone system (no tie-ins from the existing network) until it would connect to the outgoing manhole in the northwest corner of the property. All new proposed trash enclosures would include a drain that connects to the sanitary sewer system in conformance with Storm Water Quality Guidance.

The City of Folsom employs a design process that includes coordination with potentially affected utilities as part of project development. The City of Folsom coordinates with the appropriate utility companies to plan and potentially expand existing utilities in the project area, including water, sewer, telephone, gas, electricity, and cable television lines. Based on the results of an initial request for comments from the utility providers, all utility services are able to accommodate the proposed project.

Evaluation of Utilities and Service Systems

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact. Implementation of the proposed project would require the construction of new utilities to accommodate the expansion of the existing apartment complex. On-site domestic water would connect to the existing (looped) water system on-site. All domestic water pipelines include a 20-foot wide SJSWD easement for service.

On-site fire water would connect to the City of Folsom water supply on American River Canyon Drive at the existing north and south driveways and would include two double detector check valves (one on each end of the looped system), providing fire water to the proposed hydrants, exterior Fire Department Connection (FDC) assemblies, and fire riser rooms.

The on-site sewer system would be privately owned, operated, and maintained. The proposed sewer system would run south to north across the project site to Canyon Terrace Lane, then east to west to the connection to the public sewer system in the northwest corner of the Canyon Terrace Apartment community. The proposed sewer line would function as a standalone system (no tie-ins from the existing network) until it would connect to the outgoing manhole in the northwest corner of the property. Additionally, all new proposed trash enclosures would include a drain that connects to the sanitary sewer system in conformance with Storm Water Quality Guidance.

Folsom's Public Works Department is responsible for stormwater management in the City, from design and construction of the storm drain system to operation and maintenance to urban runoff pollution prevention. The on-site storm drain design would conform to City of Folsom standards and include design features consistent with the Stormwater Quality Design Manual for the Sacramento and South Placer Regions (updated June 2007). Low Impact Design features, including a combination of bio-retention swales, basins, and planters, have been identified for each drainage management area within the proposed expansion.

An existing 5-foot Sacramento Municipal Utility District easement runs through the western portion of the subject property, and the electrical for the newly constructed buildings would tie into the existing electrical infrastructure.

Construction of the additional utilities would occur on previously disturbed land and would tie into existing systems with adequate capacity to accommodate the proposed project. Therefore, environmental impacts from constructing new utilities would be less than significant.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant Impact. Folsom's Water Treatment Plant has a capacity of 50 million gallons per day. According to the City of Folsom General Plan Housing Element, the combination of treated and untreated water demands (through the time frame of the Housing Element which is 2021) are not anticipated to exceed the City's current water entitlements of 34,000 acre-feet annually (City of Folsom 2013). Because sufficient supplies are available, no additional facilities would need to be constructed or expanded, and impacts would be less than significant.

Water Supply and the Drought

While the General Plan identifies sufficient water supplies for build out of projects identified in the General Plan (including the proposed project), the State has been in a severe drought and continued growth in the City has generated concern from many residents. Folsom City Manager, Evert Palmer explained that "Folsom has rights to 34,000 acre-feet of water from Folsom Lake and consumes less than two percent of the water that passes through Folsom Dam each year. Last year, the City used just over half of its allocated supply. Folsom's new housing demand, including the development south of [US-]50, is also relatively low, comprising just four percent of the planned housing in the entire Sacramento region through 2036" (Folsom Telegraph 2015a). Implementation of the project would result in the construction of 96 additional residential units within the existing Canyon Terrace Apartment community. This increase in residential units and residents would not result in a substantial increase in water demand on the City.

Water Conservation Efforts

The City actively implements water conservation actions in response to the drought. Standards and regulations issued by the State Water Resources Control Board that came into effect June 1, 2015, require the City to reduce water consumption by 32 percent. In response, the City developed a water reduction plan to reduce water consumption and conserve water in the City.

City actions include reducing watering in parks by one third, removing turf and retrofitting irrigation in more than 30 medians citywide, turn off irrigation in ornamental streetscapes that do not have trees, prohibiting new homes and buildings from irrigating with potable water unless water-efficient drip systems are used, replacing and upgrading sprinklers and irrigation systems with water-efficient systems, and suspending operation of water features throughout the City. The City also implemented water restrictions and rebate programs for residents of the City. Folsom residents successfully reduced water consumption by 21 percent in 2014. The City reduced water consumption in parks by 27 percent, and 31 percent in Landscape and Lighting Districts. This was among the highest conservation rates statewide (Folsom Telegraph 2015b).

Construction of the proposed project would replace the existing landscape design with a landscape concept focused on water conservation. The proposed landscape design would replace large existing areas of high water use lawn grass with a combination of low to medium water use shrub/ground cover areas and a low water use native grass mix. The native grass mix would look like long meadow grass and be retained in a green state year-round with low volume irrigation.

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

Less Than Significant Impact. The proposed project would include a privately owned, operated, and maintained on-site sewer system. The proposed sewer system would run south to north across the project site to Canyon Terrace Lane, then east to west to the connection to the public sewer system in the northwest corner of the Canyon Terrace Apartment community. The proposed sewer line would function as a standalone system (no tie-ins from the existing network) until it would connect to the outgoing manhole in the northwest corner of the property. The City of Folsom is responsible for managing and maintaining its wastewater collection system, including 267-miles of pipeline and nine lift stations. This system ultimately discharges into the Sacramento Regional County Sanitation District interceptor sewer system. Wastewater is treated at the Sacramento Regional Wastewater Treatment Plant, located in Elk Grove.

In compliance with the 2006 SWRCB General Waste Discharge Requirements for Sanitary Sewer Systems, the City of Folsom adopted a Sewer System Management Plan on July 28, 2009. The plan outlines how the municipality operates and maintains the collection system, and the reporting of all Sanitary Sewer Overflows (SSO) to the SWRCB's online SSO database. Because the City has sufficient capacity to accommodate any additional demand that could result from implementation of the proposed project, and because the City is in compliance with statutes and regulations related to wastewater collection and treatment, impacts to the wastewater treatment provider would be less than significant.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact. The City of Folsom provides solid waste, recycling, and hazardous materials collection services to its residential and business communities. In order to meet the State mandated 50 percent landfill diversion requirements stipulated under AB 939, the City has instituted several community-based programs. The City offers a door-to-door collection program for household hazardous and electronic waste, in addition to six "drop off" recycling locations within the City.

After processing, solid waste is taken to the Kiefer Landfill, the primary municipal solid waste disposal facility in Sacramento County. The landfill facility sits on a 1,084-acre site in the community of Sloughhouse and has a remaining capacity of 112.9 million cubic yards. The estimated cease operation date for the landfill is January 1, 2064 (CalRecycle 2018). Kiefer Landfill has sufficient capacity to accommodate the solid waste disposal needs of the City of Folsom, and solid waste impacts from the proposed project would be less than significant for questions d) and e).

XX. WILDFIRE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
	If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a)	Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
b)	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	■
c)	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	■
d)	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	■

Environmental Setting

The project site is not located in or near a state responsibility area or lands classified as very high fire hazard severity zones (CAL FIRE 2019; City of Folsom 2018a).

Evaluation of Wildfire

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The project site is not located in or near a state responsibility area or lands classified as very high fire hazard severity zones. Therefore, no impact would occur for questions a) through d).

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

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

Evaluation of Mandatory Findings of Significance

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

Less Than Significant Impact. The preceding analysis indicates that the proposed project has the potential to adversely affect biological, cultural, and tribal cultural resources. See Sections 9.IV, 9.V, and 9.XVIII of this Initial Study for discussion of the proposed project's potential impacts on these environmental issue areas. With implementation of the mitigation measures identified in those Sections, and compliance with City programs and requirements identified in this report, impacts would be reduced to a less than significant level. No significant or potentially significant impacts would remain.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?

Less Than Significant Impact with Mitigation. While the project would indirectly contribute to cumulative impacts associated with increased urban development in the City and region, these impacts have previously been evaluated by the City and considered in development of the City's General Plan as set forth in this Initial Study. Key areas of concern are discussed in detail below.

Evaluation of cumulative biological resources impacts: Implementation of the proposed project, with continued growth within Folsom and implementation of the Folsom South of U.S. Highway 50 Specific Plan, would contribute to continued loss of habitat for biological resources by converting undeveloped areas to developed uses. The project site is disturbed, and no special status species have the potential to occur in the project site. However, the project site contains potentially suitable nesting habitat for common bird species protected under the MBTA and/or Fish and Game Code. Cumulative impacts to nesting birds may result in an overall effect on the viability of certain species. With implementation of Mitigation Measure BIO-01, the impacts would be reduced to a less than significant level and potentially cumulative impacts to protected common bird species would be avoided.

Evaluation of cumulative cultural resources impacts: A database records search was conducted for the project site, including a 0.5-mile buffer area, at the North Central Information Center at Sacramento State University. Additionally, a pedestrian survey of the project site was conducted by HELIX senior archaeologist, Carrie Wills. Although no evidence of cultural resources of significance were noted on project site, the City recognizes that sensitive and/or protected resources could be unintentionally discovered during project demolition and construction. With implementation of Mitigation Measures CUL-01 and CUL-02, the impacts would be reduced to a less than significant level and potentially cumulative impacts would be avoided.

Evaluation of cumulative hazards and hazardous materials impacts: Due to the age of the existing structures slated to be demolished, it is assumed that asbestos-containing materials and lead-based paint are present. The Hazardous Mitigation Measure HAZ-01 requires that the project applicant conduct asbestos and lead-based paint surveys prior to demolition activities. If hazards are present, the project applicant would have a licensed contractor dispose of these hazardous materials in accordance with federal, state, and local laws. Implementation of Mitigation Measure HAZ-01 would reduce impacts to a less than significant level and potentially cumulative impacts would be avoided.

Evaluation of cumulative transportation impacts: Year 2035 Conditions analyze the scenario that would exist with the buildout of land uses consistent with the City of Folsom 2035 Travel Demand Model (TDM). Year 2035 Conditions represent the long term, future year scenarios used in the evaluation of traffic operations. The projected turning movement volumes at the intersections were developed using the City of Folsom 2035 TDM. Year 2035 Plus Project Conditions were simulated by superimposing traffic generated by full build-out of the proposed project onto Year 2035 No Project traffic volumes (See Appendix H for the Year 2035 No Project traffic volumes).

Table 22. Year 2035 Plus Project Intersection Operations

#	Intersection	Traffic Control[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Oak Ave Pkwy/American River Canyon Dr	Signal	D	19.0	B	15.2	B
2	Canyon Terrace Ln (North)/American River Canyon Dr [North Dwy]	TWSC	D	10.5	B	10.2	B
3	River Ridge Way (North)/American River Canyon Dr	TWSC	D	11.5	B	11.0	B

#	Intersection	Traffic Control[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
4	Canyon Terrace Ln (South)/American River Canyon Dr [South Dwy]	TWSC	D	10.1	B	9.4	A
5	River Ridge Way (South) & Oak Canyon Way/American River Canyon Dr	TWSC	D	10.5	B	10.8	B
6	Crow Canyon Dr (North)/American River Canyon Dr	TWSC	D	11.9	B	10.5	B
7	Crow Canyon Dr (South)/ American River Canyon Dr	AWSC	D	8.8	A	8.4	A
8	Greenback Ln/American River Canyon Dr	Signal	D	14.2	B	45.2	D
9	Santa Juanita Ave/Oak Ave (West)	AWSC	D	12.5	B	16.0	C
10	Santa Juanita Ave/Oak Ave (East)	AWSC	D	16.3	C	21.1	C
11	**Oak Ave Pkwy/Baldwin Dam Rd**	**TWSC**	**D**	**36.6**	**E**	**38.7**	**E**
12	**Folsom Auburn Rd/Oak Ave Pkwy**	**Signal**	**D**	**62.8**	**E**	**63.5**	**E**

Source: GHD 2019 (Appendix H).
Notes:
[1]AWSC = All Way Stop Control; TWSC = Two/Three-Way Stop Control
[2]LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal
Bold = Unacceptable Conditions

The intersection of Folsom Auburn Road and Oak Avenue Parkway is projected to operate at unacceptable LOS E under Cumulative conditions (build-out of the 2035 General Plan). The addition of the project traffic to these Cumulative conditions increases the delay at this intersection by 2.4 seconds in the AM peak hour and 2.1 seconds in the PM peak hour. The increase in delay is less than the five seconds threshold for signalized intersections.

The intersection of Oak Avenue Parkway and Baldwin Dam Road currently operates at an unacceptable LOS of E under Existing conditions in the AM peak hour and continues to operate at that LOS after the addition of the project. The intersection is projected to operate at an acceptable level of LOS D in the AM peak hour and an unacceptable LOS of E during PM peak hour under Cumulative conditions (build-out of the 2035 General Plan). The addition of the project traffic to the 2035 General Plan build-out conditions results in a return to the existing LOS of E in the AM peak hour and increases the delay at this intersection by 3.2 seconds in the PM peak hour. While the project causes the intersection LOS to go from acceptable to unacceptable and a return to the existing LOS condition in the circumstances described, the project does not cause the peak hour warrant to be met in the AM peak hour, nor does it increase the delay by more than the five seconds threshold for unsignalized intersections in the PM peak hour. Therefore, transportation related impacts would be less than significant and potentially cumulative impacts would be avoided.

Evaluation of cumulative tribal cultural resources impacts: The City of Folsom sent project notification letters to three California Native American tribes, and the only tribe to respond was the UAIC, who requested consultation on the project and provided a suggested mitigation measure for unanticipated discoveries that the project may encounter during project construction. On October 3, 2018, the tribe responded to the City to indicate they were no longer interested in a consultation meeting, and instead, requested that their standard mitigation measure for sensitivity training, unanticipated discoveries, construction notification, and site inspection be adopted by the City. Although there is no evidence of tribal cultural resources occurring or having the potential to occur on the project site, the City recognizes that sensitive and/or protected resources could be unintentionally discovered during project demolition and construction. With implementation of Mitigation Measures TCR-01 through TCR-03, the impacts would be reduced to a less than significant level and potentially cumulative impacts would be avoided.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact. Because of site conditions, existing City regulations, and regulation of potential environmental impacts by other agencies, the proposed project would not have the potential to cause substantial adverse effects on human beings as demonstrated in the evaluation contained in this Initial Study. Therefore, impacts would be less than significant.

10.0 MITIGATION MONITORING AND REPORTING PROGRAM

A Mitigation Monitoring and Reporting Program (MMRP) has been prepared by the City per Section 15097 of the CEQA Guidelines and is presented in **Appendix I**.

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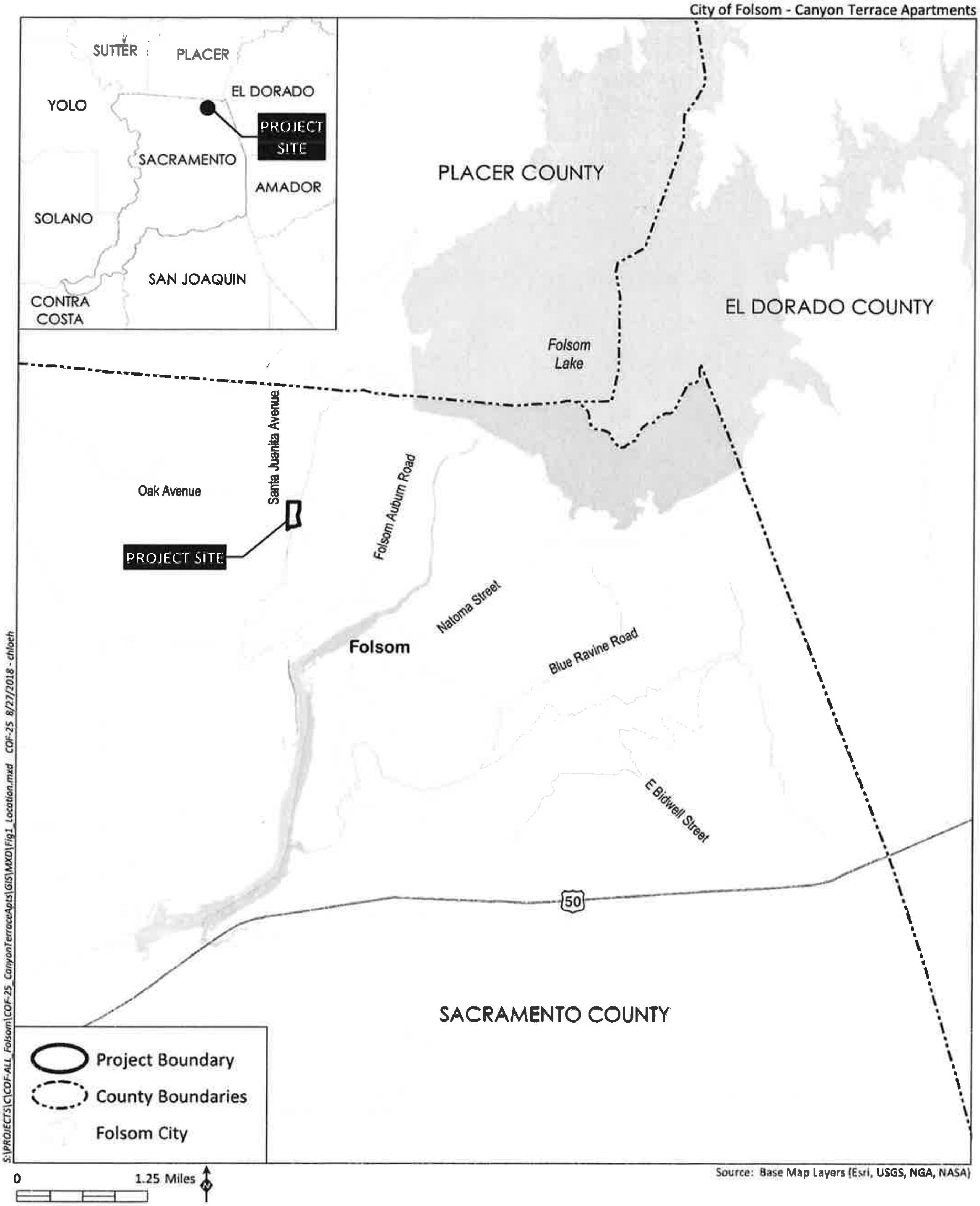
Appendix A

Figures



Source: Base Map Layers (Esri, USGS, NGA, NASA)

HELIX Environmental Planning

Regional Location

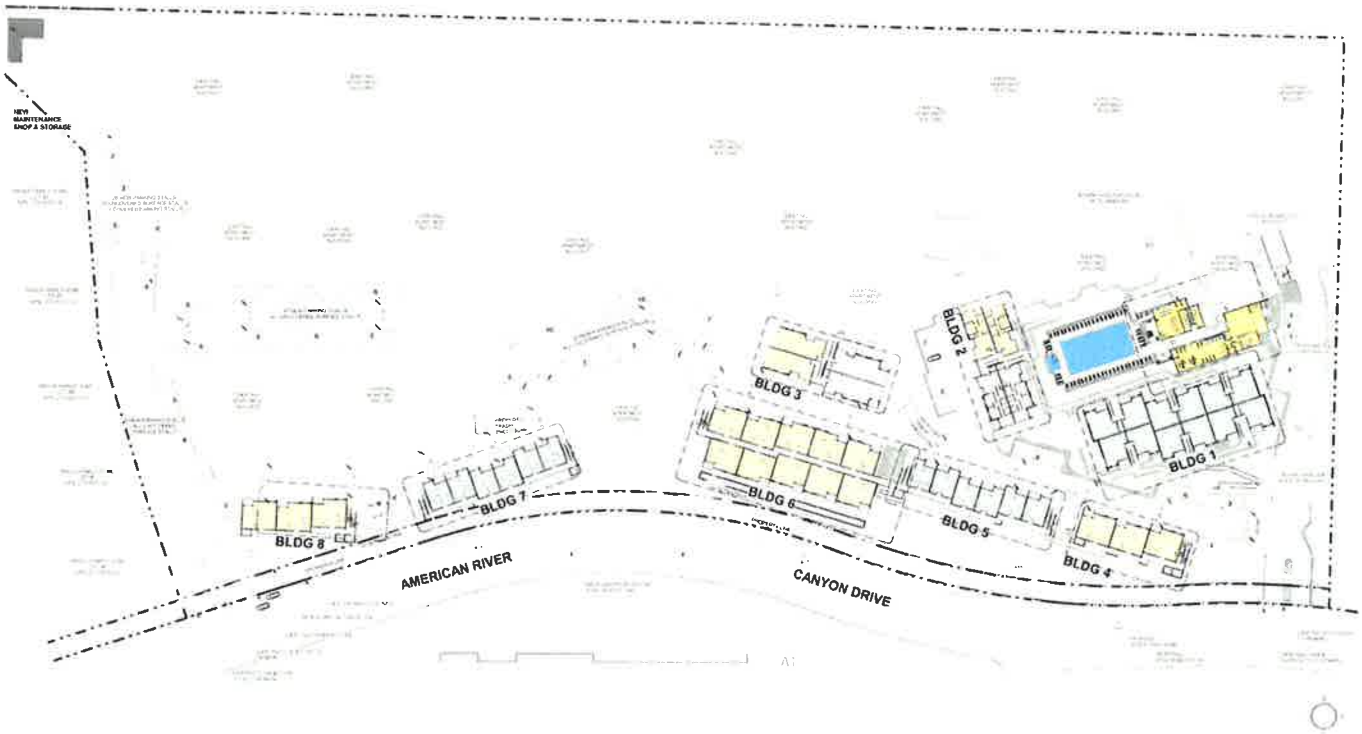
Figure 1

Source: Base Map Layers (Esri)

HELIX Environmental Planning

Aerial Map

Figure 2



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Source: MVE Partners 2019

Site Design Plan

Figure 3

Appendix B

Air Quality and Greenhouse Gas Analysis for the Canyon Terrace Apartments Project

Air Quality and Greenhouse Gas Analysis

FOR THE

Canyon Terrace Apartments Project

February 11, 2019

Prepared for:

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Prepared by:

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AIR QUALITY AND GREENHOUSE GAS ANALYSIS

FOR THE

CANYON TERRACE APARTMENTS PROJECT

FEBRUARY 11, 2019

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1Chapters Page Numbers

Appendices

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1.1 INTRODUCTION

This Air Quality and Greenhouse Gas Analysis identifies and analyzes the potential impacts from the Canyon Terrace Apartments Project (hereinafter "proposed project") related to air quality and greenhouse gas (GHG) emissions. The information and analysis in this document is prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) Guidelines and the Sacramento Metropolitan Air Quality Management District (SMAQMD) requirements. The modeling efforts utilized the California Emission Estimator Model (CalEEMod)™ (v.2016.3.2). Modeling outputs are provided in the Appendix. This study is organized as follows:

- Chapter 1 Introduction
- Chapter 2 Air Quality Analysis
- Chapter 3 Greenhouse Gas Emissions Analysis
- Chapter 4 References

The Air Quality Analysis and Greenhouse Gas Emissions Analysis each include an environmental setting, regulatory setting, thresholds of significance, impacts, and mitigation (as applicable).

1.2 PROJECT SUMMARY

The proposed project would expand the existing Canyon Terrace Apartments complex. The expansion of the Canyon Terrace Apartments is projected to construct 96 new residential units and 233 new parking spaces. The proposed parking would be allocated as follows:

- 127 surface stalls (including 3 ADA compliant spaces
- 79 garage stalls
- 27 carport stalls

The proposed project would include the demolition of an existing tennis court, swimming pool, leasing office, and associated parking, driveway, and walkway areas, in the northern portion of the project site. The existing leasing office that would be demolished is approximately 1,200 square feet. The remaining area that would require demolition would be approximately 18,900 square feet (asphalt from parking areas and driveways, and concrete from the pool, courts, and walkways). Fugitive dust emissions would be generated from the demolished material, and other air emissions would be generated from hauling of the demolished material to nearby landfills (as calculated by CalEEMod).

The proposed project would be located within an existing developed portion of the City of Folsom, approximately 360 feet south of the existing intersection of Oak Avenue Parkway and American River Canyon Drive. The proposed project site currently maintains a gentle downward slope from both east to west and from south to north. Vehicular access would be provided via two existing driveways on American River Canyon Drive, with both left-in and right-in entry permitted at each driveway. There are some existing trees located on the proposed project site, some of which may be removed during development of the proposed project. The surrounding land uses include multi-family residential uses to the east, single-family residential uses to the west, and both single- and multi-family residences to the south. A retail commercial shopping center (Village Shopping Center) is located to the north of the proposed project site.

This chapter describes the regional air quality, current attainment status of the air basin, local sensitive receptors, emission sources, and impacts that are likely to result from project implementation. This section is based in part on the following technical studies: *Air Quality and Land Use Handbook: A Community Health Perspective* (California Air Resources Board, 2005), *Guide to Air Quality Assessment in Sacramento County (CEQA Guide)* (SMAQMD, 2016), *SMAQMD Operational Screening Levels* (SMAQMD, 2018), *Sacramento County General Plan* (Sacramento County, 2017), City of Folsom General Plan (City of Folsom, 2018) and the California Emission Estimator Model (CalEEMod)™ (v.2016.3.2) (California Air Pollution Control Officers Association, 2018). The Greenhouse Gases and Climate Change analysis is located in Chapter 3.

2.1 EXISTING SETTING

SACRAMENTO VALLEY AIR BASIN

The City of Folsom is located within the Sacramento Valley Air Basin (SVAB). The SVAB is the northern half of California's Great Valley and is bordered on three sides (west, north, and east) by mountain ranges, with peaks in the eastern range above 9,000 feet. The SVAB is approximately 13,700 square miles and essentially a smooth valley floor with elevations ranging from 40 to 500 feet. The rolling valley is interrupted by the Sutter Buttes, an area of 80 square miles in northern Sutter County, which rise abruptly to more than 2,100 feet above the valley floor.

Climate

The climate in the project area is considered Mediterranean, which is characterized by hot, dry summers and cool, wet winters. Within the project area, temperatures range from an average January low of approximately 36°F to an average July high of approximately 96°F. Between mid-April and mid-October, significant precipitation is unlikely and high temperatures often peak at over 100 degrees Fahrenheit (F) with lows in the high 50s and low 60s.

Winters are fairly mild, with the most rainfall coming in January. Rainfall in the project area averages approximately 26 inches annually and occurs predominantly from October to May. During the winter, highs are typically in the 60s with lows in the 30s. "Tule fog" (thick ground fog) is often present during the autumn and winter months. The typical seasonal pattern is for North Pacific cyclonic storms to periodically sweep into the area from October through April and for high pressure to dominate over the area and to deflect storms from May to October.

Air Movement

As with all of Central California, climate in the project area is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell over the northeastern Pacific Ocean. Climate is also affected by the temperature moderating effects of the nearby oceanic heat reservoir. Warm summers, cool winters, rainfall, daytime onshore breezes, and moderate humidity characterize regional climatic conditions.

In summer, when the high-pressure cell is strongest, temperatures are very warm and humidity is low. The daily incursion of the sea breeze into the Central Valley, however, creates persistent breezes that moderate the summer heat. In winter, when the high-pressure cell is weakest, conditions are characterized by occasional rainstorms interspersed with stagnant conditions and sometimes heavy fog.

Airflow patterns in the basin can be characterized by one of eight directional types, the most frequent being northwesterly, that is to say, predominant surface wind flows in the project area are from the south/southeast. These wind flows generally occur at speeds of approximately 9-10 mph. The northwesterly flow is predominant in spring and summer, but seasonal variations do occur. Calm conditions dominate the winter months.

Inversions occur in the SVAB with great frequency in all seasons. The most stable inversions occur in late summer and fall. The summertime inversions are often the result of marine air pushing under an overlying warm air mass. These are termed "marine inversions" and are generally accompanied by brisk afternoon winds, which provide good air circulation.

In contrast, many autumn inversions are the result of warm air subsiding in a high-pressure cell where accompanying light winds do not provide adequate dispersion. Autumn inversions limit vertical mixing, creating a very stable layer of air with very light or calm winds. These inversions are usually present on clear cold nights during late fall and winter. In the morning, these ground based inversions are weakened and eventually eliminated by solar heating. As a result, they are strongest in the late night and early morning, when ground-level temperatures are coldest and solar radiation is low.

Seasonal Pollution Variations

Carbon monoxide, oxides of nitrogen, particulate matters, and lead particulate concentrations in the late fall and winter are highest when there is little interchange of air between the valley and the coast and when humidity is high following winter rains. This type of weather is associated with radiation fog, known as tule fog, when temperature inversions at ground level persist over the entire valley for several weeks and air movement is virtually absent.

Pollution potential in the project area is relatively high due to the combination of air pollutant emissions sources, transport of pollutants into the area and meteorological conditions that are conducive to high levels of air pollution. Elevated levels of particulate matter (primarily fine particulates or $PM_{2.5}$) and ground-level ozone are of most concern to regional air quality officials.

Local carbon monoxide "hot spots" are important to a lesser extent. Ground-level ozone, the principal component of smog, is not directly emitted into the atmosphere but is formed by the reaction of reactive organic gases (ROG) and nitrogen oxides (NOx) (known as ozone precursor pollutants) in the presence of strong sunlight. Ozone levels are highest in the project area during late spring through early fall, when weather conditions are conducive and emissions of the precursor pollutants are highest.

Surface-based inversions that form during late fall and winter nights cause localized air pollution problems (PM_{10} and carbon monoxide) near the emission sources because of poor dispersion conditions. Emission sources are primarily from automobiles. Conditions are exacerbated during drought-year winters.

CRITERIA POLLUTANTS

The United States Environmental Protection Agency (EPA) uses six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). Each criteria pollutant is described below.

Ozone (O_3) is a photochemical oxidant and the major component of smog. While ozone in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of ozone at ground level are a major health and environmental concern. Ozone is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) in the presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak ozone levels occur typically during the warmer times of the year. Both VOCs and NOx are emitted by transportation and industrial sources. VOCs are emitted from sources as diverse as autos, chemical manufacturing, dry cleaners, paint shops and other sources using solvents.

The reactivity of ozone causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of ozone not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to ozone for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Carbon monoxide (CO) is a colorless, odorless and poisonous gas produced by incomplete burning of carbon in fuels. When CO enters the bloodstream, it reduces the delivery of oxygen to the body's organs and tissues. Health threats are most serious for those who suffer from cardiovascular disease, particularly those with angina or peripheral vascular disease. Exposure to elevated CO levels can cause impairment of visual perception, manual dexterity, learning ability and performance of complex tasks.

Nitrogen dioxide (NO_2) is a brownish, highly reactive gas that is present in all urban atmospheres. NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O_3) and acid rain, and may affect both terrestrial and aquatic ecosystems. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide. NOx plays a major role, together with VOCs, in the atmospheric reactions that produce ozone. NOx forms when fuel is burned at high temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

Sulfur dioxide (SO_2) affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. SO_2 is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. Ambient SO_2 results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from nonferrous smelters.

Particulate matter (PM) includes dust, dirt, soot, smoke and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires and natural windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO_2 and VOCs are also considered particulate matter.

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO_2) and laboratory studies of animals and humans, there are major effects of concern for human health. These include effects on breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense systems against foreign materials, damage to lung tissue, carcinogenesis and premature death.

Respirable particulate matter (PM_{10}) consists of small particles, less than 10 microns in diameter, of dust, smoke, or droplets of liquid which penetrate the human respiratory system and cause irritation by themselves, or in combination with other gases. Particulate matter is caused primarily by dust from grading and excavation activities, from agricultural activities (as created by soil preparation activities, fertilizer and pesticide spraying, weed burning and animal husbandry), and from motor vehicles, particularly diesel-powered vehicles. PM_{10} causes a greater health risk than larger particles, since these fine particles can more easily penetrate the defenses of the human respiratory system.

Fine particulate matter ($PM_{2.5}$) consists of fine particles, which are less than 2.5 microns in size. Similar to PM_{10}, these particles are primarily the result of combustion in motor vehicles, particularly diesel engines, as well as from industrial sources and residential/agricultural activities such as burning. It is also formed through the reaction of other pollutants. As with PM_{10}, these particulates can increase the chance of respiratory disease, and cause lung damage and cancer. In 1997, the EPA created new Federal air quality standards for $PM_{2.5}$.

The major subgroups of the population that appear to be most sensitive to the effects of particulate matter include individuals with chronic obstructive pulmonary or cardiovascular disease or influenza, asthmatics, the elderly and children. Particulate matter also impacts soils and damages materials, and is a major cause of visibility impairment.

Lead (Pb) exposure can occur through multiple pathways, including inhalation of air and ingestion of Pb in food, water, soil or dust. Excessive Pb exposure can cause seizures, mental retardation and/or behavioral disorders. Low doses of Pb can lead to central nervous system damage. Recent studies have also shown that Pb may be a factor in high blood pressure and subsequent heart disease.

ODORS

Typically odors are regarded as a nuisance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another.

It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

SENSITIVE RECEPTORS

A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals and schools. The proposed project includes residences that presumably will have sensitive receptors.

AMBIENT AIR QUALITY

Both the U.S. EPA and the CARB have established ambient air quality standards for common pollutants. These ambient air quality standards represent safe levels of contaminants that avoid specific adverse health effects associated with each pollutant.

The federal and California state ambient air quality standards are summarized in **Table 2-1** for important pollutants. The federal and state ambient standards were developed independently, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone, $PM_{2.5}$, and PM_{10}.

TABLE 2-1: FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

POLLUTANT	*AVERAGING TIME*	*FEDERAL PRIMARY STANDARD*	*STATE STANDARD*
Ozone	1-Hour 8-Hour	-- 0.070 ppm	0.09 ppm 0.070 ppm
Carbon Monoxide	8-Hour 1-Hour	9.0 ppm 35.0 ppm	9.0 ppm 20.0 ppm
Nitrogen Dioxide	Annual 1-Hour	0.053 ppm 0.100 ppm	0.03 ppm 0.18 ppm
Sulfur Dioxide	Annual 24-Hour 1-Hour	0.03 ppm 0.14 ppm 0.075 ppm	-- 0.04 ppm 0.25 ppm
PM_{10}	Annual 24-Hour	-- 150 ug/m³	20 ug/m³ 50 ug/m³
$PM_{2.5}$	Annual 24-Hour	12 ug/m³ 35 ug/m³	12 ug/m³ --
Lead	30-Day Avg. 3-Month Avg.	-- 0.15 ug/m³	1.5 ug/m³ --

NOTES: PPM = PARTS PER MILLION, µG/M³ = MICROGRAMS PER CUBIC METER
SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2017A.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Existing air quality concerns within the project area are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to TACs, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles which account for 70 percent of the ozone in the region. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

Attainment Status

In accordance with the California Clean Air Act (CCAA), the CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria.

Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone (O_3), carbon monoxide (CO), and nitrogen dioxide (NO_2) as "does not meet the primary standards," "cannot be classified," or "better than national standards." For sulfur dioxide (SO_2), areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used.

Sacramento County has a state designation of nonattainment for Ozone and PM_{10}, and is either unclassified or attainment for all other criteria pollutants. Sacramento County has a national designation of nonattainment for ozone and $PM_{2.5}$. The County is designated either attainment or unclassified for all other criteria pollutants. **Table 2-2** presents the state and nation attainment status for Sacramento County.

TABLE 2-2: STATE AND NATIONAL ATTAINMENT STATUS

CRITERIA POLLUTANTS	***STATE DESIGNATIONS***	***NATIONAL DESIGNATIONS***
Ozone	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Attainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide	Unclassified	N/A
Visibility Reducing Particles	Unclassified	N/A

SOURCES: CALIFORNIA AIR RESOURCES BOARD, 2017B.

Sacramento County Monitoring

CARB maintains numerous air quality monitoring sites throughout Sacramento County to measure ozone and $PM_{2.5}$. CARB also maintains numerous air quality monitoring site throughout the SVAB to monitor PM_{10}. It is important to note that the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards. Data obtained from the monitoring sites in Sacramento County between 2015 and 2017 is summarized in **Tables 2-3 through 2-4**, and data in the SVAB between 2015 and 2017 is summarized in **Table 2-5**.

TABLE 2-3 SACRAMENTO COUNTY AMBIENT AIR QUALITY MONITORING DATA SUMMARY - OZONE 2014-2016

Year	*Days > Standard*				*1-Hour Observations*			*8-Hour Averages*				*Year Coverage*	
	State		*National*			*State*	*Nat'l*	*State*		*National*			
	1-Hr	*8-Hr*	*1-Hr*	*8-Hr*	*Max.*	*D.V.[1]*	*D.V.[2]*	*Max.*	*D.V.[1]*	*Max.*	*D.V.[2]*	*Min*	*Max*
2017	6	21	0	18	0.121	0.11	0.107	0.092	0.089	0.091	0.082	20	98
2016	10	33	0	33	0.111	0.11	0.107	0.095	0.093	0.094	0.083	87	100
2015	6	20	0	20	0.122	0.10	0.101	0.094	0.088	0.094	0.080	88	99

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. THE NATIONAL 1-HOUR OZONE STANDARD WAS REVOKED IN JUNE 2005 AND IS NO LONGER IN EFFECT. STATISTICS RELATED TO THE REVOKED STANDARD ARE SHOWN IN ITALICS. D.V. [1]= STATE DESIGNATION VALUE. D.V. [2]= NATIONAL DESIGN VALUE.

SOURCE: CARB AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM (ADAM) AIR POLLUTION SUMMARIES, 2017.

TABLE 2-4 SACRAMENTO COUNTY AMBIENT AIR QUALITY MONITORING DATA SUMMARY - $PM_{2.5}$ 2015-2017

Year	*Est. Days > Nat'l '06 Std.*	*Annual Average*		*Nat'l Ann. Std. D.V.[1]*	*State Annual D.V.[2]*	*Nat'l '06 Std. 98th Percentile*	*Nat'l '06 24-Hr Std. D.V.[1]*	*High 24-Hour Average*		*Year Coverage*	
		Nat'l	*State*					*Nat'l*	*State*	*Min.*	*Max*
2017	6.2	9.7	14.0	9.6	14	34.9	34	46.9	46.9	94	98
2016	3.3	8.8	9.8	9.3	12	28.2	31	46.8	57.5	8	96
2015	8.7	10.4	12.3	10.2	12	37.8	35	54.5	54.5	91	99

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA. D.V. [1]= STATE DESIGNATION VALUE. D.V. [2]= NATIONAL DESIGN VALUE

SOURCE: CARB AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM (ADAM) AIR POLLUTION SUMMARIES, 2017.

TABLE 2-5: SVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM_{10} 2015-2017

Year	*Est. Days > Std.*		*Annual Average*		*3-Year Average*		*High 24-Hr Average*		*Year Coverage*
	Nat'l	*State*	*Nat'l*	*State*	*Nat'l*	*State*	*Nat'l*	*State*	
2017	6.1	19.3	26.4	22.0	24	23	237.7	242.0	0-100
2016	*	12.2	24.2	20.6	23	25	88.5	88.9	0-100
2015	0.0	25.2	27.0	24.9	20	25	114.6	118.0	0-100

NOTES: THE NATIONAL ANNUAL AVERAGE PM_{10} STANDARD WAS REVOKED IN DECEMBER 2006 AND IS NO LONGER IN EFFECT. AN EXCEEDANCE IS NOT NECESSARILY A VIOLATION. STATISTICS MAY INCLUDE DATA THAT ARE RELATED TO AN EXCEPTIONAL EVENT. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. NATIONAL STATISTICS ARE BASED ON STANDARD CONDITIONS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA.

SOURCE: CARB AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM (ADAM) AIR POLLUTION SUMMARIES, 2017.

2.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

The law recognizes the importance for each state to locally carry out the requirements of the FCAA, as special consideration of local industries, geography, housing patterns, etc. are needed to have full comprehension of the local pollution control problems. As a result, the EPA requires each state to develop a State Implementation Plan (SIP) that explains how each state will implement the FCAA within their jurisdiction. A SIP is a collection of rules and regulations that a particular state will implement to control air quality within their jurisdiction. CARB is the state agency that is responsible for preparing and implementing the California SIP.

Transportation Conformity

Transportation conformity requirements were added to the FCAA in the 1990 amendments, and the EPA adopted implementing regulations in 1997. See §176 of the FCAA (42 U.S.C. §7506) and 40 CFR Part 93, Subpart A. Transportation conformity serves much the same purpose as general conformity: it ensures that transportation plans, transportation improvement programs, and projects that are developed, funded, or approved by the United States Department of Transportation or that are recipients of funds under the Federal Transit Act or from the Federal Highway Administration (FHWA), conform to the SIP as approved or promulgated by EPA.

Currently, transportation conformity applies in nonattainment areas and maintenance areas. Under transportation conformity, a determination of conformity with the applicable SIP must be made by the agency responsible for the project, such as the Metropolitan Planning Organization, the Council of Governments, or a federal agency. The agency making the determination is also responsible for all the requirements relating to public participation. Generally, a project will be considered in conformance if it is in the transportation improvement plan and the transportation improvement plan is incorporated in the SIP. If an action is covered under transportation conformity, it does not need to be separately evaluated under general conformity.

Transportation Control Measures

One particular aspect of the SIP development process is the consideration of potential control measures as a part of making progress towards clean air goals. While most SIP control measures are aimed at reducing emissions from stationary sources, some are typically also created to address mobile or transportation sources. These are known as transportation control measures (TCMs). TCM strategies are designed to reduce vehicle miles traveled and trips, or vehicle idling and associated air pollution. These goals are achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

STATE

CARB Mobile-Source Regulation

The State of California is responsible for controlling emissions from the operation of motor vehicles in the state. Rather than mandating the use of specific technology or the reliance on a specific fuel, the CARB's motor vehicle standards specify the allowable grams of pollution per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved. Towards this end, the CARB has adopted regulations which required auto manufacturers to phase in less polluting vehicles.

California Clean Air Act

The California Clean Air Act (CCAA) was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the California Health and Safety Code Section §39606(b), which are similar to the federal standards.

Air Quality Standards

NAAQS are determined by the U.S. EPA. The standards include both primary and secondary ambient air quality standards. Primary standards are established with a safety margin. Secondary standards are more stringent than primary standards and are intended to protect public health and welfare. States have the ability to set standards that are more stringent than the federal standards. As such, California established more stringent ambient air quality standards.

Federal and state ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulates (PM_{10}) and lead. In addition, California has created standards for pollutants that are not covered by federal standards. The state and federal primary standards for major pollutants are shown in Table 2-1.

Tanner Air Toxics Act

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and has adopted the U.S. EPA's list of HAPs as TACs. Most recently, diesel PM was added to the CARB list of TACs. Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

The AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

LOCAL

Air Quality Attainment Plans

Each of the attainment plans currently in effect for the SVAB are discussed in further detail below.

2017 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan

The Sacramento region is classified as a severe-15 nonattainment area for the 2008 NAAQS. The Sacramento Air Quality Management District (SMAQMD), along with the other air districts in the region, prepared the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan in December 2008. The CARB determined that the Plan met CAA requirements and approved the plan on March 26, 2009 as a revision to the SIP. An update to the plan, 2017 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (*2017 Ozone Attainment Plan*), has been prepared and was approved and adopted by the CARB on November 16, 2017. A further update to the plan, *2018 Updates to the California State Implementation Plan*, was adopted by the CARB on October 25, 2018.

$PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area

The U.S. EPA promulgated a new 24-hour standard for $PM_{2.5}$ in October 2006, which strengthened the daily standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ to protect the general public from health effects caused by exposure to fine particulate matter. Although the Sacramento area had attained the prior $PM_{2.5}$ standards, the area did not meet the new standards and the U.S. EPA Administrator established $PM_{2.5}$ nonattainment designations for the 2006 standard, which became effective on December 14, 2009. In the U.S. EPA's final designation, a multi-county $PM_{2.5}$ nonattainment area was created in the Sacramento region.

However, the Sacramento federal $PM_{2.5}$ Nonattainment Area attained the federal $PM_{2.5}$ health standards on December 31, 2011. To be re-designated, the area must, among other things, show that attainment was achieved by permanent and enforceable reductions and that the area would remain below the standard for 10 years after accounting for emissions growth. The $PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area (*$PM_{2.5}$ Implementation/Maintenance Plan*) was prepared to show that the region has met the requirements and requests that the U.S. EPA re-designate the area to attainment. The U.S EPA issued a final rule for Determination of Attainment for the Sacramento Nonattainment Area effective August 14, 2013. The *$PM_{2.5}$ Implementation/Maintenance Plan* would be adopted by the air districts within the nonattainment area, as well as the CARB, as a revision to the SIP. Contents of the *$PM_{2.5}$ Implementation/Maintenance Plan* include demonstration that the NAAQS was met and that all requirements have been met for a re-designation to attainment, specification of actions to be taken if the standards are violated in the future, and establishment of regional motor vehicle emission budgets.

Sacramento County's nonattainment status for ozone and, although not required, PM_{10}. The AQAP also addressed CO. The AQAP was designed to make expeditious progress toward attaining the State ozone standard and contained preliminary implementation schedules for control programs on stationary sources, transportation, indirect sources, and a vehicle/fuels program.

The CCAA also requires that air districts assess their progress toward attaining the CAAQS once every three years. The triennial assessment is to report the extent of air quality improvement and the amounts of emission reductions achieved from control measures for the preceding three-year period. The SMAQMD reviews and revises the AQAP, if necessary, to correct for deficiencies in meeting progress, to incorporate new data or projections, to mitigate ozone transport, and to pursue the expeditious adoption of all feasible control measures. The most recent triennial assessment is the 2009 Triennial Report and Plan Revision. SMAQMD rules included in the Triennial Reports and AQAP Revisions are intended to limit emissions from stationary sources. Programs are also proposed to provide incentives for mobile heavy-duty vehicles/engines, CEQA mitigation for construction and land use development, and a Spare the Air program to reduce vehicle trips. Additional rules include, but may not be limited to, rules that would reduce emissions from degreasing and solvent cleaning operations, adhesives and sealants, solvents and unspecified coatings.

1991 Air Quality Attainment Plan and Triennial Reports

In addition to the federal attainment plans discussed above for meeting NAAQS, the CCAA of 1988 requires air districts to endeavor to achieve and maintain the CAAQS and develop plans for attainment. Sacramento County meets the CAAQS for sulfur dioxide, nitrogen dioxide, and carbon monoxide, but is designated nonattainment for the State ozone and particulate matter standards. In compliance with the CCAA, the SMAQMD prepared and submitted the 1991 Air Quality Attainment Plan (AQAP) to mainly address Sacramento County's nonattainment status for ozone and, although not required, PM_{10}. The AQAP also addressed CO. The AQAP was designed to make expeditious progress toward attaining the State ozone standard and contained preliminary implementation schedules for control programs on stationary sources, transportation, indirect sources, and a vehicle/fuels program.

The CCAA also requires that air districts assess their progress toward attaining the CAAQS once every three years. The triennial assessment is to report the extent of air quality improvement and the amounts of emission reductions achieved from control measures for the preceding three-year period. The SMAQMD reviews and revises the AQAP, if necessary, to correct for deficiencies in meeting progress, to incorporate new data or projections, to mitigate ozone transport, and to pursue the expeditious adoption of all feasible control measures. The most recent triennial assessment is the 2009 Triennial Report and Plan Revision. SMAQMD rules included in the Triennial Reports and AQAP Revisions are intended to limit emissions from stationary sources. Programs are also proposed to provide incentives for mobile heavy duty vehicles/engines, CEQA mitigation for construction and land use development, and a Spare the Air program to reduce vehicle trips. Additional rules include, but may not be limited to, rules that would reduce emissions from degreasing and solvent cleaning operations, adhesives and sealants, solvents and unspecified coatings.

Sacramento Metropolitan Air Quality Management District (SMAQMD)

At the county level, air quality is managed through land use and development planning practices that are implemented by Sacramento County and the incorporated Cities and through permitted source controls that are implemented by the Sacramento County Air Quality Management District.

The SMAQMD is responsible for (1) implementing air quality regulations, including developing plans and control measures for stationary sources of air pollution to meet the NAAQS and CAAQS, (2) implementing permit programs for the construction, modification, and operation of sources of air pollution, and (3) enforcing air pollution statutes and regulations governing stationary sources. With CARB oversight, the SMAQMD administers local regulations.

SMAQMD also has a set of rules and regulations applicable to construction, of which the following are relevant to this project:

- **Rule 402: Nuisance**. A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.

- **Rule 403: Fugitive Dust**. The responsible person or entity is required to implement every reasonable method to control dust emissions from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation to prevent fugitive dust generated through those activities from escaping the project site. Actions include but are not limited to application of water or chemicals, asphalt, and/or oil depending on the dust-generating activity.

- **Rule 442: Architectural Coatings**. The responsible person or entity may not use a coating with a VOC content in excess of the corresponding limits specified in this rule.

- **Rule 453**: **Cutback and Emulsified Asphalt Paving Materials**: Asphalt paving operations that may be associated with implementation of the project would be subject to Rule 453. This rule applies to the manufacture and use of cutback asphalt and emulsified asphalt for paving and maintenance operation

City of Folsom General Plan

The City of Folsom General Plan (2018) establishes the following goals and policies relative to air quality in the General Plan:

Goal NCR 3.1 Improve the air quality in Folsom by meeting State and Federal standards, minimizing public exposure to hazardous air pollutants, reducing particulate matter in the atmosphere, and minimizing odors.

Policy NCR 3.1.1 Regional Cooperation: Coordinate with surrounding jurisdictions, the Sacramento Metropolitan Air Quality Management District (SMAQMD), the California Air Resources Board (ARB), CALTRANS, and the U.S. Environmental Protection Agency toward the development of a consistent and effective approach to the regional air pollution problem.

Policy NCR 3.1.2 Coordinate on Review of Air Quality Impacts: Coordinate with ARB and SMAQMD to use consistent and accurate procedures in the review of projects which may have air quality impacts. Comments on the analysis shall be solicited from SMAQMD and ARB.

Policy NCR 3.1.3 Reduce Vehicle Miles Traveled: Encourage efforts to reduce the amount of vehicle miles traveled (VMT). These efforts could include encouraging mixed-use development promoting a jobs/housing balance, and encouraging alternative transportation such as walking, cycling, and public transit.

Policy NCR 3.1.4 Maintain Ambient Air Quality Standards: Work with the California Air Resources Board (ARB) and the Sacramento Metropolitan Air Quality Management District (SMAQMD) to meet State and National ambient air quality standards in order to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location from the health effects of air pollution.

Policy NCR 3.1.5 Emission Reduction Threshold for New Development: Require all new development projects that exceed SMAQMD's thresholds of significance to incorporate design, construction material, and/or other operational features that will result in a minimum of 15 percent reduction in emissions when compared to an "unmitigated baseline" project.

Policy NCR 3.1.6 Sensitive Uses: Coordinate with SMAQMD in evaluating exposure of sensitive receptors to toxic air contaminants and odors, and impose appropriate conditions on projects to protect public health and safety so as to comply with the requirements of SMAQMD for the exposure of sensitive receptors to toxic air contaminants and odors.

Goal NCR 3.2 Improve the sustainability of the community through continued local efforts to reduce GHG emissions.

Policy NCR 3.2.1 Community Greenhouse Gas Reductions: Reduce community GHG emissions by 15 percent below 2005 baseline levels by 2020, and further reduce community emissions by:

- 40 percent below the 2020 target by 2030;
- 51 percent below the 2020 target by 2040, and
- 80 percent below the 2020 target by 2050.

Policy NCR 3.2.2 Municipal Greenhouse Gas Reductions: Reduce municipal GHG emissions by 15 percent below 2005 baseline levels by 2020, and further reduce municipal emissions by:

- 40 percent below the 2020 target by 2030;
- 51 percent below the 2020 target by 2040, and
- 80 percent below the 2020 target by 2050.

Policy NCR 3.2.3 Greenhouse Gas Reduction in New Development: Reduce greenhouse gas emissions from new development by encouraging development that lowers vehicle miles traveled (VMT), and discouraging auto-dependent sprawl and dependence on the private automobile; promoting development that is compact, mixed-use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; improving the jobs/housing ratio; and other methods of reducing emissions while maintaining the balance of housing types Folsom is known for.

Policy NCR 3.2.4 Additional GHG Emission Programs: Continue to evaluate the feasibility and effectiveness of new policies, programs, and regulations that contribute to achieving the City's long-term GHG emissions reduction goals (see Policies NCR 3.2.1 and 3.2.2).

Policy NCR 3.2.5 Climate Change Assessment and Monitoring: Continue to assess and monitor performance of GHG emissions reduction efforts for 2020, 2030, and beyond, including progress toward meeting longer-term GHG emissions reduction goals for 2035 and 2050 by reporting on the City's progress annually, updating the GHG inventory and forecasts at least every five years, and preparing updates to the GHG Strategy in the General Plan, as appropriate; as well as assess and monitor the effects of climate change and associated levels of risk in order to plan a community that can adapt to changing climate conditions and be resilient to negative changes and impacts.

Policy NCR 3.2.6 Coordination with SMAQMD: Coordinate with SMAQMD to ensure projects incorporate feasible mitigation measures to reduce GHG emissions and air pollution from both construction and operations, if not already provided for through project design.

Policy NCR 3.2.7 Preference for Reduced-Emission Equipment: Require contractors to use reduced-emission equipment for City construction projects and contracts for services.

Policy NCR 3.2.8 GHG Analysis Streamlining for Projects Consistent with the General Plan: Projects subject to environmental review under CEQA may be eligible for tiering and streamlining the analysis of GHG emissions, provided they are consistent with the GHG reduction measures included in the General Plan and EIR. The City may review such projects to determine whether the following criteria are met:

- Proposed project is consistent with the General Plan land use designation for the project site;
- Proposed project incorporates all applicable GHG reduction measures (documented in the Climate Change Technical Appendix to the General Plan EIR) as enforceable mitigation measures in the CEQA document prepared for the project; and,
- Proposed project clearly demonstrates the method, timing and process for which the project will comply with applicable GHG reduction measures and/or conditions of approval, (e.g., using a CAP/GHG reduction measures consistency checklist, mitigation monitoring and reporting plan, or other mechanism for monitoring and enforcement as appropriate).

2.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment associated with air quality if it will:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people.

ANALYSIS METHODOLOGY

Potential air quality impacts associated with short-term construction and long-term operations were evaluated in accordance with SMAQMD-recommended and ARB-approved methodologies. Construction and operational emissions of criteria air pollutants were compared with the applicable thresholds of significance (described below) to determine potential impacts. SMAQMD's significance thresholds serve as a proxy for determining whether the project could violate air quality standards, cause a substantial contribution to an existing or projected air quality violation, and conflict with any applicable air quality plan.

Construction-related emissions were modeled using the California Emissions Estimator Model California Emission Estimator Model (CalEEMod)™ (v.2016.3.2) (California Air Pollution Control Officers, 2018). Project-specific construction parameters were used as inputs in the air quality analysis (to the extent information was available). Construction is assumed to begin in September 2019 and last approximately 18 months, through March 2021. Where project-specific information was not available, default parameters provided by each model were used. It should be noted that default assumptions in the models are typically conservative to avoid underestimating emissions when project-specific information is not available. Modeled construction-related emissions are compared with the applicable SMAQMD thresholds to determine significance.

Following construction, operation of the proposed project would generate air pollutant emissions. CalEEMod was also used to estimate these long-term operational emissions, as well as emissions associated with area and energy sources (i.e., natural gas combustion, landscape maintenance, periodic architectural coating, and consumer products). Operational emissions associated with day-to-day activities of the proposed project were quantified using CalEEMod and trip generation rates were based upon the traffic study prepared (Omni Means 2017). Mobile sources would involve vehicle trips, including construction trucks and passenger cars. The analysis of mobile-source emissions compares the gross mobile-source emissions with the SMAQMD thresholds of significance for project operations. CO impacts were evaluated using the screening-level procedures provided by SMAQMD (2016).

The impact analysis does not directly evaluate airborne lead. Neither construction nor future operations would generate quantifiable lead emissions because of regulations that require unleaded fuel and that prohibit lead in new building materials.

TAC emissions associated with project construction that could affect surrounding areas are evaluated qualitatively. SMAQMD has not provided guidance or adopted a threshold of significance regarding how to evaluate TAC emissions from construction equipment. The potential for the proposed project operations to expose residents to TAC emissions that would exceed applicable health standards is also discussed qualitatively.

Lastly, SMAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis must determine if the proposed project would result in excessive nuisance odors, as defined under California Code of Regulations, Health and Safety Code Section 41700, Air Quality Public Nuisance.

IMPACTS AND MITIGATION MEASURES

Impact 2-1: Project operations have the potential to cause a violation of an air quality standard, contribute substantially to an existing or projected air quality violation, or conflict with or obstruct implementation of the applicable air quality plan (less than significant with mitigation)

The proposed project would be a direct and indirect source of air pollution, in that it would generate and attract vehicle trips in the region (mobile source emissions) and it would increase area source emissions and energy consumption. The mobile source emissions would be entirely from vehicles, while the area source emissions would be primarily from the use of natural gas fuel combustion, hearth fuel combustion, landscape fuel combustion, consumer products, and architectural coatings.

SMAQMD provides operational screening levels for projects based on their land use type. Those projects that meet the SMAQMD-specified criteria do not require modelling for project operations. For low-rise apartments, for which the proposed project qualifies, the operational precursor screening level for ozone is 682 dwelling units, and for PM is 1,385 units (SMAQMD, 2018). Projects that develop low-rise apartments that are below these criteria do not require modelling for project operations. Since the proposed project would develop 96 new residential dwelling units and it would consist of low-rise apartments, the proposed project would not require modelling for project operations. However, in order to comply with this screening table, the proposed project is required to included best management practices (BMPs) for PM emissions, and project trip generation rates cannot be higher than the default trip rates in CalEEMod (note: CalEEMod trips rates are based on standard rates from the Institute of Transportation Engineers Trip Generation Manual).

Although it is not expected that the proposed project trip rates would be higher than the default trip rates in CalEEMod, out of an abundance of caution, proposed project operational emissions were modelled using CalEEMod (v.2016.3.2), and compared to the SMAQMD operational thresholds of significance.

Table 2-6 provides the project-level operational threshold of significance for ROG, NOX, and PM_{10}. Thresholds are provided in pounds per day (lbs/day) and/or tons/year. There is no threshold established for $PM_{2.5}$.

TABLE 2-6: PROJECT-LEVEL OPERATIONAL EMISSION THRESHOLDS

	ROG	NOx	PM_{10}	$PM_{2.5}$
Threshold	65 lbs/day	65 lbs/day	80 lbs/day*; 14.6 tons per year*	82 lbs/day*; 15 tons/year*

SOURCE: SMAQMD GUIDE TO AIR QUALITY ASSESSMENT IN SACRAMENTO COUNTY (CEQA GUIDE) (2016)

**ASSUMES ALL FEASIBLE BACT/BMPS ARE APPLIED FOR PM.*

As previously described, CalEEMod (v.2016.3.2) was used to estimate project-level operational emissions for the proposed project. **Table 2-7** shows proposed project operational emissions (in maximum pounds per day), which include mobile source, area source, and energy emissions of criteria pollutants that would result from operations of the proposed project. **Table 2-8** shows project operational emissions in tons per year.

TABLE 2-7: OPERATIONAL EMISSIONS (UNMITIGATED MAXIMUM DAILY LBS/DAY)

	ROG	NOx	PM_{10} Total	$PM_{2.5}$ Total
		Summer		
Area	2.6240	0.0916	0.0438	0.0438
Energy	0.0343	0.2933	0.0237	0.0237
Mobile	0.4082	1.3399	1.0296	0.2823
Total	**3.0666**	**1.7248**	**1.0971**	**0.3497**
		Winter		
Area	2.6240	0.0916	0.0438	0.0438
Energy	0.0343	0.2933	0.0237	0.0237
Mobile	0.3078	1.4401	1.0298	0.2824
Total	**2.9662**	**1.8250**	**1.0972**	**0.3499**

SOURCE: CALEEMOD (V.2016.3.2)

TABLE 2-8: OPERATIONAL EMISSIONS (UNMITIGATED MAXIMUM ANNUAL TONS/YEAR)

	ROG	NOx	PM_{10} Total	$PM_{2.5}$ Total
		Annual		
Area	0.4651	0.0115	0.00547	0.00547
Energy	0.00626	0.0535	0.00433	0.00433
Mobile	0.0590	0.2545	0.1811	0.0498
Total	**0.5304**	**0.3195**	**0.1909**	**0.0596**

SOURCE: CALEEMOD (V.2016.3.2)

As shown in the Table 2-7 and Table 2-8, operational ROG, NOx, PM_{10} and $PM_{2.5}$ emissions are below the thresholds of significance for the individual emission categories (i.e. area, energy, and mobile sources), as well as the total for these categories. Since the SMAQMD relies on consistency with the SMAQMD mass emissions thresholds to determine whether a project would conflict with or obstruct implementation of applicable air quality plans,[1] the proposed project would not conflict with or obstruct implementation of the applicable air quality plans (including the *2018 Updates to the California State Implementation Plan*, the *$PM_{2.5}$ Implementation/Maintenance Plan*, and the *2009 Triennial Report and Plan Revision)* during project operation. Furthermore, the proposed project is consistent with all applicable SMAQMD rules and regulations, including Rule 402, Rule 403, Rule 442, and Rule 453. The proposed project is also consistent with the goals and policies contained within the City of Folsom General Plan (2018), as provided under the Regulatory Setting in this Chapter (above).

As shown Table 2-7 and Table 2-8, all emissions are reduced to a level that does not exceed the project-level operational thresholds of significance. However, as previously stated, the SMAQMD requires all projects within its jurisdiction to implement all feasible BACT/BMPs for PM. The

[1] See pg. 4-3 of the SMAQMD's *Guide to Air Quality Assessment in Sacramento County (CEQA Guide)* (2016).

following mitigation measures are provided based on the list of BMPs for operational PM emissions for land use developments projects contained in the SMAQMD CEQA Guide (SMAQMD, 2016). The proposed project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURES

Mitigation Measure 2-1: *The project applicant shall ensure the project operations meet all requirements of SMAQMD District Rule 403 (Fugitive Dust).*

Mitigation Measure 2-2: *The project applicant shall ensure that project operations comply with the mandatory measures contained in the California Building Energy Efficiency Standards (Title 24, Part 6) that pertain to efficient use of natural gas for space and water heating and other uses.*

Mitigation Measure 2-3: *The project applicant shall ensure the project operations comply with the mandatory measures contained in the California Green Building Code (Title 24, Part 11). Current mandatory measures related to operational PM include requirements for electric vehicle charging and fireplaces.*

Impact 2-2: Project construction has the potential to cause a violation of an air quality standard, contribute substantially to an existing or projected air quality violation, or conflict with or obstruct implementation of the applicable air quality plan (less than significant with mitigation)

Construction activities would result in temporary short-term emissions associated with vehicle trips from construction workers, operation of construction equipment, and the dust generated during construction activities. These temporary and short-term emissions would generate additional ozone precursors (ROG and NOx) as well as PM_{10} and $PM_{2.5}$. **Table 2-9** provides the thresholds of significance for ROG, NOX, PM_{10} and $PM_{2.5}$. There is no threshold established for ROG.

TABLE 2-9: CONSTRUCTION EMISSION THRESHOLDS

Year	ROG	NOx	PM_{10}	$PM_{2.5}$
Threshold	N/A	85 lbs/day	80 lbs/day*; 14.6 tons per year*	82 lbs/day*; 15 tons/year*

SOURCE: SMAQMD GUIDE TO AIR QUALITY ASSESSMENT IN SACRAMENTO COUNTY (CEQA GUIDE) (2016)
**ASSUMES ALL FEASIBLE BACT/BMPS ARE APPLIED FOR PM.*

Construction was assumed to occur from year 2019 through year 2021. **Table 2-10** provides the construction phases assumed for proposed project construction. The proposed project would include demolition, site preparation, grading, building construction, paving, and architectural coating phases. Demolition was assumed to occur over two phases (for the purposes of modeling), based on how CalEEMod treats the demolition of buildings versus non-buildings.

The demolition phases would include demolition of the existing tennis courts, swimming pool, leasing office, and the associated parking, driveway, and walkway areas (in the northern portion of the project site). The leasing office was assumed to be 1,200 square feet. The tonnage of concrete and asphalt for the swimming pool, tennis courts, and associated parking, driveway, and walkway areas were estimated by measuring the size of each of these areas, and then assuming 4-inch depth for the asphalt in the parking and driveway area, 12-inch depth gunite/concrete for the swimming pool, and 6-inch depth concrete for the courts and walkways. Tonnage was estimated based on an asphalt density of 145 pounds per cubic foot, and a concrete density of 150 pounds per cubic foot.[2] It was also assumed that any rock base under the asphalt and concrete will be lost onsite in the grading of the site. Fugitive dust emissions would be generated from the demolished material, and other air emissions would be generated from hauling of the demolished material to nearby landfills (as calculated by CalEEMod).

TABLE 2-10: CONSTRUCTION PHASING

Phase Name	Phase Type	Start Date	End Date	Number of Days
Demolition (Leasing Building)	Demolition	9/1/2019	9/27/2019	20
Demolition (Pool, Courts, Parking)	Demolition	9/28/2019	10/25/2019	20
Site Preparation	Site Preparation	10/26/2019	11/8/2o019	10
Grading	Grading	11/9/2019	12/6/2019	20
Building Construction	Building Construction	12/7/2019	10/23/2020	230
Paving	Paving	10/24/2020	12/2/2020	28
Architectural Coasting	Architectural Coating	12/3/2020	3/2/2021	64

SOURCE: CALEEMOD (V.2016.3.2)

CalEEMod (v.2016.3.2) was used to estimate construction emissions for the proposed project. Construction emissions for the construction years 2019 through 2021 in maximum daily pounds per day are shown in **Table 2-11**. **Table 2-12** shows construction emissions for 2019 through 2021 in tons per year.

TABLE 2-11: CONSTRUCTION EMISSIONS (UNMITIGATED MAXIMUM DAILY LBS/DAY)

	ROG	NOx	PM_{10} Total	$PM_{2.5}$ Total
2019 (Summer)	4.4194	45.6191	20.5945	12.1670
2019 (Winter)	4.4126	45.6300	20.5945	12.1670
2020 (Summer)	19.0743	20.4420	1.7115	1.2157
2020 (Winter)	19.0695	20.5016	1.7117	1.2159
2021 (Summer)	19.0468	1.5556	0.2013	0.1230
2021 (Winter)	19.0423	1.5623	0.2013	0.1230

[2] National Asphalt Pavement Association: https://homeguides.sfgate.com/calculate-asphalt-weight-per-yard-81825.html;

Concrete Sawing and Drilling Association:
https://c.ymcdn.com/sites/www.csda.org/resource/resmgr/imported/TST155WeightofConcrete.pdf

SOURCE: CALEEMOD (V.2016.3.2)

TABLE 2-12: CONSTRUCTION EMISSIONS (UNMITIGATED MAXIMUM TONS/YEAR)

	ROG	NOx	PM_{10} Total	$PM_{2.5}$ Total
2019	0.1428	1.4198	0.2538	0.1558
2020	0.4772	2.3968	0.1945	0.1405
2021	0.4093	0.0335	0.00425	0.00263

SOURCE: CALEEMOD (V.2016.3.2)

As shown in the table above, the construction emissions in the 2019 through 2021 construction season (winter and summer) do not exceed the SMAQMD thresholds of significance. Since the SMAQMD relies on consistency with the SMAQMD mass emissions thresholds to determine whether a project would conflict with or obstruct implementation of applicable air quality plans,[3] the proposed project would not conflict with or obstruct implementation of any applicable air quality plans (including the *2018 Updates to the California State Implementation Plan*, the *$PM_{2.5}$ Implementation/Maintenance Plan*, and the *2009 Triennial Report and Plan Revision*) during project construction. Furthermore, the proposed project is consistent with all applicable SMAQMD rules and regulations, including Rule 402, Rule 403, Rule 442, and Rule 453. The proposed project is also consistent with the goals and policies contained within the City of Folsom General Plan (2018), as provided under the Regulatory Setting in this Chapter (above).

However, as previously stated, the SMAQMD requires all projects within its jurisdiction to implement all feasible BACT/BMPs for PM. Implementation of Mitigation Measure 2-4 would ensure that the proposed project would have a ***less than significant*** impact.

MITIGATION MEASURES

***Mitigation Measure 2-4**: The project applicant shall ensure the project construction activities meet all requirements of SMAQMD District Rule 403 (Fugitive Dust). The project applicant shall coordinate with SMAQMD Air Quality Engineer to ensure all feasible BACT/BMPs are implemented during the construction phase of the proposed project.*

Impact 2-3: Project operations have the potential to cumulatively contribute to a violation of an air quality standard (less than significant with mitigation)

The SMAQMD *Guide to Air Quality Assessment in Sacramento County (CEQA Guide)* provides guidance on how to assess cumulative air quality impacts within its jurisdiction. The following analysis is based on the guidance for cumulative impacts provided in Chapter 8 of the *CEQA Guide* (SMAQMD 2016).

[3] See pg. 3-3 of the SMAQMD's *Guide to Air Quality Assessment in Sacramento County (CEQA Guide)* (2016).

Ozone (Construction)

Since the proposed project would not result in emissions that exceed the applicable ozone precursor project-level thresholds of significance (as described under Impact 2-2), the proposed project would have a ***less than significant*** impact relative to the potential for the proposed project to have a cumulatively considerable contribution to construction-related ozone.

Ozone (Operation)

Since the proposed project would not result in emissions that exceed the applicable ozone precursor project-level thresholds of significance (as described under Impact 2-1), the proposed project would have a ***less than significant*** impact relative to the potential for the proposed project to have a cumulatively considerable contribution to operational-related ozone.

Particulate Matter (PM) (Construction)

The SMAQMD has adopted thresholds of significance to maintain and/or attain the federal PM_{10} and $PM_{2.5}$ standards and to strive to meet state standards. PM directly emitted from a project is generally regarded as having regional and localized impacts, however, PM_{10} and $PM_{2.5}$ are the largest concern during construction (e.g. site preparation phase) of a proposed project.

The proposed project would not result in emissions that exceed the applicable construction-related PM precursor project-level thresholds of significance (as described under Impact 2-2, above). Additionally, the proposed project would incorporate basic construction emissions control practices, as provided by Mitigation Measure 2-4. Therefore, the proposed project would have a ***less than significant*** impact relative to the potential for the proposed project to have a cumulatively considerable contribution to construction-related PM.

Particulate Matter (PM) (Operation)

Operational emissions of PM from a project are mainly from mobile sources. The SMAQMD thresholds of significance for PM_{10} and $PM_{2.5}$ are in place to reduce PM contribution from new development, including cumulative contributions.

The proposed project would not result in emissions that exceed the applicable operation-related PM precursor project-level thresholds of significance (as described under Impact 2-1, above). Additionally, the proposed project would incorporate basic construction emissions control practices, as provided by Mitigation Measures 2-1 through 2-3. Therefore, the proposed project would have a ***less than significant*** impact relative to the potential for the proposed project to a cumulatively considerable contribution to construction-related PM.

CONCLUSION

With the implementation of the following mitigation measure the proposed project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURES

Implement ***Mitigation Measure 2-1, 2-2, 2-3, and 2-4.***

Impact 2-4: Carbon monoxide hotspot impacts (less than significant)

Project traffic would increase concentrations of carbon monoxide along streets providing access to the project site. Carbon monoxide is a local pollutant (i.e., high concentrations are normally only found very near sources). The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations (i.e. hotspots), therefore, are usually only found near areas of high traffic volume and congestion.

Long-distance transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. Under specific meteorological conditions and traffic conditions, CO concentrations at receptors located near roadway intersections may reach unhealthy levels, when combined with background CO level.

Emissions and ambient concentrations of CO have decreased dramatically in the SVAB with the introduction of the catalytic converter emission control technology for on-road motor vehicles in 1975 and reformulated fuels required by the 1990 Clean Air Act amendments. No exceedances of the CAAQS or NAAQS for CO have been recorded at a monitoring station in Sacramento County since 1993. Both CARB and EPA have redesignated the Sacramento Valley Air Basin as an attainment area for CO, for the CAAQS in 1997 and the NAAQS on June 1, 1998, respectively. However, elevated localized concentrations of CO still warrant consideration in the environmental review process. Occurrences of localized CO concentrations (i.e., "hotspots") are often associated with heavy traffic congestion, which most frequently occur at signalized intersections of high-volume roadways.

The preliminary screening methodology provided by the SMAQMD provides lead agencies with a conservative indication of whether project-generated vehicle trips will result in the generation of CO emissions that contribute to an exceedance of the thresholds of significance. The SMAQMD's recommended screening criteria are divided into two tiers. The screening criteria have been developed to help lead agencies analyze potential CO impacts and identify when site-specific CO dispersion modeling is not necessary.

According to the SMAQMD, a proposed project will result in a less than significant impact to air quality for local CO if:

- Traffic generated by the proposed project will not result in deterioration of intersection level of service (LOS) to LOS E or F; and
- The project will not contribute to additional traffic to an intersection that already operates at LOS of E or F.

According to the *Canyon Terrace Apartments Traffic Impact Analysis Report* (Omni Means 2017), the proposed project would not result in a deterioration of intersection LOS to LOS E or F, and would not contribute to additional traffic to an intersection that already operates at LOS E or F. Therefore, the potential for a carbon monoxide hotspot impact represents a ***less than significant*** impact.

Impact 2-5: Potential for public exposure to toxic air contaminants (less than significant)

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

The California Air Resources Board (CARB) published the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. **Table 2-13** provides the California Air Resources Board minimum separation recommendations on siting sensitive land uses.

TABLE 2-13: CARB MINIMUM SEPARATION RECOMMENDATIONS ON SITING SENSITIVE LAND USES

Source Category	*Advisory Recommendations*
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.[1]
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloro- ethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

SOURCES: AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE" (CARB 2007)

The proposed project is a residential development project and does not include any of the source categories listed in **Table 2-13**. The proposed project is located an area containing primarily residential and light commercial uses. There were also no source categories identified within Table 2-12 as being within the minimum recommended separation distance provided in **Table 2-13**.

There are no source categories located in the vicinity. Implementation of the proposed project would not result in any known increased exposure of sensitive receptors to localized concentrations of TACs. This proposed project would have a ***less than significant*** relative to this topic.

Impact 2-6: Potential for exposure to odors (less than significant)

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SMAQMD. The general nuisance rule (Heath and Safety Code §41700) is the basis for the threshold.

Examples of facilities that are known producers of odors include: Wastewater Treatment Facilities, Chemical Manufacturing, Sanitary Landfill, Fiberglass Manufacturing, Transfer Station, Painting/Coating Operations (e.g. auto body shops), Composting Facility, Food Processing Facility, Petroleum Refinery, Feed Lot/Dairy, Asphalt Batch Plant, and Rendering Plant. **Table 2-14** provides the SMAQMD's recommended odor screening distances and suggested buffer distances for a variety of odor-generating facilities.

TABLE 2-14: SMAQMD ODOR SCREENING DISTANCES

Land Use/Type of Operation	*Project Screening Distance*
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plants	2 miles

SOURCE: SMAQMD: CEQA GUIDE TO AIR QUALITY ASSESSMENT, CHAPTER 7, ODORS / RECOMMENDED ODOR SCREENING DISTANCES.

If a project would locate receptors and known odor sources in proximity to each other further analysis may be warranted; however, if a project would not locate receptors and known odor sources in proximity to each other, then further analysis is not warranted. The proposed project is not located in proximity to a known odor source and does not warrant further analysis. Additionally, implementation of the proposed project would not directly create or generate objectionable odors. This impact is considered ***less than significant***.

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This chapter discusses regional greenhouse gas (GHG) emissions, climate change, and energy conservation impacts that could result from implementation of the proposed project. This section provides a background discussion of greenhouse gases and climate change linkages and effects of global climate change. This section is organized with an existing setting, regulatory setting, approach/methodology, and impact analysis. The analysis and discussion of the GHG, climate change, and energy conservation impacts in this section focuses on the proposed project's consistency with local, regional, and statewide climate change planning efforts and discusses the context of these planning efforts as they relate to the proposed project. Disclosure and discussion of the project's estimated energy usage and greenhouse gas emissions are provided.

3.1 EXISTING SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

Various gases in the Earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three greenhouse gases have increased globally by 40, 150, and 20 percent, respectively (IPCC, 2013).

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are CO_2, CH_4, O_3, water vapor, N_2O, and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by the industrial sector (California Energy Commission, 2018a).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced approximately 440 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2016 (California Energy Commission, 2018a). By 2020, California is projected to produce 509 $MMTCO_2e$ per year (California Air Resources Board, 2015).

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2016, accounting for 41% of total GHG emissions in the state. This category was followed by the industrial sector (23%), the electricity generation sector (including both in-state and out of-state sources) (16%), the agriculture sector (8%), the residential energy consumption sector (7%), and the commercial energy consumption sector (5%) (California Energy Commission, 2018a).

Effects of Global Climate Change

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs are anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. The snowpack portion of the supply could potentially decline by 50% to 75% by the end of the 21st century (National Resources Defense Council, 2014). This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (California Environmental Protection Agency, 2010). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands. As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (California Environmental Protection Agency, 2010), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

Public Health

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25% to 35% under the lower warming range and to 75% to 85% under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55% more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

Water Resources

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25% of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter recreational season at lower elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing, snowboarding, and other snow dependent recreational activities.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70% to 90%. Under the lower warming scenario, snow pack losses are expected to be only half as large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

Agriculture

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species, while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

Forests and Landscapes

Global warming is expected to alter the distribution and character of natural vegetation thereby resulting in a possible increased risk of large of wildfires. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55%, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30% toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90%.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60% to 80% by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Under the higher warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

ENERGY CONSUMPTION

Energy is California is consumed from a wide variety of sources. Fossil fuels (including gasoline and diesel fuel, natural gas, and energy used to generate electricity) are most widely used form of energy in the State. However, renewable sources of energy (such as solar and wind) are growing in proportion to California's overall energy mix. A large driver of renewable sources of energy in California is the State's current Renewable Portfolio Standard (RPS), which requires the State to derive at least 33% of electricity generated from renewable resources by 2020, and 60 percent by 2030, and to achieve zero-carbon emissions by 2045 (as passed in September 1018, under SB 100).

Overall, in 2013, California's per capita energy usage was ranked 48th in the nation (U.S. Energy Information Administration, 2016). Additionally, California's per capita rate of energy usage has remained relatively constant since the 1970's. Many State regulations since the 1970's, including new building energy efficiency standards, vehicle fleet efficiency measures, as well as growing public awareness, have helped to keep per capita energy usage in the State in check.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with the operation of passenger, public transit, and commercial vehicles results in GHG emissions that ultimately result in global climate change. Other fuels such as natural gas, ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Electricity Consumption

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. In 2016, more than one-fourth of the electricity supply comes from facilities outside of the state. Much of the power delivered to California from states in the Pacific Northwest was generated by wind. States in the Southwest delivered power generated at coal-fired power plants, at natural gas-fired power plants, and from nuclear generating stations (U.S. EIA, 2017a). In 2016, approximately 50 percent of California's utility-scale net electricity generation was fueled by natural gas. In addition, about 25 percent of the state's utility-scale net electricity generation came from non-hydroelectric renewable technologies, such as solar, wind, geothermal, and biomass. Another 14 percent of the state's utility-scale net electricity generation came from hydroelectric generation, and nuclear energy powered an additional 11 percent. The amount of electricity generated from coal was negligible (approximately 0.2 percent) (U.S. EIA, 2017a). The percentage of renewable resources as a proportion of California's overall energy portfolio is increasing over time, as directed the State's RPS.

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.66 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (U.S. EIA, 2017b). Statewide consumption was 290,567 GWh in 2016, an annual growth rate of 0.8 percent between 1997 and 2016.

Oil

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2016, world consumption of oil had reached 96 million barrels per day. The United States, with approximately five percent of the world's population, accounts for approximately 19 percent of world oil consumption, or approximately 18.6 million barrels per day (International Energy Agency, 2018). The transportation sector relies heavily on oil. In California, petroleum-based fuels currently provide approximately 96 percent of the state's transportation energy needs (California Energy Commission, 2012).

Natural Gas/Propane

The state produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 2012). Total natural gas demand in California in 2012 was 2,313, billion cubic feet of natural gas (California Energy Commission, 2012).

ENERGY CONSUMPTION

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CITY OF FOLSOM GHG EMISSIONS

In 2009, Sacramento County developed a Greenhouse Gas Emissions Inventory for Sacramento County (Sacramento County, 2009). The report included a baseline year 2005 greenhouse gas inventory for the City of Folsom. Folsom opted to join the International Council for Local

Environmental Initiatives (ICLEI) program. Folsom committed to conduct an inventory of emissions within its jurisdiction as part of the county-wide effort to account for emissions generated within Sacramento County. This inventory is the first step in the county-wide effort to reduce GHG emissions, consistent with State policy and current regulation from AB 32.

The community-wide GHG Inventory encompasses emissions from commercial, industrial, and residential activities within the city limits. Table 3-1 quantifies the contributions of each sector to total 2005 city-wide emissions. On-road emissions accounted for 41.1% of overall emissions and is the largest contributing sector to overall emissions.

TABLE 3-1: GHG EMISSIONS INVENTORY FOR BASELINE YEAR 2005

Sector	*Metric Tons CO_2e*	*% Change*
Residential	131,409	21.6
Commercial and Industrial	146,236	24.0
Industrial Specific	0	--
On-Road Transportation	249,991	41.1
Off-road Vehicle Use	29,270	4.8
Waste	14,147	2.3
Wastewater Treatment	6,734	1.1
Water-Related	2,514	0.4
Agriculture	390	0.1
High GWP GHGs	28,318	4.7
Total	**609,009**	**100.0**

SOURCE: GREENHOUSE GAS EMISSIONS INVENTORY FOR SACRAMENTO COUNTY (2009)

Total GHG emissions in 2005 for the City of Folsom amounted to 609,009 Metric Tons (MT) CO2e, the third-largest incorporated city contributor in Sacramento County. Electricity, natural gas, gasoline, and diesel are the largest overall contributors to GHG emissions in the City of Folsom.

3.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor National Ambient Air Quality Standards (NAAQS) vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Intermodal Surface Transportation Efficiency Act (ISTEA)

ISTEA (49 U.S.C. § 101 et seq.) promoted the development of intermodal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that metropolitan planning organizations (MPOs), such as SACOG, were to address in developing transportation plans and programs, including some energy-related factors. To meet the ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process was then to address these policies. Another requirement was to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption was expected to become a criterion, along with cost and other values that determine the best transportation solution.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

SAFETEA-LU (23 U.S.C. § 507), renewed the Transportation Equity Act for the 21st Century (TEA-21) of 1998 (23 U.S.C.; 49 U.S.C.) through FY 2009. SAFETEA-LU authorized the federal surface transportation programs for highways, highway safety, and transit. SAFETEA-LU addressed the many challenges facing our transportation system today—such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment—as well as laying the groundwork for addressing future challenges. SAFETEA-LU promoted more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance, while giving state and local transportation decision makers more flexibility to solve transportation problems in their communities. SAFETEA-LU was extended in March of 2010 for nine months, and expired in December of the same year. In June 2012, SAFETEA-LU was replaced by the Moving Ahead for Progress in the 21st Century Act (MAP-21), which took effect October 1, 2012.

Federal Climate Change Policy

According to the EPA, "the United States government has established a comprehensive policy to address climate change" that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, "the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science." The federal government's goal is to reduce the greenhouse gas (GHG) intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. In addition, the EPA administers multiple programs that encourage voluntary GHG reductions, including "ENERGY STAR", "Climate Leaders", and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publicly available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial greenhouse gases along with vehicle and engine manufacturers will report at the corporate level. An estimated 85% of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

STATE

Assembly Bill 1493

In response to AB 1493, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California's existing motor vehicle emission standards. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961), and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. For passenger cars and light-duty trucks 3,750 pounds or less loaded vehicle weight (LVW), the 2016 GHG emission limits are approximately 37 percent lower than during the first year of the regulations in 2009. For medium-duty passenger vehicles and light-duty trucks 3,751 LVW to 8,500 pounds gross vehicle weight (GVW), GHG emissions are reduced approximately 24 percent between 2009 and 2016.

CARB requested a waiver of federal preemption of California's Greenhouse Gas Emissions Standards. The intent of the waiver is to allow California to enact emissions standards to reduce carbon dioxide and other greenhouse gas emissions from automobiles in accordance with the regulation amendments to the CCRs that fulfill the requirements of AB 1493. The EPA granted a waiver to California to implement its greenhouse gas emissions standards for cars.

Assembly Bill 1007

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan – Executive Order #S-06-06

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by

2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

California Executive Orders S-3-05 and S-20-06, and Assembly Bill 32

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80% below the 1990 levels by the year 2050.

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Assembly Bill 32- Climate Change Scoping Plan

2008 Climate Change Scoping Plan: On December 11, 2008 ARB adopted its *Climate Change Scoping Plan* (2008 Scoping Plan), which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The 2008 Scoping Plan contains the main strategies California has implemented to reduce CO_2e emissions by 169 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. (This is a reduction of 42 MMT CO_2e, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The 2008 Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. The 2008 Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e),
- the Low-Carbon Fuel Standard (15.0 MMT CO_2e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO_2e).

The CARB updated the Scoping Plan in 2013 (*First Update to the Scoping Plan*) and again in 2017 (the *Final Scoping Plan*). The 2013 Update built upon the initial Scoping Plan with new strategies and recommendations, and also set the groundwork to reach the long-term goals set forth by the state. The 2017 Update expands the scope of the plan further by focusing on the strategy for achieving the state's 2030 GHG target of 40 percent emissions reductions below 1990 levels (to achieve the target codified into law by SB 32).

California Strategy to Reduce Petroleum Dependence (AB 2076)

In response to the requirements of AB 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non- petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Climate Action Program at Caltrans

The California Department of Transportation, Business, Transportation, and Housing Agency, prepared a Climate Action Program in response to new regulatory directives. The goal of the Climate Action Program is to promote clean and energy efficient transportation, and provide guidance for mainstreaming energy and climate change issues into business operations. The overall approach to lower fuel consumption and CO_2 from transportation is twofold: (1) reduce congestion and improve efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems; and (2) institutionalize energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

The reasoning underlying the Climate Action Program is the conclusion that "the most effective approach to addressing GHG reduction, in the short-to-medium term, is strong technology policy and market mechanisms to encourage innovations. Rapid development and availability of alternative fuels and vehicles, increased efficiency in new cars and trucks (light and heavy duty), and super clean fuels are the most direct approach to reducing GHG emissions from motor vehicles (emission performance standards and fuel or carbon performance standards)."

Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard is incorporated into the State Alternative Fuels Plan and is one of the proposed discrete early action GHG reduction measures identified by CARB pursuant to AB 32.

Senate Bill 97 (SB 97)

Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

Senate Bill 375

Sen. Bill No. 375 (Stats. 2008, ch. 728) (SB 375) was built on AB 32 (California's 2006 climate change law). SB 375's core provision is a requirement for regional transportation agencies to develop a Sustainable Communities Strategy (SCS) in order to reduce GHG emissions from passenger vehicles. The SCS is one component of the Regional Transportation Plan (RTP).

The SCS outlines the region's plan for combining transportation resources, such as roads and mass transit, with a realistic land use pattern, in order to meet a state target for reducing GHG emissions. The strategy must take into account the region's housing needs, transportation demands, and protection of resource and farmlands.

Additionally, SB 375 modified the state's Housing Element Law to achieve consistency between the land use pattern outlined in the SCS and the Regional Housing Needs Assessment allocation. The legislation also substantially improved cities' and counties' accountability for carrying out their housing element plans.

Finally, SB 375 amended the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) to ease the environmental review of developments that help reduce the growth of GHG emissions.

Established in 2002 under Senate Bill 1078, California's Renewables Portfolio Standard (RPS) was accelerated in 2006 under Senate Bill 107 by requiring that 20 percent of electricity retail sales be served by renewable energy resources by 2010. Subsequent recommendations in California energy policy reports advocated a goal of 33 percent by 2020, and on November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08 requiring that "...[a]ll retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020." Senate Bill X1-2 was signed by Governor Edmund G. Brown, Jr., in April 2011 setting the RPS target at 33% by 2020. This new RPS applied to all electricity retailers in the state including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities had to adopt the new RPS goals of 20 percent of retails sales from renewables by the end of 2013, 25 percent by the end of 2016, and the 33 percent requirement being met by the end of 2020. More recently, SB 100 (passed in September 2018) established an RPS of 60% by 2030 and 100% (zero-carbon) by 2045.

Senate Bill 32 (SB 32)

Senate Bill 32, which passed into law in 2016, sets the target of reducing greenhouse gas emissions to 40 percent below the 1990 level by the year 2030. SB 32 extends the original set of greenhouse gas targets provided by the passage of AB 32 (the Global Warmings Solutions Act of 2006). This new target sets an aggressive goalpost, helping the State along its pathway to achieve its longer term goal of an 80 percent reduction in greenhouse gas emissions by the year 2050.

California Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards, was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. On January 1, 2010, the California Building Standards Commission adopted CALGreen and became the first state in the United States to adopt a statewide green building standards code. CALGreen requires new buildings to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials.

CEQA Guidelines Appendix F

In order to assure that energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. The goal of conserving energy implies the wise and efficient use of energy.

LOCAL

City of Folsom General Plan

The City of Folsom General Plan (2018) establishes the following goals and policies relative to greenhouse gases in the General Plan:

Goal NCR 3.2 Improve the sustainability of the community through continued local efforts to reduce GHG emissions.

Policy NCR 3.2.1 Community Greenhouse Gas Reductions: Reduce community GHG emissions by 15 percent below 2005 baseline levels by 2020, and further reduce community emissions by:

- 40 percent below the 2020 target by 2030;
- 51 percent below the 2020 target by 2040, and
- 80 percent below the 2020 target by 2050.

Policy NCR 3.2.2 Municipal Greenhouse Gas Reductions: Reduce municipal GHG emissions by 15 percent below 2005 baseline levels by 2020, and further reduce municipal emissions by:

- 40 percent below the 2020 target by 2030;
- 51 percent below the 2020 target by 2040, and
- 80 percent below the 2020 target by 2050.

Policy NCR 3.2.3 Greenhouse Gas Reduction in New Development: Reduce greenhouse gas emissions from new development by encouraging development that lowers vehicle miles traveled (VMT), and discouraging auto-dependent sprawl and dependence on the private automobile; promoting development that is compact, mixed-use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; improving the jobs/housing ratio; and other methods of reducing emissions while maintaining the balance of housing types Folsom is known for.

Policy NCR 3.2.4 Additional GHG Emission Programs: Continue to evaluate the feasibility and effectiveness of new policies, programs, and regulations that contribute to achieving the City's long-term GHG emissions reduction goals (see Policies NCR 3.2.1 and 3.2.2).

Policy NCR 3.2.5 Climate Change Assessment and Monitoring: Continue to assess and monitor performance of GHG emissions reduction efforts for 2020, 2030, and beyond, including progress toward meeting longer-term GHG emissions reduction goals for 2035 and 2050 by reporting on the City's progress annually, updating the GHG inventory and forecasts at least every five years, and preparing updates to the GHG Strategy in the General Plan, as appropriate; as well as assess and monitor the effects of climate change and associated levels of risk in order to plan a community that can adapt to changing climate conditions and be resilient to negative changes and impacts.

Policy NCR 3.2.6 Coordination with SMAQMD: Coordinate with SMAQMD to ensure projects incorporate feasible mitigation measures to reduce GHG emissions and air pollution from both construction and operations, if not already provided for through project design.

Policy NCR 3.2.7 Preference for Reduced-Emission Equipment: Require contractors to use reduced-emission equipment for City construction projects and contracts for services.

Policy NCR 3.2.8 GHG Analysis Streamlining for Projects Consistent with the General Plan: Projects subject to environmental review under CEQA may be eligible for tiering and streamlining the analysis of GHG emissions, provided they are consistent with the GHG reduction measures included in the General Plan and EIR. The City may review such projects to determine whether the following criteria are met:

- Proposed project is consistent with the General Plan land use designation for the project site;
- Proposed project incorporates all applicable GHG reduction measures (documented in the Climate Change Technical Appendix to the General Plan EIR) as enforceable mitigation measures in the CEQA document prepared for the project; and,
- Proposed project clearly demonstrates the method, timing and process for which the project will comply with applicable GHG reduction measures and/or conditions of approval, (e.g., using a CAP/GHG reduction measures consistency checklist, mitigation monitoring and

reporting plan, or other mechanism for monitoring and enforcement as appropriate).

3.3 IMPACTS AND MITIGATION MEASURES

GREENHOUSE GAS EMISSIONS THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the proposed project would do any of the following:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The SMAQMD has the following greenhouse gas thresholds, as provided in the SMAQMD Thresholds of Significance Table (SMAQMD, 2015):

- Construction Phase: 1,100 MT/year
- Operational Phase: 1,100 MT/year

Additionally, if a project's emissions exceed either of these thresholds of significance, then the project emissions may also have a cumulative environmental impact.

For projects that exceed the SMAQMD's threshold of significance, SMAQMD advises that lead agencies implement all feasible mitigation to reduce GHG emissions.

ENERGY CONSERVATION THRESHOLDS OF SIGNIFICANCE

Additionally, per Appendix F of the State CEQA Guidelines, the proposed project would result in a significant impact on energy use if it would:

- Result in significant adverse impacts related to Project energy requirements, energy use inefficiencies, and/or energy intensiveness of materials by amount and fuel type for each stage of the Project including construction, operations, maintenance, and/or removal;
- Result in significant adverse impacts on local and regional energy supplies and on requirements for additional capacity;
- Result in significant adverse impacts on peak and base period demands for electricity and other forms of energy;
- Fail to comply with existing energy standards;
- Result in significant adverse impacts on energy resources;
- Result in significant adverse impacts related to transportation energy use requirements of the project and use of transportation alternatives; or

- Conflict, or create an inconsistency, with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects related to energy conservation.

In order to determine whether or not the proposed project would result in a significant impact on energy use, this EIR includes an analysis of proposed project energy use, provided below.

IMPACTS AND MITIGATION MEASURES

Impact 3-1: Potential to generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (less than significant)

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. Implementation of the proposed project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO_2 and other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O), from mobile sources and utility usage.

The proposed project's short-term construction-related and long-term operational GHG emissions were estimated using the California Emission Estimator Model (CalEEMod)™ (v.2016.3.2). CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., MT CO_2e), based on the global warming potential of the individual pollutants. Chapter 2 (Air Quality) provides further detail on the construction phasing and parameters assumed for the purposes of modeling (including assumptions relating to demolition activities).

Short-Term Construction GHG Emissions: Estimated increases in GHG emissions associated with construction of the proposed project are summarized in Table 3-2.

TABLE 3-2: CONSTRUCTION GHG EMISSIONS (UNMITIGATED METRIC TONS/YEAR)

	Bio-CO_2	*Non-Bio-CO_2*	*Total CO_2*	*CH_4*	*N_2O*	*CO_2e*
2019	0	142.5	142.5	<0.1	0	143.5

2020	0	352.7	352.7	0.1	0	354.5
2021	0	7.4	7.4	<0.1	0	7.4
Maximum	**0**	**352.7**	**352.7**	**0.1**	**0**	**354.5**

SOURCES: CALEEMOD (V.2016.3.2)

As presented in the table, short-term construction emissions of GHG associated are estimated to be a maximum of 354.5 MT CO_2e in a single year. Construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change in the long-term. Emissions from construction are below the SMAQMD construction phase threshold of 1,100 MT CO_2e/year. Therefore, proposed project GHG during the construction phase of the proposed project would have a ***less than significant*** impact relative to this topic.

Long-Term Operational GHG Emissions: The long-term operational GHG emissions estimate for the proposed project incorporates the project's potential area source and vehicle emissions, and emissions associated with utility and water usage, and wastewater and solid waste generation. The modeling also reflects a loss of carbon sequestration from the loss of existing trees and vegetation; however, it does not reflect any benefits of carbon sequestration from the installation of new landscaping. As a conservative estimate, the loss of existing trees and vegetation was estimated to generate a one-time loss (from carbon sequestration) of approximately 17.2 MT CO_2e (see Appendix C of this Air Quality and Greenhouse Gas Analysis for further detail)[1]. If amortized over a 30-year period, this loss represents an approximate loss of 0.5733 MT CO_2e/year. This loss is in addition to the proposed project unmitigated operational GHG emissions as provided in Table 3-3.

As described previously, the SMAQMD operational GHG threshold is 1,100 MT CO_2e/year. The proposed project unmitigated operational GHG emissions (excluding the emissions associated with the loss of carbon sequestration) is provided in Table 3-3.

TABLE 3-3: OPERATIONAL GHG EMISSIONS (UNMITIGATED METRIC TONS/YEAR)

Category	*Bio-CO_2*	*Non-Bio-CO_2*	*Total CO_2*	*CH_4*	*N_2O*	*CO_2e*
Area	0	1.6	1.6	<0.1	0	1.7
Energy	0	187.5	187.5	<0.1	<0.1	188.4
Mobile	0	195.0	195.0	<0.1	0	195.3
Waste	9.0	0	9.0	0.5	0	22.2
Water	2.2	13.1	15.3	<0.1	<0.1	17.0
Total	**11.2**	**397.2**	**408.4**	**0.6**	**<0.1**	**424.5**

SOURCE: CALEEMOD (V.2016.3.2)

As shown in Table 3-3, the proposed project's operational GHG emissions would equal approximately 424.5 MT CO_2e/year under the unmitigated scenario. If combined with the modeled estimate for the loss of carbon sequestration from existing trees and vegetation over a 30-year

[1] Note: for the purposes of modeling, it was assumed that approximately one-third of the site is currently "Forest Land" and the remaining two-thirds of the site is currently "Grassland". The proposed project was assumed to remove half of the existing "Forest Land" and three-quarters of the existing "Grassland" on the project site.

period, the proposed project's operational GHG emissions would equal approximately 425.0 MT CO_2e/year (424.5 + 0.5733 MT CO_2e/year) (note: these numbers are approximate due to rounding; see Appendix C of this Air Quality and Greenhouse Gas Analysis for further detail). This is less than the SMAQMD 1,100 MT CO_2e/year operational threshold. Therefore, proposed project GHG emissions during the operational phase of the proposed project would have a ***less than significant*** impact relative to this topic.

Conclusion: Short-term construction and long-term operational GHG emissions are subject to the SMAQMD GHG threshold of 1,100 MT CO_2e/year. Both operational and construction GHG emissions would be below this thresholds, as shown in Tables 3-2 and 3-3 (above). The proposed project would not hinder the State's ability to reach the GHG reduction target nor conflict with any applicable plan, policy, or regulation related to GHG reduction, and impacts related to GHG emissions and global climate change would be considered ***less than significant***.

Impact 3.2: Project implementation may result in the inefficient, wasteful, or unnecessary use of energy resources (less than significant)

Appendix F of the State CEQA Guidelines requires consideration of the potentially significant energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision [b][3]). According to Appendix F of the CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed project would be considered "wasteful, inefficient, and unnecessary" if it were to violate state and federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The proposed project is primarily a residential development, with eight new apartment buildings, 96 residential units and 233 new parking spaces. Demolition would be required to remove an existing tennis court, swimming pool, leasing office, and some associated parking, driveway, and walkway areas. The amount of energy used at the residential uses within the project site would directly correlate to the number and size of residential units, the energy consumption of associated unit appliances, garage usage, and outdoor lighting, landscape maintenance, and other energy uses associated with project site activities. Other proposed project energy uses include fuel used by vehicle trips generated by the project during its construction and operation, and fuel used by off-road construction vehicles during construction. The following discussion provides calculated levels of energy use expected for the proposed Project, based on modelling (i.e. CalEEMod v.2016.3.2 and the California Air Resource Board's EMFAC2014). It should be noted that many of the assumptions provided by CalEEMod are conservative relative to the proposed project. Therefore, this discussion provides conservative estimates of proposed project emissions.

ELECTRICITY AND NATURAL GAS

Electricity and natural gas used by the proposed project would be used primarily for residential housing end uses. Additionally, the energy required to pump water and wastewater to and within the project site is included under electricity usage. Total annual unmitigated electricity (kWh) and natural gas (kBTU) usage associated with the operation of the proposed project is shown in Table 3.4, below (as provided by CalEEMod).

TABLE 3.4: PROJECT OPERATIONAL NATURAL GAS AND ELECTRICITY USAGE (UNMITIGATED SCENARIO)

EMISSIONS	*NATURAL GAS (KBTU/YEAR)*	*ELECTRICITY (KWH/YEAR)*
Apartments Low Rise	1,161,480	431,447
Total	**1,561,740**	**431,447**

SOURCE: CALEEMOD (V.2016.3.2)

According to CalEEMod's *Appendix A: Calculation Details for CalEEMod,* CalEEMod uses the California Commercial End Use Survey (CEUS) database to develop energy intensity value for non-residential buildings. The energy use from residential land uses is calculated based on the Residential Appliance Saturation Survey (RASS). Similar to CEUS, this is a comprehensive energy use assessment that includes the end use for various climate zones in California.

ON-ROAD VEHICLES (OPERATION)

The proposed project would generate vehicle trips during its operational phase. According to the traffic data provided for the proposed project, the proposed project would generate approximately 179 daily vehicle trips (Omni Means, 2017). In order to calculate operational on-road vehicle energy usage and emissions, default trip lengths generated by CalEEMod were used, which are based on the proposed project location and urbanization level parameters selected within CalEEMod (i.e. "Sacramento County" Air District and "Urban" urbanization level). These values are provided by the individual districts or use a default average for the state, depending on the location of the proposed project (ENVIRON, 2013). Based on default factors provided by CalEEMod, the weighted average distance per trip is assumed to be approximately 7.55 miles. Therefore, the proposed project would generate at total of approximately 1,351 average daily vehicle miles travelled (Average Daily VMT). Using fleet mix data provided by CalEEMod (v.2016.3.2), and Year 2018 gasoline and diesel MPG (miles per gallon) factors for individual vehicle classes as provided by EMFAC2014, De Novo derived weighted MPG factors of approximately 24.0 for gasoline and 12.6 for diesel. With this information, De Novo calculated that the unmitigated proposed project would generate vehicle trips that would use a total of approximately 53 gallons of gasoline and six gallons of diesel fuel per day, on average, or 19,353 gallons of gasoline and 2,326 annual gallons of diesel fuel per year.

ON-ROAD VEHICLES (CONSTRUCTION)

The proposed project would also generate on-road vehicle trips during project construction (from construction workers and vendors). Estimates of vehicle fuel consumed were derived based on the assumed construction schedule, vehicle trip lengths and number of workers per construction phase as provided by CalEEMod, and Year 2018 gasoline MPG factors provided by EMFAC2014. For the purposes of simplicity, it was assumed that all on-road worker vehicles generated by the construction phase of the project would use gasoline as a fuel source (as opposed to diesel fuel or alternative sources). Additionally, it was assumed that all on-road vendor trucks generated by the construction phase would use diesel fuel. Table 3.5, below, describes gasoline and diesel fuel used by on-road mobile sources during each phase of the construction schedule. As shown, the vast majority of on-road mobile vehicle fuel used during the construction of the proposed project would occur during the building construction phase. See Appendix D of this study for detailed calculations of on-road mobile fuel generated during the project construction period.

TABLE 3.5: ON-ROAD MOBILE FUEL GENERATED BY PROJECT CONSTRUCTION ACTIVITIES – BY PHASE

CONSTRUCTION PHASE	# OF DAYS	TOTAL DAILY WORKER TRIPS[A]	TOTAL DAILY VENDOR TRIPS[A]	GALLONS OF GASOLINE FUEL[B]	GALLONS OF DIESEL FUEL[B]
Demolition	20	15	-	128	-
Site Preparation	10	18	-	38	-
Grading	20	15	-	51	-
Building Construction	230	69	10	8,034	2,615
Paving	28	15	-	141	-
Architectural Coating	64	14	-	107	-
Total	**352**	**131**	**10**	**8,499**	**2,615**

NOTE: [A] PROVIDED BY CALEEMOD. [B]SEE APPENDIX D FOR FURTHER DETAIL. NOTE: NUMBERS MAY NOT EXACTLY ADD UP DUE TO ROUNDING.
SOURCE: CALEEMOD (V.2016.3.2); EMFAC2014.

OFF-ROAD VEHICLES (CONSTRUCTION)

Off-road construction vehicles would use diesel fuel during the construction phase of the proposed project. A non-exhaustive list of off-road constructive vehicles that could be used during the construction phase of the proposed project includes: cranes, forklifts, generator sets, tractors, excavators, and dozers. It is assumed that the vast majority of CO_2 emissions generated by the off-road mobile vehicles during the construction phase of the proposed project would occur during the site preparation and grading phases. Based on the total amount of CO_2 emissions expected to be generated by the off-road mobile vehicles during these proposed project construction phases (as provided by the CalEEMod output), and a CO_2 to diesel fuel conversion factor (provided by the U.S. Energy Information Administration), it is estimated that the proposed project would use a total of approximately 7,876 gallons of diesel fuel for off-road construction vehicles during project construction. Detailed calculations are provided in Appendix D.

OTHER

Proposed project landscape maintenance activities would generally require the use of fossil fuel (i.e. gasoline) energy. For example, lawn mowers require the use of fuel for power. As an approximation, it is estimated that gasoline-powered landscape care maintenance would occur 0.25 hours per week for each residential unit proposed. Given a total of 92 dwelling units, landscape maintenance would occur for 1,196 hours per year. With a conservative estimate of approximately 0.5 gallons of gasoline used per person-hour of landscape maintenance, the proposed project would require the use of approximately 598 gallons of gasoline per year to power landscape maintenance equipment for residential uses. The energy used to power landscape maintenance equipment would not differ substantially from the energy required for landscape maintenance for similar types of projects.

The proposed project could also use other sources of energy not identified here. Examples of other energy sources include alternative and/or renewable energy (such as solar PV) and/or on-site stationary sources (such as on-site diesel generators) for electricity generation. However, these sources of energy are not currently planned to be utilized by the proposed project.

CONCLUSION

The proposed project would use energy resources for the operation of project buildings (i.e electricity and natural gas), for on-road vehicle trips (i.e. gasoline and diesel fuel) generated by the proposed project, and from off-road vehicles (i.e. diesel fuel). Each of these activities would require the use of energy resources. The proposed project would be responsible for conserving energy, to the extent feasible, and relies heavily on reducing per capita energy consumption to achieve this goal, including through Statewide and local measures.

The proposed project would be in compliance with all applicable federal, state, and local regulations regulating energy usage. For example, PG&E is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the Statewide Renewable Portfolio Standard (RPS) to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio. Based on this requirement, PG&E is expected to procure at least 33% of its electricity resources from renewable energy resources by 2020, and 60% by 2030. Other statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard), would improve vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time. Furthermore, as described previously, the incorporation of the mitigation measure described previously in this section would further reduce project energy. The proposed project would also be in compliance with the planning documents described previously within this section.

As a result, the proposed project would not result in any significant adverse impacts related to proposed project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for each stage of the project including construction, operations, maintenance, and/or removal. PG&E, the electricity and natural gas provider to the site, maintains sufficient capacity to serve the proposed project. The proposed project would comply with all existing energy standards, including those established by the City of Folsom, and would not result in significant adverse impacts on energy resources. Although improvements to City's pedestrian, bicycle, and public transit systems would provide further opportunities for alternative transit, the proposed project would be linked closely with existing networks that, in large part, are sufficient for most residents of the proposed project and the City of Folsom as a whole. For these reasons, and others described previously, the proposed project would not be expected to cause an inefficient, wasteful, or unnecessary use of energy resources or exceed any threshold as described by Appendix F of the *CEQA Guidelines*. This is a ***less than significant*** impact.

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SUMMER EMISSIONS (CALEEMOD)

Canyon Terrace Apartments (City of Folsom)

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	96.00	Dwelling Unit	6.00	96,000.00	256

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on project size. Demolition split into two phases - one for the building, the other for the pool, courts, and parking lot.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition -

Vehicle Trips - 1.95 trip rate/unit, as provided by the Omni-Means Traffic Report

Sequestration -

Land Use Change - Assumed that approximately two thirds (4 acres) of existing site is 'Grassland' vegetation type, and one third 'Forest Land - Trees' (2 acres). Project would remove up to one acre of 'Forest Land - Trees' and three acres of 'Grassland'.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	64.00
tblConstructionPhase	NumDays	20.00	28.00
tblLandUseChange	CO2peracre	111.00	4.31
tblTripsAndVMT	HaulingTripNumber	5.00	0.00
tblTripsAndVMT	HaulingTripNumber	138.00	0.00
tblVehicleTrips	ST_TR	7.16	1.95
tblVehicleTrips	SU_TR	6.07	1.95
tblVehicleTrips	WD_TR	6.59	1.95

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.4194	45.6191	22.7129	0.0400	18.2032	2.3913	20.5945	9.9670	2.2000	12.1670	0.0000	3,939.6956	3,939.6956	1.1963	0.0000	3,966.3380
2020	19.0743	20.4420	19.3965	0.0349	0.5851	1.1264	1.7115	0.1566	1.0592	1.2157	0.0000	3,364.2424	3,364.2424	0.7174	0.0000	3,380.5795
2021	19.0468	1.5556	2.2364	4.0500e-003	0.1065	0.0948	0.2013	0.0283	0.0948	0.1230	0.0000	388.7551	388.7551	0.0222	0.0000	389.3094
Maximum	**19.0743**	**45.6191**	**22.7129**	**0.0400**	**18.2032**	**2.3913**	**20.5945**	**9.9670**	**2.2000**	**12.1670**	**0.0000**	**3,939.6956**	**3,939.6956**	**1.1963**	**0.0000**	**3,966.3380**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.4194	45.6191	22.7129	0.0400	18.2032	2.3913	20.5945	9.9670	2.2000	12.1670	0.0000	3,939.6956	3,939.6956	1.1963	0.0000	3,966.3379
2020	19.0743	20.4420	19.3965	0.0349	0.5851	1.1264	1.7115	0.1566	1.0592	1.2157	0.0000	3,364.2424	3,364.2424	0.7174	0.0000	3,380.5795
2021	19.0468	1.5556	2.2364	4.0500e-003	0.1065	0.0948	0.2013	0.0283	0.0948	0.1230	0.0000	388.7551	388.7551	0.0222	0.0000	389.3094
Maximum	**19.0743**	**45.6191**	**22.7129**	**0.0400**	**18.2032**	**2.3913**	**20.5945**	**9.9670**	**2.2000**	**12.1670**	**0.0000**	**3,939.6956**	**3,939.6956**	**1.1963**	**0.0000**	**3,966.3379**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.6240	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438	0.0000	14.2610	14.2610	0.0138	0.0000	14.6065
Energy	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928
Mobile	0.4082	1.3399	4.3211	0.0126	1.0192	0.0104	1.0296	0.2725	9.7700e-003	0.2823		1,278.1453	1,278.1453	0.0597		1,279.6382
Total	**3.0666**	**1.7248**	**12.3832**	**0.0149**	**1.0192**	**0.0779**	**1.0971**	**0.2725**	**0.0772**	**0.3497**	**0.0000**	**1,666.7745**	**1,666.7745**	**0.0807**	**6.8600e-003**	**1,670.8375**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.6240	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438	0.0000	14.2610	14.2610	0.0138	0.0000	14.6065
Energy	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928
Mobile	0.4082	1.3399	4.3211	0.0126	1.0192	0.0104	1.0296	0.2725	9.7700e-003	0.2823		1,278.1453	1,278.1453	0.0597		1,279.6382
Total	**3.0666**	**1.7248**	**12.3832**	**0.0149**	**1.0192**	**0.0779**	**1.0971**	**0.2725**	**0.0772**	**0.3497**	**0.0000**	**1,666.7745**	**1,666.7745**	**0.0807**	**6.8600e-003**	**1,670.8375**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition (Building)	Demolition	9/1/2019	9/27/2019	5	20	
2	Demolition (Pool, Courts, Parking)	Demolition	9/28/2019	10/25/2019	5	20	
3	Site Preparation	Site Preparation	10/26/2019	11/8/2019	5	10	
4	Grading	Grading	11/9/2019	12/6/2019	5	20	
5	Building Construction	Building Construction	12/7/2019	10/23/2020	5	230	
6	Paving	Paving	10/24/2020	12/2/2020	5	28	
7	Architectural Coating	Architectural Coating	12/3/2020	3/2/2021	5	64	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 194,400; Residential Outdoor: 64,800; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition (Building)	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition (Building)	Excavators	3	8.00	158	0.38
Demolition (Building)	Rubber Tired Dozers	2	8.00	247	0.40
Demolition (Pool, Courts, Parking)	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition (Pool, Courts, Parking)	Excavators	3	8.00	158	0.38
Demolition (Pool, Courts, Parking)	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition (Building)	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Demolition (Pool, Courts, Parking)	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	69.00	10.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition (Building) - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0616	0.0000	0.0616	9.3200e-003	0.0000	9.3200e-003			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.0616**	**1.7949**	**1.8565**	**9.3200e-003**	**1.6697**	**1.6790**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.2 Demolition (Building) - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0703	0.0366	0.5416	1.2300e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		122.7963	122.7963	3.8600e-003		122.8929
Total	**0.0703**	**0.0366**	**0.5416**	**1.2300e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**122.7963**	**122.7963**	**3.8600e-003**		**122.8929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0616	0.0000	0.0616	9.3200e-003	0.0000	9.3200e-003			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.0616**	**1.7949**	**1.8565**	**9.3200e-003**	**1.6697**	**1.6790**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.2 Demolition (Building) - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0703	0.0386	0.5416	1.2300e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		122.7963	122.7963	3.8600e-003		122.8929
Total	**0.0703**	**0.0386**	**0.5416**	**1.2300e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**122.7963**	**122.7963**	**3.8600e-003**		**122.8929**

3.3 Demolition (Pool, Courts, Parking) - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5595	0.0000	1.5595	0.2361	0.0000	0.2361			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**1.5595**	**1.7949**	**3.3544**	**0.2361**	**1.6697**	**1.9058**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.3 Demolition (Pool, Courts, Parking) - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0703	0.0386	0.5416	1.2300e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		122.7963	122.7963	3.8600e-003		122.8929
Total	**0.0703**	**0.0386**	**0.5416**	**1.2300e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**122.7963**	**122.7963**	**3.8600e-003**		**122.8929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5595	0.0000	1.5595	0.2361	0.0000	0.2361			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**1.5595**	**1.7949**	**3.3544**	**0.2361**	**1.6697**	**1.9058**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.3 Demolition (Pool, Courts, Parking) - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0703	0.0386	0.5416	1.2300e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		122.7963	122.7963	3.8600e-003		122.8929
Total	**0.0703**	**0.0386**	**0.5416**	**1.2300e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**122.7963**	**122.7963**	**3.8600e-003**		**122.8929**

3.4 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.4 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0843	0.0463	0.6499	1.4800e-003	0.1369	9.8000e-004	0.1379	0.0363	9.0000e-004	0.0372		147.3555	147.3555	4.6400e-003		147.4714
Total	**0.0843**	**0.0463**	**0.6499**	**1.4800e-003**	**0.1369**	**9.8000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**147.3555**	**147.3555**	**4.6400e-003**		**147.4714**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.4 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0843	0.0463	0.6499	1.4800e-003	0.1369	9.8000e-004	0.1379	0.0363	9.0000e-004	0.0372		147.3555	147.3555	4.6400e-003		147.4714
Total	**0.0843**	**0.0463**	**0.6499**	**1.4800e-003**	**0.1369**	**9.8000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**147.3555**	**147.3555**	**4.6400e-003**		**147.4714**

3.5 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856		2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**6.5523**	**1.3974**	**7.9497**	**3.3675**	**1.2856**	**4.6531**		**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.5 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0703	0.0386	0.5416	1.2300e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		122.7963	122.7963	3.8600e-003		122.8929
Total	**0.0703**	**0.0386**	**0.5416**	**1.2300e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**122.7963**	**122.7963**	**3.8600e-003**		**122.8929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856	0.0000	2,936.806 8	2,936.806 8	0.9292		2,960.036 1
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**6.5523**	**1.3974**	**7.9497**	**3.3675**	**1.2856**	**4.6531**	**0.0000**	**2,936.806 8**	**2,936.806 8**	**0.9292**		**2,960.036 1**

3.5 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0703	0.0386	0.5416	1.2300e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		122.7963	122.7963	3.8600e-003		122.8929
Total	**0.0703**	**0.0386**	**0.5416**	**1.2300e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**122.7963**	**122.7963**	**3.8600e-003**		**122.8929**

3.6 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.6 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0473	1.1978	0.3576	2.5100e-003	0.0602	8.6400e-003	0.0688	0.0173	8.2700e-003	0.0256		265.2509	265.2509	0.0159		265.6494
Worker	0.3233	0.1776	2.4913	5.6800e-003	0.5249	3.7400e-003	0.5286	0.1392	3.4500e-003	0.1427		564.8628	564.8628	0.0178		565.3072
Total	**0.3706**	**1.3754**	**2.8490**	**8.1900e-003**	**0.5851**	**0.0124**	**0.5975**	**0.1566**	**0.0117**	**0.1683**		**830.1137**	**830.1137**	**0.0337**		**830.9566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.6 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0473	1.1978	0.3576	2.5100e-003	0.0602	8.6400e-003	0.0688	0.0173	8.2700e-003	0.0256		265.2509	265.2509	0.0159		265.6494
Worker	0.3233	0.1776	2.4913	5.6800e-003	0.5249	3.7400e-003	0.5286	0.1392	3.4500e-003	0.1427		564.8628	564.8628	0.0178		565.3072
Total	**0.3706**	**1.3754**	**2.8490**	**8.1900e-003**	**0.5851**	**0.0124**	**0.5975**	**0.1566**	**0.0117**	**0.1683**		**830.1137**	**830.1137**	**0.0337**		**830.9566**

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.063 1	2,553.063 1	0.6229		2,568.634 5
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.063 1**	**2,553.063 1**	**0.6229**		**2,568.634 5**

3.6 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0377	1.0980	0.2951	2.4900e-003	0.0602	5.7200e-003	0.0659	0.0173	5.4800e-003	0.0228		263.6554	263.6554	0.0149		264.0289
Worker	0.2975	0.1579	2.2529	5.5000e-003	0.5249	3.6500e-003	0.5285	0.1392	3.3600e-003	0.1426		547.5239	547.5239	0.0157		547.9161
Total	**0.3352**	**1.2559**	**2.5480**	**7.9900e-003**	**0.5851**	**9.3700e-003**	**0.5944**	**0.1566**	**8.8400e-003**	**0.1654**		**811.1794**	**811.1794**	**0.0306**		**811.9450**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.6 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0377	1.0980	0.2951	2.4900e-003	0.0602	5.7200e-003	0.0659	0.0173	5.4800e-003	0.0228		263.6554	263.6554	0.0149		264.0289
Worker	0.2975	0.1579	2.2529	5.5000e-003	0.5249	3.6500e-003	0.5285	0.1392	3.3600e-003	0.1426		547.5239	547.5239	0.0157		547.9161
Total	**0.3352**	**1.2559**	**2.5480**	**7.9900e-003**	**0.5851**	**9.3700e-003**	**0.5944**	**0.1566**	**8.8400e-003**	**0.1654**		**811.1794**	**811.1794**	**0.0306**		**811.9450**

3.7 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.7 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0343	0.4898	1.2000e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		119.0269	119.0269	3.4100e-003		119.1122
Total	**0.0647**	**0.0343**	**0.4898**	**1.2000e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**119.0269**	**119.0269**	**3.4100e-003**		**119.1122**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.7 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0343	0.4898	1.2000e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		119.0269	119.0269	3.4100e-003		119.1122
Total	**0.0647**	**0.0343**	**0.4898**	**1.2000e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**119.0269**	**119.0269**	**3.4100e-003**		**119.1122**

3.8 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.7718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**19.0139**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.8 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0604	0.0320	0.4571	1.1200e-003	0.1065	7.4000e-004	0.1072	0.0283	6.8000e-004	0.0289		111.0918	111.0918	3.1800e-003		111.1714
Total	**0.0604**	**0.0320**	**0.4571**	**1.1200e-003**	**0.1065**	**7.4000e-004**	**0.1072**	**0.0283**	**6.8000e-004**	**0.0289**		**111.0918**	**111.0918**	**3.1800e-003**		**111.1714**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.7718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**19.0139**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.8 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0604	0.0320	0.4571	1.1200e-003	0.1065	7.4000e-004	0.1072	0.0283	6.8000e-004	0.0289		111.0918	111.0918	3.1800e-003		111.1714
Total	**0.0604**	**0.0320**	**0.4571**	**1.1200e-003**	**0.1065**	**7.4000e-004**	**0.1072**	**0.0283**	**6.8000e-004**	**0.0289**		**111.0918**	**111.0918**	**3.1800e-003**		**111.1714**

3.8 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Archit. Coating	18.7718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**18.9907**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.8 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0561	0.0287	0.4188	1.0800e-003	0.1065	7.2000e-004	0.1072	0.0283	6.6000e-004	0.0289		107.3071	107.3071	2.8600e-003		107.3785
Total	**0.0561**	**0.0287**	**0.4188**	**1.0800e-003**	**0.1065**	**7.2000e-004**	**0.1072**	**0.0283**	**6.6000e-004**	**0.0289**		**107.3071**	**107.3071**	**2.8600e-003**		**107.3785**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.7718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**18.9907**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.8 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0561	0.0287	0.4188	1.0800e-003	0.1065	7.2000e-004	0.1072	0.0283	6.6000e-004	0.0289		107.3071	107.3071	2.8600e-003		107.3785
Total	**0.0561**	**0.0287**	**0.4188**	**1.0800e-003**	**0.1065**	**7.2000e-004**	**0.1072**	**0.0283**	**6.6000e-004**	**0.0289**		**107.3071**	**107.3071**	**2.8600e-003**		**107.3785**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4082	1.3399	4.3211	0.0126	1.0192	0.0104	1.0296	0.2725	9.7700e-003	0.2823		1,278.145 3	1,278.145 3	0.0597		1,279.638 2
Unmitigated	0.4082	1.3399	4.3211	0.0126	1.0192	0.0104	1.0296	0.2725	9.7700e-003	0.2823		1,278.145 3	1,278.145 3	0.0597		1,279.638 2

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	187.20	187.20	187.20	480,376	480,376
Total	187.20	187.20	187.20	480,376	480,376

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.555851	0.039752	0.205040	0.120748	0.020349	0.005402	0.018507	0.022668	0.002052	0.002157	0.005939	0.000618	0.000915

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928
NaturalGas Unmitigated	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	3182.13	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928
Total		**0.0343**	**0.2933**	**0.1248**	**1.8700e-003**		**0.0237**	**0.0237**		**0.0237**	**0.0237**		**374.3681**	**374.3681**	**7.1800e-003**	**6.8600e-003**	**376.5928**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	3.18213	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928
Total		**0.0343**	**0.2933**	**0.1248**	**1.8700e-003**		**0.0237**	**0.0237**		**0.0237**	**0.0237**		**374.3681**	**374.3681**	**7.1800e-003**	**6.8600e-003**	**376.5928**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6240	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438	0.0000	14.2610	14.2610	0.0138	0.0000	14.6065
Unmitigated	2.6240	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438	0.0000	14.2610	14.2610	0.0138	0.0000	14.6065

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3292					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.0544					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2405	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438		14.2610	14.2610	0.0138		14.6065
Total	**2.6240**	**0.0916**	**7.9373**	**4.2000e-004**		**0.0438**	**0.0438**		**0.0438**	**0.0438**	**0.0000**	**14.2610**	**14.2610**	**0.0138**	**0.0000**	**14.6065**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3292					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.0544					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2405	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438		14.2610	14.2610	0.0138		14.6065
Total	**2.6240**	**0.0916**	**7.9373**	**4.2000e-004**		**0.0438**	**0.0438**		**0.0438**	**0.0438**	**0.0000**	**14.2610**	**14.2610**	**0.0138**	**0.0000**	**14.6065**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

WINTER EMISSIONS (CALEEMOD)

Canyon Terrace Apartments (City of Folsom)

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	96.00	Dwelling Unit	6.00	96,000.00	256

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on project size. Demolition split into two phases - one for the building, the other for the pool, courts, and parking lot.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition -

Vehicle Trips - 1.95 trip rate/unit, as provided by the Omni-Means Traffic Report

Sequestration -

Land Use Change - Assumed that approximately two thirds (4 acres) of existing site is 'Grassland' vegetation type, and one third 'Forest Land - Trees' (2 acres). Project would remove up to one acre of 'Forest Land - Trees' and three acres of 'Grassland'.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	64.00
tblConstructionPhase	NumDays	20.00	28.00
tblLandUseChange	CO2peracre	111.00	4.31
tblTripsAndVMT	HaulingTripNumber	5.00	0.00
tblTripsAndVMT	HaulingTripNumber	138.00	0.00
tblVehicleTrips	ST_TR	7.16	1.95
tblVehicleTrips	SU_TR	6.07	1.95
tblVehicleTrips	WD_TR	6.59	1.95

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.4126	45.6300	22.6222	0.0399	18.2032	2.3913	20.5945	9.9670	2.2000	12.1670	0.0000	3,924.749 4	3,924.749 4	1.1958	0.0000	3,951.380 7
2020	19.0695	20.5016	19.1170	0.0342	0.5851	1.1266	1.7117	0.1566	1.0594	1.2159	0.0000	3,290.828 4	3,290.828 4	0.7170	0.0000	3,307.149 7
2021	19.0423	1.5623	2.1748	3.9200e-003	0.1065	0.0948	0.2013	0.0283	0.0948	0.1230	0.0000	375.6910	375.6910	0.0218	0.0000	376.2367
Maximum	**19.0695**	**45.6300**	**22.6222**	**0.0399**	**18.2032**	**2.3913**	**20.5945**	**9.9670**	**2.2000**	**12.1670**	**0.0000**	**3,924.749 4**	**3,924.749 4**	**1.1958**	**0.0000**	**3,951.380 7**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.4126	45.6300	22.6222	0.0399	18.2032	2.3913	20.5945	9.9670	2.2000	12.1670	0.0000	3,924.749 4	3,924.749 4	1.1958	0.0000	3,951.380 7
2020	19.0695	20.5016	19.1170	0.0342	0.5851	1.1266	1.7117	0.1566	1.0594	1.2159	0.0000	3,290.828 4	3,290.828 4	0.7170	0.0000	3,307.149 7
2021	19.0423	1.5623	2.1748	3.9200e-003	0.1065	0.0948	0.2013	0.0283	0.0948	0.1230	0.0000	375.6910	375.6910	0.0218	0.0000	376.2367
Maximum	**19.0695**	**45.6300**	**22.6222**	**0.0399**	**18.2032**	**2.3913**	**20.5945**	**9.9670**	**2.2000**	**12.1670**	**0.0000**	**3,924.749 4**	**3,924.749 4**	**1.1958**	**0.0000**	**3,951.380 7**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.6240	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438	0.0000	14.2610	14.2610	0.0138	0.0000	14.6065
Energy	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928
Mobile	0.3078	1.4401	3.9871	0.0114	1.0192	0.0106	1.0298	0.2725	9.9100e-003	0.2824		1,154.3739	1,154.3739	0.0590		1,155.8492
Total	**2.9662**	**1.8250**	**12.0492**	**0.0137**	**1.0192**	**0.0780**	**1.0972**	**0.2725**	**0.0774**	**0.3499**	**0.0000**	**1,543.0030**	**1,543.0030**	**0.0800**	**6.8600e-003**	**1,547.0486**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.6240	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438	0.0000	14.2610	14.2610	0.0138	0.0000	14.6065
Energy	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928
Mobile	0.3078	1.4401	3.9871	0.0114	1.0192	0.0106	1.0298	0.2725	9.9100e-003	0.2824		1,154.3739	1,154.3739	0.0590		1,155.8492
Total	**2.9662**	**1.8250**	**12.0492**	**0.0137**	**1.0192**	**0.0780**	**1.0972**	**0.2725**	**0.0774**	**0.3499**	**0.0000**	**1,543.0030**	**1,543.0030**	**0.0800**	**6.8600e-003**	**1,547.0486**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition (Building)	Demolition	9/1/2019	9/27/2019	5	20	
2	Demolition (Pool, Courts, Parking)	Demolition	9/28/2019	10/25/2019	5	20	
3	Site Preparation	Site Preparation	10/26/2019	11/8/2019	5	10	
4	Grading	Grading	11/9/2019	12/6/2019	5	20	
5	Building Construction	Building Construction	12/7/2019	10/23/2020	5	230	
6	Paving	Paving	10/24/2020	12/2/2020	5	28	
7	Architectural Coating	Architectural Coating	12/3/2020	3/2/2021	5	64	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 194,400; Residential Outdoor: 64,800; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition (Building)	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition (Building)	Excavators	3	8.00	158	0.38
Demolition (Building)	Rubber Tired Dozers	2	8.00	247	0.40
Demolition (Pool, Courts, Parking)	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition (Pool, Courts, Parking)	Excavators	3	8.00	158	0.38
Demolition (Pool, Courts, Parking)	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition (Building)	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Demolition (Pool, Courts, Parking)	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	69.00	10.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition (Building) - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0616	0.0000	0.0616	9.3200e-003	0.0000	9.3200e-003			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.0616**	**1.7949**	**1.8565**	**9.3200e-003**	**1.6697**	**1.6790**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.2 Demolition (Building) - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0477	0.4660	1.0800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		107.8500	107.8500	3.4200e-003		107.9356
Total	**0.0647**	**0.0477**	**0.4660**	**1.0800e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**107.8500**	**107.8500**	**3.4200e-003**		**107.9356**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0616	0.0000	0.0616	9.3200e-003	0.0000	9.3200e-003			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.0616**	**1.7949**	**1.8565**	**9.3200e-003**	**1.6697**	**1.6790**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.2 Demolition (Building) - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0477	0.4660	1.0800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		107.8500	107.8500	3.4200e-003		107.9356
Total	**0.0647**	**0.0477**	**0.4660**	**1.0800e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**107.8500**	**107.8500**	**3.4200e-003**		**107.9356**

3.3 Demolition (Pool, Courts, Parking) - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5595	0.0000	1.5595	0.2361	0.0000	0.2361			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**1.5595**	**1.7949**	**3.3544**	**0.2361**	**1.6697**	**1.9058**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.3 Demolition (Pool, Courts, Parking) - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0477	0.4660	1.0800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		107.8500	107.8500	3.4200e-003		107.9356
Total	**0.0647**	**0.0477**	**0.4660**	**1.0800e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**107.8500**	**107.8500**	**3.4200e-003**		**107.9356**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5595	0.0000	1.5595	0.2361	0.0000	0.2361			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.899 4	3,816.899 4	1.0618		3,843.445 1
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**1.5595**	**1.7949**	**3.3544**	**0.2361**	**1.6697**	**1.9058**	**0.0000**	**3,816.899 4**	**3,816.899 4**	**1.0618**		**3,843.445 1**

3.3 Demolition (Pool, Courts, Parking) - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0477	0.4660	1.0800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		107.8500	107.8500	3.4200e-003		107.9356
Total	**0.0647**	**0.0477**	**0.4660**	**1.0800e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**107.8500**	**107.8500**	**3.4200e-003**		**107.9356**

3.4 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.452 9	3,766.452 9	1.1917		3,796.244 5
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.452 9**	**3,766.452 9**	**1.1917**		**3,796.244 5**

3.4 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0573	0.5591	1.3000e-003	0.1369	9.8000e-004	0.1379	0.0363	9.0000e-004	0.0372		129.4200	129.4200	4.1100e-003		129.5227
Total	**0.0776**	**0.0573**	**0.5591**	**1.3000e-003**	**0.1369**	**9.8000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**129.4200**	**129.4200**	**4.1100e-003**		**129.5227**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.4 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0573	0.5591	1.3000e-003	0.1369	9.8000e-004	0.1379	0.0363	9.0000e-004	0.0372		129.4200	129.4200	4.1100e-003		129.5227
Total	**0.0776**	**0.0573**	**0.5591**	**1.3000e-003**	**0.1369**	**9.8000e-004**	**0.1379**	**0.0363**	**9.0000e-004**	**0.0372**		**129.4200**	**129.4200**	**4.1100e-003**		**129.5227**

3.5 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856		2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**6.5523**	**1.3974**	**7.9497**	**3.3675**	**1.2856**	**4.6531**		**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.5 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0477	0.4660	1.0800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		107.8500	107.8500	3.4200e-003		107.9356
Total	**0.0647**	**0.0477**	**0.4660**	**1.0800e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**107.8500**	**107.8500**	**3.4200e-003**		**107.9356**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856	0.0000	2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**6.5523**	**1.3974**	**7.9497**	**3.3675**	**1.2856**	**4.6531**	**0.0000**	**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.5 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0477	0.4660	1.0800e-003	0.1141	8.1000e-004	0.1149	0.0303	7.5000e-004	0.0310		107.8500	107.8500	3.4200e-003		107.9356
Total	**0.0647**	**0.0477**	**0.4660**	**1.0800e-003**	**0.1141**	**8.1000e-004**	**0.1149**	**0.0303**	**7.5000e-004**	**0.0310**		**107.8500**	**107.8500**	**3.4200e-003**		**107.9356**

3.6 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.580 2	2,591.580 2	0.6313		2,607.363 5
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.580 2**	**2,591.580 2**	**0.6313**		**2,607.363 5**

3.6 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0497	1.2271	0.4068	2.4500e-003	0.0602	8.8800e-003	0.0691	0.0173	8.4900e-003	0.0258		258.5858	258.5858	0.0173		259.0176
Worker	0.2976	0.2196	2.1434	4.9900e-003	0.5249	3.7400e-003	0.5286	0.1392	3.4500e-003	0.1427		496.1101	496.1101	0.0158		496.5038
Total	**0.3473**	**1.4466**	**2.5502**	**7.4400e-003**	**0.5851**	**0.0126**	**0.5977**	**0.1566**	**0.0119**	**0.1685**		**754.6959**	**754.6959**	**0.0330**		**755.5214**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.580 2	2,591.580 2	0.6313		2,607.363 5
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.580 2**	**2,591.580 2**	**0.6313**		**2,607.363 5**

3.6 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0497	1.2271	0.4068	2.4500e-003	0.0602	8.8800e-003	0.0691	0.0173	8.4900e-003	0.0258		258.5858	258.5858	0.0173		259.0176
Worker	0.2976	0.2196	2.1434	4.9900e-003	0.5249	3.7400e-003	0.5286	0.1392	3.4500e-003	0.1427		496.1101	496.1101	0.0158		496.5038
Total	**0.3473**	**1.4466**	**2.5502**	**7.4400e-003**	**0.5851**	**0.0126**	**0.5977**	**0.1566**	**0.0119**	**0.1685**		**754.6959**	**754.6959**	**0.0330**		**755.5214**

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.6 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0397	1.1205	0.3395	2.4300e-003	0.0602	5.9200e-003	0.0661	0.0173	5.6600e-003	0.0230		256.9123	256.9123	0.0162		257.3165
Worker	0.2738	0.1951	1.9290	4.8300e-003	0.5249	3.6500e-003	0.5285	0.1392	3.3600e-003	0.1426		480.8531	480.8531	0.0138		481.1987
Total	**0.3135**	**1.3156**	**2.2685**	**7.2600e-003**	**0.5851**	**9.5700e-003**	**0.5946**	**0.1566**	**9.0200e-003**	**0.1656**		**737.7654**	**737.7654**	**0.0300**		**738.5152**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.063 1	2,553.063 1	0.6229		2,568.634 5
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.063 1**	**2,553.063 1**	**0.6229**		**2,568.634 5**

3.6 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0397	1.1205	0.3395	2.4300e-003	0.0602	5.9200e-003	0.0661	0.0173	5.6600e-003	0.0230		256.9123	256.9123	0.0162		257.3165
Worker	0.2738	0.1951	1.9290	4.8300e-003	0.5249	3.6500e-003	0.5285	0.1392	3.3600e-003	0.1426		480.8531	480.8531	0.0138		481.1987
Total	**0.3135**	**1.3156**	**2.2685**	**7.2600e-003**	**0.5851**	**9.5700e-003**	**0.5946**	**0.1566**	**9.0200e-003**	**0.1656**		**737.7654**	**737.7654**	**0.0300**		**738.5152**

3.7 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.733 4	2,207.733 4	0.7140		2,225.584 1
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.733 4**	**2,207.733 4**	**0.7140**		**2,225.584 1**

3.7 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0595	0.0424	0.4194	1.0500e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		104.5333	104.5333	3.0100e-003		104.6084
Total	**0.0595**	**0.0424**	**0.4194**	**1.0500e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**104.5333**	**104.5333**	**3.0100e-003**		**104.6084**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.7 Paving - 2020

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0595	0.0424	0.4194	1.0500e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		104.5333	104.5333	3.0100e-003		104.6084
Total	**0.0595**	**0.0424**	**0.4194**	**1.0500e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**104.5333**	**104.5333**	**3.0100e-003**		**104.6084**

3.8 Architectural Coating - 2020

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	18.7718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**19.0139**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.8 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0556	0.0396	0.3914	9.8000e-004	0.1065	7.4000e-004	0.1072	0.0283	6.8000e-004	0.0289		97.5644	97.5644	2.8100e-003		97.6345
Total	**0.0556**	**0.0396**	**0.3914**	**9.8000e-004**	**0.1065**	**7.4000e-004**	**0.1072**	**0.0283**	**6.8000e-004**	**0.0289**		**97.5644**	**97.5644**	**2.8100e-003**		**97.6345**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.7718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**19.0139**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.8 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0556	0.0396	0.3914	9.8000e-004	0.1065	7.4000e-004	0.1072	0.0283	6.8000e-004	0.0289		97.5644	97.5644	2.8100e-003		97.6345
Total	**0.0556**	**0.0396**	**0.3914**	**9.8000e-004**	**0.1065**	**7.4000e-004**	**0.1072**	**0.0283**	**6.8000e-004**	**0.0289**		**97.5644**	**97.5644**	**2.8100e-003**		**97.6345**

3.8 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.7718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**18.9907**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.8 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0517	0.0355	0.3572	9.5000e-004	0.1065	7.2000e-004	0.1072	0.0283	6.6000e-004	0.0289		94.2430	94.2430	2.5100e-003		94.3058
Total	**0.0517**	**0.0355**	**0.3572**	**9.5000e-004**	**0.1065**	**7.2000e-004**	**0.1072**	**0.0283**	**6.6000e-004**	**0.0289**		**94.2430**	**94.2430**	**2.5100e-003**		**94.3058**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.7718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**18.9907**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.8 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0517	0.0355	0.3572	9.5000e-004	0.1065	7.2000e-004	0.1072	0.0283	6.6000e-004	0.0289		94.2430	94.2430	2.5100e-003		94.3058
Total	0.0517	0.0355	0.3572	9.5000e-004	0.1065	7.2000e-004	0.1072	0.0283	6.6000e-004	0.0289		94.2430	94.2430	2.5100e-003		94.3058

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3078	1.4401	3.9871	0.0114	1.0192	0.0106	1.0298	0.2725	9.9100e-003	0.2824		1,154.3739	1,154.3739	0.0590		1,155.8492
Unmitigated	0.3078	1.4401	3.9871	0.0114	1.0192	0.0106	1.0298	0.2725	9.9100e-003	0.2824		1,154.3739	1,154.3739	0.0590		1,155.8492

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	187.20	187.20	187.20	480,376	480,376
Total	187.20	187.20	187.20	480,376	480,376

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.555851	0.039752	0.205040	0.120748	0.020349	0.005402	0.018507	0.022668	0.002052	0.002157	0.005939	0.000618	0.000915

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928
NaturalGas Unmitigated	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	3182.13	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928
Total		**0.0343**	**0.2933**	**0.1248**	**1.8700e-003**		**0.0237**	**0.0237**		**0.0237**	**0.0237**		**374.3681**	**374.3681**	**7.1800e-003**	**6.8600e-003**	**376.5928**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	3.18213	0.0343	0.2933	0.1248	1.8700e-003		0.0237	0.0237		0.0237	0.0237		374.3681	374.3681	7.1800e-003	6.8600e-003	376.5928
Total		**0.0343**	**0.2933**	**0.1248**	**1.8700e-003**		**0.0237**	**0.0237**		**0.0237**	**0.0237**		**374.3681**	**374.3681**	**7.1800e-003**	**6.8600e-003**	**376.5928**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6240	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438	0.0000	14.2610	14.2610	0.0138	0.0000	14.6065
Unmitigated	2.6240	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438	0.0000	14.2610	14.2610	0.0138	0.0000	14.6065

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3292					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.0544					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2405	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438		14.2610	14.2610	0.0138		14.6065
Total	**2.6240**	**0.0916**	**7.9373**	**4.2000e-004**		**0.0438**	**0.0438**		**0.0438**	**0.0438**	**0.0000**	**14.2610**	**14.2610**	**0.0138**	**0.0000**	**14.6065**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3292					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.0544					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2405	0.0916	7.9373	4.2000e-004		0.0438	0.0438		0.0438	0.0438		14.2610	14.2610	0.0138		14.6065
Total	**2.6240**	**0.0916**	**7.9373**	**4.2000e-004**		**0.0438**	**0.0438**		**0.0438**	**0.0438**	**0.0000**	**14.2610**	**14.2610**	**0.0138**	**0.0000**	**14.6065**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C

ANNUAL EMISSIONS (CALEEMOD)

Canyon Terrace Apartments (City of Folsom)

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	96.00	Dwelling Unit	6.00	96,000.00	256

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on project size. Demolition split into two phases - one for the building, the other for the pool, courts, and parking lot.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition -

Vehicle Trips - 1.95 trip rate/unit, as provided by the Omni-Means Traffic Report

Sequestration -

Land Use Change - Assumed that approximately two thirds (4 acres) of existing site is 'Grassland' vegetation type, and one third 'Forest Land - Trees' (2 acres). Project would remove up to one acre of 'Forest Land - Trees' and three acres of 'Grassland'.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	64.00
tblConstructionPhase	NumDays	20.00	28.00
tblLandUseChange	CO2peracre	111.00	4.31
tblTripsAndVMT	HaulingTripNumber	5.00	0.00
tblTripsAndVMT	HaulingTripNumber	138.00	0.00
tblVehicleTrips	ST_TR	7.16	1.95
tblVehicleTrips	SU_TR	6.07	1.95
tblVehicleTrips	WD_TR	6.59	1.95

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1428	1.4198	0.8981	1.6000e-003	0.1808	0.0729	0.2538	0.0881	0.0677	0.1558	0.0000	142.5499	142.5499	0.0383	0.0000	143.5082
2020	0.4772	2.3968	2.2653	4.0300e-003	0.0628	0.1317	0.1945	0.0169	0.1237	0.1405	0.0000	352.7268	352.7268	0.0724	0.0000	354.5359
2021	0.4093	0.0335	0.0467	8.0000e-005	2.2100e-003	2.0400e-003	4.2500e-003	5.9000e-004	2.0400e-003	2.6300e-003	0.0000	7.3815	7.3815	4.3000e-004	0.0000	7.3922
Maximum	**0.4772**	**2.3968**	**2.2653**	**4.0300e-003**	**0.1808**	**0.1317**	**0.2538**	**0.0881**	**0.1237**	**0.1558**	**0.0000**	**352.7268**	**352.7268**	**0.0724**	**0.0000**	**354.5359**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1428	1.4198	0.8981	1.6000e-003	0.1808	0.0729	0.2538	0.0881	0.0677	0.1558	0.0000	142.5498	142.5498	0.0383	0.0000	143.5080
2020	0.4772	2.3968	2.2653	4.0300e-003	0.0628	0.1317	0.1945	0.0169	0.1237	0.1405	0.0000	352.7265	352.7265	0.0724	0.0000	354.5356
2021	0.4093	0.0335	0.0467	8.0000e-005	2.2100e-003	2.0400e-003	4.2500e-003	5.9000e-004	2.0400e-003	2.6300e-003	0.0000	7.3815	7.3815	4.3000e-004	0.0000	7.3922
Maximum	**0.4772**	**2.3968**	**2.2653**	**4.0300e-003**	**0.1808**	**0.1317**	**0.2538**	**0.0881**	**0.1237**	**0.1558**	**0.0000**	**352.7265**	**352.7265**	**0.0724**	**0.0000**	**354.5356**

Canyon Terrace Apartments (City of Folsom) - Sacramento County, Annual

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2019	11-30-2019	1.2682	1.2682
2	12-1-2019	2-29-2020	0.7833	0.7833
3	3-1-2020	5-31-2020	0.7528	0.7528
4	6-1-2020	8-31-2020	0.7523	0.7523
5	9-1-2020	11-30-2020	0.6444	0.6444
6	12-1-2020	2-28-2021	0.6606	0.6606
7	3-1-2021	5-31-2021	0.0147	0.0147
		Highest	1.2682	1.2682

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4651	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564
Energy	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	187.4937	187.4937	6.8600e-003	2.3100e-003	188.3539
Mobile	0.0590	0.2545	0.6996	2.1200e-003	0.1792	1.9100e-003	0.1811	0.0481	1.7900e-003	0.0498	0.0000	195.0315	195.0315	9.5800e-003	0.0000	195.2709
Waste						0.0000	0.0000		0.0000	0.0000	8.9641	0.0000	8.9641	0.5298	0.0000	22.2081
Water						0.0000	0.0000		0.0000	0.0000	2.2130	13.0813	15.2942	8.2100e-003	4.9300e-003	16.9700
Total	**0.5304**	**0.3195**	**1.7145**	**2.5100e-003**	**0.1792**	**0.0117**	**0.1909**	**0.0481**	**0.0116**	**0.0596**	**11.1770**	**397.2237**	**408.4007**	**0.5560**	**7.2400e-003**	**424.4592**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4651	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564
Energy	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	187.4937	187.4937	6.8600e-003	2.3100e-003	188.3539
Mobile	0.0590	0.2545	0.6996	2.1200e-003	0.1792	1.9100e-003	0.1811	0.0481	1.7900e-003	0.0498	0.0000	195.0315	195.0315	9.5800e-003	0.0000	195.2709
Waste						0.0000	0.0000		0.0000	0.0000	8.9641	0.0000	8.9641	0.5298	0.0000	22.2081
Water						0.0000	0.0000		0.0000	0.0000	2.2130	13.0813	15.2942	8.2100e-003	4.9300e-003	16.9700
Total	**0.5304**	**0.3195**	**1.7145**	**2.5100e-003**	**0.1792**	**0.0117**	**0.1909**	**0.0481**	**0.0116**	**0.0596**	**11.1770**	**397.2237**	**408.4007**	**0.5560**	**7.2400e-003**	**424.4592**

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

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	0.0000
Vegetation Land Change	-17.2400
Total	**-17.2400**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition (Building)	Demolition	9/1/2019	9/27/2019	5	20	
2	Demolition (Pool, Courts, Parking)	Demolition	9/28/2019	10/25/2019	5	20	
3	Site Preparation	Site Preparation	10/26/2019	11/8/2019	5	10	
4	Grading	Grading	11/9/2019	12/6/2019	5	20	
5	Building Construction	Building Construction	12/7/2019	10/23/2020	5	230	
6	Paving	Paving	10/24/2020	12/2/2020	5	28	
7	Architectural Coating	Architectural Coating	12/3/2020	3/2/2021	5	64	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 194,400; Residential Outdoor: 64,800; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition (Building)	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition (Building)	Excavators	3	8.00	158	0.38
Demolition (Building)	Rubber Tired Dozers	2	8.00	247	0.40
Demolition (Pool, Courts, Parking)	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition (Pool, Courts, Parking)	Excavators	3	8.00	158	0.38
Demolition (Pool, Courts, Parking)	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition (Building)	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Demolition (Pool, Courts, Parking)	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	69.00	10.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition (Building) - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8672
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**6.2000e-004**	**0.0180**	**0.0186**	**9.0000e-005**	**0.0167**	**0.0168**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8672**

3.2 Demolition (Building) - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8671
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**6.2000e-004**	**0.0180**	**0.0186**	**9.0000e-005**	**0.0167**	**0.0168**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8671**

3.2 Demolition (Building) - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

3.3 Demolition (Pool, Courts, Parking) - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0156	0.0000	0.0156	2.3600e-003	0.0000	2.3600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8672
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**0.0156**	**0.0180**	**0.0335**	**2.3600e-003**	**0.0167**	**0.0191**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8672**

3.3 Demolition (Pool, Courts, Parking) - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0156	0.0000	0.0156	2.3600e-003	0.0000	2.3600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8671
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**0.0156**	**0.0180**	**0.0335**	**2.3600e-003**	**0.0167**	**0.0191**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8671**

3.3 Demolition (Pool, Courts, Parking) - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

3.4 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

3.4 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.6000e-004	2.7600e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.6042	0.6042	2.0000e-005	0.0000	0.6047
Total	**3.6000e-004**	**2.6000e-004**	**2.7600e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.6042**	**0.6042**	**2.0000e-005**	**0.0000**	**0.6047**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

3.4 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.6000e-004	2.7600e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.6042	0.6042	2.0000e-005	0.0000	0.6047
Total	**3.6000e-004**	**2.6000e-004**	**2.7600e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.6042**	**0.6042**	**2.0000e-005**	**0.0000**	**0.6047**

3.5 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0258	0.2835	0.1629	3.0000e-004		0.0140	0.0140		0.0129	0.0129	0.0000	26.6423	26.6423	8.4300e-003	0.0000	26.8530
Total	**0.0258**	**0.2835**	**0.1629**	**3.0000e-004**	**0.0655**	**0.0140**	**0.0795**	**0.0337**	**0.0129**	**0.0465**	**0.0000**	**26.6423**	**26.6423**	**8.4300e-003**	**0.0000**	**26.8530**

3.5 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0258	0.2835	0.1629	3.0000e-004		0.0140	0.0140		0.0129	0.0129	0.0000	26.6422	26.6422	8.4300e-003	0.0000	26.8530
Total	**0.0258**	**0.2835**	**0.1629**	**3.0000e-004**	**0.0655**	**0.0140**	**0.0795**	**0.0337**	**0.0129**	**0.0465**	**0.0000**	**26.6422**	**26.6422**	**8.4300e-003**	**0.0000**	**26.8530**

3.5 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					tons/yr								MT/yr			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

3.6 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					tons/yr								MT/yr			
Off-Road	0.0201	0.1792	0.1459	2.3000e-004		0.0110	0.0110		0.0103	0.0103	0.0000	19.9839	19.9839	4.8700e-003	0.0000	20.1056
Total	**0.0201**	**0.1792**	**0.1459**	**2.3000e-004**		**0.0110**	**0.0110**		**0.0103**	**0.0103**	**0.0000**	**19.9839**	**19.9839**	**4.8700e-003**	**0.0000**	**20.1056**

3.6 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0104	3.1900e-003	2.0000e-005	5.0000e-004	7.0000e-005	5.7000e-004	1.4000e-004	7.0000e-005	2.1000e-004	0.0000	2.0238	2.0238	1.3000e-004	0.0000	2.0269
Worker	2.3700e-003	1.6700e-003	0.0180	4.0000e-005	4.3100e-003	3.0000e-005	4.3400e-003	1.1500e-003	3.0000e-005	1.1700e-003	0.0000	3.9376	3.9376	1.2000e-004	0.0000	3.9407
Total	**2.7800e-003**	**0.0121**	**0.0212**	**6.0000e-005**	**4.8100e-003**	**1.0000e-004**	**4.9100e-003**	**1.2900e-003**	**1.0000e-004**	**1.3800e-003**	**0.0000**	**5.9614**	**5.9614**	**2.5000e-004**	**0.0000**	**5.9676**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0201	0.1792	0.1459	2.3000e-004		0.0110	0.0110		0.0103	0.0103	0.0000	19.9838	19.9838	4.8700e-003	0.0000	20.1055
Total	**0.0201**	**0.1792**	**0.1459**	**2.3000e-004**		**0.0110**	**0.0110**		**0.0103**	**0.0103**	**0.0000**	**19.9838**	**19.9838**	**4.8700e-003**	**0.0000**	**20.1055**

3.6 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					tons/yr									MT/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0104	3.1900e-003	2.0000e-005	5.0000e-004	7.0000e-005	5.7000e-004	1.4000e-004	7.0000e-005	2.1000e-004	0.0000	2.0238	2.0238	1.3000e-004	0.0000	2.0269
Worker	2.3700e-003	1.6700e-003	0.0180	4.0000e-005	4.3100e-003	3.0000e-005	4.3400e-003	1.1500e-003	3.0000e-005	1.1700e-003	0.0000	3.9376	3.9376	1.2000e-004	0.0000	3.9407
Total	2.7800e-003	0.0121	0.0212	6.0000e-005	4.8100e-003	1.0000e-004	4.9100e-003	1.2900e-003	1.0000e-004	1.3800e-003	0.0000	5.9614	5.9614	2.5000e-004	0.0000	5.9676

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					tons/yr									MT/yr		
Off-Road	0.2258	2.0433	1.7944	2.8700e-003		0.1190	0.1190		0.1119	0.1119	0.0000	246.6646	246.6646	0.0602	0.0000	248.1691
Total	0.2258	2.0433	1.7944	2.8700e-003		0.1190	0.1190		0.1119	0.1119	0.0000	246.6646	246.6646	0.0602	0.0000	248.1691

3.6 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0800e-003	0.1194	0.0333	2.6000e-004	6.2300e-003	6.2000e-004	6.8500e-003	1.8000e-003	5.9000e-004	2.3900e-003	0.0000	25.1993	25.1993	1.4900e-003	0.0000	25.2366
Worker	0.0274	0.0186	0.2034	5.3000e-004	0.0540	3.9000e-004	0.0544	0.0144	3.6000e-004	0.0147	0.0000	47.8193	47.8193	1.3500e-003	0.0000	47.8531
Total	**0.0314**	**0.1380**	**0.2367**	**7.9000e-004**	**0.0602**	**1.0100e-003**	**0.0612**	**0.0162**	**9.5000e-004**	**0.0171**	**0.0000**	**73.0187**	**73.0187**	**2.8400e-003**	**0.0000**	**73.0898**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2258	2.0433	1.7944	2.8700e-003		0.1190	0.1190		0.1119	0.1119	0.0000	246.6643	246.6643	0.0602	0.0000	248.1688
Total	**0.2258**	**2.0433**	**1.7944**	**2.8700e-003**		**0.1190**	**0.1190**		**0.1119**	**0.1119**	**0.0000**	**246.6643**	**246.6643**	**0.0602**	**0.0000**	**248.1688**

3.6 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0800e-003	0.1194	0.0333	2.6000e-004	6.2300e-003	6.2000e-004	6.8500e-003	1.8000e-003	5.9000e-004	2.3900e-003	0.0000	25.1993	25.1993	1.4900e-003	0.0000	25.2366
Worker	0.0274	0.0186	0.2034	5.3000e-004	0.0540	3.9000e-004	0.0544	0.0144	3.6000e-004	0.0147	0.0000	47.8193	47.8193	1.3500e-003	0.0000	47.8531
Total	**0.0314**	**0.1380**	**0.2367**	**7.9000e-004**	**0.0602**	**1.0100e-003**	**0.0612**	**0.0162**	**9.5000e-004**	**0.0171**	**0.0000**	**73.0187**	**73.0187**	**2.8400e-003**	**0.0000**	**73.0898**

3.7 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0190	0.1969	0.2051	3.2000e-004		0.0105	0.0105		9.7000e-003	9.7000e-003	0.0000	28.0395	28.0395	9.0700e-003	0.0000	28.2662
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0190**	**0.1969**	**0.2051**	**3.2000e-004**		**0.0105**	**0.0105**		**9.7000e-003**	**9.7000e-003**	**0.0000**	**28.0395**	**28.0395**	**9.0700e-003**	**0.0000**	**28.2662**

3.7 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	5.3000e-004	5.8100e-003	2.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.3666	1.3666	4.0000e-005	0.0000	1.3675
Total	**7.8000e-004**	**5.3000e-004**	**5.8100e-003**	**2.0000e-005**	**1.5400e-003**	**1.0000e-005**	**1.5500e-003**	**4.1000e-004**	**1.0000e-005**	**4.2000e-004**	**0.0000**	**1.3666**	**1.3666**	**4.0000e-005**	**0.0000**	**1.3675**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0190	0.1969	0.2051	3.2000e-004		0.0105	0.0105		9.7000e-003	9.7000e-003	0.0000	28.0395	28.0395	9.0700e-003	0.0000	28.2662
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0190**	**0.1969**	**0.2051**	**3.2000e-004**		**0.0105**	**0.0105**		**9.7000e-003**	**9.7000e-003**	**0.0000**	**28.0395**	**28.0395**	**9.0700e-003**	**0.0000**	**28.2662**

3.7 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	5.3000e-004	5.8100e-003	2.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.3666	1.3666	4.0000e-005	0.0000	1.3675
Total	**7.8000e-004**	**5.3000e-004**	**5.8100e-003**	**2.0000e-005**	**1.5400e-003**	**1.0000e-005**	**1.5500e-003**	**4.1000e-004**	**1.0000e-005**	**4.2000e-004**	**0.0000**	**1.3666**	**1.3666**	**4.0000e-005**	**0.0000**	**1.3675**

3.8 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5400e-003	0.0177	0.0192	3.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	2.6809	2.6809	2.1000e-004	0.0000	2.6861
Total	**0.1996**	**0.0177**	**0.0192**	**3.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**2.6809**	**2.6809**	**2.1000e-004**	**0.0000**	**2.6861**

3.8 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.7000e-004	4.0700e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9566	0.9566	3.0000e-005	0.0000	0.9573
Total	**5.5000e-004**	**3.7000e-004**	**4.0700e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9566**	**0.9566**	**3.0000e-005**	**0.0000**	**0.9573**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5400e-003	0.0177	0.0192	3.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	2.6809	2.6809	2.1000e-004	0.0000	2.6861
Total	**0.1996**	**0.0177**	**0.0192**	**3.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**2.6809**	**2.6809**	**2.1000e-004**	**0.0000**	**2.6861**

3.8 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.7000e-004	4.0700e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9566	0.9566	3.0000e-005	0.0000	0.9573
Total	**5.5000e-004**	**3.7000e-004**	**4.0700e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9566**	**0.9566**	**3.0000e-005**	**0.0000**	**0.9573**

3.8 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4036					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7100e-003	0.0328	0.0391	6.0000e-005		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003	0.0000	5.4895	5.4895	3.8000e-004	0.0000	5.4989
Total	**0.4083**	**0.0328**	**0.0391**	**6.0000e-005**		**2.0200e-003**	**2.0200e-003**		**2.0200e-003**	**2.0200e-003**	**0.0000**	**5.4895**	**5.4895**	**3.8000e-004**	**0.0000**	**5.4989**

3.8 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	6.8000e-004	7.6200e-003	2.0000e-005	2.2100e-003	2.0000e-005	2.2300e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8920	1.8920	5.0000e-005	0.0000	1.8933
Total	**1.0400e-003**	**6.8000e-004**	**7.6200e-003**	**2.0000e-005**	**2.2100e-003**	**2.0000e-005**	**2.2300e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.8920**	**1.8920**	**5.0000e-005**	**0.0000**	**1.8933**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4036					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7100e-003	0.0328	0.0391	6.0000e-005		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003	0.0000	5.4895	5.4895	3.8000e-004	0.0000	5.4989
Total	**0.4083**	**0.0328**	**0.0391**	**6.0000e-005**		**2.0200e-003**	**2.0200e-003**		**2.0200e-003**	**2.0200e-003**	**0.0000**	**5.4895**	**5.4895**	**3.8000e-004**	**0.0000**	**5.4989**

3.8 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	6.8000e-004	7.6200e-003	2.0000e-005	2.2100e-003	2.0000e-005	2.2300e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8920	1.8920	5.0000e-005	0.0000	1.8933
Total	**1.0400e-003**	**6.8000e-004**	**7.6200e-003**	**2.0000e-005**	**2.2100e-003**	**2.0000e-005**	**2.2300e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.8920**	**1.8920**	**5.0000e-005**	**0.0000**	**1.8933**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0590	0.2545	0.6996	2.1200e-003	0.1792	1.9100e-003	0.1811	0.0481	1.7900e-003	0.0498	0.0000	195.0315	195.0315	9.5800e-003	0.0000	195.2709
Unmitigated	0.0590	0.2545	0.6996	2.1200e-003	0.1792	1.9100e-003	0.1811	0.0481	1.7900e-003	0.0498	0.0000	195.0315	195.0315	9.5800e-003	0.0000	195.2709

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	187.20	187.20	187.20	480,376	480,376
Total	187.20	187.20	187.20	480,376	480,376

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.555851	0.039752	0.205040	0.120748	0.020349	0.005402	0.018507	0.022668	0.002052	0.002157	0.005939	0.000618	0.000915

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	125.5129	125.5129	5.6800e-003	1.1700e-003	126.0047
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	125.5129	125.5129	5.6800e-003	1.1700e-003	126.0047
NaturalGas Mitigated	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	61.9808	61.9808	1.1900e-003	1.1400e-003	62.3492
NaturalGas Unmitigated	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	61.9808	61.9808	1.1900e-003	1.1400e-003	62.3492

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	1.16148e+006	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	61.9808	61.9808	1.1900e-003	1.1400e-003	62.3492
Total		**6.2600e-003**	**0.0535**	**0.0228**	**3.4000e-004**		**4.3300e-003**	**4.3300e-003**		**4.3300e-003**	**4.3300e-003**	**0.0000**	**61.9808**	**61.9808**	**1.1900e-003**	**1.1400e-003**	**62.3492**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	1.16148e+006	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	61.9808	61.9808	1.1900e-003	1.1400e-003	62.3492
Total		**6.2600e-003**	**0.0535**	**0.0228**	**3.4000e-004**		**4.3300e-003**	**4.3300e-003**		**4.3300e-003**	**4.3300e-003**	**0.0000**	**61.9808**	**61.9808**	**1.1900e-003**	**1.1400e-003**	**62.3492**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	431447	125.5129	5.6800e-003	1.1700e-003	126.0047
Total		**125.5129**	**5.6800e-003**	**1.1700e-003**	**126.0047**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	431447	125.5129	5.6800e-003	1.1700e-003	126.0047
Total		**125.5129**	**5.6800e-003**	**1.1700e-003**	**126.0047**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4651	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564
Unmitigated	0.4651	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0601					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3749					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0301	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564
Total	**0.4651**	**0.0115**	**0.9922**	**5.0000e-005**		**5.4700e-003**	**5.4700e-003**		**5.4700e-003**	**5.4700e-003**	**0.0000**	**1.6172**	**1.6172**	**1.5700e-003**	**0.0000**	**1.6564**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0601					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3749					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0301	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564
Total	**0.4651**	**0.0115**	**0.9922**	**5.0000e-005**		**5.4700e-003**	**5.4700e-003**		**5.4700e-003**	**5.4700e-003**	**0.0000**	**1.6172**	**1.6172**	**1.5700e-003**	**0.0000**	**1.6564**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.2942	8.2100e-003	4.9300e-003	16.9700
Unmitigated	15.2942	8.2100e-003	4.9300e-003	16.9700

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	6.25479 / 3.94323	15.2942	8.2100e-003	4.9300e-003	16.9700
Total		**15.2942**	**8.2100e-003**	**4.9300e-003**	**16.9700**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	6.25479 / 3.94323	15.2942	8.2100e-003	4.9300e-003	16.9700
Total		**15.2942**	**8.2100e-003**	**4.9300e-003**	**16.9700**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.9641	0.5298	0.0000	22.2081
Unmitigated	8.9641	0.5298	0.0000	22.2081

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	44.16	8.9641	0.5298	0.0000	22.2081
Total		**8.9641**	**0.5298**	**0.0000**	**22.2081**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	44.16	8.9641	0.5298	0.0000	22.2081
Total		**8.9641**	**0.5298**	**0.0000**	**22.2081**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-17.2400	0.0000	0.0000	-17.2400

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	4 / 1	-12.9300	0.0000	0.0000	-12.9300
Trees	2 / 1	-4.3100	0.0000	0.0000	-4.3100
Total		**-17.2400**	**0.0000**	**0.0000**	**-17.2400**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Aspen	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

APPENDIX F: ENERGY CONSERVATION CALCULATIONS

Off-road Mobile (Construction) Energy Usage

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-road vehicles use diesel fuel as an energy source.
Demolition, site preparation, and grading energy were used as the basis of this calculation.

Given Factor:	**79.95**	**metric tons**	**CO_2**	**(provided in CalEEMod Output File)**	
Conversion Factor:	2204.62	pounds	per metric ton		
Intermediate Result:	**176,254**	**pounds**	**CO_2**		
Conversion Factor:	22.38	pounds	CO_2 per 1 gallon of diesel fuel		(Source: U.S. EIA, 2016.
Final Result:	**7,875.51**	**gallons**	**diesel fuel**		Website: http://www.eia.gov/tools/faqs/faq.cfm?id=307&t=11)

On-road Mobile (Operational) Energy Usage

Note: For the sake of simplicity, it was assumed that passenger vehicles, light duty trucks, motorcycles, and mobile homes use gasoline, and all medium-duty trucks, heavy-duty trucks, and buses use diesel fuel.

Unmitigated:

Step 1: **Total Net Daily Trips (provided by Omni-Means)**

179

Res H-W	*Res H-S*	*Res H-O*
Trip Length (miles) (provided by CalEEMod)		
10	5	6.5
Trip %		
42.60%	12.50%	41.00%

Average Trip Length (weighted average)

7.5500

Therefore:

Average Daily VMT:

1,351

Step 2: Given:

Fleet Mix (provided by CalEEMod v2016.3.2)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
52.9%	4.8%	18.8%	14.1%	2.8%	0.6%	1.5%	0.8%	0.1%	0.1%	3.0%	0.1%	0.5%

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	LDT1	LDT2	MDV	MCY	MH	OBUS
27.19147164	22.89247	20.25539	15.12783416	37.03807873	6.489482957	6.389326

Diesel MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

LHD1	LHD2	MHD	HHD	UBUS	SBUS
17.07659601	15.33739	8.136619	5.432521594	4.800897734	7.178678959

Therefore:

Weighted Average MPG Factors

Gasoline: **24.0** Diesel: **12.6**

Step 3: **Therefore:**

53 daily gallons of gasoline **6 daily gallons of diesel**

or

19,353 annual gallons of gasoline	**2,326 annual gallons of diesel**

On-road Mobile (Construction) Energy Usage - Demolition

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**
15

Worker Trip Length (miles) (provided by CalEEMod)
10

Therefore:
Average Worker Daily VMT:
150

Step 2: Given:
Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.2)

LDA	LDT1	LDT2
0.3333333	0.333333	0.333333

And:
Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	LDT1	LDT2
27.191472	22.89247	20.25539

Therefore:
Weighted Average Worker MPG Factor
23.4

Step 3: **Therefore:**
6.4 **Worker daily gallons of gasoline**

Step 4: 20 **# of Days (see CalEEMod)**

Therefore:
Result: 128 **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Site Preparation

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**
18

Worker Trip Length (miles) (provided by CalEEMod)
10

Therefore:
Average Worker Daily VMT:
180

Step 2: Given:
Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.2)

LDA	LDT1	LDT2
0.3333333	0.333333	0.333333

And:
Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	LDT1	LDT2
27.191472	22.89247	20.25539

Therefore:
Weighted Average Worker MPG Factor
23.4

Step 3: **Therefore:**
7.7 **Worker daily gallons of gasoline**

Step 4: 5 **# of Days (see CalEEMod)**

Therefore:
Result: 38 **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Grading

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

15

Worker Trip Length (miles) (provided by CalEEMod)

10

Therefore:

Average Worker Daily VMT:

150

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.2)

LDA	LDT1	LDT2
0.3333333	0.333333	0.333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	LDT1	LDT2
27.191472	22.89247	20.25539

Therefore:

Weighted Average Worker MPG Factor

23.4

Step 3: **Therefore:**

6.4 **Worker daily gallons of gasoline**

Step 4: 8 **# of Days (see CalEEMod)**

Therefore:

Result: 51 **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Building Construction

Step 1:

Total Daily Worker Trips (provided by CalEEMod) 69
Total Daily Vendor Trips (provided by CalEEMod) 10
Total Daily Hauler Trips (provided by CalEEMod) 0

Worker Trip Length (miles) (provided by CalEEMod) 10
Vendor Trip Length (miles) (provided by CalEEMod) 6.5
Hauling Trip Length (miles) (provided by CalEEMod) 0

Therefore:
Average Worker Daily VMT: 690.00
Average Vendor Daily VMT: 65
Average Hauling Daily VMT: -

Step 2:

Given:
Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.2)

LDA	LDT1	LDT2
0.33333333	0.333333	0.333333

Assumed Fleet Mix for Vendors (provided by CalEEMod v2016.3.2)

MHD	HHD
0.5	0.5

And:
MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

Gasoline:

LDA	LDT1	LDT2
27.1914716	22.89247	20.25539

Diesel:

MHD	HHD
8.136618526	5.432522

Therefore:
Weighted Average Worker (Gasoline) MPG Factor 23.4
Weighted Average Vendor (Diesel) MPG Factor 6.8
Weighted Average Hauling MPG Factor 0.0

Step 3:

Therefore: 29 **Worker daily gallons of gasoline**
Therefore: 10 **Vendor daily gallons of diesel**
Therefore: 0.0

Step 4:

273 **# of Days (see CalEEMod)**

Therefore: **8,034** **Total gallons of gasoline**
Therefore: **2,615** **Total gallons of diesel**

On-road Mobile (Construction) Energy Usage - Paving

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**
15

Worker Trip Length (miles) (provided by CalEEMod)
10

Therefore:
Average Worker Daily VMT:
150

Step 2: Given:
Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.2)

LDA	LDT1	LDT2
0.3333333	0.333333	0.333333

And:
Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	LDT1	LDT2
27.191472	22.89247	20.25539

Therefore:
Weighted Average Worker MPG Factor
23.4

Step 3: **Therefore:**
6.4 Worker daily gallons of gasoline

Step 4: 22 **# of Days (see CalEEMod)**

Therefore:
Result: **141 Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Architectural Coating

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

14

Worker Trip Length (miles) (provided by CalEEMod)

10

Therefore:

Average Worker Daily VMT:

140

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.2)

LDA	LDT1	LDT2
0.3333333	0.333333	0.333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	LDT1	LDT2
27.191472	22.89247	20.25539

Therefore:

Weighted Average Worker MPG Factor

23.4

Step 3: **Therefore:**

6.0 **Worker daily gallons of gasoline**

Step 4: 18 **# of Days (see CalEEMod)**

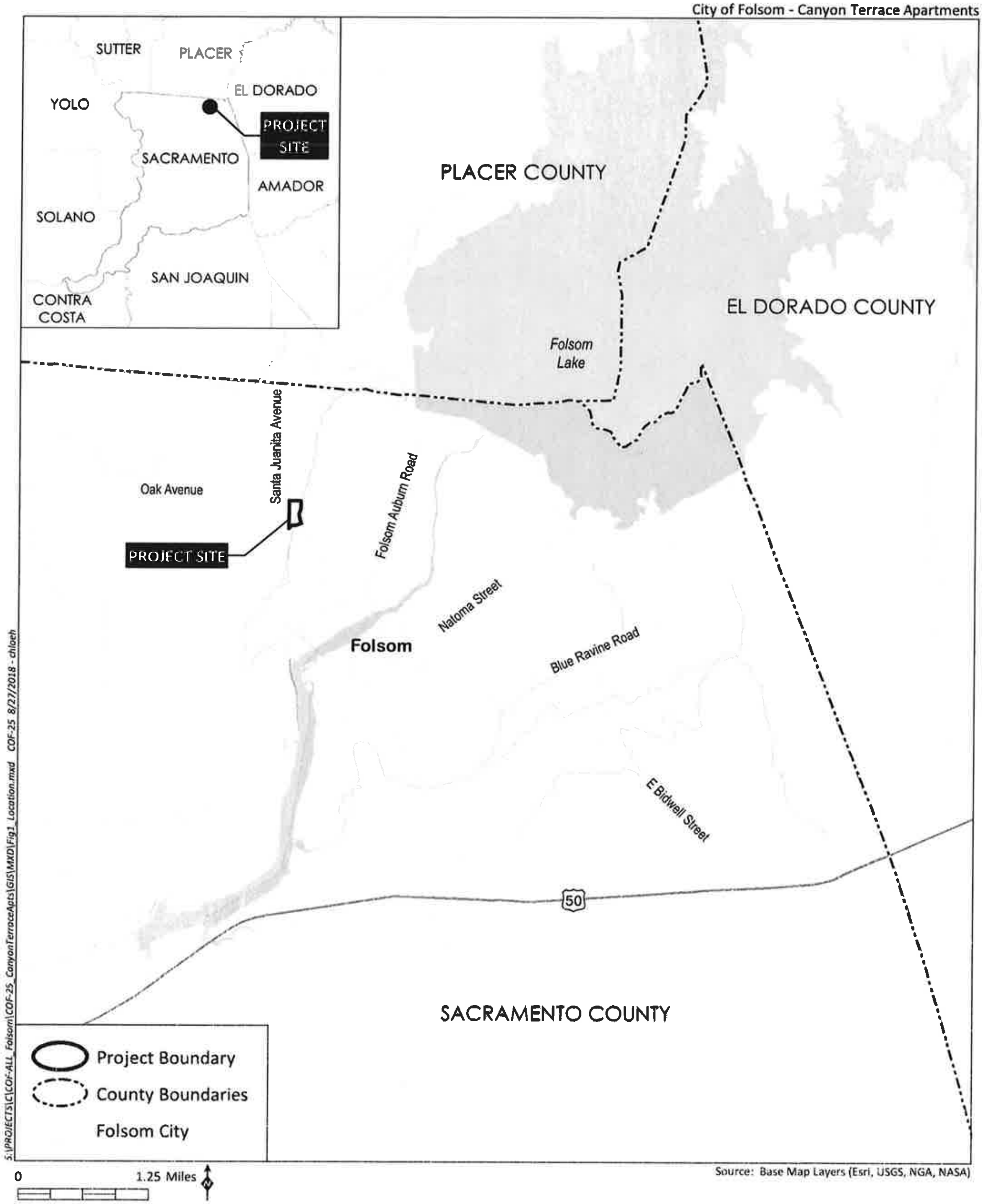
Therefore:

Result: 107 **Total gallons of gasoline**

EMFAC 2014: YEAR 2018 SACRAMENTO COUNTY VEHICLE EMISSIONS OUTPUT

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: County
Region: Sacramento
Calendar Year: 2018
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	**CalYr**	**VehClass**	**Fuel**	**VMT**	**Trips**	**Fuel_Consumption**	**MPG (derived)**		
Sacrament	2018	All Other Buses	DSL	22022.63	0	2.764255328			
Sacrament	2018	LDA	GAS	19389304	3354318	713.0656205	**27.19147164**		
Sacrament	2018	LDA	DSL	175466.5	27319.33	4.839280595			
Sacrament	2018	LDA	ELEC	250009.6	32187.08	0			
Sacrament	2018	LDT1	GAS	1599959	294575.4	69.89017687	**22.89247119**		
Sacrament	2018	LDT1	DSL	5456.92	1291.866	0.205812381			
Sacrament	2018	LDT1	ELEC	2101.567	437.7076	0			
Sacrament	2018	LDT2	GAS	7333600	1209109	362.0567723	**20.25538627**		
Sacrament	2018	LDT2	DSL	10764.78	1476.405	0.379016273			
Sacrament	2018	LHD1	GAS	474704	229205.9	49.73374951			
Sacrament	2018	LHD1	DSL	441704.1	163905.6	25.86604885	**17.07659601**		
Sacrament	2018	LHD2	GAS	73553.13	30660.48	8.531198494			
Sacrament	2018	LHD2	DSL	145459.3	47593.28	9.483970012	**15.33738627**		
Sacrament	2018	MCY	GAS	223807.4	61388.78	6.042629991	**37.03807873**		
Sacrament	2018	MDV	GAS	4709083	883917.1	311.2860194	**15.12783416**		
Sacrament	2018	MDV	DSL	62872.07	8830.852	2.87585288			
Sacrament	2018	MH	GAS	32017.16	385.9444	4.9337	**6.489482957**		
Sacrament	2018	MH	DSL	8049.659	90.02752	0.85056111			
Sacrament	2018	Motor Coach	DSL	16044.14	0	2.92109018			
Sacrament	2018	OBUS	GAS	39977.25	14709.44	6.256880783	**6.389326174**		
Sacrament	2018	PTO	DSL	23824.24	0	4.884692025			
Sacrament	2018	SBUS	GAS	6331.818	504.8684	0.550901827			
Sacrament	2018	SBUS	DSL	16477.23	0	2.295301607	**7.178678959**		
Sacrament	2018	T6 Ag	DSL	17604.19	0	2.230900374	**7.891067671**	**8.136619**	Note: Average of T6
Sacrament	2018	T6 CAIRP heavy	DSL	2440.878	0	0.29466224	**8.283648588**		
Sacrament	2018	T6 CAIRP small	DSL	7492.894	0	0.907323727	**8.258237055**		
Sacrament	2018	T6 instate constru	DSL	7935.149	0	0.974414529	**8.143504439**		
Sacrament	2018	T6 instate constru	DSL	59793.32	0	7.303348374	**8.187110467**		
Sacrament	2018	T6 instate heavy	DSL	113538.6	0	13.86033702	**8.19162173**		
Sacrament	2018	T6 instate small	DSL	282265.2	0	34.48391015	**8.18541812**		
Sacrament	2018	T6 OOS heavy	DSL	1398.532	0	0.168999473	**8.275360824**		
Sacrament	2018	T6 OOS small	DSL	4293.147	0	0.519862397	**8.258237055**		
Sacrament	2018	T6 Public	DSL	64635.44	0	8.115433732	**7.96450883**		
Sacrament	2018	T6 utility	DSL	2701.625	0	0.343539417	**7.864089005**		
Sacrament	2018	T6TS	GAS	101996	42763.96	16.50271669			
Sacrament	2018	T7 Ag	DSL	4668.489	0	0.879763825	**5.306525419**	**5.432522**	Note: Average of T7
Sacrament	2018	T7 CAIRP	DSL	133116.3	0	23.25479458	**5.724250409**		
Sacrament	2018	T7 CAIRP construc	DSL	5629.134	0	0.98845665	**5.69487217**		
Sacrament	2018	T7 NNOOS	DSL	165064.3	0	27.05698173	**6.100619013**		
Sacrament	2018	T7 NOOS	DSL	52580.89	0	9.374457966	**5.608952171**		
Sacrament	2018	T7 other port	DSL	1590.255	0	0.269567228	**5.899290464**		
Sacrament	2018	T7 POAK	DSL	3165.448	0	0.55369467	**5.716955204**		
Sacrament	2018	T7 Public	DSL	90263.59	0	18.40896524	**4.903240767**		
Sacrament	2018	T7 Single	DSL	119983.6	0	19.91018145	**6.026245565**		
Sacrament	2018	T7 single construc	DSL	14561.83	0	2.467570859	**5.901281273**		
Sacrament	2018	T7 SWCV	DSL	29410.63	0	12.79407196	**2.298770102**		
Sacrament	2018	T7 tractor	DSL	88983.59	0	14.80775376	**6.009256571**		
Sacrament	2018	T7 tractor constru	DSL	10856.92	0	1.858463161	**5.841880826**		
Sacrament	2018	T7 utility	DSL	494.7772	0	0.097084925	**5.096333518**		
Sacrament	2018	T7IS	GAS	10367.24	2114.564	2.396015451	**4.326866435**		
Sacrament	2018	UBUS	GAS	38784.45	1040.504	7.93848827			
Sacrament	2018	UBUS	DSL	53739.79	1445.733	11.19369559	**4.800897734**		



HELIX Environmental Planning

Regional Location

Figure 1

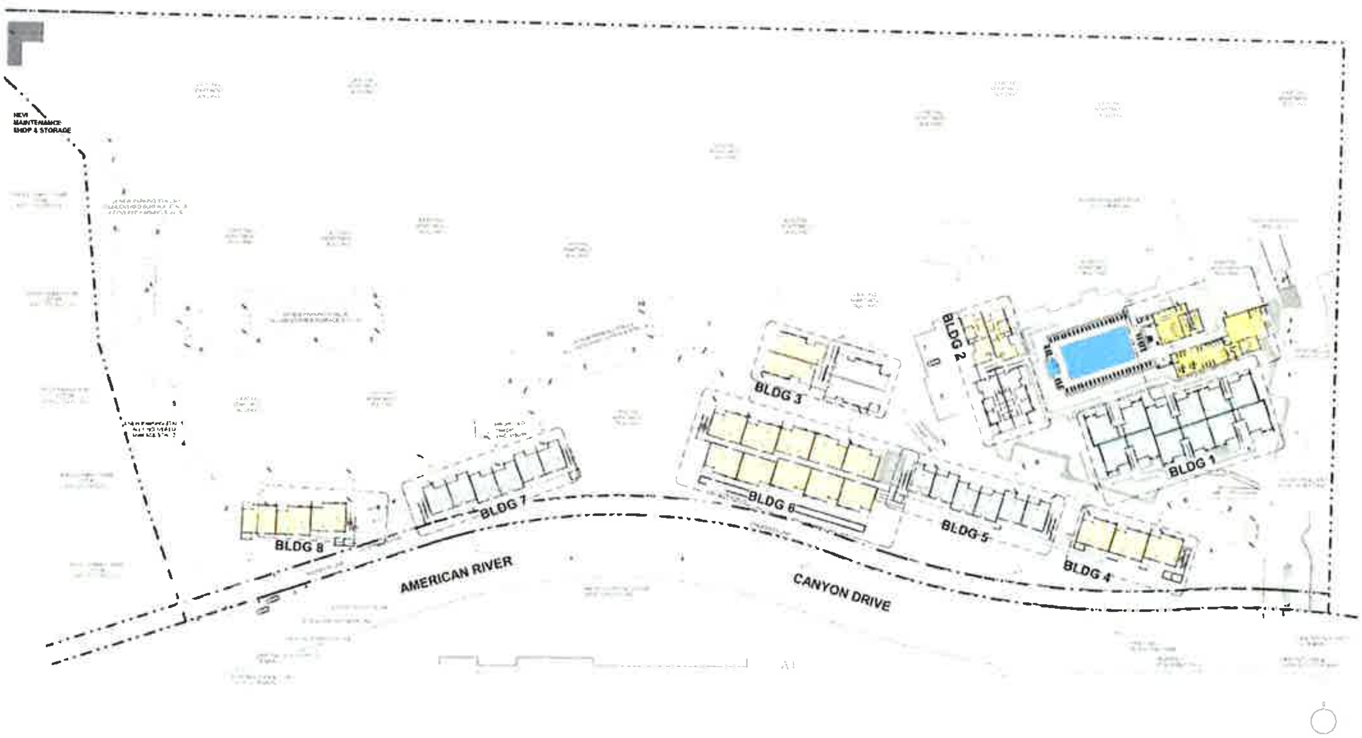
0 250 Feet

Source: Base Map Layers (Esri)

HELIX
Environmental Planning

Aerial Map

Figure 2



Source: MVE Partners 2019

Site Design Plan

Figure 3

Appendix C

Consulting Arborist Report

ABACUS
CONSULTING ARBORISTS

P.O. Box 4248
Auburn, CA 95604
www.abacus-tree.com (530) 305-0165 Nicole.Abacus@gmail.com

Consulting Arborist Report

Prepared at the request of:

Scott Robertson

Of

Omni Means, Ltd.

For

Canyon Terrace Apartments

Located at

1600 Canyon Terrace Lane,
Folsom, CA

By:
Nicole Harrison

March 22, 2016

TABLE OF CONTENTS

Executive Summary:

Scott Robertson of Omni-Means, the property owner's representative, contacted **ABACUS Consulting Arborists** to inventory and evaluate the protected trees and produce an Arborist Report as the end product. The property is Canyon Terrace Apartments at 1600 Canyon Terrace Lane, in Folsom, California.

Nicole Harrison, ISA Certified Arborist #WE-6500AM, TRAQ, of **ABACUS Consulting Arborists** was on site from February 20th to March 12th, 2016, providing species identification, number of trunks, measurements of DBH and canopy, field condition notes, recommended actions, and ratings.

There are **NO** trees on this property that qualify as "protected trees" by the standards of the Folsom Tree Ordinance. This property contains the following species:

- Aleppo Pine
- American Sweetgum
- Ash species
- Callery Pear
- Chinese Evergreen Elm
- Chinese Pistache
- Coast Redwood
- Deodar Cedar
- Honey Locust
- London Plane Tree
- Maytens Tree
- Mexican Fan Palm
- Purple Leaf Plum
- Red Maple
- Silver Maple
- Tulip Tree
- White Alder

There are 183 total trees inventoried.

The condition of each tree is included in ***Chart B – Tree Inventory.***

Assignment:

Pursuant to your request, **ABACUS** has completed an inventory of all the trees located on-site. We provided species identification, number of stems, measurements of DBH and canopy, field condition notes, recommended actions, and ratings

Observations:

Nicole Harrison, *ISA Certified Arborist #WE-6500AM*, evaluated all protected trees that met the requirements of the City of Folsom Tree Ordinance. The fieldwork was performed from February 20th to March 12th, 2016.

The trees (on-site) tagged by **ABACUS** have a numbered tag, placed on each one that is 1-1/8" x 1-3/8", green anodized aluminum, "acorn" shaped, and labeled: **ABACUS**, Auburn, CA with 1/8" pre-stamped tree number, our phone number 530-889-0603, attached with a natural colored aluminum 10d (3") nail, installed at 6 feet above ground level on the north side of the tree. The tag should last ~10 – 20+ years depending on the species, before it is enveloped by the trees' normal growth cycle.

Tree Site Map is by others. All of the other information within this report is by **ABACUS**.

Chart B in this report is an inventory on the trees. The following terms, and ***Chart A*** will further explain our findings on ***Chart B*** and the trees in question.

Species of trees is listed by our local and correct common name and botanical name by genus (capitalized) and species (lower case). Oaks frequently cross-pollinate and hybridize, but the identification is towards the strongest characteristics.

 # Stems refers to the quantity of trunks or stems of a tree that have a significant connection. If one stem or trunk were to be removed, it would cause decay to harm an adjoining stem, making it one tree. All stems must be of the same species. (Also see "Tree SIZE Expressed by Trunk Diameter" at the end of this report)

DBH (diameter breast high) is normally measured at 4'6" (above the average ground height for "Urban Forestry"), but if that varies then the location where it is measured is noted here. A Swedish caliper [1] was used to measure the DBH for trees less than 26" in diameter and a steel diameter tape[2] for trees greater than 26"Ø.

Canopy is the farthest extent of the crown composed of leaves and small twigs. This measurement further defines the Critical Root Zone (CRZ) or Protection Zone (PZ), which is a circular area around a tree with a radius equal to a tree's largest dripline plus 1'. Our canopy measurement is the longest dripline measurement from the center point of the tree and includes the 1' only on the Tree Site Map.

Rating is subjective to condition and is based on both the health and structure of the tree. All of the trees were rated for condition, per the recognized national standard as set up by the Council of Tree and Landscape Appraisers and the International Society of Arboriculture (ISA) on a numeric scale of 5 (being the highest) to 0 (the worst condition, dead) as in Chart A. The rating was done in the field at the time of the measuring and inspection. The scale is as follows:

[1] A large wooden sliding adjustable thickness gauge calibrated in 1/16" increments.

[2] Diameter Tape is used to figure the tree's diameter, by measuring the circumference, whereon the inches are pre- multiplied by 3.14 or π (π called pi) and shown to produce the diameter of the tree directly on the tape.

Chart A – Ratings Description

No problem(s)	5	excellent
No apparent problem(s)	4	good
Minor problem(s)	3	fair
Major problem(s)	2	poor
Extreme problem(s)	1	hazardous, non-correctable
Dead	0	dead

There is a very important line drawn between a tree rated a **3** and a **2**. A tree rated **3**, **4**, or **5** is a tree to be preserved, and a tree rated **0**, **1**, or **2** is recommended for removal. On the following tree list **BLACK** marks are field notes and action items on trees that are to remain, and **RED** are trees that are recommended for removal. Trees rated a **2** may be retained but only if the recommendations are followed, otherwise the tree should be removed.

Rating #0: This indicates a tree that has no significant sign of life.

Rating #1: The problems are extreme. This rating is assigned to a tree that has structural and/or health problems that no amount of work or effort can change. The issues may or may not be considered a dangerous situation.

Rating #2: The tree has major problems. If the option is taken to preserve the tree, its condition could be improved with correct arboricultural work including, but not limited to: pruning, cabling, bracing, bolting, guying, spraying, mistletoe removal, vertical mulching, fertilization, etc. If the recommended actions are completed correctly, hazard can be reduced and the rating can be elevated to a 3. If no action is taken the tree is considered a liability and should be removed.

Rating #3: The tree is in fair condition. There are some minor structural or health problems that pose no immediate danger. When the recommended actions in an arborist report are completed correctly the defect(s) can be minimized or eliminated.

Rating #4: The tree is in good condition and there are no apparent problems that a Certified Arborist can see from a visual ground inspection. If potential structural or health problems are tended to at this stage future hazard can be reduced and more serious health problems can be averted.

Rating #5: No problems found from a visual ground inspection. Structurally, these trees have properly spaced branches and near perfect characteristics for the species. Highly rated trees are not common in natural or developed landscapes. No tree is ever perfect especially with the unpredictability of nature, but with this highest rating, the condition should be considered excellent.

Notes: explain why the tree should be removed or preserved. If it is to remain and be preserved the tree may need some form of work to limit future liability from partial or total failure. Lower deadwood may not be an immediate problem, but the same size wood at a much higher location on the trees could be dangerous and might cause a minor injury to a fatal blow if the branch failed.

Common terms:

CDL: Co-Dominant Leader: Stems or trunks of the tree that are equal in size and relative importance.

CRZ: Critical Root Zone: The canopy is the farthest extent of the crown composed of leaves and small twigs. This measurement further defines the CRZ, which is a circular area around a protected tree with a radius equal to a tree's largest dripline radius. The roots of a tree grow minimally within this canopy measurement and have been found growing 2 to 3 times beyond the farthest branches.

IB: Included Bark: A sharp "V" crotch, usually less than a 45° angle of attachment, between 2 branches where the bark is kept between two narrowly joined branches and the bark is continually turned inward, rather than being pushed out. It is a common point for potential massive structural failure and this hazard can be minimized with properly installed and maintained cabling, bolting or bracing.

BMT: Broadleaf Mistletoe infested tree.

EG: Epicormic Growth: Shoots that arise from latent buds along the trees trunk or mature branches. This growth is usually a sign that the tree has undergone a stressful period.

LTD: Limb Tip Dieback: Generally associated with drought, the tips of scaffold limbs have died.

NABA: Narrow Angle Branch Attachment: A sharp "V" crotch, usually less than a 45° angle of attachment. Included bark is explained above and is common in branches with narrow attachments. In addition, these branches may not be attached to the trunk as well as others with wider angles of attachment, and can fail more frequently depending on the size of the branch.

OPC: Old Pruning Cuts

OWL: Over Weight Limb

PRZ: Protected Root Zone: A circular area around a protected tree with a radius equal to a tree's largest dripline radius plus 1'.

PS: Poor Structure: These trees have grown with structural imperfections that cannot be corrected and therefore render them hazardous and more likely to fail in the future.

R4D: Remove For Development

RDW: Remove Dead Wood: All dead wood to be removed over 3" in diameter and if over 2" in diameter when above 25', as this is a potential hazard for people under these limbs and a future health problem for the tree.

RH: Remove Hanger: There is a broken or cut branch that is hanging in the tree and needs to be removed.

RBMT: Remove Broadleaf Mistletoe: Broadleaf mistletoe, *Phoradendron villosum*, is an evergreen parasitic that grows on many hardwood trees and is spread most commonly by birds excreting the living seeds onto woody branches where they germinate. It is important to stop the spread by correctly removing the mistletoe plant by either pruning off the branch it lives on (if small enough) or by removing its light source and killing the parasite. Pruning: remove the branch at least 12" below the point of attachment to the next lateral using an approved thinning-type cut. Light exclusion: remove the mistletoe to flush with limb or trunk where it is attached and wrap the limb/trunk with 2-3 layers6 mil polyethylene plastic 8" above and below the point of attachment. Tape it with a few wraps of electrical tape to keep all light out to kill the mistletoe, remove in 2-3 years.

TBR: To Be Removed: Tree to be removed due to health and/or structural reasons. Removal should be done carefully as to not harm the surrounding trees, branches, and/or trunks above or roots below ground. Do NOT rip out or push over the tree stumps if they are near other trees that are to be preserved. Cut them off close to ground level and leave the stumps and roots to decay, unless they are located within a proposed foundation or area to be paved/concrete surfaced.

~: Tilde: This mark is used in the field in any empty box to indicate that there is no information to enter in that space.

TMD: Too Much Decay

TMDW: Too Much Dead Wood

UC: Unbalanced Canopy: Either the trunk is leaning and/or the canopy is phototropic and overly heavy on one side.

Compass Points: These are the standard 16 points of the compass as aligned with Geographic North or True North. In our area, True North (TN) is adjusted for declination 14°49' to the west of Magnetic North (MN).

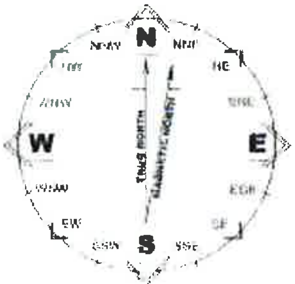


Chart B

BLACK marks are field notes and action items on trees that are to remain, and RED are trees that are recommended for removal.

Tree Tag #	Common Name	Botanical Name	DBH	Canopy radius	Notes	Actions	Rating
6144	Coast Redwood	*Sequoia sempervirens*	38	18	2' to curb, grass to west, large surface roots, lifting drive	To be Determined	4
6145	Coast Redwood	*Sequoia sempervirens*	19	15	**Sparse canopy, curb at 2', bare soil, surface roots with mechanical damage, needle blight**	To be Determined	**2**
6146	Coast Redwood	*Sequoia sempervirens*	21	13	Sparse canopy, curb at 2', bare soil, surface roots, needle blight	To be Determined	3
6147	Coast Redwood	*Sequoia sempervirens*	20	14	Sparse canopy, curb at 2', bare soil, surface roots, needle blight	To be Determined	3
6148	Coast Redwood	*Sequoia sempervirens*	27	16	Fair leaf surface, curb at 2', bare soil, surface roots, needle blight	To be Determined	3
6149	Coast Redwood	*Sequoia sempervirens*	30	15	Curb at 2', bare soil, surface roots, needle blight	To be Determined	3
6150	Coast Redwood	*Sequoia sempervirens*	24	15	Surface roots, bare soil, fair leaf surface	Mulch	3
6151	Coast Redwood	*Sequoia sempervirens*	25	16	Surface roots, bare soil, fair leaf surface	To be Determined	3
6152	Coast Redwood	*Sequoia sempervirens*	23	14	Poor growing space, surface roots, bare soil, 2' to curb, needle blight	Add Mulch	3
6153	Coast Redwood	*Sequoia sempervirens*	21	16	Girdling roots, root pruning at 6" for Irrigation/curb replacement (?), poor growing space	Remove within 3 - 5 years	3
6154	Coast Redwood	*Sequoia sempervirens*	18	13	Poor growing space, curb at 1', bare soil, fair leaf surface	To be Determined	3
6155	Chinese Pistache	*Pistacia chinensis*	7	15	Grass at base, co-dominant leader at 6'	Prune for good structure	3
6156	Chinese Pistache	*Pistacia chinensis*	5	10	**Grass at base, surface roots, lean with correction, poor structure, sparse canopy**	To be Determined	**2**
6157	Purple leaf Plum	*Prunus cerasifera*	7 @ 1'	11	Island, abnormal root flare, narrow attachment angles, fair leaf surface, needs corrective pruning	Needs corrective pruning	3
6158	Aleppo Pine	*Pinus halepensis*	12	14	**Very sparse canopy, significant removal of leaf surfaces at last pruning cycle, bare compacted soil at base, poor crown ratio, no space**	**Recommended for removal**	**2**
6158	Purple leaf Plum	*Prunus cerasifera*	8 @ 1'	10	Island, co-dominant leader at 2' into multistem, narrow attachments, crossing limbs, fair leaf surface	Needs corrective pruning	3
6159	Aleppo Pine	*Pinus halepensis*	16	16	Co-dominant leader at 6' into 3, rocks, compacted soil, girdling strap roots, fair leaf surface, sequoia pitch moth	To be Determined	3
6159	Purple leaf Plum	*Prunus cerasifera*	11 @ 2'	13	Grass at base, leans, poor old pruning cuts, very poor structure, crossing limbs, narrow attachments	Replace	2
6160	Coast Redwood	*Sequoia sempervirens*	24	14	5' to walk, needle blight, surface roots, grass at base	Remove within 2 years	2
6161	Red Maple	*Acer rubrum*	10	13	Root flare holds water, good leaf surface, some poor structure, mechanical damage to surface roots		3

Tree Tag #	Common Name	*Botanical Name*	DBH	Canopy radius	Notes	Actions	Rating
6162	Glossy leaf Privet	*Ligustrum lucidum*		12	No tag, unbalanced canopy to east, not evaluated	To be Determined	3
6163	Mexican Fan Palm	*Washingtonia robusta*	14	8	Rocks at base	To be Determined	4
6164	Aleppo Pine	*Pinus halepensis*	20	18	Extensive surface roots, bare soil, sequoia pitch moth, gall rust	Mulch to cover roots, remove limbs with rust	3
6165	Coast Redwood	*Sequoia sempervirens*	9	8	**Dead top, epicormic growth**	**Remove**	**1**
6166	Coast Redwood	*Sequoia sempervirens*	11	8	**Dead top, epicormic growth**	**Remove**	**1**
6167	Ornamental Pear	*Pyrus calleryana*	15	17	**Extensive surface roots, bare soil, very poor structure, crossing limbs, broadleaf mistletoe**	**Recommended for replacement**	**2**
6168	Coast Redwood	*Sequoia sempervirens*	16	10	**Epicormic growth, bare compacted soil, dead top**	**Remove**	**1**
6169	Coast Redwood	*Sequoia sempervirens*	18	12	**Bare compacted soil at base, surface roots, very sparse canopy, epicormic growth**	**Remove**	**2**
6170	Coast Redwood	*Sequoia sempervirens*	15	12	**Bare compacted soil at base, surface roots, very sparse canopy, epicormic growth**	**Remove**	**2**
6171	Coast Redwood	*Sequoia sempervirens*	17	14	**Bare compacted soil at base, surface roots, very sparse canopy**	**Remove**	**2**
6172	Deodar Cedar	*Cedrus deodara*	17	18	**Island surrounded by juniper, girdling roots at base, poor health**	**To be Determined**	**2**
6173	Mexican Fan Palm	*Washingtonia robusta*	17	8		To be Determined	3
6174	Mexican Fan Palm	*Washingtonia robusta*	15	8		To be Determined	3
6175	Alder	*Alnus sp.*	15	11	**Diseased, root rot, extensive surface roots**	**Remove**	**1**
6176	Coast Redwood	*Sequoia sempervirens*	25	15	Bare soil, surface roots, grass at 3'	To be Determined	3
6177	Coast Redwood	*Sequoia sempervirens*	23	14	Bare soil, surface roots, lifting path, grass at 3'	To be Determined	3
6178	Coast Redwood	*Sequoia sempervirens*	20	14	Bare soil, surface roots, grass at 3'	To be Determined	3
6179	Ash	*Fraxinus sp.*	18	22	**Grass at base, surface roots, narrow attachments, included bark**	**Prune for good structure**	**2**
6180	Ash	*Fraxinus sp.*	16	17	**Extensive surface roots, co-dominant leader at 8' with included bark, poor canopy space**	**Consider removal**	**2**
6181	Ash	*Fraxinus sp.*	17	24	Extensive surface roots, some with mechanical damage, strap roots, broadleaf mistletoe, structurally better than the others in this group	Remove mistletoe, prune to balance	3
6182	Ash	*Fraxinus sp.*	18	30	Girdled by roots, grass at base	Regularly reduce weight	3
6183	Ash	*Fraxinus sp.*	6	14	**Grass at base, poor structure from top failure**	**Needs corrective pruning**	**2**
6184	Mexican Fan Palm	*Washingtonia robusta*	17	8		To be Determined	3
6185	Mexican Fan Palm	*Washingtonia robusta*	14, 14	8		To be Determined	3

Tree Tag #	Common Name	Botanical Name	DBH	Canopy radius	Notes	Actions	Rating
6186	Ornamental Pear	*Pyrus calleryana*	12	22	Surface roots, narrow attachment angles, poor structure, broadleaf mistletoe, grass at 3'	Recommended for replacment, or add mulch to cover roots	2
6187	Ornamental Pear	*Pyrus calleryana*	12	23	Surface roots, narrow attachment at co-dominant leader, compacted soil at base, strap roots	Add mulch to cover roots	2
6188	Mexican Fan Palm	*Washingtonia robusta*	17	8		To be Determined	3
6189	Mexican Fan Palm	*Washingtonia robusta*	17	8		To be Determined	3
6190	Mexican Fan Palm	*Washingtonia robusta*	18	8		To be Determined	3
6191	Coast Redwood	*Sequoia sempervirens*	17	12	Grass at base, girdling roots - poor nursery stock, needle blight, fair leaf surface	To be Determined	2
6192	Ash	*Fraxinus sp.*	24	29	Surface roots, poor growing space, co-dominant leader at 8' - crotch has dead wood and multiple stems, old pruning cuts are poor with no callous, narrow attachments and included bark	Needs corrective pruning	2
6193	Coast Redwood	*Sequoia sempervirens*	22	16	Rocks at base, stairs at 1', strap roots, fair leaf surface	Cut strap roots, replace rocks with mulch	3
6194	Coast Redwood	*Sequoia sempervirens*	18	12	Rocks at base, slope, surface roots	Replace rocks with mulch	3
6195	Coast Redwood	*Sequoia sempervirens*	23	14	Rocks at base, good leaf surface	Replace rocks with mulch	3
6196	Coast Redwood	*Sequoia sempervirens*	28	16	Good leaf surface	Alleviate soil compaction at top by parking, use erosion control to add and retain mulch	3
6197	Coast Redwood	*Sequoia sempervirens*	15	12	Slope, rocks at base, fair leaf surface	Alleviate soil compaction at top by parking, use erosion control to add and retain mulch	3
6198	Coast Redwood	*Sequoia sempervirens*	16	10	Slope, rocks at base, fair leaf surface	Alleviate soil compaction at top by parking, use erosion control to add and retain mulch	3
6199	Coast Redwood	*Sequoia sempervirens*	18	11	Rocks at base, sprouts, broken limbs at 6', fair leaf surface	Alleviate soil compaction at top by parking, use erosion control to add and retain mulch	3
6200	Pine	*Pinus sp.*	11	22	Rocks at base, surface roots, slope, fair leaf surface, declining, sequoia	Alleviate soil compaction at top	3

Tree Tag #	Common Name	Botanical Name	DBH	Canopy radius	Notes	Actions	Rating
					pitch moth, old pruning cut at 2'	by parking, use erosion control to add and retain mulch	
6201					Tag not used		
6202	Coast Redwood	*Sequoia sempervirens*	31	16	Steep slope, strap root to north west, bare soil, needle blight	To be Determined	3
6203	Coast Redwood	*Sequoia sempervirens*	26	15	Poor growing space - island, walk at 6', burned (?) - dead limbs to south, sparse canopy	Remove dead wood	3
6204	Coast Redwood	*Sequoia sempervirens*	27	17	Extensive surface roots, bare soil, needle blight	Add mulch to cover roots	3
6205	Coast Redwood	*Sequoia sempervirens*	27	18	Surface roots, sparse grass	Add mulch to replace grass	3
6206	Coast Redwood	*Sequoia sempervirens*	32	20	Fair leaf surface, some dead wood, sparse grass at base	Add erosion control and mulch	3
6207	Coast Redwood	*Sequoia sempervirens*	29	16	Bare compacted soil, needle blight	Add mulch	3
6208	Deodar Cedar	*Cedrus deodara*	25	26	Rocks, compacted soil at base, slope, sparse canopy	Replace rocks with mulch	3
6209	American Sweetgum	*Liquidambar styraciflua*	14	13	Surface roots with mechanical damage, poor structure, fair leaf surface	Suppress competing leaders, mulch	3
6210	Silver Maple	*Acer saccharinum*	9 @ 4'	18	**Mechanical damage to buttress and surface roots, moss at base, poor structure, poor pruning cuts**	**Alleviate soil compaction, mulch to replace grass, prune for good structure**	**2**
6211	American Sweetgum	*Liquidambar styraciflua*	15	20	**Large girdling root, large surface roots with mechanical damage, co-dominant leader failure, poor structure**	**Remove within 3 years**	**2**
6212	Ornamental Pear	*Pyrus calleryana*	17	20	**Slope, compacted soil, surface root cut at path at 5', topping cuts, poor structure, crossing limbs**	**Replace**	**2**
6213	Ornamental Pear	*Pyrus calleryana*	18	24	**Recent failure with 3" hanger, very poor structure - not correctible**	**Replace**	**2**
6214	Purple leaf plum	*Prunus cerasifera*	12 @ 1'	16	**Extensive surface roots, poor structure, poor nursery stocke, stubs with regrowth**	**Replace**	**2**
6215	Coast Redwood	*Sequoia sempervirens*	21	15	**Grass at base, very sparse canopy, declining, needle blight**	**Remove within 3 years**	**2**
6216	Coast Redwood	*Sequoia sempervirens*	13	15	**Lean with correction, surface roots, very sparse canopy, needle blight**	**Remove**	**1**
6217	Coast Redwood	*Sequoia sempervirens*	24	15	**Grass at base, surface roots, needle blight - sparse canopy**	**To be Determined**	**2**
6218	Coast Redwood	*Sequoia sempervirens*	24	15	Grass at base, surface roots, needle blight	To be Determined	3
6219	Coast Redwood	*Sequoia sempervirens*	24	15	Bare compacted soil, needle blight	To be Determined	3
6220	Pine	*Pinus sp.*	21 @ 3'	24	**Surface roots with mechanical damage, grass at base, severe decling**	**Remove**	**1**
6221	Pine	*Pinus sp.*	11	14	Surface roots, narrow attachment at 7', declining - will require treatment	Remove narrow attached limb,	3

Tree Tag #	Common Name	Botanical Name	DBH	Canopy radius	Notes	Actions	Rating
6222	Deodar Cedar	*Cedrus deodara*	11	15	**Significant lean, exposed roots, girdling roots**	**Remove**	**1**
6223	Chinese Evergreen Elm	*Ulmus parvifolia*	7	18	Poor growing space, moss at base, long term problem	Prune for good structure, cut strap root	3
6224	Chinese Evergreen Elm	*Ulmus parvifolia*	14	28	Leans, poor growing space, strap root, closing wounds	Prune for good structure, cut strap root	3
6225	Honey Locust	*Gleditsia triacanthos*	8 @ 3'	16	Surface roots, bare soil, poor structure, epicormic growth	Crown clean, alleviate compaction, add mulch	3
6226	Honey Locust	*Gleditsia triacanthos*	10	18	Surface roots, bare compacted soil, over weight limb to southwest, crossing limbs	Crown clean, alleviate compaction, add mulch	3
6227	Honey Locust	*Gleditsia triacanthos*	8	15	**Bare compacted soil, sap sucker damage, closing split 4 - 8'**	**Crown clean, alleviate compaction, add mulch**	**2**
6228	Honey Locust	*Gleditsia triacanthos*	9	16	Abnormal root flare, bare soil, broadleaf mistletoe, crossing limbs	Crown clean, remove mistletoe, alleviate compaction, add mulch	3
6229	Honey Locust	*Gleditsia triacanthos*	5	10	Bare soil	Crown clean, remove mistletoe, alleviate compaction, add mulch	3
6230	Honey Locust	*Gleditsia triacanthos*	6	10	Bare compacted soil, co-dominant leader at 5' with included bark, broadleaf mistletoe	Crown clean, alleviate compaction, add mulch	3
6231	Aleppo Pine	*Pinus halepensis*	20 @ 3'	15	**Lean from base with correction at 6', closing old pruning cuts, sequioa pitch moth, abnormal trunk shape below 5'**	**Add Mulch**	**2**
6232	Aleppo Pine	*Pinus halepensis*	14	18	**Sparse canopy, bare soil, sequioa pitch moth**	**Add Mulch**	**2**
6233	Aleppo Pine	*Pinus halepensis*	17	19	Narrow attachment, sequoia pitch moth, bare soil	Cut strap roots, mulch	3
6234	Aleppo Pine	*Pinus halepensis*	15	18	**Slope, compacted soil at base, co-dominant leader at 5', large old pruning cuts at 6 - 8', sequoia pitch moth, sparse canopy, north stem topped**	**Add Mulch**	**2**
6235	Aleppo Pine	*Pinus halepensis*	19	24	Large surface roots, bare, compacted soil at base	Add Mulch	3
6236	Aleppo Pine	*Pinus halepensis*	12	14	**Very sparse canopy, significant removal of leaf surfaces at last pruning cycle, bare compacted soil at base, poor crown ratio, no space**	**Recommended for removal**	**2**
6237	Aleppo Pine	*Pinus halepensis*	16	16	Co-dominant leader at 6' into 3, rocks, compacted soil, girdling strap	To be Determined	3

Tree Tag #	Common Name	Botanical Name	DBH	Canopy radius	Notes	Actions	Rating
					roots, fair leaf surface, sequoia pitch moth		
6238	Aleppo Pine	*Pinus halepensis*	13	14	Corrected lean, poor taper - no space	Remove	2
6239	Aleppo Pine	*Pinus halepensis*	17	17	Surface roots, compacted soil, corrected lean, sequoia pitch moth	To be Determined	3
6240	Ash	*Fraxinus sp.*	8	15	Compacted soil at base, surface roots, co-dominant leader at 7' included bark, narrow attachments through out, large dead wood	To be Determined	2
6241	Ash	*Fraxinus sp.*	8	14	Poor growing space, lifting walk and parking, co-dominant leader at 7', included bark, narrow attachments, surface roots with mechanical damage, bare compacted soil	To be Determined	2
6242	London Plane Tree	*Platanus acerifolia*	12	17	Surface roots, compacted soil at base, crossing limbs, old pruning cuts almost closed	To be Determined	3
6243	London Plane Tree	*Platanus acerifolia*	8	13	Surface roots, compacted soil at base, fair leaf surface	To be Determined	3
6244	London Plane Tree	*Platanus acerifolia*	7	12	Surface roots, fair leaf surface	To be Determined	3
6245	Coast Redwood	*Sequoia sempervirens*	16	15	Rocks at base, sparse canopy	To be Determined	3
6246	Coast Redwood	*Sequoia sempervirens*	14	11	Rocks at base, sparse canopy	To be Determined	3
6247	Coast Redwood	*Sequoia sempervirens*	17	15	Rocks at base, sparse canopy	To be Determined	3
6248	Coast Redwood	*Sequoia sempervirens*	23	15	Rocks at base, sparse canopy, mechanical damage to surface roots	To be Determined	3
6249	Coast Redwood	*Sequoia sempervirens*	22	15	Rocks at base, sparse canopy, mechanical damage to surface roots	To be Determined	3
6250	Coast Redwood	*Sequoia sempervirens*	24	15	Strap roots, grass at 1', minor flagging	Remove strap roots	3
6251	Coast Redwood	*Sequoia sempervirens*	29	15	Sparse canopy, need blight	To be Determined	3
6252	Coast Redwood	*Sequoia sempervirens*	32	15	Good, minor needle blight	To be Determined	4
6253	Coast Redwood	*Sequoia sempervirens*	25	15	Rocks at base, sparse canopy, tag to south	To be Determined	2
6254	Coast Redwood	*Sequoia sempervirens*	30	14	Rocks at base, sprouts at base, sparse canopy, flagging, needle blight	Remove flagging limbs	3
6255	Coast Redwood	*Sequoia sempervirens*	18	125	Rocks at base, sparse canopy	To be Determined	3
6256	Coast Redwood	*Sequoia sempervirens*	26	15	Rocks at base, minor flagging, sparse canopy	To be Determined	3
6257	Coast Redwood	*Sequoia sempervirens*	32	19	Surface roots, rocks at base, minor flagging, sparse canopy	To be Determined	3
6258	Red Maple	*Acer rubrum*	7	15	Columnar, girdled with decay under base, grass at 1', good leaf surface	Remove	2
6259	Purple leaf plum	*Prunus cerasifera*	10 @ 2'	12	Past life span, poor structure, too much decay, conks on all old pruning cuts,	Remove	2
6260	Coast Redwood	*Sequoia sempervirens*	32	17	Poor growing space, surface roots, path on 2 sides, needle blight	Add Mulch	3

Tree Tag #	Common Name	Botanical Name	DBH	Canopy radius	Notes	Actions	Rating
6261	Purple leaf plum	*Prunus cerasifera*	7 @ 1'	14	Rocks at base, surface roots, unbalanced canopy to east	Add Mulch	2
6262	Coast Redwood	*Sequoia sempervirens*	30	15	Significant dead wood - from flagging, very sparse canopy	To be Determined	2
6263	Coast Redwood	*Sequoia sempervirens*	30	15	Surface roots, sparse canopy, flagging	To be Determined	3
6264	Coast Redwood	*Sequoia sempervirens*	27	14	Surface roots, girdling strap roots	To be Determined	3
6265	Coast Redwood	*Sequoia sempervirens*	24	12	Slope, needle blight, sparse canopy	To be Determined	3
6266	Coast Redwood	*Sequoia sempervirens*	25	11	Trunk wound - closed, flagging, sparse canopy	To be Determined	3
6267	Chinese Evergreen Elm	*Ulmus parvifolia*	14	31	Junipers surrounding, large old pruning cut at 6' to south - poor shape cut with callous	To be Determined	3
6268	Blue Atlas Cedar	*Cedrus atlantica*	8	8	Dead wood at base, bark peeling, abnormal root flare	To be Determined	3
6269	Coast Redwood	*Sequoia sempervirens*	24	14	Mechanical damage to surface roots, sparse canopy, diseased	To be Determined	3
6270	Coast Redwood	*Sequoia sempervirens*	25	13	Top dying, flagging, very sparse canopy	Remove	2
6271	Deodar Cedar	*Cedrus deodara*	6	10	Rocks at base, girdled at old stake tie, needs corrective pruning for central leader	To be Determined	3
6272	Deodar Cedar	*Cedrus deodara*	19	25	Rocks at base, sparse canopy	To be Determined	3
6273	Deodar Cedar	*Cedrus deodara*	15	20	Rocks at base, fair leaf surface	To be Determined	3
6274	Ash	*Fraxinus sp.*	4	10	Too much dead wood, sunburn	Replace	1
6275	Ash	*Fraxinus sp.*	6	10	Bench graft, mechanical damage to surface roots, bare compacted soil, large dead wood	To be Determined	2
6276	Ash	*Fraxinus sp.*	5	10	Very poor structure, too many failures	Replace	1
6277	London Plane Tree	*Platanus acerifolia*	14 @ 2'		Extensive surface roots, lifting sidewalk, good leaf surface	Needs corrective pruning to space limbs	3
6278	London Plane Tree	*Platanus acerifolia*	17	24	Co-dominant leader at 6', grass at base, mechanical damage to buttress roots, large old pruning cuts with callous	To be Determined	
6279	Glossy leaf Privet	*Ligustrum lucidum*	5, 9, 7	13	Narrow attachment angles, poor species	Recommended for removal	2
6280	London Plane Tree	*Platanus acerifolia*	21	24	Bare compacted soil, surface roots, good leaf surface	Add mulch, remove limbs ± 5" or less below 7'	4
6281	Blue Atlas Cedar	*Cedrus atlantica*	18	20	Unbalanced canopy to west, fair leaf surface	Add mulch	4
6282	Blue Atlas Cedar	*Cedrus atlantica*	21	24	Slope, fair leaf surface	Add mulch	4
6283	Blue Atlas Cedar	*Cedrus atlantica*	20	24	Slope, surface roots, unbalanced canopy to south - suppressed by tree #6284, fair leaf surface	Add mulch	4
6284	London Plane Tree	*Platanus acerifolia*	21 @ 2'	33	Slope, surface roots, co-dominant leader at 5'	Remove all limbs ±5" below 6',	3

Tree Tag #	Common Name	Botanical Name	DBH	Canopy radius	Notes	Actions	Rating
						reduce weight or cable to prevent failure	
6285	Unidentified Shrub		3, 6, 6	18	Very poor structure, unbalanced canopy to north, understory	Prune to balance	2
6286	London Plane Tree	*Platanus acerifolia*	23	30	Co-dominant leader failure at 8', rip closing with poor growth attached, grass at base, mechanical damage to surface roots, good leaf surface	Reduce (not remove) new growth	3
6287	London Plane Tree	*Platanus acerifolia*	21	25	Grass at base, mechanical damage to buttress roots, good leaf surface	Remove lower limbs one at a time, reduce weight to south to control extension	4
6288	London Plane Tree	*Platanus acerifolia*	30	32	At fire hydrant, rocks to east, grass at base, mechanical damage to surface roots, large lower limb to south east at 4 - 10' off the ground (over sidewalk), co-dominant leader at ± 10'	Prune for good structure	3
6289	London Plane Tree	*Platanus acerifolia*	20	27	Grass at base, mechanical damage to surface roots, irrigation spray on trunk, many closed old pruning cuts	Reduce lower extended limbs	4
6290	London Plane Tree	*Platanus acerifolia*	22	28	Grass at base, mechanical damage to surface roots - from mower?, good structure, good leaf surface	Protect roots	4
6291	Deodar Cedar	*Cedrus deodara*	26	35	River rocks at base, mechanical damage to surface roots, slight lean, large prostrate limbs with upright growth, fair leaf surface	Crown clean	3
6292	London Plane Tree	*Platanus acerifolia*	22	26	Bare compacted soil, surface roots, closing old pruning cuts to north	Reduce south stem by 15%	4
6293	London Plane Tree	*Platanus acerifolia*	24	25	Co-dominant leader at 7', large rip failure at ± 15', mechanical damage to surface roots, grass at 1'	Reduce canopy over failure by 10%, re-inspect in 3 years	3
6294	London Plane Tree	*Platanus acerifolia*	19	26	Bare compacted soil, surface roots, good leaf surface, mid canopy narrow attachments	To be Determined	4
6295	London Plane Tree	*Platanus acerifolia*	15 @ 2'	23	Bare compacted soil, surface roots, good leaf surface	Prune or remove lower limbs to limit extension	4
6296	London Plane Tree	*Platanus acerifolia*	17	23	Bare compacted soil, surface roots, unbalanced canopy to west, narrow attachment at 7', good leaf surface	Cover soil	3
6297	Ash	*Fraxinus sp.*	13	18	Abnormal trunk shape, co-dominant leader at 7' with included bark, large dead stub to south	Remove dead wood, needs corrective pruning	3
6298	Ash	*Fraxinus sp.*	6	10	Significant dead wood, borers	Replace	2
6299	Ash	*Fraxinus sp.*	4	10	Planted too deep, root rot, sunburn	Replace	1
6300	Aleppo Pine	*Pinus halepensis*	37	25	Bare, compacted soil, surface roots, girdling roots, sequoia pitch moth, co-dominant leader at 7', 8' and 10' with included bark	Re-evaluate for cabling by qualified arborist	3
6301	Aleppo Pine	*Pinus*	23	25	Surface roots, slope to north, lean	Remove dead	3

Tree Tag#	Common Name	Botanical Name	DBH	Canopy radius	Notes	Actions	Rating
		halepensis			with correction at 3', strap root downhill, fair leaf surface, some dead wood	wood	
6302	Aleppo Pine	*Pinus halepensis*	20	24	**Slope, significant lean with correction at 10', extensive surface roots, tension roots exposed, sequioa pitch moth**	**To be Determined**	2
6303	Aleppo Pine	*Pinus halepensis*	23	23	Canopy raised - new cuts, surface roots, bare compacted soil, co-dominant leader at 7' with included bark, bark rot at 1' from irrigation spraying trunk	Cable, mulch, correct irrigation	3
6304	Chinese Evergreen Elm	*Ulmus parvifolia*	8	18	Unbalanced canopy to north west, crossing limbs, fair leaf surface	Prune to balance, crown clean	3
6305	London Plane Tree	*Platanus acerifolia*	12	18	Surface roots, bare compacted soil, unbalanced canopy to east, fair leaf surface, old pruning cuts - mostly closed	Add Mulch	3
6306	London Plane Tree	*Platanus acerifolia*	14	17	Over extended to south, fair leaf surface, roots lifting sidewalk	Mulch, remove crossing limb at 6' with old pruning cut with cavity at 4' to south west	3
6307	London Plane Tree	*Platanus acerifolia*	16	25	Fair leaf surface	Reduce to north, prune upper canopy for space	3
6308	American Sweetgum	*Liquidambar styraciflua*	12	21	Abnormal flare, lean with correction, mechanical damage to surface roots, included bark at 6' and 12'	Crown clean, biennial reduction pruning to prevent failure	3
6309	American Sweetgum	*Liquidambar styraciflua*	11	13	Abnormal flare, mechanical damage to surface roots, failure stubs	Remove stubs, biennial reduction pruning to prevent failure	3
6310	American Sweetgum	*Liquidambar styraciflua*	14	15	Abnormal flare, mechanical damage to surface roots, included bark at 9' and 10'	Crown clean, biennial reduction pruning to prevent failure	3
6311	American Sweetgum	*Liquidambar styraciflua*	13	15	Abnormal flare, mechanical damage to surface roots, included bark at 10'	Crown clean, biennial reduction pruning to prevent failure	3
6312	London Plane Tree	*Platanus acerifolia*	14	22	Poor growing space, extensive surface roots, good leaf surface	Aerate, mulch	4
6313	London Plane Tree	*Platanus acerifolia*	14	23	Compacted soil at base, surface roots, strap roots, good leaf surface	Mulch, cut strap roots	4
6314	London Plane Tree	*Platanus acerifolia*	13 @ 4'	24	Drain at 7', bare compacted soil, surface roots pushing curb, mechanical damage to surface roots in grass, crotch at 10' into 3 limbs	To be Determined	3
6315	Deodar Cedar	*Cedrus deodara*	18	29	Slight lean, canopy over parking, competing leader at top, recent canopy raise	Suppress competing leader	3
6316	Deodar	*Cedrus*	20	28	Recent canopy raise, surface roots	Suppress	3

Tree Tag #	Common Name	Botanical Name	DBH	Canopy radius	Notes	Actions	Rating
	Cedar	*deodara*				competing leader, remove stubs	
6317	Deodar Cedar	*Cedrus deodara*	13	15	Sparse canopy., double top, surface roots	To be Determined	3
6318	Deodar Cedar	*Cedrus deodara*	16	16	Sparse canopy, slope to west, surface roots	To be Determined	4
6319	Deodar Cedar	*Cedrus deodara*	20	24	Sparse canopy	Suppress competing leaders	4
6320	Coast Redwood	*Sequoia sempervirens*	17	12	Surface roots, grass at base	Cut strap root, canopy raise not recommended	3
6321	Ash	*Fraxinus sp.*	16	22	Surface roots, narrow attachment angles, included bark, good leaf surface	Reduce all stems except central leader	3
6322	Tulip Tree	*Liriodendron tulipifera*	12	16	Top failed with regrowth, surface roots	Top correction by certified arborist, remove dead wood	3
6323	Maytens Tree	*Maytenus bo aria*	6	7	Poor leaf surface, crossing limbs	Crown clean	3
6324	Maytens Tree	*Maytenus bo aria*	5	7	**Poor leaf surface, significant die back**	**Remove dead wood**	**2**
6325	Coast Redwood	*Sequoia sempervirens*	32	14	Surface roots with mechanical damage, poor growing space	Alleviate soil compaction, mulch	4

Testing & Analysis:

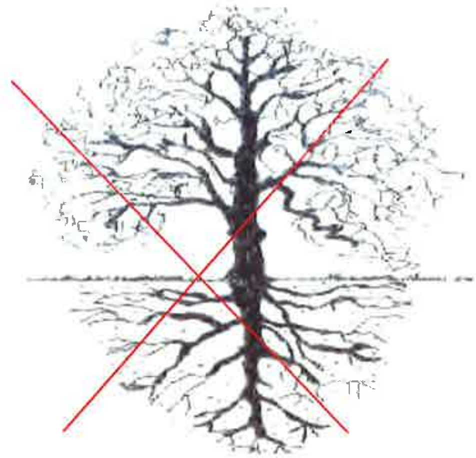
A Level 2 – Basic Visual Assessment was performed in accordance with the International Society of Arboriculture's best management practices. This assessment level is limited to the observation of conditions and defects which are readily visible. No laboratory or chemical testing and analysis was performed, only ground level observations.

A recommended Level 3 – Advanced Assessment should be performed on trees determined during the development process to have a target. Level 3 assessments include aerial inspection and evaluation of the structural defects of a tree including decay and load testing for purposes of risk analysis.

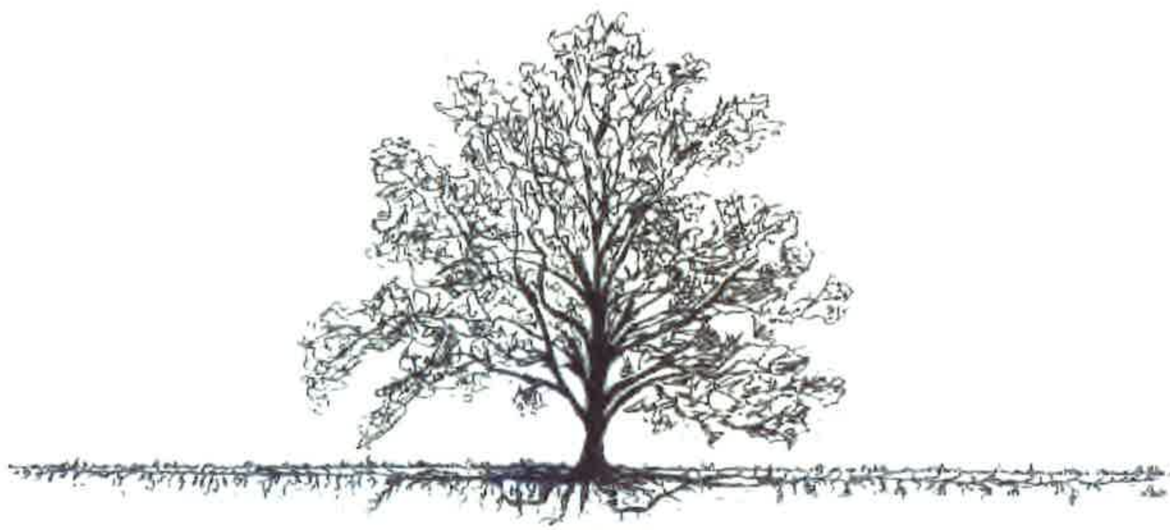
Discussion:

Root Structure

The majority of a tree's roots are contained in a radius from the main trunk outward approximately two to three times the canopy of the tree. These roots are located in the top 6" to 3' of soil. It is a common misconception that a tree underground resembles the canopy (see Drawing A below). The correct root structure of a tree is in Drawing B. All plants' roots need both water and air for survival. Surface roots are a common phenomenon with trees grown in compacted soil. Poor canopy development or canopy decline in mature trees is often the result of inadequate root space and/or soil compaction.



Drawing A
Common misconception of where tree roots are assumed to be located



Drawing B
The reality of where roots are generally located

Roots are the method by which a tree receives water and water-soluble nutrients. The water and nutrients are transported through the tree in the cambium layer, which lies just underneath the bark. Photosynthesis, which occurs in the leaves, requires the water from the roots. In return, the leaves produce sugars to feed the roots. There is a balance between the roots and leaves. There must be enough of each to provide for the other. In re-iteration: <u>The GREEN part of the tree has an equal and more vigorous portion of roots that are unseen below the ground. What you see is a small portion of the tree!</u>

Canopy Development & Response Growth

Healthy Canopy

Sparse Canopy

Photo by Nicole Harrison

Water is required to maintain each leaf on a tree. The larger a tree becomes, the more water is required to maintain it. If there is not enough water in the soil, the tree will begin to drop leaves to balance the leaf surface to the available water. Our native oaks have adapted to our dry environment and cycle in and out of leaf drop and re-growth phases. Non-native species, however, are not able to adapt to this cycle. In particular, Coast Redwood are notorious for growth to a certain size, a size to which water is available, and then they quickly decline and dye from lack of available water.

Epicormic growth is a trees response to loss of leave surface from either limb drop, over pruning, or stressful conditions. Epicormic growth is simply the release of latent buds, which begin rapid growth in order to provide as much new leaf surface in the shortest period of time to make up for the loss of leave surface. Epicormic growth prevents the death of the tree in stressful times, but creates a need for additional pruning. It is not the formation of a structurally intact new limb. The new limbs are weakly attached and need support and pruning.

Epicormic Growth

Leaves develop on main stems as opposed to on branch tips

Limited space for canopy development produces poor structure in trees. The largest tree in a given area, which is 'shading' the other trees, is considered Dominant. The 'shaded' trees are considered Suppressed. The following picture illustrates this point. Suppressed trees are more likely to become a potential hazard due to their poor structure.

Dominant Tree

Growth is upright

Canopy is balanced by limbs and foliage equally

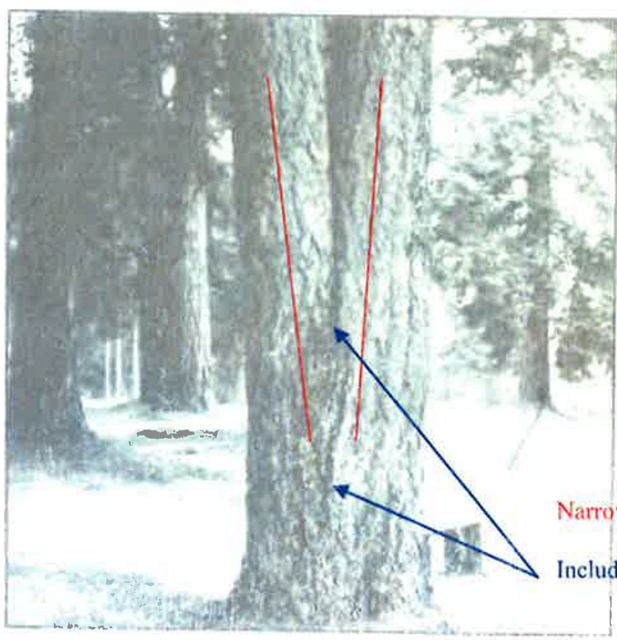
Suppressed Tree

Canopy weight all to one side

Limbs and foliage grow away from dominant tree

Structural Issues

Co-dominant leaders are another common structural problem in trees.



Narrow Angle

Included Bark between the arrows

Figure 6. Codominant stems are inherently weak because the stems are of similar diameter.

The tree in this picture has a co-dominant leader at about 3' and included bark up to 7 or 8'. Included bark occurs when two or more limbs have a narrow angle of attachment resulting in bark between the stems – instead of cell to cell structure. This is considered a critical defect in trees and is the cause of many failures.

Photo from <u>Evaluation of Hazard Trees in Urban Areas by</u> Nelda P. Matheny and James R. Clark, 1994 International Society of Arboriculture

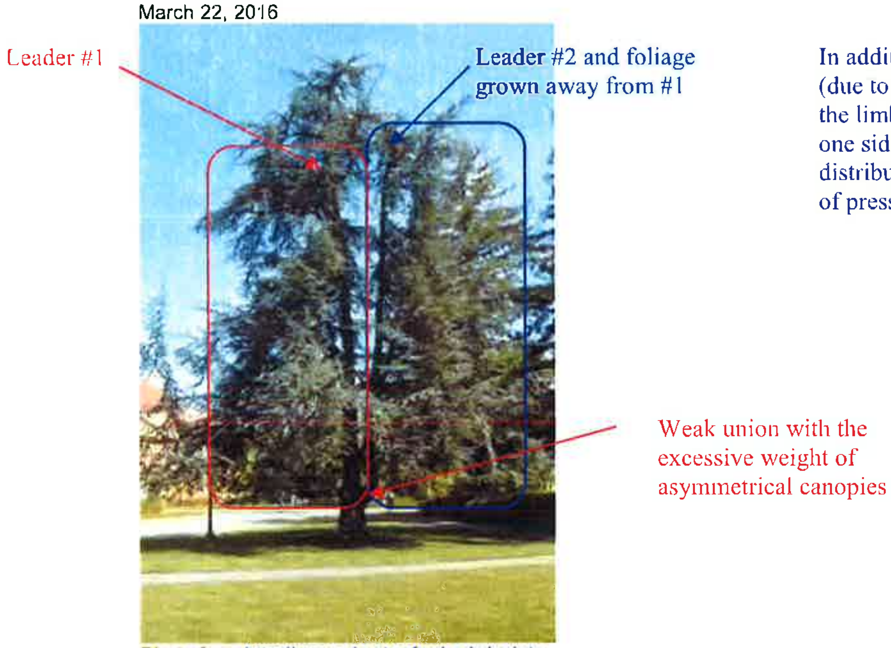


Photo from http://grounds.stanford.edu/points/significanttrees/cedrusatlantica.html

In addition, co-dominant leaders phototropically (due to sunlight) suppress each other's growth. All the limbs are grown away from the main trunk to one side. The weight of the foliage of the tree is distributed asymmetrically placing a greater amount of pressure on the already weak union.

Our native oak trees are easily damaged or killed by having the soil within the Critical Root Zone (CRZ) disturbed or compacted. All of the work initially performed around protected trees that will be saved should be done by people rather than by wheeled or track type tractors. Oaks are fragile giants that can take little change in soil grade, compaction, or warm season watering. Don't be fooled into believing that warm season watering has no adverse effects on native oaks. Decline and eventual death can take as long as 5-20 years with poor care and inappropriate watering. Oaks can live hundreds of years if treated properly during construction, as well as later with proper pruning, and the appropriate landscape/irrigation design.

Conclusion:

There are **No** trees on this property that qualify as "protected trees" by the standards of the Folsom Tree Ordinance.

Recommendations:

1) Follow all of the recommendations in the action column of *Chart B* immediately.

2) Mulch the area under the oaks' branched canopy with arborist type hard wood woodchips (4 – 6" deep), not redwood or cedar bark

3) All trees to be saved shall have their root zones and trunk(s) protected with a four (4') foot high orange or yellow plastic, high visibility exclusionary fence surrounding the trees' root zone. The fence shall be staked 10'o.c. maximum spacing, with 5' steel "T" posts, 2" x 2" square or 2"+ ∅ wood posts. The exclusionary area shall be under the tree's branched canopy and extend out to the tree's longest dripline radius plus one foot, as a circle. Where new construction will be within the Protected Root Zone, the fencing shall be 4' away from the footings, and extend around the rest of the canopy of the tree from that point. The fencing shall be maintained and not removed until the completion of construction. The fencing shall completely surround the Protected Root Zone and not be "U" shaped or open at any point. Whenever possible, include as many trees that are to be saved into one fenced exclusionary Protected Root Zone. The fencing plan will be completed once the developer decides on driveway, utility, and structure placement.

4) As soon as the concrete is poured and the forms are stripped, backfill the footings and stem walls. The protected trees nearby that are to remain should be watered to the point of soil saturation.

5) Care must also be continued after the construction is over to select the right plants to live under and near the native oaks. Watered lawns and any frequent summer watering near California oaks will not mix well over a long period. This will cause the oaks to perish due to *Armillaria mellea* (oak root fungus). The demise of the native oaks due to *Armillaria mellea* may take 5 – 20 years. Oaks should live 200 - 300 years.

6) To help control root damage, utility-trenching paths are to be established away from the roots and branches of the oaks that are to remain.

7) Soil compaction shall be avoided by maintaining the exclusionary Protected Root Zone fencing, keeping material storage, people, portable outhouses, vehicles, and dogs out of this area.

8) Soil contamination shall be avoided by eliminating chemical dumping on the property that may infiltrate into the Protected Root Zone. **No**: washing, dumping, or contaminating the site including but not necessarily limited to the following: concrete from tools or trucks, paint materials, sheetrock mud or stucco materials, other chemicals, solvents, herbicides, etc. Limestone gravel should not be used as base material or for drain rock as it will change the pH to be more alkaline, and may harm the native oaks.

9) Do not nail, tie, screw, or fasten any signs, braces, etc. to the trees that are to remain.

10) The cut and fill material excavated from or added to the lot can kill an oak by removing too many roots, drying or wetting the soil or by suffocating the roots with too much soil. Care must be taken with the added soil as well as with the actual excavation. Roots need air as much as they need water to survive and for the whole tree to live and to flourish. If fill material is needed, properly designed aeration/ventilation systems made to protect the trees and allow for the fill material can be installed.

11) When deciding on a pruning arborist, inquire about a chipper and require them to utilize the chipped branches of the trees to be removed or pruned. The chips are to be used under

the oaks that are to remain, as mulch in the Protected Root Zone. Other mulch may be used of arborist type woodchips (4 – 6" deep), but not redwood or cedar bark.

12) When the recommended pruning is completed, it is only advisable if a qualified ISA Certified Arborist is on site. No cutting of live wood over 2"∅ shall be made. All cutting, pruning, trimming, cabling, guying, bracing, and lightning protection systems shall conform to the most current standards of the American National Standards Institute (ANSI). The current ANSI Tree Care Standards are A300 (Parts 1-4) 2000 to 2002 (copies at: www.ansi.org). The BMPs are "Best Management Practices", as companion publications to the ANSI Tree Care Standards, printed by the International Society of Arboriculture (copies at: www.isa-arbor.com). The BMP booklets explain the details of the ANSI Tree Care Standards and how to follow them correctly. Pruning of branches less than 3" in diameter should be made with sharp hand tools: pruners, loppers, and/or handsaws, not chainsaws.

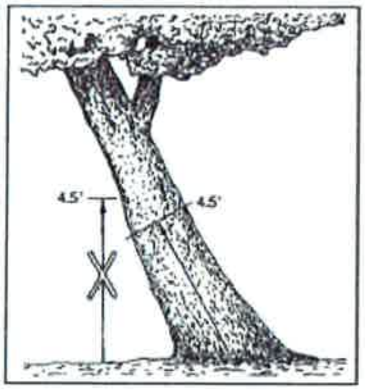
These important details will greatly increase the likelihood of survival for your protected trees.

Tree Size Expressed by Trunk Diameter

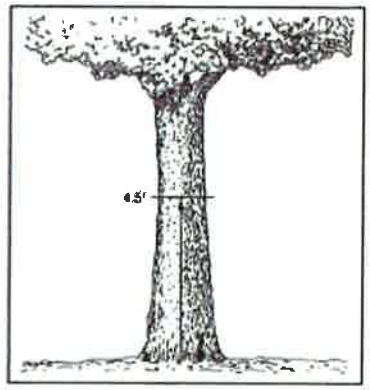
Tree SIZE Expressed by Trunk Diameter

"The height at which the trunk diameter of a tree is measured depends upon its size. The American Standard for Nursery Stock (ANSI, 1990) state that measurements shall be taken 6 inches (15 cm) above the ground for trunk diameters up to and including 4 inches (10 cm). Larger trees (assumed, but not stated, to be of transplantable size) are to be measured at 12 inches (30 cm). Trees normally considered too large to transplant are to be measured 4.5 feet [4'-6" is also called diameter breast high or dbh] (1.4 m) above the ground. Trees, like conifers, which have branches below 4.5 feet should be measured at a height that most effectively represents the size of the tree." The diameter is calculated by first measuring the circumference divided by 3.14 (π called pi) or by using a "diameter tape" whereon the inches are multiplied by π and shown to produce the diameter directly.

This is the dbh standard for measurement as shown in figure 4-2.



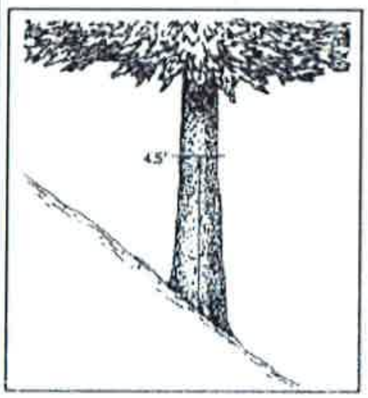
Figures 4-3 (top) and 4-4 (bottom) In each case, the trunk circumference should be measured at right angles to the trunk 4.5 feet (1.4 cm) along the center of the trunk axis so the height is the average of the shortest and longest sides of the trunk.

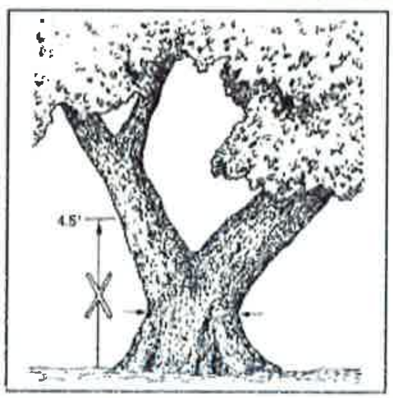


Figures 4-2. Trees with fairly straight, upright trunks with the lowest branch arising on the trunk higher than 6 feet (1.8 m) above the ground should be measured at 4.5 feet (1.4 m).

There are some exceptions to the dbh standard as shown in the figures 4-3, 4-4, 4-5 & 4-6.

Figure 4-6. In a multi-stem tree, measure the trunk circumference of each trunk at 4.5 feet (1.4 m) above the ground. The area of each trunk is determined and then added together to obtain a trunk area that is representative of the size of the tree and each of the stems contribute its proportionate share to the canopy.





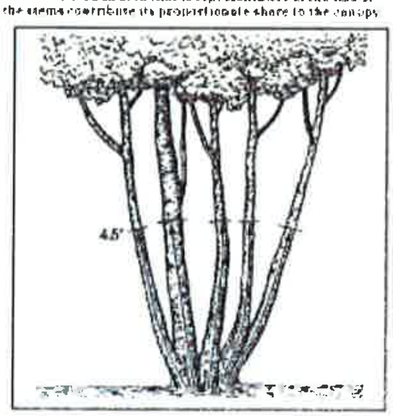


Figure 4-5. When low branches preclude measuring the trunk at 4.5 feet (1.4 m), measure the smallest circumference below the lowest branch. In this example, an alternative would be to determine the sum of the cross sectional areas of the two stems [illegible] 12 inches (30 cm) above the crotch, then average the sum of [illegible] branch areas and the smallest cross-sectional area below the branches. This may give a better estimate of tree size. Record the height of measurement(s) and the [illegible] the height of those heights were chosen.

ABACUS
Where Every Detail Counts
[illegible] Duncan Hill Rd
Auburn, CA [illegible]
Phone & Fax [illegible]
Email: [illegible]
www.abacus-tree.com

Tree SIZE Expressed by Trunk Diameter	
Scale: NTS	Drawing: TSE

ABACUS
CONSULTING ARBORISTS

P.O. Box 4248
Auburn, CA 95604
www.abacus-tree.com (530) 305-0165 Nicole.Abacus@gmail.com

Disclosure, Assumptions and Disclaimer

1) I, Nicole Harrison, *ISA Certified Arborist WE-6500A,* with "**ABACUS**", did personally inspect the site and investigated the tree(s) as mentioned in this report and I performed all aspects of this report unless noted otherwise in the report. Arborist's Assistant was Julie McNamara.
2) We have neither financial interest in the tree work that may or may not be done, nor financial interest in the property where the tree(s) is (are) located unless noted within the report.
3) All opinions and recommendations expressed herein this report are ours solely. We have used our specialized education, knowledge, training and experience to examine the tree(s) and to make our opinions and recommendations to enhance the beauty; health and longevity, with an attempt to reduce the risk of whom and/or what is near these trees. We cannot guarantee or warranty that a tree will not be healthy or safe under all circumstances, nor for a specific period of time or those problems may not arise in the future.
4) Our report with its opinions and recommendations are limited to the tree(s) inspected.
5) We attempt to be cognizant of the whole scope of a project, but many matters are beyond the scope of our professional consulting arborist services such as: exact property boundaries, property ownership, site lines, easements, codes, covenants & restrictions (CC&Rs), disputed between neighbors, and other issues.
6) We rely on the information disclosed to us and assume the information to be complete, true, and accurate.
7) The inspection is limited to visual examination of accessible items of the tree(s), from the ground unless otherwise noted, without excavation, probing, boring, or dissection, unless noted otherwise. Only information covered in this report was examined, and reflects the condition of those inspected items at that specific time.
8) Clients may choose to accept or disregard these opinions and recommendations of the arborist or to seek additional advice.
9) This report is copyrighted. Any modification or partial use shall nullify the whole report. Do not copy without written permission. This report is for the client and the client's assignees.
10) Sketches, diagrams, graphs, drawings, and photographs within this report are intended as visual aids and are not necessarily to scale, and should not be construed as engineering or architectural detail, reports or surveys.
11) We shall not attend or give a deposition and/or attend court by reason of this report unless fees are contracted for in advance, according to our standard fee schedule, adjusted yearly, for such services as described.

Signed: ______________________

Volume 2 of 2

Appendices D-I

Appendix D

Cultural Resources Assessment and Tribal Cultural Resources Coordination

HELIX Environmental Planning, Inc.
11 Natoma Street Ste. 155
Folsom CA 95630
916.365.8700

HELIX
Environmental Planning

September 5, 2018

Steve Banks
Principal Planner
City of Folsom
50 Natoma Street
Folsom, CA 95630

Subject: Cultural Resource Assessment Canyon Terrace Apartments Project, 1600 Canyon Terrace Lane, Folsom, CA

Dear Mr. Banks:

HELIX Environmental Planning, Inc. (HELIX) has conducted a cultural resource assessment for a proposed development project consisting of ninety-six new apartment units in eight new apartment buildings within the existing Canyon Terrace Apartment Community located at 1600 Canyon Terrace Lane, Folsom, CA. The proposed project is located at the western edge of the City of Folsom's (City) boundary within Sacramento County.

HELIX conducted a Phase I Cultural Resource Assessment for the project area that included a cultural resource records search at the North Central Information Center (NCIC), a request to the Native American Heritage Commission (NAHC) for a search of their Sacred Lands File (SLF), and a pedestrian survey of the project area. HELIX also assisted the City in initiating Native American consultation pursuant to Senate Bill 18 (SB 18). The City has contracted separately with Ecorp Consulting, Inc. to assist with tribal consultation under Assembly Bill 52 (AB 52) requirements.

CULTURAL RESOURCES RECORDS SEARCH

On August 3, 2018, HELIX conducted a cultural resource records search at the NCIC to identify any resources, sites or features within a 0.50-mile radius of the project boundaries. The search included current inventories of the National Register of Historic Places (NR), the California Register of Historical Resources (CRHR), the California Historical Landmarks listings (CHL), and the California Points of Historical Interest list. The California State Historic Property Data File (HPDF) for Sacramento County was also reviewed to determine if any local resources have been previously evaluated for historic significance within the search radius.

The results of the records search indicate that six precontact resources and seven historic-age resources have been recorded within the 0.50-mile search radius; none have been recorded within the project area. Details of the recorded resources are noted in Table 1. In addition, 14 reports are on file with the NCIC for the 0.50-mile radius (Table 2). None of the reports addressed the project area.

Table 1
Resources Within 0.50-Mile Search Radius

Resource Number	Description	Recorded By/Date	Within Project Area?
P-31-000896	Multicomponent precontact site including a lithic scatter and a bedrock milling site	S.G Lindstrom and M. Panelli/1990	No
P-34-000440	Baldwin Reservoir Main Ditch	Sean Dexter and William Hoyle/1967	No
P-34-000439	Hinkle Creek Park Railroad Segment	Has been recorded since the late 1980's, but most recent recordation was by M. Nolte and J. Dougherty/2006	No
P-34-001677	Precontact midden site that includes bedrock mortar pits	P. Johnson and J. Johnson/1973	No
P-34-001505	Hinkle Creek #6, which includes two bedrock outcroppings	M. Nolte and J. Dougherty/2006	No
P-34-001501	Hinkle Creek #2, which is feature related to mining activities	M. Nolte and J. Dougherty/2006	No
P-34-001502	Hinkle Creek #3, which is a mining site	M. Nolte and J. Dougherty/2006	No
P-34-001503	Hinkle Creek #4, which includes bedrock outcroppings	M. Nolte and J. Dougherty/2006	No
P-34-001504	Hinkle Creek #5, which includes mortar cups in an outcrop of bedrocks near Hinkle Creek	M. Nolte and J. Dougherty/2006	No
P-34-002209	Hinkle Creek District #1, which includes two mining features in a historic district	PAR Environmental/2008	No
P-34-000911	Historic road	Eleanor H. Derr and Richard K. Derr/1993	No
P-34-000372	Railroad bed from 1860's	John H. Madsen/1977	No
P-34-000437	Bedrock mortar pits	J. Foster, D. Foster/1986	No

Table 2
Reports Within 0.50-Mile Search Radius

Report Number/Title	Recorded By/Date	Includes Project Area?
S-000042/ An Intensive Archaeological Survey of Both Banks of Portions of Miners and Strap Ravines and the Linda Creek Drainage in Placer and Sacramento Counties	Jerald J. Johnson/1976	No
S-000155/ An Archaeological Survey of the Oak Avenue Parkway, Ashland Water Transmission Main, and Storage, Blue Ravine Water Transmission Main, and the Lew Howard Memorial Park for the City of Folsom, Sacramento County, California	Gregory Greenway/1977	No
S-002041/Draft Environmental Impact Report for Oak Avenue-North, General Plan Amendment, Community Plan Amendment, and Rezone	Laurie Warner/1993	No
S-004485/ Negative Cultural Resources Survey Report for the Ottoman Hills Project	Margaret Keefer/2003	No
S-006291/A Cultural Resources Study for the San Juan Suburban Water District Pipeline Project Initial Study	Eleanor H. Derr/1993	No
S-006522/Sprow Ranch Tentative Subdivision Map, Special Development Permit and Affordable Housing Plan (Cultural Resources)	G. Erwin/ 2005	No
S-006545/Archaeological Survey of Illiescu Tentative Parcel Map	PAR Environmental/2005	No
S-007056/Cultural Resources Inventory Hinkle Creek Center City of Folsom Sacramento County, CA	John W. Dougherty and Cindy L. Baker/2006	No
S-009055/Archaeological Reconnaissance, Spring 1973; Part 1: Proposed Penryn 115KV Transmission Line, Pat 2: Proposed Table Mt. -Rancho Seco-Tesla 500KW Transmission Line	Patti Johnson/ 1973	No
S-011163/Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SC15328B (Baldwin Dam), American River Canyon Drive, Folsom, Sacramento County, California	Carrie D. Wills/2012	No
S-011526/Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SC15328B (Baldwin Dam), American River Canyon Drive, Folsom, Sacramento County, California	Carrie D. Wills and Kathleen A. Crawford/2014	No
S-011573/Cultural Resources Assessment Manhole Access Roads Improvement Project, Folsom, Sacramento County, California	Ric Windmiller, Dana E. Supernowicz, Kenneth L. Finger/2014	No
S-011578/Direct APE Architectural Assessment for T-Mobile West, LLC Candidate SC15328B (Baldwin Dam), American River Canyon Drive, Folsom, Sacramento County, California	Wayne H. Bonner and Kathleen A. Crawford/2012	No
S-011887/Cultural Resources Constraints Report. Rio Oso-Gold Hill 230kV: Install top cage extension at structure 024/102. PM Number 30945905	Ben Elliot/2013	No

Source: NCIC Record Search August 3, 2018.

NATIVE AMERICAN HERITAGE COMMISSION SACRED LANDS FILE SEARCH

On August 2, 2018, HELIX sent a letter to the NAHC to determine if any sacred sites listed on the SLF are located within the project area. On August 6, 2018 a response was received stating that the search was negative for Sacred Lands within the project area. Included with the response was a list of 10 Native Americans who may have additional information about the project area. On September 4, 2018, information request letters were sent to each of the Native Americans requesting any additional information they may have about the project area. As of the date of this report, no responses have been received.

SENATE BILL (SB 18) CONSULTATION REQUEST

On August 17, 2018, consultation request letters were sent by the City of Folsom (City) to 10 Native American tribal representatives specified by the NAHC as wishing to consult with the City regarding this project under SB 18. The letters included a detailed project description and stated:

> "In conjunction with the proposed General Plan Amendment, and in accordance with Senate Bill 18 (SB 18), we contacted the California Native American Heritage Commission (NAHC) on August 2, 2018 to request a list of Native American tribes and individuals who may wish to consult with the City under SB 18. Your name and contact information was provided to us by the NAHC in its response, which we received on August 6, 2018.
>
> The purposes of consultation under SB 18 are to consult on the preservation of, or the mitigation of impacts to, Native American Cultural Places, as defined in Public Resources Code 5097.993, and to protect the confidentiality of information concerning the same. Tribal participation is, therefore, important and we are hereby notifying you of the opportunity to consult with the City under SB 18 during our consideration of the General Plan Amendment."

HELIX is assisting the City in keeping the administrative records of the SB 18 consultation efforts.

PEDESTRIAN SURVEY

On August 27, 2018, HELIX conducted a pedestrian survey of the project area. The general topography is rolling hills within a completely built urban environment. The overall visibility was poor to non-existent as the entire project area was planted with various types of landscape elements. Survey transects were not utilized because of the poor visibility, instead, the very few open areas with no vegetation were examined.

No historical or precontact resources were discovered during the course of the survey.

CONCLUSION AND RECOMMENDATIONS

In accordance with State CEQA Guidelines, HELIX has assessed the project area for the presence of cultural resources. Since the entire project area has been subjected to extensive excavation for plants, grass and irrigation systems, it is highly unlikely that any intact resources are present within the project area. In addition, no precontact or historic resources have been previously recorded within the project area and none were discovered during the course of the field survey, therefore, it is considered unlikely that cultural resources would be impacted by project development. Still, the potential exists for inadvertent discovery of human and/or cultural resources during the course of project construction. The City is encouraged to include the measures outlined below to minimize the impact of such inadvertent discovery. No additional studies, archaeological work, or construction monitoring is warranted or recommended.

Inadvertent Discovery Procedures

Accidental Discovery of Human Remains

If human remains are encountered during excavations associated with this project, all work will halt within 50 feet of the find, and the County Coroner will be notified (per Section 7050.5 of the California Health and Safety Code and Section 15064.5 of the CEQA Guidelines). If the coroner determines that the remains are of Native American origin, he/she will contact the NAHC. The NAHC will be responsible for designating the most likely descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Public Resources Code Section 5097.98. The MLD will make his/her recommendations within 48 hours of their notification by the NAHC.

Accidental Discovery of Cultural Resources

In accordance with Section 15064.5 of the CEQA Guidelines, if buried cultural resources are discovered during construction, operations shall stop within 50 feet of the find and a qualified archaeologist shall be consulted to determine whether the resource is significant and requires further study. The archaeologist shall make recommendations to the Lead Agency concerning appropriate measures that will be implemented to protect the resource(s), including but not limited to excavation and evaluation of the finds, consistent with Section 15064.5 of the CEQA Guidelines and 36 CFR 800. Cultural resources could consist of but are not limited to stone, bone, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites.

Sincerely,

Carrie D. Wills

Senior Archaeologist

Lisa Westwood

From: Steven Banks <sbanks@folsom.ca.us>
Sent: Wednesday, October 03, 2018 1:35 PM
To: Lisa Westwood
Cc: 'RobertE@helixepi.com'
Subject: FW: AB 52 Consultation for the Canyon Terrace Apartments Project (2nd Initiation Consultation Letter)
Attachments: 3_Mitigation_Measures_CEQA_Discoveries.docx; 5 _Mitigation_Measures_CEQA_Construction_Worker_Awareness_Training.docx; 4 _Mitigation_Measures_CEQA_Discoveries_PostGroundDist_SiteVisit.docx

Follow Up Flag: Follow up
Flag Status: Flagged

FYI

From: Marcos Guerrero <mguerrero@auburnrancheria.com>
Sent: Wednesday, October 3, 2018 12:37 PM
To: Steven Banks <sbanks@folsom.ca.us>; Cherilyn Neider <cneider@auburnrancheria.com>
Cc: Matthew Moore <mmoore@auburnrancheria.com>; Melodi McAdams <mmcadams@auburnrancheria.com>
Subject: RE: AB 52 Consultation for the Canyon Terrace Apartments Project (2nd Initiation Consultation Letter)

Hello Mr. Banks,
A site visit will not be necessary. UAIC would like the attached mitigation measures included:

- Sensitivity Training;
- Discoveries protocols;
- Construction notification and site inspection;

Please let us know if you will be able to include the attached measures in the environmental document?

Thanks,
Marcos

From: Steven Banks [mailto:sbanks@folsom.ca.us]
Sent: Tuesday, October 2, 2018 8:06 AM
To: Cherilyn Neider <cneider@auburnrancheria.com>
Cc: Matthew Moore <mmoore@auburnrancheria.com>; Marcos Guerrero <mguerrero@auburnrancheria.com>; Melodi McAdams <mmcadams@auburnrancheria.com>
Subject: AB 52 Consultation for the Canyon Terrace Apartments Project (2nd Initiation Consultation Letter)

Good morning Cherilyn,

Thank you again for reaching out to the City with your request to consult regarding the Canyon Terrace Apartment project (PN 17-270). Attached to this email you will find a second response letter with suggested dates to consult regarding the proposed project, a Cultural Letter Report regarding the project, and the GIS SHP files you requested. I look forward to hearing back on the consultation dates.

Best regards.

Steve

Steven Banks
Principal Planner
City of Folsom
(916) 461-6207
sbanks@folsom.ca.us

From: Cherilyn Neider <cneider@auburnrancheria.com>
Sent: Thursday, September 20, 2018 10:16 AM
To: Steven Banks <sbanks@folsom.ca.us>
Cc: Matthew Moore <mmoore@auburnrancheria.com>; Marcos Guerrero <mguerrero@auburnrancheria.com>; Melodi McAdams <mmcadams@auburnrancheria.com>
Subject: AB 52 Consultation for the Canyon Terrace Apartments Project

Dear Steve Banks,

Thank you for your letter received on 9/10/2018 (Canyon Terrace Apartments). I am contacting you in order to request:

- Consultation for this project;
- All existing cultural resource assessments, as well as requests for, and the results of, any records searches that may have been conducted;
- GIS SHP files for the proposed project's APE.

Attached you will find mitigation measures recommended for the project.

Thank you for involving UAIC in the planning process at an early stage. We ask that you make this correspondence a part of the project record and we look forward to working with you to ensure that tribal cultural resources are protected. Marcos Guerrero, UAIC Cultural Resources Manager, will be UAIC's point of contact for this consultation. Please contact Mr. Guerrero by phone at (530) 883-2364 or email at mguerrero@auburnrancheria.com to begin the consultation process.

Sincerely,
Cherilyn

Cherilyn Neider
Tribal Historic Preservation
United Auburn Indian Community
530.883.2394

Inadvertent Discoveries Mitigation Measures

Develop a standard operating procedure, points of contact, timeline and schedule for the project so all possible damages can be avoided or alternatives and cumulative impacts properly accessed.

If potential tribal cultural resources, archaeological resources, other cultural resources, articulated, or disarticulated human remains are discovered by Native American Representatives or Monitors from interested Native American Tribes, qualified cultural resources specialists or other Project personnel during construction activities, work will cease in the immediate vicinity of the find (based on the apparent distribution of cultural resources), whether or not a Native American Monitor from an interested Native American Tribe is present. A qualified cultural resources specialist and Native American Representatives and Monitors from culturally affiliated Native American Tribes will assess the significance of the find and make recommendations for further evaluation and treatment as necessary. These recommendations will be documented in the project record. For any recommendations made by interested Native American Tribes which are not implemented, a justification for why the recommendation was not followed will be provided in the project record.

If adverse impacts to tribal cultural resources, unique archeology, or other cultural resources occurs, then consultation with UAIC regarding mitigation contained in the Public Resources Code sections 21084.3(a) and (b) and CEQA Guidelines section 15370 should occur, in order to coordinate for compensation for the impact by replacing or providing substitute resources or environments.

Post-Ground Disturbance Site Visit Mitigation Measure

A minimum of seven days prior to beginning earthwork or other soil disturbance activities, the applicant shall notify the CEQA lead agency representative of the proposed earthwork start-date, in order to provide the CEQA lead agency representative with time to contact the United Auburn Indian Community (UAIC). A UAIC tribal representative shall be invited to inspect the project site, including any soil piles, trenches, or other disturbed areas, within the first five days of ground breaking activity. During this inspection, a site meeting of construction personnel shall also be held in order to afford the tribal representative the opportunity to provide tribal cultural resources awareness information. If any tribal cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains are encountered during this initial inspection or during any subsequent construction activities, work shall be suspended within 100 feet of the find, and the project applicant shall immediately notify the CEQA lead agency representative. The project applicant shall coordinate any necessary investigation of the site with a UAIC tribal representative, a qualified archaeologist approved by the City, and as part of the site investigation and resource assessment the archeologist shall consult with the UAIC and provide proper management recommendations should potential impacts to the resources be found by the CEQA lead agency representative to be significant. A written report detailing the site assessment, coordination activities, and management recommendations shall be provided to the CEQA lead agency representative by the qualified archaeologist. Possible management recommendations for tribal cultural resources, historical, or unique archaeological resources could include resource avoidance or, where avoidance is infeasible in light of project design or layout or is unnecessary to avoid significant effects, preservation in place or other measures. The contractor shall implement any measures deemed by CEQA lead agency representative staff to be necessary and feasible to avoid or minimize significant effects to the cultural resources, including the use of a Native American Monitor whenever work is occurring within 100 feet of the find.

Tribal Cultural Resource – Awareness Training - Mitigation Measure

A consultant and construction worker tribal cultural resources awareness brochure and training program for all personnel involved in project implementation will be developed in coordination with interested Native American Tribes. The brochure will be distributed and the training will be conducted in coordination with qualified cultural resources specialists and Native American Representatives and Monitors from culturally affiliated Native American Tribes before any stages of project implementation and construction activities begin on the project site. The program will include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The worker cultural resources awareness program will also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site and will outline what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program will also underscore the requirement for confidentiality and culturally-appropriate treatment of any find of significance to Native Americans and behaviors, consistent with Native American Tribal values.

CITY OF
FOLSOM
DISTINCTIVE BY NATURE

October 22, 2018

Gene Whitehouse, Chairman
United Auburn Indian Community
10720 Indian Hill Road
Auburn, California 95603

RE: Conclusion of Consultation on the Canyon Terrace Apartments Project, Folsom, California

Dear Chairman Whitehouse:

On September 6, 2018, the City of Folsom formally notified the United Auburn Indian Community of an opportunity to consult under AB 52 for the proposed Canyon Terrace Apartments Project. On September 20, 2018, we received an email response from the tribe, indicating the desire to consult with us regarding potential impacts to Tribal Cultural Resources. Subsequently, on September 27, 2018, we received a letter from you, indicating the same, and designating Marcos Guerrero as your point of contact for the purpose of consultation under AB 52. Therefore, in response to the tribe's September 20 request, on September 21, 2018, the City initiated consultation with the tribe, provided copies of all requested information, and invited Mr. Guerrero to a project meeting on either October 9th or 11th. On October 3rd, Mr. Guerrero rescinded the request to consult and declined the opportunity to meet. Instead, he provided three mitigation measures for the City to consider incorporating into the CEQA document to address unanticipated discoveries of Tribal Cultural Resources.

After a review of the totality of information submitted by the tribe and in light of the definitions in Section 21074(a) of the Public Resources Code (PRC), the City made a determination that there are no Tribal Cultural Resources located within the project area, and that the proposed project will have a less than significant impact on tribal cultural resources with the incorporation of mitigation measures to address unanticipated discoveries. The three mitigation measures provided by Mr. Guerrero have been tailored to this specific project and incorporated into the CEQA document for this project. A copy of the final mitigation measures is enclosed. Therefore, in accordance with PRC Section 21080.3.2(b)(1) and 21082.3(d)(1) of the California Public Resources Code, we hereby conclude consultation with the United Auburn Indian Community on this project. On behalf of the City, I thank you for your consultation.

Respectfully,

Steven Banks, Principal Planner
Community Development Department
City of Folsom

cc: Marcos Guerrero, Jason Camp
Enclosures

Mitigation Measure TCR-01: Avoid and minimize impacts to previously unknown Tribal Cultural Resources.

If potential tribal cultural resources or human remains are discovered by Native American Representatives or Monitors from interested Native American Tribes, qualified cultural resources specialists or other Project personnel during construction activities, work will cease in the immediate vicinity of the find (based on the apparent distribution of cultural resources), whether or not a Native American Monitor from an interested Native American Tribe is present. The City shall immediately notify a qualified archaeologist and interested Native American Tribes to consult on the significance of the find and make recommendations for further evaluation and treatment as necessary. These recommendations and actions taken (or not taken) based on consultation will be documented in the project record. If the discovery includes human remains, the procedures in Mitigation Measure CUL-02 shall be implemented.

Mitigation Measure TCR-02: Accommodate a post-ground disturbance field visit for interested tribes.

A minimum of seven days prior to beginning earthwork or other soil disturbance activities, the applicant shall notify the City of the proposed earthwork start-date, in order to provide the City representative sufficient time to contact the United Auburn Indian Community (UAIC). A UAIC tribal representative shall be invited to inspect the project location, including any soil piles, trenches, or other disturbed areas, within the first five days of ground breaking activity. Construction activity may be ongoing during this time. Should the tribe choose not to perform a field visit within the first five days, construction activities may continue as scheduled, as long as the notification was made.

Mitigation Measure TCR-03: Provide construction personnel with procedures for unanticipated discoveries during ground-disturbing activities.

A construction worker tribal cultural resources awareness brochure and training program for personnel involved in project implementation will be developed by a qualified professional prior to the initiation of construction activities on the project. The brochure will be distributed during a training session that will be conducted by a qualified professional. Native American representatives and monitors from culturally affiliated and interested Native American tribes will be given the opportunity to contribute information to include in the program, if they so desire. The program will include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The construction worker tribal cultural resources awareness program will also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project property and will outline what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program will also underscore the requirement for confidentiality and culturally-appropriate treatment of any discovery that is determined by the City, in consultation with tribes, to be of significance to Native American tribal values.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

October 22, 2018

Robert Edgerton, AICP CEP
HELIX Environmental Planning, Inc.
11 Natoma Street, Suite 155
Folsom, CA 95630

RE: Tribal Consultation Record for Compliance with Assembly Bill 52 and CEQA for the Canyon Terrace Apartments Project, City of Folsom

Dear Robert:

The California Environmental Quality Act (CEQA), as amended in 2014 by Assembly Bill 52 (AB 52), requires that the City of Folsom (City) provide notice to any California Native American tribes that have requested notice of projects subject to CEQA review and consult with tribes that responded to the notice within 30 days of receipt with a request for consultation. Section 21073 of the Public Resources Code (PRC) defines California Native American tribes as "a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of the Statutes of 2004." This includes both federally and non-federally recognized tribes. For the City of Folsom, these include the following tribes that previously submitted general request letters, requesting such noticing:

- Wilton Rancheria (letter dated July 1, 2015 and received August 24, 2015)
- Ione Band of Miwok Indians (letter dated March 2, 2016)
- United Auburn Indian Community (UAIC) of the Auburn Rancheria (letter dated November 23, 2015)

The purpose of consultation is to identify Tribal Cultural Resources (TCRs) that may be significantly impacted by the proposed Project, and to allow the City to avoid or mitigate significant impacts prior to Project approval and implementation. Section 21074(a) of the PRC defines TCRs for the purpose of CEQA as:

> Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
>
> a) included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or
>
> b) included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or

2525 Warren Drive • Rocklin, CA 95677 • Tel: (916) 782-9100 • Fax: (916) 782-9134 • www.ecorpconsulting.com

c) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Because criteria A and B also meet the definition of a Historical Resource under CEQA, a TCR may also require additional consideration as a Historical Resource. TCRs may or may not exhibit archaeological, cultural, or physical indicators and can only be identified by a culturally-affiliated tribe, which has been determined under State law to be the subject matter expert for TCRs.

CEQA requires that the City initiate consultation with tribes at the commencement of the CEQA process to identify TCRs. Furthermore, because a significant effect on a TCR is considered a significant impact on the environment under CEQA, consultation is required to develop appropriate avoidance, impact minimization, and mitigation measures. Therefore, in accordance with the requirements summarized above, the City carried out, or attempted to carry out, tribal consultation for the Project. The methods and results of tribal consultation are summarized below, and a copy of the complete non-confidential administrative record is provided in Attachment A.

Within 14 days of initiating CEQA review for the Project, on September 6, 2018, the City sent Project notification letters to the three California Native American tribes named above, which had previously submitted general consultation request letters pursuant to 21080.3.1(d) of the PRC. Each tribe was provided a brief description of the Project and its location, the contact information for the City's authorized representative, and a notification that the tribe has 30 days to request consultation. The 30-day response period concluded on October 9, 2018.

As a result of the initial notification letters, only one tribe responded to the opportunity to consult on the Project: the UAIC, as described below. Neither the Ione Band of Miwok Indians, nor Wilton Rancheria, responded within the 30-day response window, nor, therefore, no consultation with either tribe was required or carried out with those tribes under CEQA.

On September 20, 2018, UAIC responded to the City's letter by email, requesting consultation on the Project, copies of all existing cultural resources assessments, and GIS shapefiles for the Project boundaries. UAIC also provided a suggested mitigation measure for unanticipated discoveries that the Project may encounter. Subsequently, on September 27, 2018, the City received a follow-up letter that was dated September 17 but post-marked September 25, requesting copies of documentation and tribal monitors if resources are present. However, before adopting any mitigation measures, the City engaged in consultation with UAIC in order to first determine the presence of TCRs in the Project area that could be significantly impacted. Only after such conclusions are drawn by the City through consultation can mitigation be considered under CEQA.

Therefore, on September 21, 2018, which was within 30 days of receiving the response, the City initiated consultation with UAIC. The City invited the tribe to a consultation meeting and Project orientation at the City offices on either October 9 or 11, 2018. The City also provided an electronic copy of the cultural resources documentation and shapefiles for the Project, as requested.

On October 3, 2018, the tribe responded by email to indicate it no longer was interested in meeting, and instead, requested that its standard mitigation measures for sensitivity training, unanticipated discoveries, construction notification and site inspection, be adopted by the City. The tribe did not provide any information about TCRs to the City.

After a review of the totality of information submitted by the tribe (as described above), the thresholds under PRC Section 21074(a)(1) have not been met and the project would not cause a significant adverse change in significance of a TCR. The City made a determination that there are no known TCRs located within the project area, and that the proposed project will have a less than significant impact on unforeseeable TCRs with the incorporation of mitigation measures to address unanticipated discoveries. The three mitigation measures provided by the tribe have been tailored to this specific project and incorporated into the CEQA document for this project, as shown below.

Mitigation Measure TCR-01: Avoid and minimize impacts to previously unknown Tribal Cultural Resources.

If potential tribal cultural resources or human remains are discovered by Native American Representatives or Monitors from interested Native American Tribes, qualified cultural resources specialists or other Project personnel during construction activities, work will cease in the immediate vicinity of the find (based on the apparent distribution of cultural resources), whether or not a Native American Monitor from an interested Native American Tribe is present. The City shall immediately notify a qualified archaeologist and interested Native American Tribes to consult on the significance of the find and make recommendations for further evaluation and treatment as necessary. These recommendations and actions taken (or not taken) based on consultation will be documented in the project record. If the discovery includes human remains, the procedures in Mitigation Measure CUL-02 shall be implemented.

Mitigation Measure TCR-02: Accommodate a post-ground disturbance field visit for interested tribes.

A minimum of seven days prior to beginning earthwork or other soil disturbance activities, the applicant shall notify the City of the proposed earthwork start-date, in order to provide the City representative sufficient time to contact the United Auburn Indian Community (UAIC). A UAIC tribal representative shall be invited to inspect the project location, including any soil piles, trenches, or other disturbed areas, within the first five days of ground breaking activity. Construction activity may be ongoing during this time. Should the tribe choose not to perform a field visit within the first five days, construction activities may continue as scheduled, as long as the notification was made.

Mitigation Measure TCR-03: Provide construction personnel with procedures for unanticipated discoveries during ground-disturbing activities.

A construction worker tribal cultural resources awareness brochure and training program for personnel involved in project implementation will be developed by a qualified professional prior to the initiation of construction activities on the project. The brochure will be distributed during a training session that will be conducted by a qualified professional. Native American representatives and monitors from culturally affiliated and interested Native American tribes will be given the opportunity to contribute information to include in the program, if they so desire. The program will include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The construction worker tribal cultural resources awareness program will also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project property and will outline what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program will also underscore the requirement for confidentiality and culturally-appropriate treatment of any discovery that is determined by the City, in consultation with tribes, to be of significance to Native American tribal values.

Therefore, in accordance with PRC Section 21080.3.2(b)(1) and 21082.3(d)(1) of the California Public Resources Code, the City concluded consultation with UAIC by letter on October 22, 2018.

If you have any questions, you may reach me by phone at (916) 782-9100 or by email at LWestwood@ecorpconsulting.com.

Sincerely,

Lisa Westwood

Lisa Westwood, RPA
Director of Cultural Resources

Attachment A: Non-Confidential Tribal Consultation Record

ATTACHMENT A

Non-Confidential Tribal Consultation Record

Wilton Rancheria

9728 Kent Street
Elk Grove, CA 95624
Phone: (916) 683-6000
Facsimile: (916) 683-6015
Email: tribaloffice@wiltonrancheria-nsn.gov

July 1, 2015

City of Folsom
50 Natoma Street
Folsom, CA 95630

RE: California Environmental Quality Act Public Resources Code section 21080.3, subd. (b) Request for Formal Notification of Proposed Projects Within the Wilton Rancheria Tribe's Geographic Area of Traditional and Cultural Affiliation

Dear City of Folsom,

Wilton Rancheria ("Tribe") is a federally-recognized Tribe as listed in the Federal Register, Vol. 74, No. 132, p. 33468-33469, as "Wilton Rancheria of Wilton, California". The Tribe's Service Delivery Area ("SDA") as listed in the Federal Register, Vol. 78, No. 176, p. 55731, is Sacramento County. However, the Tribe's traditional and culturally affiliated territory spans from Sacramento County to portions of the surrounding Counties. The Tribe is concerned about development and projects that have potential to impact resources that are of cultural and environmental significance to the tribe. As of the date of this letter, in accordance with Public Resources Code Section 21080.3.1, subd. (b), Wilton Rancheria, which is traditionally and culturally affiliated with the geographic area within your agency's jurisdiction, requests formal notice of and information on proposed projects for which your agency will serve as a lead agency under the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq.

Pursuant to Public Resources Code section 21080.3.1, subd. (b), and until further notice, we hereby designate the following person as the tribe's lead contact person for purposes of receiving notices of proposed projects from your agency:

Steven Hutchason
Executive Director
Environmental Resources Department
9728 Kent Street
Elk Grove California, 95624
(916) 683-6000 Ext. 2006
(916) 683-6015
shutchason@wiltonrancheria-nsn.gov

We request that all notices be sent via certified U.S. Mail with return receipt and an electronic copy also be sent via email to the email address above as well as tribaloffice@wiltonrancheria-nsn.gov.

In order for your agency to be in compliance, the Tribe will request consultation, when necessary, following the receipt and review of the information your agency provides. This requirement is defined by Public Resources Code section 21080.3.1, subd. (b), pursuant to Public Resources Code section 21080.3.2 to mitigate any project impacts a specific project may cause to tribal cultural resources.

Other regulations and statues that apply to the Wilton Rancheria Tribal Consultation include, but are not limited to:

- Senate Bill 18,
- Section 106 of the National Historic Preservation Act,
- Native American Graves Protection and Repatriation Act,
- American Indian Religious Freedom Act,
- Archaeological Resources Protection Act, and
- Executive Order 13175- Consultation and Coordination with Indian Tribal Governments: Section 5 (b) To the extent practicable and permitted by law, no agency shall promulgate any regulation that has tribal implication, that imposes substantial direct compliance costs on Indian tribal governments, and that is not required by statute, unless: (1) funds necessary to pay the direct costs incurred by the Indian tribal government or the tribe in complying with the regulation are provided by the federal government.

If you have any questions or need additional information, please contact our lead contact person listed. We look forward to establishing a successful working relationship between your agency and our Tribe.

Sincerely,

Raymond C Hitchcock

Raymond "C" Hitchcock
Chairman

CC. California Native American Heritage Commission

David Miller

MIWOK United Auburn Indian Community
MAIDU of the Auburn Rancheria

Gene Whitehouse Chairman	John L. Williams Vice Chairman	Danny Rey Secretary	Brenda Adams Treasurer	Calvin Moman Council Member

November 23, 2015

City of Folsom Representative
50 Natoma Street
Folsom, CA 95630

RE: AB 52 Notification Request, California Environmental Quality Act Public Resources Code section 21080.3, subd. (b) Request for Formal Notification of Proposed Projects within the United Auburn Indian Community (UAIC) of the Auburn Rancheria's Geographic Area of Traditional and Cultural Affiliation

Dear City of Folsom Representative:

In accordance with Public Resources Code Section 21080.3.1, subd. (b), The United Auburn Indian Community (UAIC) of the Auburn Rancheria, which is traditionally and culturally affiliated with a geographic area within your agency's geographic area of jurisdiction, requests formal notice of and information on proposed projects for which your agency will serve as a lead agency under the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq.

Enclosed with this letter is a copy of a map that depicts the ancestral territory that the UAIC is traditionally and culturally affiliated with. UAIC's traditionally and culturally affiliated geographic area is supported by, and has been developed through, multiple lines of evidence including oral tradition, history, ethnography, geography, linguistic, kinship, biology, archaeology, anthropology, folklore, other relevant information and expert opinion, and Congressional action through the Auburn Indian Restoration Act of 1994 (H.R. 4228 [103rd]).

Pursuant to Public Resources Code section 21080.3.1, subd. (b), and until further notice, we hereby designate the following person as the tribe's lead contact person for purposes of receiving notices of proposed projects from your agency:

Lead Contact:
Gene Whitehouse,
Chairman
10720 Indian Hill Road
Auburn, CA 95603
916-883-2320

Copies to:
Jason Camp
Tribal Historic Preservation Officer
10720 Indian Hill Road
Auburn, CA 95603
(530) 883-2320
jcamp@auburnrancheria.com

Marcos Guerrero
Cultural Resources Manager
10720 Indian Hill Road
Auburn, CA 95603
(530) 883-2364
mguerrero@auburnrancheria.com

We request that all notices be sent via certified U.S. Mail with return receipt and that your notices specify a lead contact person for your agency. Following receipt and review of the information your agency provides, within the 30-day period outlined in Public Resources Code section 21080.3.1, subd. (d), the UAIC may request consultation, as defined by Public Resources Code section 21080.3.1, subd. (b), pursuant to Public Resources Code section 21080.3.2 to discuss issues including the type of environmental review to be conducted, project alternatives, significant effects of the project and mitigation measures for any project impacts (direct, indirect and cumulative) a specific project may cause to tribal cultural resources.

For your information, UAIC's policy is to be present during project cultural resource surveys, including initial pedestrian surveys, to identify tribal cultural resources. UAIC's policy is also to be provided all existing cultural resource assessments, including the request for and results of any records search that may have been conducted prior to the initial survey or consultation meeting. Finally, UAIC's general policy is preservation in place and avoidance of tribal cultural resources, and any subsurface testing or data recovery must not occur without first consulting with UAIC and receiving UAIC's written consent.

We recommend that your agency retain this correspondence in your permanent files. If you have any questions or need additional information, please contact Marcos Guerrero, Cultural Resources Manager, at (530) 883-2364 or by email at mguerrero@auburnrancheria.com.

Sincerely,

Gene Whitehouse,
Chairman

CC: Jason Camp, THPO
Marcos Guerrero, CRM
Cynthia Gomez, NAHC

UAIC Geographic Area of Traditional and Cultural Affiliation

(for the purposes of California AB 52)

This area includes all of Amador, El Dorado, Nevada, Placer, Sacramento, Sutter and Yuba counties as well as portions of Butte, Plumas, San Joaquin, Sierra, Solano, and Yolo counties.

Map Created on 10/28/2015 by the UAIC Tribal Preservation Department

This map is no substitute for direct consultation with UAIC prior to considering any proposed project or commencing any archaeological activities in or around sensitive areas

Note: While we make every effort to identify Tribal Cultural Resources that exist within the UAIC Geographic Area of Traditional and Cultural Affiliation, it is highly probable that there are additional, older sites that we have not yet identified due to restricted access or other reasons or that agricultural or construction activities have distributed burials and cultural materials beyond the previously known boundaries of these sites. Even if these materials are in a disturbed condition, they still retain cultural value to UAIC and should be respected and protected. Because of this, thorough survey with a qualified Native American Monitor to confirm site boundaries and search for unknown sites is critical. This survey should be conducted after consultation with the Tribe and prior to the final determination of the type of environmental document to be used.

2 March 2016

City of Folsom
Community Development Dept.
David Miller Director
50 Natoma St.
Folsom Calif. 95630

RE: Formal Request for Tribal Consultation Pursuant to the California Environmental Quality Act (CEQA), Public Resources Code section 21080.3.1, subds. (b), (d) and (e) for City of Folsom

Dear , Mr. Miller

This letter constitutes a formal request for tribal consultation for the first phase of planning under the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code section 21080.3.1 subdivisions (b), (d) and (e)) for the mitigation of potential project impacts to tribal cultural and environmental resources for the above referenced project. The Ione Band of Miwok Indians requests formal notice and information for all projects within your agency's jurisdiction.

The Ione Band of Miwok Indians requests consultation on the following topics listed below, which shall be included in consultation if requested (Public Resources Code section 21080.3.2, subd. (a)):

- Alternatives to the project
- Recommended mitigation measures
- Significant effects of the project

The Ione Band of Miwok Indians also requests consultation on the following discretionary topics listed below (Public Resources Code section 21080.3.2, subd. (a)):

- Type of environmental review necessary
- Significance of tribal cultural resources, including any regulations, policies or standards used by your agency to determine significance of tribal cultural resources
- **Significance of the project's impacts on tribal cultural resources**
- Project alternatives and/or appropriate measures for preservation or mitigation that we may recommend, including, but not limited to:

(1) Avoidance and preservation of the resources in place, pursuant to Public Resources Code section 21084.3, including, but not limited to, planning and construction, geotechnical tests, utility location, and pedestrian surveys to avoid harming the resources (including water, endangered tribal plant resources, and endangered animal resources), and to protect the cultural and natural context, or planning greenspace, parks or other open space, to incorporate the resources with culturally appropriate protection and management criteria;

(2) Treating the resources with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resources, including but not limited to the following:

- Protecting the cultural character and integrity of the resource
- Protecting the traditional use of the resource
- Protecting the confidentiality of the resource

(3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places

(4) Protecting the resource

Additionally, the Ione Band of Miwok Indians would like to receive any cultural resources assessments or other assessments that have been completed on all or part of the project's potential "area of project effect" (APE), including, but not limited to:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE
   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response
   - Notification of whether the probability is low, moderate, or high that cultural resources are located in the APE
   - Notification if a records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE
   - Notification if a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures
   - All information regarding site locations, Native American human remains, and associated funerary objects; such information should be placed in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through the Native American Heritage Commission. The request form can be found at **http://www.dot.ca.gov/hq/env/cultural/#templates** under Compliance Document Templates. Click on the link *Sacred Lands Inventory Form* to download the pdf. USGS 7.5- minute quadrangle name, township, range, and section are required for the search.
4. Any ethnographic studies conducted for any area including all or part of the potential APE

5. Any geotechnical reports regarding all or part of the potential APE

We would like to remind your agency that CEQA Guidelines section 15126.4, subdivision (b)(3) states that preservation-in-place is the preferred manner of mitigating impacts to archaeological sites. Section 15126.4, subd. (b)(3) of the CEQA Guidelines has been interpreted by the California Court of Appeal to mean that "feasible preservation in place must be adopted to mitigate impacts to historical resources of an archaeological nature unless the lead agency determines that another form of mitigation is available and provides superior mitigation of impacts." *Madera Oversight Coalition v. County of Madera* (2011) 199 Cal.App.4th 48, disapproved on other grounds, *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439.

The Ione Band of Miwok Indians expects to begin consultation within 30 days of your receipt of this letter. Please contact the Cultural Committee of the Ione Band of Miwok Indians.

Thank you.

Sincerely,

Randy Yonemura

Randy Yonemura
Cultural Committee Chair
P.O. Box 699
9252 Bush St., Suite 2
Plymouth, CA 95669
Tel. (209) 245-5800
Email: Randy_yonemura@yahoo.com

IONE BAND OF MIWOK INDIANS INDIGENOUS TERRITORY

CITY OF
FOLSOM
DISTINCTIVE BY NATURE

September 6, 2018

Randy Yonemura, Cultural Committee Chair
Ione Band of Miwok Indians
PO Box 699
Plymouth Street, Suite 2
Plymouth, CA 95669

RE: Notice of Opportunity to Consult for the Canyon Terrace Apartments Project, City of Folsom

Dear Mr. Yonemura:

The City of Folsom is initiating environmental review under the California Environmental Quality Act (CEQA) for the Canyon Terrace Apartments Project. The City is currently considering a request from Canyon Terrace Folsom, LLC (applicant) for a General Plan Amendment, Rezone, and Planned Development Permit for development of 96 new apartment units within eight new apartment buildings within the existing Canyon Terrace Apartment Community at 1600 Canyon Terrace Lane, Folsom, CA. The Canyon Terrace Apartment Community includes 200 existing apartment units spread among 25 two-story apartment buildings. The proposed apartment buildings are three-stories tall and feature garages tucked under the buildings. A small community building, pool area, and tennis courts will be removed as part of the project. Parking areas will be retained except in areas of the new development where displaced parking spaces will be replaced by the proposed infill project. Access to the project area will continue to be provided by two existing driveways located on the western side of American River Drive. A copy of the project map is included for your reference.

In accordance with Assembly Bill 52 (AB 52) and Section 21080.3.1(d) of the California Public Resources Code (PRC), we are responding to your request to be notified of projects in our jurisdiction that will be reviewed under CEQA. Your name was provided to us as the point of contact for your tribe. We are hereby notifying you of an opportunity to consult with us regarding this plan.

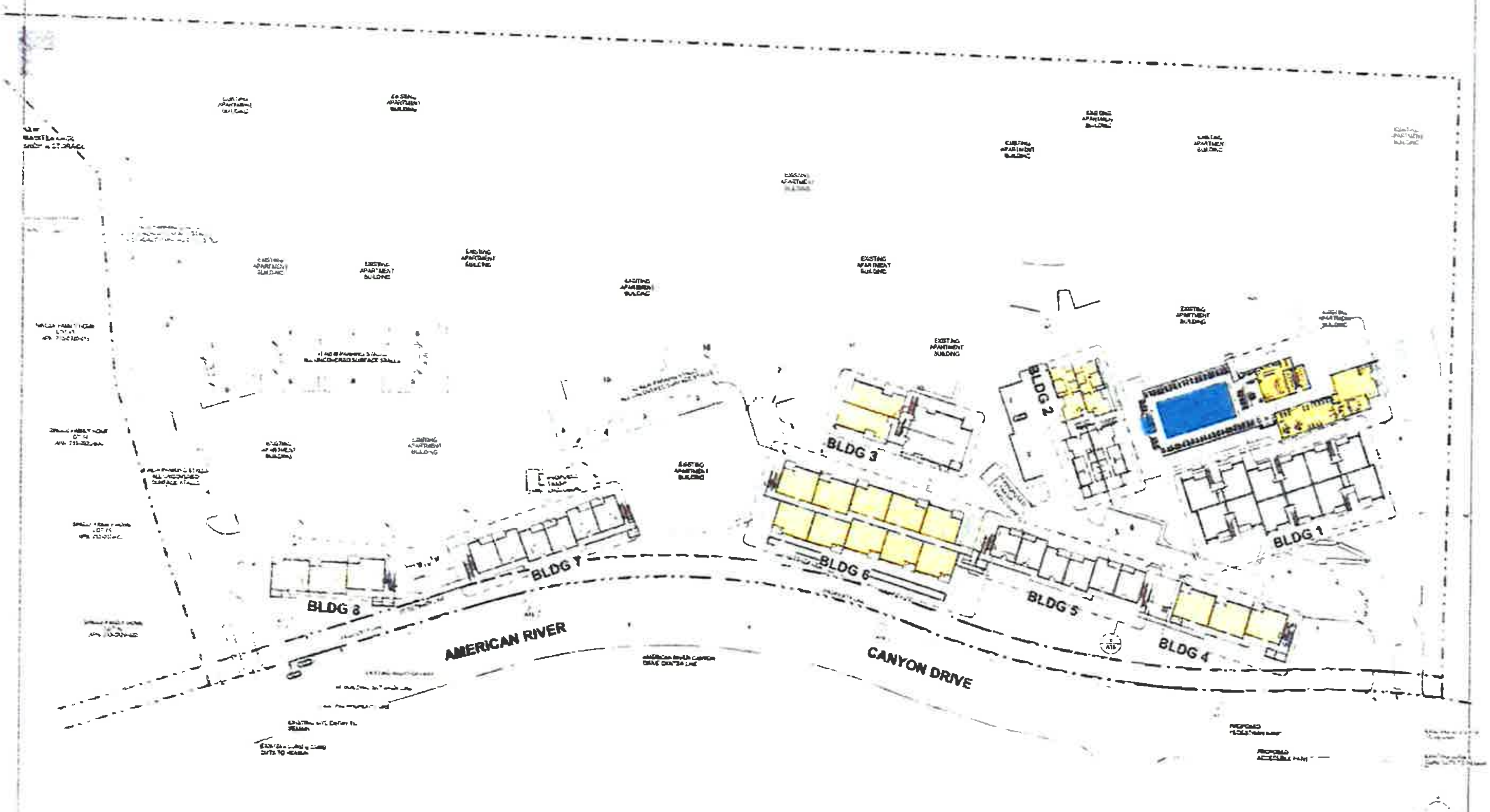
In accordance with Section 21080.3.1(d) of the PRC, you have 30 days from the receipt of this letter to either request or decline consultation in writing for this project. Please send your written response to my attention by mail in care of the City of Folsom, Community Development Department, 50 Natoma Street, Folsom, CA 95630. You may also reach me by phone at (916) 461-6207 or by email at sbanks@folsom.ca.us.

If we do not receive a response within 30 days, we will proceed. Thank you and we look forward to your response.

Respectfully,

Scott Johnson, AICP
Planning Manager, Community Development Department
City of Folsom

cc: Jason Camp; Marcos Guerrero



MVE

Canyon Terrace Apartments

SITE PLAN

A1.1

CITY OF
FOLSOM
DISTINCTIVE BY NATURE

September 6, 2018

Gene Whitehouse, Chairman
United Auburn Indian Community
10720 Indian Hill Road
Auburn, California 95603

RE: Notice of Opportunity to Consult for the Canyon Terrace Apartments Project, City of Folsom

Dear Chairman Whitehouse:

The City of Folsom is initiating environmental review under the California Environmental Quality Act (CEQA) for the Canyon Terrace Apartments Project. The City is currently considering a request from Canyon Terrace Folsom, LLC (applicant) for a General Plan Amendment, Rezone, and Planned Development Permit for development of 96 new apartment units within eight new apartment buildings within the existing Canyon Terrace Apartment Community at 1600 Canyon Terrace Lane, Folsom, CA. The Canyon Terrace Apartment Community includes 200 existing apartment units spread among 25 two-story apartment buildings. The proposed apartment buildings are three-stories tall and feature garages tucked under the buildings. A small community building, pool area, and tennis courts will be removed as part of the project. Parking areas will be retained except in areas of the new development where displaced parking spaces will be replaced by the proposed infill project. Access to the project area will continue to be provided by two existing driveways located on the western side of American River Drive. A copy of the project map is included for your reference.

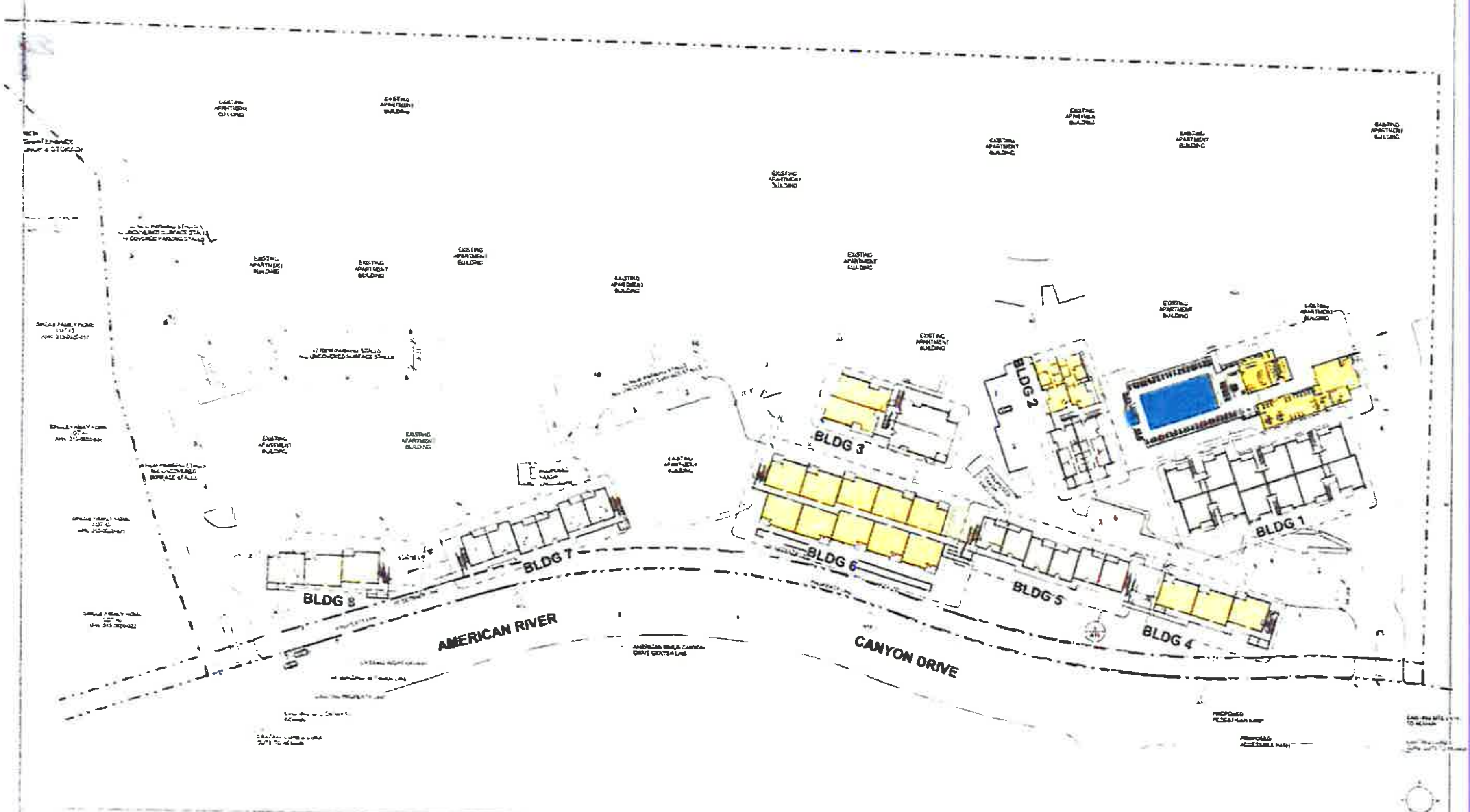
In accordance with Assembly Bill 52 (AB 52) and Section 21080.3.1(d) of the California Public Resources Code (PRC), we are responding to your request to be notified of projects in our jurisdiction that will be reviewed under CEQA. Your name was provided to us as the point of contact for your tribe. We are hereby notifying you of an opportunity to consult with us regarding this plan.

In accordance with Section 21080.3.1(d) of the PRC, you have 30 days from the receipt of this letter to either request or decline consultation in writing for this project. Please send your written response to my attention by mail in care of the City of Folsom, Community Development Department, 50 Natoma Street, Folsom, CA 95630. You may also reach me by phone at (916) 461-6207 or by email at sbanks@folsom.ca.us.

If we do not receive a response within 30 days, we will proceed. Thank you and we look forward to your response.

Respectfully,

Steve Banks
Principal Planner, Community Development Department
City of Folsom



THE EZRALOW COMPANY MVE

Canyon Terrace Apartments

SITE PLAN

A1.1

CITY OF
FOLSOM
DISTINCTIVE BY NATURE

September 6, 2018

Steven Hutchason, Executive Director
Environmental Resources Department
Wilton Rancheria
9728 Kent Street
Elk Grove, California 95624

RE: Notice of Opportunity to Consult for the Canyon Terrace Apartments Project, City of Folsom

Dear Mr. Hutchason:

The City of Folsom is initiating environmental review under the California Environmental Quality Act (CEQA) for the Canyon Terrace Apartments Project. The City is currently considering a request from Canyon Terrace Folsom, LLC (applicant) for a General Plan Amendment, Rezone, and Planned Development Permit for development of 96 new apartment units within eight new apartment buildings within the existing Canyon Terrace Apartment Community at 1600 Canyon Terrace Lane, Folsom, CA. The Canyon Terrace Apartment Community includes 200 existing apartment units spread among 25 two-story apartment buildings. The proposed apartment buildings are three-stories tall and feature garages tucked under the buildings. A small community building, pool area, and tennis courts will be removed as part of the project. Parking areas will be retained except in areas of the new development where displaced parking spaces will be replaced by the proposed infill project. Access to the project area will continue to be provided by two existing driveways located on the western side of American River Drive. A copy of the project map is included for your reference.

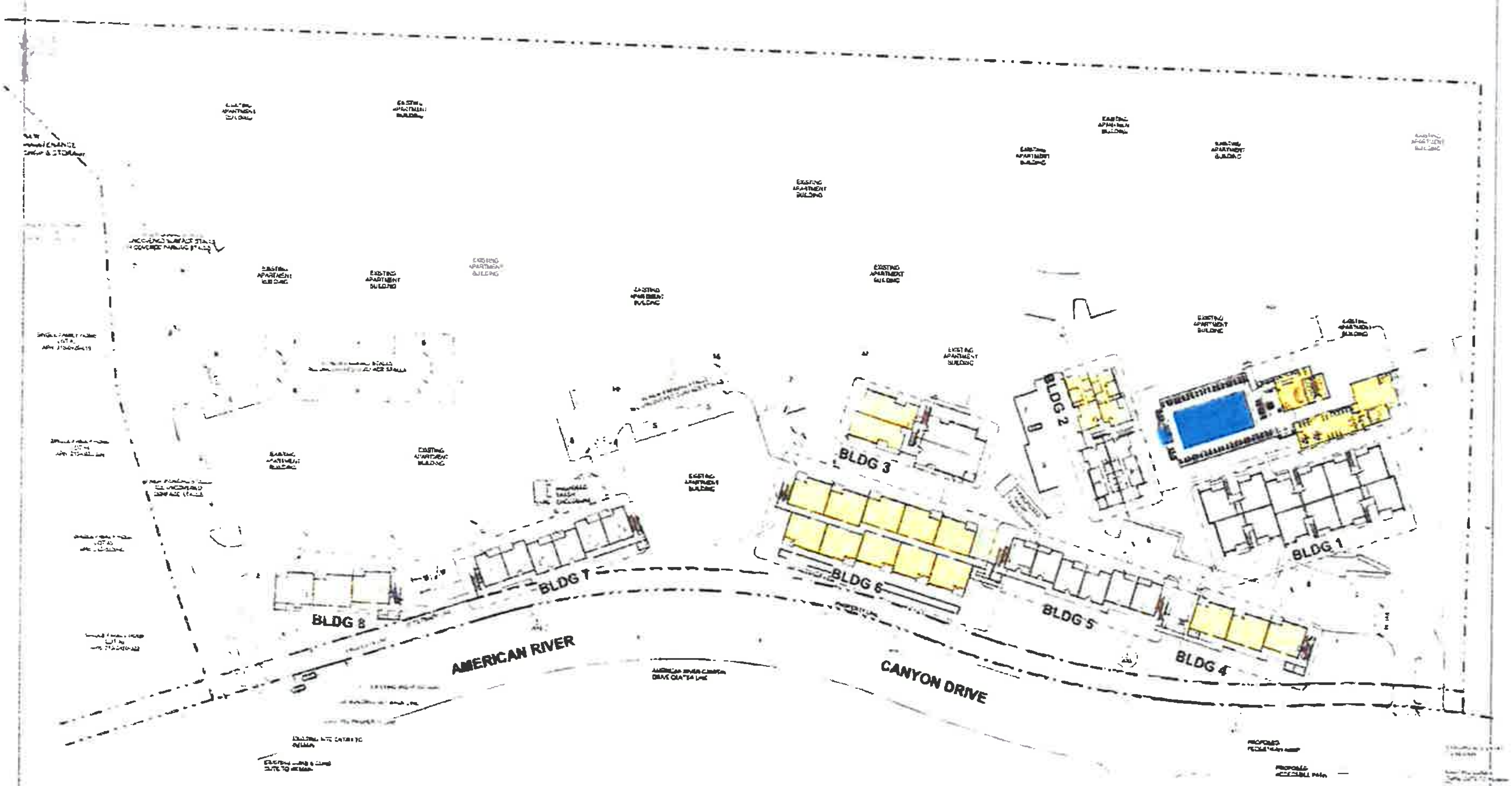
In accordance with Assembly Bill 52 (AB 52) and Section 21080.3.1(d) of the California Public Resources Code (PRC), we are responding to your request to be notified of projects in our jurisdiction that will be reviewed under CEQA. Your name was provided to us as the point of contact for your tribe. We are hereby notifying you of an opportunity to consult with us regarding this plan.

In accordance with Section 21080.3.1(d) of the PRC, you have 30 days from the receipt of this letter to either request or decline consultation in writing for this project. Please send your written response to my attention by mail in care of the City of Folsom, Community Development Department, 50 Natoma Street, Folsom, CA 95630. You may also reach me by phone at (916) 461-6207 or by email at sbanks@folsom.ca.us.

If we do not receive a response within 30 days, we will proceed. Thank you and we look forward to your response.

Respectfully,

Scott Johnson, AICP
Planning Manager, Community Development Department
City of Folsom



MVE

Canyon Terrace Apartments

SITE PLAN

A1.1

MIWOK United Auburn Indian Community
MAIDU of the Auburn Rancheria

Gene Whitehouse Chairman | John L. Williams Vice Chairman | Calvin Moman Secretary | Jason Camp Treasurer | Gabe Cayton Council Member

September 17, 2018

Steve Banks
Planner
City of Folsom
50 Natoma Street
Folsom, CA 95630

RE: AB 52 Consultation Request for the Canyon Terrace Apartments Project, Folsom, CA

Dear Planner Steve Banks,

The United Auburn Indian Community (UAIC) received a letter from the City of Folsom dated 9/10/2018, formally notifying us of a proposed project, the Canyon Terrace Apartments Project in Folsom, and an opportunity to consult under AB 52. This letter is notice that UAIC would like to initiate consultation under AB 52.

This letter is also a formal request to allow UAIC tribal representatives to observe and participate in all cultural resource surveys, including initial pedestrian surveys for the project. Please send us all existing cultural resource assessments, as well as requests for, and the results of, any records searches that may have been conducted prior to our first consultation meeting. If tribal cultural resources are identified within the project area, it is UAIC's policy that tribal monitors must be present for all ground disturbing activities. Finally, please be advised that UAIC's strong preference is to preserve tribal cultural resources in place and avoid them whenever possible. Subsurface testing and data recovery must not occur without first consulting with UAIC and receiving UAIC's written consent.

In the letter, Planner Steve Banks is identified as the lead contact person for consultation on the proposed project. Marcos Guerrero, our Cultural Resources Manager, will be UAIC's point of contact for this consultation. Please contact Mr. Guerrero by phone at (530) 883-2364 or email at mguerrero@auburnrancheria.com to begin the consultation process.

Thank you for involving UAIC in the planning process at an early stage. We ask that you make this letter a part of the project record and we look forward to working with you to ensure that tribal cultural resources are protected.

Sincerely,

Gene Whitehouse
Chairman

CC: Matthew Moore, UAIC Tribal Historic Preservation Officer
Marcos Guerrero, UAIC Cultural Resources Manager

CITY OF
FOLSOM
DISTINCTIVE BY NATURE

September 21, 2018

Marcos Guerrero
Cultural Resources Manager
United Auburn Indian Community
Tribal Historic Preservation Department
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

RE: Initiation of Consultation for the Canyon Terrace Apartments Project (PN 17-270) in Folsom, California

Dear Mr. Guerrero:

On September 6, 2018, the City of Folsom formally notified you of an opportunity to consult under AB 52 for the proposed Canyon Terrace Apartments Project. On September 20, 2018, we received a response from Cherilyn Neider on your behalf, indicating a desire to consult with us regarding potential impacts to Tribal Cultural Resources associated with the proposed project. We look forward to consulting with the United Auburn Indian Community on this project.

In accordance with AB 52 and Section 21080.3.1(e) of the California Public Resources Code, we are hereby initiating consultation with you. We would like to invite you to a project orientation meeting on either October 9, 2018 or October 11, 2018 to discuss the project and determine the best way to continue consultation. Please respond with your availability to attend a meeting on either of those dates at our office, which is located at 50 Natoma Street in Folsom. Additional contact information can be found on our website, https://www.folsom.ca.us/. If you are unable to attend, please contact me to schedule an alternate date.

To facilitate our consultation meeting, I am enclosing, at your request, a copy of the cultural resources study prepared for the project, as well as the GIS shapefiles of the project area.

If you have any questions, you may contact me by mail at the address noted in the letterhead above, or by phone at (916) 461-6207. You may also reach me by email at sbanks@folsom.ca.us. Thank you and we look forward to consulting with you.

Respectfully,

Steven Banks
Principal Planner
City of Folsom

cc: Gene Whitehouse, UAIC

Appendix E

Energy Technical Memorandum

March 19, 2019

Sid Paul
Ezralow Company
23622 Calabasas Road, Suite 200
Calabasas, CA 91302-1549

SUBJECT: **Canyon Terrace Apartments Project – Air Quality and Greenhouse Gas Emissions Reduction Calculation for the Installation of Electric Vehicle Charging Stations within the Project Site**

Dear Mr. Paul,

This memorandum provides a calculation for the estimated reduction in air quality and greenhouse gas (GHG) emissions estimated with the implementation of mitigation that requires the installation of electric vehicle charging stations within the Canyon Terrace Apartments project (proposed project).

INTRODUCTION

The City of Folsom has made a commitment to require new development to include sustainability measures. The proposed project would develop 96 new residential units and 233 new parking spaces, within an existing development in the City of Folsom. In this regard, the developer (The Ezralow Company) is considering the installation of electric vehicle charging stations within the project site. The City of Folsom has requested quantification of the net benefit of this action to air quality and GHG emissions. The following analysis provides quantification for the estimated net benefit of the installation of electric vehicle charging stations within the project site.

METHODOLOGY

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was used to model the reduction emissions that would occur with implementation of the "Implement Neighborhood Electric Vehicle (NEV) Network" mitigation measure. The effect of this mitigation measure is based on the methodology provided by the California Air Pollution Control Officers Association (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures* (August 2010) guidebook. It is recognized that the NEV model was originally developed for use in communities with a network of small vehicles traveling at slower speeds (35mph) for short distances. It has also been found that NEVs do not replace an everyday combustion motor vehicle, rather they are used more locally for short trips lengths. Since the NEV model was originally developed in the earlier part of the 2000s, the passenger electric vehicle has become more commonplace within the regional transportation network. This type of vehicle can travel at speeds comparable to the conventional combustion motor vehicles, and for trip lengths that make it an everyday vehicle. The use of an electric vehicle, which is a consumer choice, provides air quality benefits related to mobile source emission reductions that are beyond that of the NEV model. As such, the use of the NEV mitigation in CalEEMod is a conservative estimate, and likely underestimates the total emissions reductions.

ASSUMPTIONS

The following assumptions were made as part of this calculation:

- The provision of electric vehicle charging stations on-site occurs as part of a broader effort to create a local network of charging stations within the local area (e.g. the City of Folsom);
- The "Implement NEV Network" mitigation measure within CalEEMod assumes the low end of the CAPCOA recommendations (i.e. 0.04 NEVs per household) (note: based on 96 units within the project site, this assumes that approximately 4 electric vehicles would regularly use the on-site electric vehicle charging);
- Project demand is fully met by 3 electric vehicle charging stations (consistent with the California Green Buildings Standard Code's provisions for electric vehicle charging infrastructure: new multi-family buildings with 17 or more units should allocate 3 percent or more of the total number of parking spaces for future installation of electric vehicle supply equipment).

RESULTS

It is estimated that installation of electric vehicle charging stations on-site (sufficient to meet project demand) would reduce project-wide transportation GHG emissions by approximately 0.06% for ROG, 0.27% for NOx, 0.48% for SO_2, 0.49% for PM_{10}, 0.46% for $PM_{2.5}$, 0.47% for CO_2, and 0.36% for CO_2e. Table 1 provides project operational emissions without installation of on-site electric vehicle charging stations. Table 2 provides total project operational emissions with installation of on-site electric vehicle charging stations (sufficient to meet project demand). Full modeling results are providing in Appendix A.

TABLE 1: PROJECT OPERATIONAL EMISSIONS (TONS/YEAR) - UNMITIGATED

Emissions Category	ROG	NOx	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CO_2e
Area	0.4651	0.0115	0.00005	0.00547	0.00547	1.6564	1.6564
Energy	0.00626	0.0535	0.00034	0.00433	0.00433	187.4937	188.3539
Mobile	0.2225	0.9592	0.008	0.6826	0.1878	735.1188	736.0211
Waste	0	0	0	0	0	8.9641	22.2081
Water	0	0	0	0	0	15.2942	16.9700
Total	**0.6938**	**1.0242**	**0.00839**	**0.6924**	**0.1976**	**948.4880**	**965.2095**

Source: CalEEMod (v.2016.3.2)

TABLE 2: PROJECT OPERATIONAL EMISSIONS (TONS/YEAR) – WITH ON-SITE VEHICLE CHARGING

Emissions Category	ROG	NOx	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CO_2e
Area	0.4651	0.0115	0.00005	0.00547	0.00547	1.6172	1.6564
Energy	0.00626	0.0535	0.00034	0.00433	0.00433	187.4937	188.3539
Mobile	0.2221	0.9565	0.00796	0.6792	0.1869	731.6596	732.5583
Waste	0	0	0	0	0	8.9641	22.2081
Water	0	0	0	0	0	15.2942	16.9700
Total	**0.6934**	**1.0214**	**0.00835**	**0.6890**	**0.1967**	**945.0287**	**961.7466**

Source: CalEEMod (v.2016.3.2)

CONCLUSION

If the proposed project were to include installation of electric vehicle charging stations that fully meet on-site demand, the proposed project emissions would be reduced as follows: 0.06% for ROG, 0.27% for NOx, 0.48% for SO_2, 0.49% for PM_{10}, 0.46% for $PM_{2.5}$, 0.47% for CO_2, and 0.36% for CO_2e. This assumes an utilization rate of 0.04 per household.

Sincerely,

Steve McMurtry
Principal
DE NOVO PLANNING GROUP

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DE NOVO PLANNING GROUP
1020 Suncast Lane, Suite 106 | El Dorado Hills, CA 95762
smcmurtry@denovoplanning.com | TEL 916 580 9818

ANNUAL EMISSIONS

Canyon Terrace Apartments (City of Folsom)
Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	96.00	Dwelling Unit	6.00	96,000.00	256

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on project size. Demolition split into two phases - one for the building, the other for the pool, courts, and parking lot.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition -

Vehicle Trips - 7.35 trip rate/unit, as provided by the GHD Traffic Report

Land Use Change - Assumed that approximately two thirds (4 acres) of existing site is 'Grassland' vegetation type, and one third 'Forest Land - Trees' (2 acres). Project would remove up to one acre of 'Forest Land - Trees' and three acres of 'Grassland'.

Sequestration -

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	64.00
tblConstructionPhase	NumDays	20.00	28.00
tblLandUseChange	CO2peracre	111.00	4.31
tblTripsAndVMT	HaulingTripNumber	5.00	0.00
tblTripsAndVMT	HaulingTripNumber	138.00	0.00
tblVehicleTrips	ST_TR	7.16	7.35
tblVehicleTrips	SU_TR	6.07	7.35
tblVehicleTrips	WD_TR	6.59	7.35

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1428	1.4198	0.8981	1.6000e-003	0.1808	0.0729	0.2538	0.0881	0.0677	0.1558	0.0000	142.5499	142.5499	0.0383	0.0000	143.5082
2020	0.4772	2.3968	2.2653	4.0300e-003	0.0628	0.1317	0.1945	0.0169	0.1237	0.1405	0.0000	352.7268	352.7268	0.0724	0.0000	354.5359
2021	0.4093	0.0335	0.0467	8.0000e-005	2.2100e-003	2.0400e-003	4.2500e-003	5.9000e-004	2.0400e-003	2.6300e-003	0.0000	7.3815	7.3815	4.3000e-004	0.0000	7.3922
Maximum	**0.4772**	**2.3968**	**2.2653**	**4.0300e-003**	**0.1808**	**0.1317**	**0.2538**	**0.0881**	**0.1237**	**0.1558**	**0.0000**	**352.7268**	**352.7268**	**0.0724**	**0.0000**	**354.5359**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1428	1.4198	0.8981	1.6000e-003	0.1808	0.0729	0.2538	0.0881	0.0677	0.1558	0.0000	142.5498	142.5498	0.0383	0.0000	143.5080
2020	0.4772	2.3968	2.2653	4.0300e-003	0.0628	0.1317	0.1945	0.0169	0.1237	0.1405	0.0000	352.7265	352.7265	0.0724	0.0000	354.5356
2021	0.4093	0.0335	0.0467	8.0000e-005	2.2100e-003	2.0400e-003	4.2500e-003	5.9000e-004	2.0400e-003	2.6300e-003	0.0000	7.3815	7.3815	4.3000e-004	0.0000	7.3922
Maximum	**0.4772**	**2.3968**	**2.2653**	**4.0300e-003**	**0.1808**	**0.1317**	**0.2538**	**0.0881**	**0.1237**	**0.1558**	**0.0000**	**352.7265**	**352.7265**	**0.0724**	**0.0000**	**354.5356**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2019	11-30-2019	1.2682	1.2682
2	12-1-2019	2-29-2020	0.7833	0.7833
3	3-1-2020	5-31-2020	0.7528	0.7528
4	6-1-2020	8-31-2020	0.7523	0.7523
5	9-1-2020	11-30-2020	0.6444	0.6444
6	12-1-2020	2-28-2021	0.6606	0.6606
7	3-1-2021	5-31-2021	0.0147	0.0147
		Highest	1.2682	1.2682

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4651	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564
Energy	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	187.4937	187.4937	6.8600e-003	2.3100e-003	188.3539
Mobile	0.2225	0.9592	2.6368	8.0000e-003	0.6754	7.1900e-003	0.6826	0.1811	6.7400e-003	0.1878	0.0000	735.1188	735.1188	0.0361	0.0000	736.0211
Waste						0.0000	0.0000		0.0000	0.0000	8.9641	0.0000	8.9641	0.5298	0.0000	22.2081
Water						0.0000	0.0000		0.0000	0.0000	2.2130	13.0813	15.2942	8.2100e-003	4.9300e-003	16.9700
Total	**0.6938**	**1.0242**	**3.6517**	**8.3900e-003**	**0.6754**	**0.0170**	**0.6924**	**0.1811**	**0.0165**	**0.1976**	**11.1770**	**937.3110**	**948.4880**	**0.5825**	**7.2400e-003**	**965.2095**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4651	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564
Energy	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	187.4937	187.4937	6.8600e-003	2.3100e-003	188.3539
Mobile	0.2221	0.9565	2.6268	7.9600e-003	0.6720	7.1600e-003	0.6792	0.1802	6.7100e-003	0.1869	0.0000	731.6596	731.6596	0.0360	0.0000	732.5583
Waste						0.0000	0.0000		0.0000	0.0000	8.9641	0.0000	8.9641	0.5298	0.0000	22.2081
Water						0.0000	0.0000		0.0000	0.0000	2.2130	13.0813	15.2942	8.2100e-003	4.9300e-003	16.9700
Total	**0.6934**	**1.0214**	**3.6417**	**8.3500e-003**	**0.6720**	**0.0170**	**0.6890**	**0.1802**	**0.0165**	**0.1967**	**11.1770**	**933.8517**	**945.0287**	**0.5824**	**7.2400e-003**	**961.7466**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.06	0.27	0.27	0.48	0.50	0.18	0.49	0.50	0.18	0.48	0.00	0.37	0.36	0.02	0.00	0.36

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	0.0000
Vegetation Land Change	-17.2400
Total	-17.2400

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition (Building)	Demolition	9/1/2019	9/27/2019	5	20	
2	Demolition (Pool, Courts, Parking)	Demolition	9/28/2019	10/25/2019	5	20	
3	Site Preparation	Site Preparation	10/26/2019	11/8/2019	5	10	
4	Grading	Grading	11/9/2019	12/6/2019	5	20	
5	Building Construction	Building Construction	12/7/2019	10/23/2020	5	230	
6	Paving	Paving	10/24/2020	12/2/2020	5	28	
7	Architectural Coating	Architectural Coating	12/3/2020	3/2/2021	5	64	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 194,400; Residential Outdoor: 64,800; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition (Building)	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition (Building)	Excavators	3	8.00	158	0.38
Demolition (Building)	Rubber Tired Dozers	2	8.00	247	0.40
Demolition (Pool, Courts, Parking)	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition (Pool, Courts, Parking)	Excavators	3	8.00	158	0.38
Demolition (Pool, Courts, Parking)	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition (Building)	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Demolition (Pool, Courts, Parking)	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	69.00	10.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition (Building) - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8672
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**6.2000e-004**	**0.0180**	**0.0186**	**9.0000e-005**	**0.0167**	**0.0168**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8672**

3.2 Demolition (Building) - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8671
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**6.2000e-004**	**0.0180**	**0.0186**	**9.0000e-005**	**0.0167**	**0.0168**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8671**

3.2 Demolition (Building) - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

3.3 Demolition (Pool, Courts, Parking) - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0156	0.0000	0.0156	2.3600e-003	0.0000	2.3600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8672
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**0.0156**	**0.0180**	**0.0335**	**2.3600e-003**	**0.0167**	**0.0191**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8672**

3.3 Demolition (Pool, Courts, Parking) - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0156	0.0000	0.0156	2.3600e-003	0.0000	2.3600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8671
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**0.0156**	**0.0180**	**0.0335**	**2.3600e-003**	**0.0167**	**0.0191**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8671**

3.3 Demolition (Pool, Courts, Parking) - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

3.4 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

3.4 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.6000e-004	2.7600e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.6042	0.6042	2.0000e-005	0.0000	0.6047
Total	**3.6000e-004**	**2.6000e-004**	**2.7600e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.6042**	**0.6042**	**2.0000e-005**	**0.0000**	**0.6047**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

3.4 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.6000e-004	2.7600e-003	1.0000e-005	6.6000e-004	0.0000	6.7000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.6042	0.6042	2.0000e-005	0.0000	0.6047
Total	**3.6000e-004**	**2.6000e-004**	**2.7600e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.6042**	**0.6042**	**2.0000e-005**	**0.0000**	**0.6047**

3.5 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0258	0.2835	0.1629	3.0000e-004		0.0140	0.0140		0.0129	0.0129	0.0000	26.6423	26.6423	8.4300e-003	0.0000	26.8530
Total	**0.0258**	**0.2835**	**0.1629**	**3.0000e-004**	**0.0655**	**0.0140**	**0.0795**	**0.0337**	**0.0129**	**0.0465**	**0.0000**	**26.6423**	**26.6423**	**8.4300e-003**	**0.0000**	**26.8530**

3.5 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0258	0.2835	0.1629	3.0000e-004		0.0140	0.0140		0.0129	0.0129	0.0000	26.6422	26.6422	8.4300e-003	0.0000	26.8530
Total	**0.0258**	**0.2835**	**0.1629**	**3.0000e-004**	**0.0655**	**0.0140**	**0.0795**	**0.0337**	**0.0129**	**0.0465**	**0.0000**	**26.6422**	**26.6422**	**8.4300e-003**	**0.0000**	**26.8530**

3.5 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.3000e-004	4.6000e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0071	1.0071	3.0000e-005	0.0000	1.0078
Total	**6.1000e-004**	**4.3000e-004**	**4.6000e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0071**	**1.0071**	**3.0000e-005**	**0.0000**	**1.0078**

3.6 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0201	0.1792	0.1459	2.3000e-004		0.0110	0.0110		0.0103	0.0103	0.0000	19.9839	19.9839	4.8700e-003	0.0000	20.1056
Total	**0.0201**	**0.1792**	**0.1459**	**2.3000e-004**		**0.0110**	**0.0110**		**0.0103**	**0.0103**	**0.0000**	**19.9839**	**19.9839**	**4.8700e-003**	**0.0000**	**20.1056**

3.6 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0104	3.1900e-003	2.0000e-005	5.0000e-004	7.0000e-005	5.7000e-004	1.4000e-004	7.0000e-005	2.1000e-004	0.0000	2.0238	2.0238	1.3000e-004	0.0000	2.0269
Worker	2.3700e-003	1.6700e-003	0.0180	4.0000e-005	4.3100e-003	3.0000e-005	4.3400e-003	1.1500e-003	3.0000e-005	1.1700e-003	0.0000	3.9376	3.9376	1.2000e-004	0.0000	3.9407
Total	**2.7800e-003**	**0.0121**	**0.0212**	**6.0000e-005**	**4.8100e-003**	**1.0000e-004**	**4.9100e-003**	**1.2900e-003**	**1.0000e-004**	**1.3800e-003**	**0.0000**	**5.9614**	**5.9614**	**2.5000e-004**	**0.0000**	**5.9676**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0201	0.1792	0.1459	2.3000e-004		0.0110	0.0110		0.0103	0.0103	0.0000	19.9838	19.9838	4.8700e-003	0.0000	20.1055
Total	**0.0201**	**0.1792**	**0.1459**	**2.3000e-004**		**0.0110**	**0.0110**		**0.0103**	**0.0103**	**0.0000**	**19.9838**	**19.9838**	**4.8700e-003**	**0.0000**	**20.1055**

3.6 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1000e-004	0.0104	3.1900e-003	2.0000e-005	5.0000e-004	7.0000e-005	5.7000e-004	1.4000e-004	7.0000e-005	2.1000e-004	0.0000	2.0238	2.0238	1.3000e-004	0.0000	2.0269
Worker	2.3700e-003	1.6700e-003	0.0180	4.0000e-005	4.3100e-003	3.0000e-005	4.3400e-003	1.1500e-003	3.0000e-005	1.1700e-003	0.0000	3.9376	3.9376	1.2000e-004	0.0000	3.9407
Total	**2.7800e-003**	**0.0121**	**0.0212**	**6.0000e-005**	**4.8100e-003**	**1.0000e-004**	**4.9100e-003**	**1.2900e-003**	**1.0000e-004**	**1.3800e-003**	**0.0000**	**5.9614**	**5.9614**	**2.5000e-004**	**0.0000**	**5.9676**

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2258	2.0433	1.7944	2.8700e-003		0.1190	0.1190		0.1119	0.1119	0.0000	246.6646	246.6646	0.0602	0.0000	248.1691
Total	**0.2258**	**2.0433**	**1.7944**	**2.8700e-003**		**0.1190**	**0.1190**		**0.1119**	**0.1119**	**0.0000**	**246.6646**	**246.6646**	**0.0602**	**0.0000**	**248.1691**

3.6 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0800e-003	0.1194	0.0333	2.6000e-004	6.2300e-003	6.2000e-004	6.8500e-003	1.8000e-003	5.9000e-004	2.3900e-003	0.0000	25.1993	25.1993	1.4900e-003	0.0000	25.2366
Worker	0.0274	0.0186	0.2034	5.3000e-004	0.0540	3.9000e-004	0.0544	0.0144	3.6000e-004	0.0147	0.0000	47.8193	47.8193	1.3500e-003	0.0000	47.8531
Total	**0.0314**	**0.1380**	**0.2367**	**7.9000e-004**	**0.0602**	**1.0100e-003**	**0.0612**	**0.0162**	**9.5000e-004**	**0.0171**	**0.0000**	**73.0187**	**73.0187**	**2.8400e-003**	**0.0000**	**73.0896**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2258	2.0433	1.7944	2.8700e-003		0.1190	0.1190		0.1119	0.1119	0.0000	246.6643	246.6643	0.0602	0.0000	248.1688
Total	**0.2258**	**2.0433**	**1.7944**	**2.8700e-003**		**0.1190**	**0.1190**		**0.1119**	**0.1119**	**0.0000**	**246.6643**	**246.6643**	**0.0602**	**0.0000**	**248.1688**

3.6 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0800e-003	0.1194	0.0333	2.6000e-004	6.2300e-003	6.2000e-004	6.8500e-003	1.8000e-003	5.9000e-004	2.3900e-003	0.0000	25.1993	25.1993	1.4900e-003	0.0000	25.2366
Worker	0.0274	0.0186	0.2034	5.3000e-004	0.0540	3.9000e-004	0.0544	0.0144	3.6000e-004	0.0147	0.0000	47.8193	47.8193	1.3500e-003	0.0000	47.8531
Total	**0.0314**	**0.1380**	**0.2367**	**7.9000e-004**	**0.0602**	**1.0100e-003**	**0.0612**	**0.0162**	**9.5000e-004**	**0.0171**	**0.0000**	**73.0187**	**73.0187**	**2.8400e-003**	**0.0000**	**73.0898**

3.7 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0190	0.1969	0.2051	3.2000e-004		0.0105	0.0105		9.7000e-003	9.7000e-003	0.0000	28.0395	28.0395	9.0700e-003	0.0000	28.2662
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0190**	**0.1969**	**0.2051**	**3.2000e-004**		**0.0105**	**0.0105**		**9.7000e-003**	**9.7000e-003**	**0.0000**	**28.0395**	**28.0395**	**9.0700e-003**	**0.0000**	**28.2662**

3.7 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	5.3000e-004	5.8100e-003	2.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.3666	1.3666	4.0000e-005	0.0000	1.3675
Total	**7.8000e-004**	**5.3000e-004**	**5.8100e-003**	**2.0000e-005**	**1.5400e-003**	**1.0000e-005**	**1.5500e-003**	**4.1000e-004**	**1.0000e-005**	**4.2000e-004**	**0.0000**	**1.3666**	**1.3666**	**4.0000e-005**	**0.0000**	**1.3675**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0190	0.1969	0.2051	3.2000e-004		0.0105	0.0105		9.7000e-003	9.7000e-003	0.0000	28.0395	28.0395	9.0700e-003	0.0000	28.2662
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0190**	**0.1969**	**0.2051**	**3.2000e-004**		**0.0105**	**0.0105**		**9.7000e-003**	**9.7000e-003**	**0.0000**	**28.0395**	**28.0395**	**9.0700e-003**	**0.0000**	**28.2662**

3.7 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	5.3000e-004	5.8100e-003	2.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.3666	1.3666	4.0000e-005	0.0000	1.3675
Total	**7.8000e-004**	**5.3000e-004**	**5.8100e-003**	**2.0000e-005**	**1.5400e-003**	**1.0000e-005**	**1.5500e-003**	**4.1000e-004**	**1.0000e-005**	**4.2000e-004**	**0.0000**	**1.3666**	**1.3666**	**4.0000e-005**	**0.0000**	**1.3675**

3.8 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5400e-003	0.0177	0.0192	3.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	2.6809	2.6809	2.1000e-004	0.0000	2.6861
Total	**0.1996**	**0.0177**	**0.0192**	**3.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**2.6809**	**2.6809**	**2.1000e-004**	**0.0000**	**2.6861**

3.8 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.7000e-004	4.0700e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9566	0.9566	3.0000e-005	0.0000	0.9573
Total	**5.5000e-004**	**3.7000e-004**	**4.0700e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9566**	**0.9566**	**3.0000e-005**	**0.0000**	**0.9573**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1971					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5400e-003	0.0177	0.0192	3.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	2.6809	2.6809	2.1000e-004	0.0000	2.6861
Total	**0.1996**	**0.0177**	**0.0192**	**3.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**2.6809**	**2.6809**	**2.1000e-004**	**0.0000**	**2.6861**

3.8 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.7000e-004	4.0700e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9566	0.9566	3.0000e-005	0.0000	0.9573
Total	**5.5000e-004**	**3.7000e-004**	**4.0700e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9566**	**0.9566**	**3.0000e-005**	**0.0000**	**0.9573**

3.8 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4036					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7100e-003	0.0328	0.0391	6.0000e-005		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003	0.0000	5.4895	5.4895	3.8000e-004	0.0000	5.4989
Total	**0.4083**	**0.0328**	**0.0391**	**6.0000e-005**		**2.0200e-003**	**2.0200e-003**		**2.0200e-003**	**2.0200e-003**	**0.0000**	**5.4895**	**5.4895**	**3.8000e-004**	**0.0000**	**5.4989**

3.8 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	6.8000e-004	7.6200e-003	2.0000e-005	2.2100e-003	2.0000e-005	2.2300e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8920	1.8920	5.0000e-005	0.0000	1.8933
Total	**1.0400e-003**	**6.8000e-004**	**7.6200e-003**	**2.0000e-005**	**2.2100e-003**	**2.0000e-005**	**2.2300e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.8920**	**1.8920**	**5.0000e-005**	**0.0000**	**1.8933**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4036					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7100e-003	0.0328	0.0391	6.0000e-005		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003	0.0000	5.4895	5.4895	3.8000e-004	0.0000	5.4989
Total	**0.4083**	**0.0328**	**0.0391**	**6.0000e-005**		**2.0200e-003**	**2.0200e-003**		**2.0200e-003**	**2.0200e-003**	**0.0000**	**5.4895**	**5.4895**	**3.8000e-004**	**0.0000**	**5.4989**

3.8 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	6.8000e-004	7.6200e-003	2.0000e-005	2.2100e-003	2.0000e-005	2.2300e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.8920	1.8920	5.0000e-005	0.0000	1.8933
Total	**1.0400e-003**	**6.8000e-004**	**7.6200e-003**	**2.0000e-005**	**2.2100e-003**	**2.0000e-005**	**2.2300e-003**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.8920**	**1.8920**	**5.0000e-005**	**0.0000**	**1.8933**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Implement NEV Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2221	0.9565	2.6268	7.9600e-003	0.6720	7.1600e-003	0.6792	0.1802	6.7100e-003	0.1869	0.0000	731.6596	731.6596	0.0360	0.0000	732.5583
Unmitigated	0.2225	0.9592	2.6368	8.0000e-003	0.6754	7.1900e-003	0.6826	0.1811	6.7400e-003	0.1878	0.0000	735.1188	735.1188	0.0361	0.0000	736.0211

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	705.60	705.60	705.60	1,810,647	1,801,593
Total	705.60	705.60	705.60	1,810,647	1,801,593

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.555851	0.039752	0.205040	0.120748	0.020349	0.005402	0.018507	0.022668	0.002052	0.002157	0.005939	0.000618	0.000915

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	125.5129	125.5129	5.6800e-003	1.1700e-003	126.0047
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	125.5129	125.5129	5.6800e-003	1.1700e-003	126.0047
NaturalGas Mitigated	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	61.9808	61.9808	1.1900e-003	1.1400e-003	62.3492
NaturalGas Unmitigated	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	61.9808	61.9808	1.1900e-003	1.1400e-003	62.3492

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	1.16148e+006	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	61.9808	61.9808	1.1900e-003	1.1400e-003	62.3492
Total		**6.2600e-003**	**0.0535**	**0.0228**	**3.4000e-004**		**4.3300e-003**	**4.3300e-003**		**4.3300e-003**	**4.3300e-003**	**0.0000**	**61.9808**	**61.9808**	**1.1900e-003**	**1.1400e-003**	**62.3492**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	1.16148e+006	6.2600e-003	0.0535	0.0228	3.4000e-004		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	61.9808	61.9808	1.1900e-003	1.1400e-003	62.3492
Total		**6.2600e-003**	**0.0535**	**0.0228**	**3.4000e-004**		**4.3300e-003**	**4.3300e-003**		**4.3300e-003**	**4.3300e-003**	**0.0000**	**61.9808**	**61.9808**	**1.1900e-003**	**1.1400e-003**	**62.3492**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	431447	125.5129	5.6800e-003	1.1700e-003	126.0047
Total		**125.5129**	**5.6800e-003**	**1.1700e-003**	**126.0047**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	431447	125.5129	5.6800e-003	1.1700e-003	126.0047
Total		**125.5129**	**5.6800e-003**	**1.1700e-003**	**126.0047**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4651	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564
Unmitigated	0.4651	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0601					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3749					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0301	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564
Total	**0.4651**	**0.0115**	**0.9922**	**5.0000e-005**		**5.4700e-003**	**5.4700e-003**		**5.4700e-003**	**5.4700e-003**	**0.0000**	**1.6172**	**1.6172**	**1.5700e-003**	**0.0000**	**1.6564**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0601					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3749					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0301	0.0115	0.9922	5.0000e-005		5.4700e-003	5.4700e-003		5.4700e-003	5.4700e-003	0.0000	1.6172	1.6172	1.5700e-003	0.0000	1.6564
Total	**0.4651**	**0.0115**	**0.9922**	**5.0000e-005**		**5.4700e-003**	**5.4700e-003**		**5.4700e-003**	**5.4700e-003**	**0.0000**	**1.6172**	**1.6172**	**1.5700e-003**	**0.0000**	**1.6564**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.2942	8.2100e-003	4.9300e-003	16.9700
Unmitigated	15.2942	8.2100e-003	4.9300e-003	16.9700

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	6.25479 / 3.94323	15.2942	8.2100e-003	4.9300e-003	16.9700
Total		**15.2942**	**8.2100e-003**	**4.9300e-003**	**16.9700**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	6.25479 / 3.94323	15.2942	8.2100e-003	4.9300e-003	16.9700
Total		**15.2942**	**8.2100e-003**	**4.9300e-003**	**16.9700**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.9641	0.5298	0.0000	22.2081
Unmitigated	8.9641	0.5298	0.0000	22.2081

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	44.16	8.9641	0.5298	0.0000	22.2081
Total		**8.9641**	**0.5298**	**0.0000**	**22.2081**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	44.16	8.9641	0.5298	0.0000	22.2081
Total		**8.9641**	**0.5298**	**0.0000**	**22.2081**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-17.2400	0.0000	0.0000	-17.2400

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	4 / 1	-12.9300	0.0000	0.0000	-12.9300
Trees	2 / 1	-4.3100	0.0000	0.0000	-4.3100
Total		**-17.2400**	**0.0000**	**0.0000**	**-17.2400**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Aspen	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Canyon Terrace Apartments – Energy Efficiency/Sustainability

Solar:

Applicant proposes to install a solar photovoltaic system on the rooftops of the new Clubhouse/Leasing Office/Fitness Center Building and Building No. 1. The Solar Energy System will be approximately 70,000 KWDC and will generate 100,000 kWh annually. The proposed system is expected to generate sufficient energy to offset 100% the energy requirements for the common area amenities, including the clubhouse, the pool and all common area lighting needs on the property. To the extent feasible, Applicant proposes to engage installers and manufacturers located in the Greater Sacramento region for the solar system.

Electric Vehicle Charging:

Applicant proposes to install a minimum of three (3) electric vehicle charging stations at the Project. Per attached memorandum from DeNovo Planning Group, the Project's Air Quality and Greenhouse Gas Consultant, *"Project demand is fully met by 3 electric vehicle charging stations (consistent with the California Green Buildings Standard Code's provisions for electric vehicle charging infrastructure: new multi-family buildings with 17 or more units should allocate 3 percent or more of the total number of parking spaces for future installation of electric vehicle supply equipment)."* The charging stations will be located in surface parking spaces close to the new leasing office so property management can ensure that the parking spaces and charging stations are utilized for their intended use.

Electric Vehicle Car Sharing:

Applicant proposes to implement electric vehicle car sharing at the Project, through a company that Applicant is already working with in the region, called Envoy. Envoy shared cars have been shown to reduce vehicle miles traveled (VMT), car ownership (parking spaces) and GHG Emissions. Additional literature from Envoy is attached.

Attachments:

- Rendering showing potential solar panel locations.
- Electric Vehicle Car Sharing and the Environment
- E-Mobility: Research
- Memorandum "Canyon Terrace Apartments Project – Air Quality and Greenhouse Gas Emissions Reduction Calculation for the Installation of Electric Vehicle Charging Stations within the Project Site"

Electric Vehicle (EV) Car Sharing and the Environment

EV car sharing presents a double-win scenario. It increases per passenger use of a single vehicle, which contributes to vehicle miles traveled (VMT) reductions. Further, by being all electric, EVs contribute directly to gasoline displacement.

Both of these trends are discussed:

- **Greenhouse gas (GHG) and pollution emissions reduction.** We provide the following illustrative example of GHG and pollution reduction, from data provided by Envoy Technologies Inc. ("Envoy"). Envoy's all-electric fleet (1 vehicle, per month) is shared across approximately 50 members, which generally creates over 30 individual rides, and creates approximately 300 to 500 e-miles. This equates to an electricity demand of ***95 to 160 kWhs per month,*** in lieu of gasoline demand.

  In petroleum reduction, these Envoy displaces at minimum 12 gallons of gasoline (240 pounds of CO2),[1] when comparing to average vehicle fuel economy of 24.7 miles per gallon for new vehicles (link). There are also additional pollution reduction gains which can be attributed to the use of electricity from a low carbon intensity grid, which can be measured.

- **VMT Reductions.** There are strong research trends which connect car sharing to VMT and car ownership reduction. These research trends suggest that adding a vehicle to car sharing fleets replaces 9 to 13 privately-owned vehicles among members of carsharing services, and contributes to a 27-43 percent reduction in VMT, and 34-41 percent reduction in GHG.[2] Moreover, round-trip carsharing has been documented as a strategy to reduce car ownership and VMT in urban areas, and is suggested as an efficient tool to achieve VMT reductions and GHG emissions targeted in California State by 2040,[3] which forecasts that a 5% increase in carsharing adoption can reduce statewide VMT by 1.1%.[4]

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[1] *https://www.fueleconomy.gov/feg/contentIncludes/co2_inc.htm*

[2] *Martin and Shaheen (2011) surveyed more than 6,000 members of carsharing programs in the United States and Canada, and arrived at this conclusion; See: The Adoption of Shared Mobility in California and Its Relationship with Other Components of Travel Behavior; A National Center for Sustainable Transportation Research Report; March 2018; Website Access: https://rosap.ntl.bts.gov/view/dot/35032.*

[3] *See: Caltrans California Transportation Plan 2040, 2015.*

[4] *As noted within: The Adoption of Shared Mobility in California and Its Relationship with Other Components of Travel Behavior; A National Center for Sustainable Transportation Research Report; March 2018; Website Access: https://rosap.ntl.bts.gov/view/dot/35032*

E-MOBILITY: Research

Reduction in Car Ownership

There is widespread research that links carsharing to the reduction in both vehicle miles traveled (VMT), car ownership, and GHG Emissions reduction:

- Evidence from this North American carsharing member survey demonstrates that carsharing facilitates a substantial reduction in household vehicle holdings, despite the fact that 60% of all house-holds joining carsharing are carless.[1]
- Round trip carsharing has been documented as a strategy to reduce car ownership and VMT in urban areas, and is suggested as an efficient tool to achieve the reductions in VMT and GHG emissions targeted in California State by 2040,[i] which forecasts that a 5% increase in the adoption of carsharing can reduce statewide VMT by 1.1%.[ii]
- Researchers attest that by reducing the importance of car ownership among users (i.e., those that already own one or more vehicles), carsharing may help to reduce vehicle ownership, allowing, at least, a portion of their users to get rid of one (or all) of their vehicles.[iii]
- Research[iv] found that 30% of the members of carsharing programs were willing to sell one or more of their vehicles, while other members postponed the purchase of an additional vehicle for about two years.[v]
- Research[vi] suggests that car2go has reduced the net number of vehicles on the road in five cities studied within North America. Approximately 2% to 5% of members sold a vehicle due to car2go, with another 7% to 10% suppressed or avoided a vehicle purchase due to car2go.[vii]
- Research also suggests that adding another vehicle to the fleet of shared cars would replace 9 to 13 privately-owned vehicles among members of carsharing services, and would contribute to a 27-43 percent reduction in VMT as well as a 34-41 percent reduction in GHG.[viii]
- Recent research found that users of two popular car sharing platforms reported reduced vehicle ownership after joining carsharing services. Round-trip service users were close to 5 times more likely to shed a car, and mean car ownership dropped from 44% to 22%.[ix]
- ***Regarding market impact,*** as a result of this shift to diverse mobility solutions, it is anticipated that up to one out of ten new cars sold in 2030 may likely be a shared vehicle, which could reduce private-use vehicle sales, an effect partially offset by a faster replacement rate for shared vehicles. This would mean that more than 30 percent of miles driven in new cars sold could be from shared

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[1] http://sfpark.org/wp-content/uploads/carshare/Impact_of_Carsharing_on_Household_Vehicle_Holdings.pdf

mobility. On this trajectory, one out of three new cars sold could potentially be a shared vehicle as soon as 2050.[x]

Reduced Need for Parking Spots

- ***Caltrans*** (California Transportation Plan 2040) notes that shared-use mobility has the capability to improve road capacity and parking.[xi]
- Researchers state that reduced vehicle ownership may create a positive feedback loop in which even larger VMT reductions are achieved if limit requirements for parking space are revised, which may allow construction of denser urban areas.[xii]
- ***Universities*** have been enthusiastic to partner with carsharing services for multiple reasons, including the reduction in on-campus parking demand (Zheng et al., 2009).[xiii]
- Research also suggests that the presence of dedicated carshare vehicles is associated with reduced vehicle ownership and parking demand at the building level.[xiv]
- User surveys suggest traditional and point-to-point carsharing models continue to remove more cars from the road than they add, and recent research has shown vehicle ownership is significantly lower in buildings with both carsharing nearby and unbundled parking.[xv]
- UCB Research found that the availability of car sharing in their campus allowed 30 percent of students who lived on campus to leave their personal cars at home.[2]

Attraction to Leasing at a Building

- The car sharing and mobility-as-a-service market is rapidly growing, which suggests that future leasers will be attracted to mobility options that are provided on site.
- Car-sharing is the most mature of the shared mobility offerings and is most widespread in markets where private vehicle ownership is already widespread.[xvi]
- Responses to McKinsey's 2017 consumer survey showed that the majority of existing carsharing members expect to increase their usage rates in the next two years (Grosse-Ophoff et al. 2017). In this study, 67 percent of respondents

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[2] https://www.universityofcalifornia.edu/news/car-sharing-campuses-improves-quality-life-takes-cars-road; https://www.zipcar.com/press/releases/universitystudy;

predicted that they will increase their use of carsharing memberships over the next two years.[xvii]

- Fujitsu America, Inc. expects that by 2030, a majority of shared cars on the road will have utilization rates above 50 percent—a significant jump from the current utilization rate of five percent.[xviii]
- It should also be noted that investments in e-mobility are ideal to prepare for future clientele needs. EV adopters tend to be wealthier and highly-educated; 47% of PEV driver's households make more than $150,000 per year, and many hold advanced degrees[xix] which suggests major opportunity for property owners to attract such clientele. Moreover, EV adopters also express concern with the current charging infrastructure availability, which can be addressed with deployment in various settings.

Value Add to Site Host

- ***Carsharing creates additional value for parking spots.***
- A recent host focus group[xx] noted that all participants in a carshare host focus group agreed that one of the biggest advantages of sharing their vehicles was the income derived from doing so.[xxi]
- Shaheen notes the opportunity to earn revenue on existing, often little-used assets[xxii]
- Regarding electricity costs, site hosts can expect customers to pay a premium to charge vehicles, according to the Center for Sustainable Energy, Two-thirds of respondents reported a willingness to pay up to $1.00 per hour for occasional public charging, but less than one-third were willing to pay $1.50 per hour.[xxiii]

Other Key Trends

- More broadly, research connects parking requirements to pollution. Chester et al. (2010) indicate that parking currently adds from 1.3 to 25 grams of carbon dioxide equivalent/passenger-kilometer (km) to total lifecycle greenhouse gas (GHG) emissions of vehicle transport, depending on the scenario, and from 24% to 89% to sulfur dioxide and particulate matter emissions; with a large decrease in parking requirements, a substantial fraction of these emissions could be eliminated.[xxiv]
- **Generally, it should be noted that researchers are seeking to solve challenges associated with parking spot utilization.** Case study research of Davis apartment complexes suggests that a minimum of 34% and a maximum of 55% of parking spaces, on average, are occupied over the course of a day. Consequently, 45% of spaces sit unused across an entire day and 34% of spaces are underused (sit full the entire day).[xxv]

[i] See: Caltrans California Transportation Plan 2040, 2015.
[ii] The Adoption of Shared Mobility in California and Its Relationship with Other Components of Travel Behavior; A National Center for Sustainable Transportation Research Report; March 2018; Website Access: https://rosap.ntl.bts.gov/view/dot/35032
[iii] The Adoption of Shared Mobility in California and Its Relationship with Other Components of Travel Behavior; A National Center for Sustainable Transportation Research Report; March 2018; Website Access: https://rosap.ntl.bts.gov/view/dot/35032
[iv] Cervero and Tsai (2004)
[v] The Adoption of Shared Mobility in California and Its Relationship with Other Components of Travel Behavior; A National Center for Sustainable Transportation Research Report; March 2018; Website Access: https://rosap.ntl.bts.gov/view/dot/35032
[vi] Results of a study of car2go (Shaheen et al)
[vii] E. Martin and S. Shaheen. Working Paper. July 2016; The Impacts of Car2go on Vehicle Ownership, Modal Shift, Vehicle Miles Traveled, and Greenhouse Gas Emissions: An Analysis of Five North American Cities; Website Access: http://innovativemobility.org/wp-content/uploads/2016/07/Impactsofcar2go_FiveCities_2016.pdf
[viii] Martin and Shaheen (2011) surveyed more than 6,000 members of carsharing programs in the United States and Canada, and arrived at this conclusion; The Adoption of Shared Mobility in California and Its Relationship with Other Components of Travel Behavior; A National Center for Sustainable Transportation Research Report; March 2018; Website Access: https://rosap.ntl.bts.gov/view/dot/35032.
[ix] Namazu, Michiko; Dowlatabadi, Hadi; Vehicle Ownership Reduction: A Comparison Of One-Way And Two-Way Carsharing Systems; Website Access: http://dx.doi.org/10.1016/j.tranpol.2017.11.001
[x] McKinsey&Company. (2016, January). Automotive revolution- perspective towards 2030. Website Access: https://www.mckinsey.com/~/media/mckinsey/industries/high%20tech/our%20insights/disruptive%20trends%20that%20will%20transform%20the%20auto%20industry/auto%202030%20report%20jan%202016.ashx
[xi] http://www.dot.ca.gov/hq/tpp/californiatransportationplan2040/Final%20CTP/FINALCTP2040-Report-WebReady.pdf
[xii] The Adoption of Shared Mobility in California and Its Relationship with Other Components of Travel Behavior; A National Center for Sustainable Transportation Research Report; March 2018; Website Access: https://rosap.ntl.bts.gov/view/dot/35032
[xiii] Stocker, A., Lazarus, J., Becker, S., & Shaheen, S. (2016). North American College/University; Market Carsharing Impacts: Results from Zipcar's College Travel; Study 2015; Transportation Sustainability Research Center. Website Access: http://innovativemobility.org/wp-content/uploads/Zipcar-College-Market-Study-2015.pdf
[xiv] Carsharing and Car Ownership at the Building Scale; Examining the Potential for Flexible Parking Requirements; Website Access: https://www.tandfonline.com/doi/full/10.1080/01944363.2013.790588?scroll=top&needAccess=true
[xv] Napolitan, Francesa. Cumulative impacts of carsharing and unbundled parking on vehicle ownership and mode choice; Website Access: https://trrjournalonline.trb.org/doi/abs/10.3141/2319-11 .
[xvi] Jerram, L; "Prepare to enter the age of shared mobility." Automotive Megatrends; Website Access; https://automotivemegatrends.com/prepare-enter-a
[xvii] Future of Mobility White Paper ; Website Access: http://www.dot.ca.gov/hq/tpp/offices/osp/docs/FOM_White_Paper.pdf
[xviii] https://www.prnewswire.com/news-releases/fujitsu-forecasts-utilization-rates-of-shared-cars-to-surpass-50-percent-by-2030-300556496.html
[xix] https://energycenter.org/sites/default/files/docs/nav/transportation/cvrp/survey-results/California_Plug-in_Electric_Vehicle_Driver_Survey_Results-May_2013.pdf
[xx]S.Shaheen group survey
[xxi] Shaheen, S., E. Martin, and A. Bansal. (2017). Peer-to-Peer (P2P) Carsharing: Understanding Early Markets, Social Dynamics, and Behavioral Impacts. University of California Transportation Center Final Report; Website Access: https://cloudfront.escholarship.org/dist/prd/content/qt7s8207tb/qt7s8207tb.pdf
[xxii] Shaheen, S., E. Martin, and A. Bansal. (2017). Peer-to-Peer (P2P) Carsharing: Understanding Early Markets, Social Dynamics, and Behavioral Impacts. University of California Transportation Center Final Report; Website Access: https://cloudfront.escholarship.org/dist/prd/content/qt7s8207tb/qt7s8207tb.pdf
[xxiii] https://energycenter.org/sites/default/files/docs/nav/transportation/cvrp/survey-results/California_Plug-in_Electric_Vehicle_Driver_Survey_Results-May_2013.pdf
[xxiv] Adam Stocker and Susan Shaheen – Shared Automated Vehicles: Review of Business Models; Website Access: https://www.itf-oecd.org/sites/default/files/docs/shared-automated-vehicles-business-models.pdf
[xxv] Thigpin, Calvin; From Peak-Hour to Time-of-Day: A Case Study of a Novel Parking Occupancy Measure and an Evaluation of Infill Development and Carsharing as Solutions to Parking Oversupply ; Transportation Research Board 97th Annual Meeting, 2018, 18p; 2018

Appendix F

Geotechnical Exploration

CANYON TERRACE APARTMENTS
FOLSOM, CALIFORNIA

GEOTECHNICAL EXPLORATION

SUBMITTED TO
Mr. Scott Robertson
OMNI-MEANS, Ltd
943 Reserve Drive, Suite 100
Roseville, CA 95678

PREPARED BY
ENGEO Incorporated

June 30, 2017

PROJECT NO.
12732.000.000

Project No.
12732.000.000

June 30, 2017

Mr. Scott Robertson
OMNI-MEANS, Ltd
943 Reserve Drive, Suite 100
Roseville, CA 95678

Subject: Canyon Terrace Apartments
1600 Canyon Terrace Lane
Folsom, California

GEOTECHNICAL EXPLORATION

Dear Mr. Robertson:

ENGEO prepared this geotechnical report for OMNI-MEANS, Ltd as outlined in our agreement dated December 16, 2015. We characterized the subsurface conditions at the site to provide the enclosed geotechnical recommendations for design.

Our experience and that of our profession clearly indicate that the risk of costly design, construction, and maintenance problems can be significantly lowered by retaining the design geotechnical engineering firm to review the project plans and specifications and provide geotechnical observation and testing services during construction. Please let us know when working drawings are nearing completion, and we will be glad to discuss these additional services with you.

If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated

Abram Magel

Abram Magel, PE

REGISTERED PROFESSIONAL ENGINEER
MARK M. GILBERT
No. 2191
GEOTECHNICAL
STATE OF CALIFORNIA

Mark Gilbert, GE, QSD

am/mmg/cjn

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

ENGEO prepared this geotechnical report for design of Canyon Terrace Apartments in Folsom, California. We prepared this report as outlined in our agreement dated December 16, 2015. OMNI-MEANS, Ltd. authorized ENGEO to conduct the following scope of services:

- Service plan development
- Subsurface field exploration
- Soil laboratory testing
- Data analysis and conclusions
- Report preparation

For our use, we received a draft site plan prepared by you, dated May 17, 2017 and an older site plan prepared by The Ezralow Company, dated February 6, 2015, both delivered electronically via email. The 2015 site plan includes topographic information. We were also provided a Land Title Survey prepared by Kier and Wright, dated January 2007. Civil grading and structural plans were not provided at the time of preparing this report.

This report was prepared for the exclusive use of our client and their consultants for design of this project. In the event that any changes are made in the character, design or layout of the development, we must be contacted to review the conclusions and recommendations contained in this report to evaluate whether modifications are recommended. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without our express written consent.

1.2 PROJECT LOCATION

Figure 1 displays a Site Vicinity Map. The Canyon Terrace Apartments are located southwest of the intersection of Oak Avenue Parkway and American River Canyon Drive in Folsom, California. Access is provided via two entry roads along the west side of American River Canyon Drive.

Figure 2 shows site boundaries, proposed building and pavement areas, and our exploratory locations. The site is bordered to the north by a shopping center, to the east by American River Canyon Drive, to the south by single-family houses, and to the west by Odyssey Learning Center and single-family houses.

1.3 PROJECT DESCRIPTION

Based on our discussion with you and review of the information provided, we understand that the proposed site improvements include eight new apartment buildings, a swimming pool, gym, club, leasing facility, and paved parking and drive lanes. The apartment buildings are up to three story wood-framed structures with concrete slab-on-grade first floor. Five of the apartment buildings will be cut into the slope along the eastern portion of the site. Depending on the location of the hillside apartment structures, the eastern walls will retain up to one and half stories of earth. The bottom story of these structures will be used as garage space. While no civil grading plans were provided at the time of preparing this report, we anticipate earthwork cuts of up to approximately 15 feet and only minor fills.

2.0 FINDINGS

2.1 GEOLOGY

The site is located in the foothills of the Sierra Nevada geomorphic province. The Sierra Nevada Mountains are a fault block range trending generally north-northwest along the eastern portion of California. The Sierra Nevada fault block tilts to the west displaying a steep eastern slope and a gentle western slope. Generally, the western Sierra Nevada slope contains large river systems, which have led to the development of deeply incised canyons and intact ridges. The Sierra Nevada basement bedrock is dominated by Paleozoic and Mesozoic age plutonic, meta-sedimentary, meta-volcanics, and metamorphic rocks. In some locations, overlaying the basement rock are Tertiary volcanic deposits.

The site geology is mapped as Tertiary Mehrten Formation by the California Geological Survey (CGS) (Gutierrez, 2011). Mehrten Formation is composed of two units, Mehrten Breccia and Mehrten Conglomerate, derived from ancient Sierra Nevada volcanic activity. Mehrten Breccia is a nearly horizontal series of pyroclastic mudflows that consist of angular andesitic cobbles and boulders surrounded by heavily cemented tuffaceous siltstone. Mehrten Conglomerate typically underlies the Breccia unit and contains primarily andesitic rounded to subrounded cobbles in a moderately cemented siltstone-sandstone matrix. The conglomerate can contain discrete to massive beds of volcanic derived siltstone and sandstone. During our exploration, we encountered Mehrten Conglomerate and deposits indicative of the younger Pliocene Laguna Formation. Laguna Formation consists of interbedded alluvial gravel, sand, and silt dominated by metamorphic and quartz grains sourced from the Sierra Nevada.

Based on our subsurface exploration, we indicated the approximate location of the geologic contact between the Mehrten Formation and the Laguna Formation on the Site Plan, Figure 2.

2.2 SEISMICITY

The site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone and no known surface expression of active faults is believed to exist within the site. Fault rupture through the site, therefore, is not anticipated.

The site does lie within a seismically active region, as California has numerous faults that are considered active. An active fault is defined by the State Mining and Geology Board as one that has had surface displacement within Holocene time (about the last 11,000 years) (Hart, 1997). The following table summarizes the distances to mapped, active faults and estimated maximum moment magnitudes within approximately 50 miles using the USGS Spatial Query tool, which is based on the 2008 USGS National Seismic Hazard Maps that were used to develop the 2016 California Building Code (CBC) seismic design parameters.

TABLE 2.2-1: Active Faults Capable of Producing Significant Ground Shaking at the Site

FAULT NAME	DISTANCE FROM SITE (MILES)	DIRECTION FROM SITE	MAXIMUM MOMENT MAGNITUDE
Great Valley 4a, Trout Creek	45	Southwest	6.6
Great Valley 3, Mysterious Ridge	46	Southwest	7.1
Great Valley 4b, Gordon Valley	48	Southwest	6.8

2.3 FIELD EXPLORATION

We observed the excavation of eight test pits at the site on June 8 and 13, 2017. The approximate locations are shown on the Site Plan, Figure 2. An ENGEO representative observed the test pit excavations and logged the subsurface conditions at each location. We retained a CASE 580 Super N backhoe to excavate the test pits using an 18-inch-wide bucket and logged the type, location, and uniformity of the underlying soil and rock. The maximum depth penetrated by the test pits was approximately 10½ feet.

We obtained bulk soil samples from the test pits using hand sampling techniques. The test pit logs present descriptions and graphically depict the subsurface conditions encountered.

We used the field logs to develop the report logs in Appendix A. The logs depict subsurface conditions at the exploration locations for the date of exploration; however, subsurface conditions may vary with time.

2.4 SURFACE CONDITIONS

Site topography slopes downward from American River Canyon Drive on the east side of the site towards the west. The slopes are steepest (approximately 3H:1V) near American River Canyon Drive with another steep portion towards the center of the site. According to the 2015 site plan (Ezralow, 2015), site grades range from Elevation 345 feet along the eastern edge to Elevation 275 feet at the southwest corner (no datum provided).

We observed the following site features during our reconnaissance:

- The site was an operational apartment complex with multiple residential buildings, administrative buildings, a swimming pool, tennis courts, paved parking, and landscaped open space.
- Most of the eastern portion of the site was a mowed lawn with landscaped bushes and trees. The ground surface in the grassy areas was wet from rain several days prior to our reconnaissance.
- Many of the landscaped areas included the use of large cobbles and boulders.
- There were several man-made drainage swales that were lined with cobbles at various locations on the site.
- A concrete vault with a pipe sticking up was located near the center of the site in a grassy area. This feature is likely associated with the 40-inch-diameter water line that is shown on the Title Survey (Kier and Wright, 2007).

Photographs of typical surface conditions taken during our field exploration are provided below

PHOTO 2.4-1: View looking west from central portion of the site

PHOTO 2.4-2: View looking northeast from central portion of the site

2.5 SUBSURFACE CONDITIONS

All of the test pits except for TP3 encountered 1½ to 4½ feet of fill from the ground surface down. The fill generally consisted of clayey sand and gravel with cobble, likely associated with previous grading of the development. The test pits located on the northwestern portion of the site (TP3, TP6, TP7, and TP8) encountered soil consistent with the Laguna Formation. The Laguna Formation soils generally consisted of cemented sandy silt and silty sand with minor amounts of fine gravel. TP8 encountered fat clay from a depth of approximately 4½ to 7 feet; laboratory expansion index testing indicates the clay has high expansion potential.

The test pits located on the southeastern portion of the site encountered Merhten Conglomerate, which consisted of well-rounded cobble and gravel in a matrix of sandy clay and clayey sand. Some of these test pits encountered boulders up to approximately 16 inches in maximum dimension.

Consult the Site Plan and test pit logs for specific subsurface conditions at each location. We include our test pit logs in Appendix A. The logs contain the soil or rock type, color, composition, and visual classification in general accordance with the Unified Soil Classification System. The logs graphically depict the subsurface conditions encountered at the time of the exploration.

2.6 GROUNDWATER CONDITIONS

We did not observe static or perched groundwater in any of our subsurface explorations. Fluctuations in the level of groundwater may occur due to variations in rainfall, irrigation practice, and other factors not evident at the time measurements were made.

2.7 LABORATORY TESTING

We performed laboratory tests on selected soil samples to evaluate their engineering properties. For this project, we performed moisture content, sieve, expansion index, resistance value

(R-value), and corrosion testing. Moisture contents, percent fines, and expansion indices are recorded on the logs in Appendix A. Individual test results are included in Appendix B.

3.0 CONCLUSIONS

From a geotechnical engineering viewpoint, in our opinion, the site is suitable for the proposed development, provided the geotechnical recommendations in this report are properly incorporated into the design plans and specifications.

The primary geotechnical concerns that could affect development on the site are existing fill and expansive soil. We summarize our conclusions below.

3.1 EXISTING FILL

Our test pits encountered non-engineered fill that ranged from 2½ to 4½ feet thick at the locations explored. Non-engineered fills can undergo excessive settlement, especially under new fill or building loads. Without proper documentation of existing fill placed on the site, we recommend complete removal and recompaction of the existing fill. We present fill removal recommendations in Section 5.1.

3.2 EXPANSIVE SOIL

We observed highly expansive soil in test pit TP8 and also observed potentially expansive clays near the surface of test pits TP5, TP6, TP7, and TP8. Our laboratory testing indicates that these soils exhibit low to high shrink/swell potential with variations in moisture content. Expansive soils change in volume with changes in moisture. They can shrink or swell and cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations.

To reduce the potential for damage to the planned building, we recommend that the upper 18 inches of the building pad extending at least 10 feet laterally beyond building areas be underlain by non-expansive fill. Selective grading to mitigate expansive soil may not be a practical alternative and imported fill may be recommended. In lieu of importing non-expansive fill, it may also be cost effective to lime treat the upper 18 inches of the building pad to reduce the expansion potential of the onsite soil. We recommend that other structural elements, such as pavements and flatwork be designed for moderately expansive soil conditions.

We have also provided specific grading recommendations for compaction of clay soil at the site. The purpose of these recommendations is to reduce the swell potential of the clay by compacting the soil at a high moisture content and controlling the amount of compaction.

3.3 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking, and ground lurching. The following sections present a discussion of these hazards as they apply to the site. Based on topographic and lithologic data, the risk of regional subsidence or uplift, soil liquefaction, lateral spreading, landslides, tsunamis, flooding or seiches is considered low to negligible at the site.

3.3.1 Ground Rupture

Since there are no known active faults crossing the property and the site is not located within an Earthquake Fault Special Study Zone, it is our opinion that ground rupture is unlikely at the subject property.

3.3.2 Ground Shaking

An earthquake of moderate to high magnitude generated within region could cause considerable ground shaking at the site, similar to that which has occurred in the past. To mitigate the shaking effects, structures should be designed using sound engineering judgment and the 2016 California Building Code (CBC) requirements, as a minimum. Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1999).

3.3.3 Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. The sands that were encountered were generally cemented. In addition, groundwater was not encountered to the terminal depth of our test pits. For these reasons and based upon engineering judgment, it is our opinion that the potential for liquefaction at the site is low during seismic shaking.

3.3.4 Ground Lurching

Ground lurching is a result of the rolling motion imparted to the ground surface during energy released by an earthquake. Such rolling motion can cause ground cracks to form in weaker soils. The potential for the formation of these cracks is considered greater at contacts between deep alluvium and bedrock. Such an occurrence is possible at the site, but based on the site location, it is our opinion that the offset is expected to be minor. We provide recommendations for foundation and pavement design in this report that are intended to reduce the potential for adverse impacts from lurch cracking.

3.3.5 Flooding

Based on site elevation and distance from water sources, flooding is not expected at the subject site; however, the Civil Engineer should review pertinent information relating to possible flood levels for the subject site based on final pad elevations and provide appropriate design measures for development of the project, if recommended.

3.4 EXCAVATABILITY

We used a CASE 580 Super N Backhoe with an 18-inch-wide bucket during our exploratory work. Based upon our observation and experience, conventional grading and backhoe equipment will likely be able to excavate the soil deposits. We observed the upper approximately 10 feet of the conglomerate to be highly weathered. Conventional grading and backhoe equipment will likely be able to excavate the weathered conglomerate using moderate effort. Deeper grading excavations in conglomerate will likely require moderate effort with a CAT D8 or larger bulldozer, equipped with single or multi-shank rippers. A CAT 235 or larger excavator should be used to facilitate deep trench excavations in conglomerate with moderate effort.

We provide the above excavatability information for general planning purposes only. This information is not intended for bidding purposes.

3.5 SOIL CORROSION POTENTIAL

We obtained representative soil samples and submitted to a qualified analytical lab for determination of pH, resistivity, sulfate content, and chloride content. The results are included in Appendix B and summarized in the table below.

TABLE 3.5-1: Corrosivity Test Results

SAMPLE LOCATION	DEPTH (FEET)	PH[1]	RESISTIVITY[1] (OHMS-CM)	CHLORIDE[2] (PPM)	SULFATE[3] (PPM)
TP1 & TP3 (composite)	4 & ½	5.94	2,950	3.8	11.9
TP6	1	5.42	3,220	7.1	44.5

(1) Per CA DOT Test #643; (2) Per CA DOT Test #422; (3) Per CA DOT Test #417

The 2016 CBC references the 2014 American Concrete Institute Manual, ACI 318-14, Section 19.3.1 for concrete durability requirements. ACI Table 19.3.1.1 provides exposure categories and classes and Table 19.3.2.1 provides requirements for concrete in contact with soil based upon the exposure class. In accordance with these ACI tables, the soils are categorized as being within S0 sulfate exposure class. Considering a S0 sulfate exposure class, the code requires a minimum compressive strength of 2,500 psi. It should be noted, however, that the project's design requirements for concrete may result in more stringent concrete specifications.

Laboratory tests on representative soil samples from the site indicate a chloride concentration in soil of less than 10 ppm. ACI Table 19.3.1.1 provides exposure categories for corrosion protection of reinforcement and references sources of chlorides from deicing chemicals, salt, brackish water, and seawater. Typical chloride concentrations for seawater are about 19,200 ppm and for brackish water may be in the range of 500 to 5,000 ppm. Since the chloride test results from the site are substantially lower than that of seawater or brackish water, we recommend an exposure class of C0 or C1 depending on the location of the structural element (i.e. protected from moisture or exposed to moisture).

The resistivity measurements indicate the soils are classified as moderately corrosive according to the National Association of Corrosion Engineers' 1984 *Corrosion Basics an Introduction* interpretation of resistivity.

If desired to investigate this further, we recommend a corrosion consultant be retained to evaluate if specific corrosion recommendations are advised for the project.

3.6 2016 CBC SEISMIC DESIGN PARAMETERS

The 2016 CBC utilizes design criteria set forth in the 2010 ASCE 7 Standard. Based on the subsurface conditions encountered, we characterized the site as Site Class C in accordance with the 2016 CBC. We provide the 2016 CBC seismic design parameters in Table 3.6-1 below, which include design spectral response acceleration parameters based on the mapped Risk Targeted Maximum Considered Earthquake (MCER) spectral response acceleration parameters.

TABLE 3.6-1: 2016 CBC Seismic Design Parameters, Latitude: 38.69717 **Longitude:** -121.19056

PARAMETER	VALUE
Site Class	C
Mapped MCE_R Spectral Response Acceleration at Short Periods, S_S (g)	0.48
Mapped MCE_R Spectral Response Acceleration at 1-second Period, S_1 (g)	0.24
Site Coefficient, F_A	1.20
Site Coefficient, F_V	1.56
MCE_R Spectral Response Acceleration at Short Periods, S_{MS} (g)	0.58
MCE_R Spectral Response Acceleration at 1-second Period, S_{M1} (g)	0.38
Design Spectral Response Acceleration at Short Periods, S_{DS} (g)	0.39
Design Spectral Response Acceleration at 1-second Period, S_{D1} (g)	0.25
Mapped MCE Geometric Mean (MCE_G) Peak Ground Acceleration, PGA (g)	0.16
Site Coefficient, F_{PGA}	1.20
MCE_G Peak Ground Acceleration adjusted for Site Class effects, PGA_M (g)	0.19

4.0 CONSTRUCTION MONITORING

Our experience and that of our profession clearly indicate that the risk of costly design, construction, and maintenance problems can be significantly lowered by retaining the design geotechnical engineering firm to:

1. Review the final grading and foundation plans and specifications prior to construction to evaluate whether our recommendations have been implemented, and to provide additional or modified recommendations, as needed. This also allows us to check if any changes have occurred in the nature, design or location of the proposed improvements and provides the opportunity to prepare a written response with updated recommendations.

2. Perform construction monitoring to check the validity of the assumptions we made to prepare this report. Earthwork operations should be performed under the observation of our representative to check that the site is properly prepared, the selected fill materials are satisfactory, and that placement and compaction of the fills has been performed in accordance with our recommendations and the project specifications. Sufficient notification to us prior to earthwork is important.

If we are not retained to perform the services described above, then we are not responsible for any party's interpretation of our report (and subsequent addenda, letters, and verbal discussions).

5.0 EARTHWORK RECOMMENDATIONS

The relative compaction and optimum moisture content of soil, rock, and aggregate base referred to in this report are based on the most recent ASTM D1557 test method. Compacted soil is not acceptable if it is unstable. It should exhibit only minimal flexing or pumping, as observed by an ENGEO representative.

As used in this report, the term "moisture condition" refers to adjusting the moisture content of the soil by either drying if too wet or adding water if too dry.

We define "structural areas" in this report as any area sensitive to settlement of compacted soil. These areas include, but are not limited to building pads, sidewalks, pavement areas, and retaining walls.

We define non-expansive soil in this report as soil with an expansion index (EI) less than 50.

5.1 EXISTING FILL REMOVAL

Non-engineered fill was encountered in all but one of our explorations at the site. Remove existing fill to competent native soil or rock, as evaluated by ENGEO. Existing fill may be reused as engineered fill provided it meets the requirements of Section 5.8. Consult the test pit logs in Appendix B for fill depths at specific locations.

5.2 EXPANSIVE SOIL MITIGATION

To reduce the risk of structural damage associated with the variably expansive soil conditions, we recommend constructing the upper 18 inches of the building pad with non-expansive fill. We define non-expansive fill as soil with an Expansion Index (EI) less than 50. As an alternative to importing non-expansive fill for grading the building pad, it may be cost effective to lime treat the upper 18 inches of the finished building pad and to 10 feet laterally beyond. However, the blending of lime into the soil with rotary-mixing equipment may be inhibited by the presence of cobbles and boulders.

5.3 GENERAL SITE CLEARING

Areas to be developed should be cleared of surface and subsurface deleterious materials, including existing building foundations, slabs, buried utility and irrigation lines, pavements, debris, and designated trees, shrubs, and associated roots. Clean and backfill excavations extending below the planned finished site grades with suitable material compacted to the recommendations presented in Section 5.9. Retain ENGEO to observe and test backfilling.

Following clearing, strip the site to remove surface organic materials. Strip organics from the ground surface to a depth of at least 2 to 3 inches below the surface. Remove strippings from the site or, if considered suitable by the landscape architect and owner, use them in landscape fill.

It may also be feasible to mulch organics in place, depending on the amount and type of vegetation present at the time of grading as well as the proposed mulching method. If desired, ENGEO can evaluate site vegetation at the time of grading to assess the feasibility of mulching organics in place.

5.4 BUILDING PAD OVEREXCAVATION

To improve subsurface drainage and to facilitate shallow excavations for footings and plumbing trenches, we recommend that any undisturbed native material within 1½ feet of finished building pad grade be overexcavated and recompacted in accordance with Section 5.9. We should review site grading plans once they are available.

5.5 CUT/FILL TRANSITION OR CUT LOTS

Building pads constructed in cuts may encounter variable subsurface conditions in the near-surface soil and rock; these pads may, therefore, be subject to damaging differential soil movements. Building pads that transition from cut to fill within the building pad area also can experience differential soil movements.

We recommend such building pads be reconstructed to create uniform subgrade conditions. This can be accomplished by subexcavating the soil on the building pads to a minimum depth of 1½ feet below finished pad grade on cut lots or lots constructed over cut-and-fill transitions and replacing the subexcavated material with uniformly mixed compacted fill. The subexcavation should be performed over the entire flat pad area. Compacted fill used to replace subexcavated soil should be placed in accordance with Section 5.9.

5.6 DIFFERENTIAL FILL THICKNESS

Differential building movements may result from conditions where building pads have significant differentials in fill thickness. We recommend that the differential fill thickness across any lot be no greater than 10 feet. Local subexcavation of soil material and replacement with compacted fill may be needed to achieve this recommendation.

5.7 OVER-OPTIMUM SOIL MOISTURE CONDITIONS

The contractor should anticipate encountering excessively over-optimum (wet) soil moisture conditions during winter or spring grading, or during or following periods of rain. Wet soil can make proper compaction difficult or impossible. Wet soil conditions can be mitigated by:

1. Frequent spreading and mixing during warm dry weather.
2. Mixing with drier materials.
3. Mixing with a lime, lime-flyash, or cement product; or
4. Stabilizing with aggregate, geotextile stabilization fabric, or both.

Options 3 and 4 should be evaluated by ENGEO prior to implementation.

5.8 ACCEPTABLE FILL

Onsite soil and rock material is suitable as fill material provided it is processed to remove concentrations of organic material, debris, and particles greater than 8 inches in maximum dimension.

Cobbles and boulders larger than 8 inches may be placed in deeper portions of fills provided that:

- They are located at least 2 feet below any planned excavations limits (i.e. for utilities or foundations).

- They are placed individually and not nested together.

- The contractor can achieve acceptable compaction adjacent to the boulders, as evaluated by ENGEO.

Imported fill materials should meet the above requirements and have an expansion index less than 50. Allow ENGEO to sample and test proposed imported fill materials at least 5 days prior to delivery to the site.

5.9 FILL COMPACTION

5.9.1 Grading in Structural Areas

5.9.1.1 Non-expansive Soils

Perform subgrade compaction prior to fill placement, following cutting operations, and in areas left at grade as follows.

1. Scarify to a depth of at least 8 inches.

2. Moisture condition soil to at least 1 percentage point above the optimum moisture content; **and**

3. Compact the subgrade to at least 90 percent relative compaction. Compact the upper 6 inches of finish pavement subgrade to at least 95 percent relative compaction prior to aggregate base placement.

After the subgrade soil has been compacted, place and compact acceptable fill as follows:

1. Spread fill in loose lifts that do not exceed 8 inches.

2. Moisture condition lifts to at least 1 percentage point above the optimum moisture content; **and**

3. Compact fill to a minimum of 90 percent relative compaction; Compact the upper 6 inches of fill in pavement areas to 95 percent relative compaction prior to aggregate base placement.

Where fill or subgrade materials contain more than 30 percent rock retained on a ¾-inch sieve, a performance specification should be used to evaluate compaction. For this condition, we recommend a maximum loose lift thickness (or subgrade processing depth) of 12 inches. Moisture condition rocky fill such that the moisture content of the matrix soil (minus ¾-inch material) is slightly above the optimum moisture content assessed by visual/manual methods. Compact each lift of rocky fill with at least five passes of a Caterpillar 825 compactor to achieve 90 percent equivalent relative compaction and at least seven passes of a Caterpillar 825 compactor to achieve 95 percent equivalent relative compaction. We can develop other performance standards for different compaction equipment.

5.9.1.2 Expansive Soils

Perform subgrade compaction prior to fill placement, following cutting operations, and in areas left at grade as follows.

1. Scarify to a depth of at least 8 inches.
2. Moisture condition soil to at least 4 percentage points over the optimum moisture content; **and**
3. Compact the soil to between 87 and 92 percent relative compaction. Compact the upper 6 inches of finish pavement subgrade to at least 90 percent relative compaction prior to aggregate base placement.

After the subgrade has been compacted, place and compact acceptable fill as follows:

1. Spread fill in loose lifts that do not exceed 8 inches.
2. Moisture condition lifts to at least 4 percentage points over the optimum moisture content; **and**
3. Compact fill to between 87 and 92 percent relative compaction; compact the upper 6 inches of fill in pavement areas to at least 90 percent relative compaction prior to aggregate base placement.

Where lime treatment of the soil is used to mitigate expansive soil conditions, we recommend uniformly mixing the subgrade soil with at least 4 percent high calcium lime by dry weight. The soil should be moisture conditioned to at least 3 percentage points above the optimum moisture content before mixing. The mixing should be performed in accordance with the current version of Caltrans Standard Specifications with the following exceptions:

1. Following mixing, the treated soils should be allowed to fully hydrate prior to compaction.
2. Following hydration, the treated soil should be compacted according to ASTM D-1557 to not less than 95 percent relative compaction at a moisture content at least 2 percentage points above the optimum to a non-yielding surface.

5.9.1.3 Aggregate Base

Compact the pavement Caltrans Class 2 Aggregate Base section to at least 95 percent relative compaction (ASTM D1557). Moisture condition aggregate base to or slightly above the optimum moisture content prior to compaction.

5.9.2 Underground Utility Backfill

The contractor is responsible for conducting trenching and shoring in accordance with CALOSHA requirements. Project consultants involved in utility design should specify pipe bedding materials. Jetting of backfill is not an acceptable means of compaction. We may allow thicker loose lift thicknesses based on acceptable density test results, where increased effort is applied to rocky fill, or for the first lift of fill over pipe bedding.

5.9.2.1 Non-expansive Soil

Place and compact trench backfill as follows:

1. Trench backfill should have a maximum particle size of 6 inches.

2. Moisture condition trench backfill to or slightly above the optimum moisture content. Moisture condition backfill outside the trench.

3. Place fill in loose lifts not exceeding 12 inches; **and**

4. Compact fill to a minimum of 90 percent relative compaction (ASTM D1557).

Where fill or subgrade materials contain more than 30 percent rock retained on a ¾-inch sieve, a performance specification should be used to evaluate compaction. For this condition, we recommend a maximum loose lift thickness of 12 inches. Moisture condition rocky fill such that the moisture content of the matrix soil (minus ¾-inch material) is at or slightly above the optimum moisture content evaluated by visual/manual methods. Compact each lift of rocky fill with at least six passes and eight passes of a Caterpillar 235 or larger excavator with a sheepsfoot wheel attachment for 90 percent and 95 percent relative compaction, respectively. We can develop other performance standards for different compaction equipment.

Where utility trenches cross perimeter building foundations, backfill with native clay soil for pipe bedding and backfill for a distance of 2 feet on each side of the foundation. This will help prevent the normally granular bedding materials from acting as a conduit for water to enter beneath the building. As an alternative, a sand cement slurry (minimum 28-day compressive strength of 500 psi) may be used in place of native clay soil.

5.9.2.2 Expansive Soil

Place and compact trench backfill as follows:

1. Trench backfill should have a maximum particle size of 6 inches.

2. Moisture condition trench backfill to at least 4 percentage points above the optimum moisture content. Moisture condition backfill outside the trench.

3. Place fill in loose lifts not exceeding 12 inches; **and**

4. Compact fill to between 87 and 92 percent relative compaction (90 percent minimum relative compaction at depths of 3 feet or more below finish grades).

5.9.3 Landscape Fill

Process, place and compact fill in accordance with Section 5.9.1.1, except compact to at least 85 percent relative compaction (ASTM D1557).

5.10 SLOPES

5.10.1 Gradients

Construct final slope gradients to 2:1 (horizontal:vertical) or flatter. The contractor is responsible to construct temporary construction slopes in accordance with CALOSHA requirements.

5.10.2 Fill Placed on Existing Slopes

We recommend keying and benching where fills are placed on original grade with a gradient of 6:1 or steeper.

Construct a minimum 15-foot-wide key inward from the toe of the new fill slope. Extend the key at least 2 feet below original grade into firm competent soil/rock, as evaluated by ENGEO. Slope the key bottom at least 2 percent downward toward the heel of the key. Deeper keys may be recommended by ENGEO based on actual soil/rock conditions observed during construction.

Cut benches into original grade after the key has been nearly filled and compacted in accordance with Section 5.9.1.1. Construct benches into original slope grade as filling proceeds every 2 feet vertically, to remove loose soil/rock. Deeper bench depths may be recommended by ENGEO depending on actual conditions observed during construction. Bench widths may vary depending on the original slope grade and actual bench depth.

Since the project grading plans were not available at the time of preparing this report, we should be allowed to review the grading plans once available and prior to construction to evaluate the location and geometry of keyways and benches, if necessary.

5.11 SITE DRAINAGE

5.11.1 Surface Drainage

The project civil engineer is responsible for designing surface drainage improvements. With regard to geotechnical engineering issues, we recommend that finish grades be sloped away from buildings and pavements to the maximum extent practical. The latest California Building Code Section 1804.3 specifies minimum slopes of 5 percent away from foundations. Where lot lines or surface improvements restrict meeting this slope requirement, we recommend that specific drainage requirements be developed. As a minimum, we recommend the following:

1. Discharge roof downspouts into closed conduits and direct away from foundations to appropriate drainage devices.

2. Do not allow water to pond near foundations, pavements, or exterior flatwork.

5.11.2 Subsurface Drainage

We recommend that ENGEO be retained to review the grading plans and show the approximate locations of recommended keyways and subdrains, if necessary, on a corrective grading plan. Depending on the actual conditions encountered during grading, subsurface drainage facilities may be recommended within low-lying areas. Subrains should also be added where wet conditions are encountered during grading.

6.0 FOUNDATION RECOMMENDATIONS

We developed structural improvement recommendations using data obtained from our field exploration, laboratory test results, and engineering analysis.

The proposed structures, up to three stories in height, can be supported on continuous or isolated spread footings bearing in competent native soil/rock or compacted fill.

6.1 FOOTING DIMENSIONS AND ALLOWABLE BEARING CAPACITY

Provide minimum footing dimensions as follows in the Table 6.1-1 below.

TABLE 6.1-1: Minimum Footing Dimensions

STRUCTURE TYPE	FOOTING TYPE	*MINIMUM DEPTH (INCHES)	MINIMUM WIDTH (INCHES)
Single Story	Continuous	12	12
	Isolated	12	18
Two and Three Story	Continuous	18	12
	Isolated	18	18

* below lowest adjacent pad grade

Minimum footing depths shown above are taken from lowest adjacent pad grade. The cold joint between the exterior footing and slab-on-grade should be located at least 4 inches above adjacent exterior grade.

Design foundations recommended above for a maximum allowable bearing pressure of 2,500 pounds per square foot (psf) for dead-plus-live loads. Increase this bearing capacity by one-third for the short-term effects of wind or seismic loading.

The maximum allowable bearing pressure is a net value; the weight of the footing may be neglected for design purposes. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1:1(horizontal:vertical) plane projected upward from the bottom edge of the trench to the footing.

6.2 WATERSTOP

If a two-pour system is used for footings and slab, the cold joint between the exterior footing and slab-on-grade should be located at least 4 inches above adjacent finish exterior grade. If this is not done, then we recommend the addition of a waterstop between the two pours to reduce moisture penetration through the cold joint and migration under the slab. Use of a monolithic pour would eliminate the need for the waterstop.

6.3 REINFORCEMENT

The structural engineer should design footing reinforcement to support the intended structural loads without excessive settlement. Reinforce continuous footings with top and bottom steel to provide structural continuity and to permit spanning of local irregularities. At a minimum, design continuous footings to structurally span a clear distance of 5 feet.

6.4 FOUNDATION LATERAL RESISTANCE

Lateral loads may be resisted by friction along the base and by passive pressure along the sides of foundations. The passive pressure is based on an equivalent fluid pressure in pounds per cubic foot (pcf). We recommend the following allowable values for design:

- Passive Lateral Pressure: 300 pcf
- Coefficient of Friction: 0.35

The above allowable values include a factor of safety of 1.5. Increase the above values by one-third for the short-term effects of wind or seismic loading.

Passive lateral pressure should not be used for footings on or above slopes.

6.5 SETTLEMENT

Provided our report recommendations are followed and given the proposed construction (Section 1.3), we estimate total and differential foundation settlements to be less than approximately ½ and ¼ inch, respectively.

7.0 SLABS-ON-GRADE

7.1 INTERIOR CONCRETE FLOOR SLABS

7.1.1 Minimum Design Section

We recommend the following minimum design:

1. Provide a minimum concrete thickness of 5 inches.

2. Place minimum steel reinforcing of No. 3 rebar on 18-inch centers each way within the middle third of the slab to help control the width of shrinkage cracking that inherently occurs as concrete cures.

The structural engineer should provide final design thickness and additional reinforcement, as necessary, for the intended structural loads.

7.1.2 Slab Moisture Vapor Reduction

When buildings are constructed with concrete slab-on-grade, water vapor from beneath the slab will migrate through the slab and into the building. This water vapor can be reduced but not stopped. Vapor transmission can negatively affect floor coverings and lead to increased moisture within a building. When water vapor migrating through the slab would be undesirable, we recommend the following to reduce, but not stop, water vapor transmission upward through the slab-on-grade.

1. Construct a moisture retarder system directly beneath the slab on-grade that consists of the following:

a. Vapor retarder membrane sealed at all seams and pipe penetrations and connected to all footings. Vapor retarders shall conform to Class A vapor retarder in accordance with ASTM E 1745, latest edition, "Standard Specification for Plastic Water Vapor Retarders used in Contact with Soil or Granular Fill under Concrete Slabs". The vapor retarder should be **underlain by**

b. 4 inches of clean crushed rock. Crushed rock should have 100 percent passing the ¾-inch sieve and less than 5 percent passing the No. 4 Sieve.

2. Use a concrete water-cement ratio for slabs-on-grade of no more than 0.50.

3. Provide inspection and testing during concrete placement to check that the proper concrete and water cement ratio are used.

4. Moist cure slabs for a minimum of 3 days or use other equivalent curing specified by the structural engineer.

The structural engineer should be consulted as to the use of a layer of clean sand or pea gravel (less than 5 percent passing the U.S. Standard No. 200 Sieve) placed on top of the vapor retarder membrane to assist in concrete curing.

7.1.3 Subgrade Modulus for Structural Slab Design

Provided the site earthwork is conducted in accordance with the recommendations of this report, a subgrade modulus of 200 psi/in can be used for structural slab design.

7.2 EXTERIOR FLATWORK

Exterior flatwork includes items such as concrete sidewalks, steps, and outdoor courtyards exposed to foot traffic only. Provide a minimum section of 4 inches of concrete over 4 inches of aggregate base. Compact the aggregate base to at least 90 percent relative compaction (ASTM D1557). Thicken flatwork edges to at least 8 inches to help control moisture variations in the subgrade and place wire mesh or rebar within the middle third of the slab to help control the width and offset of cracks. Construct control and construction joints in accordance with current Portland Cement Association Guidelines.

7.3 TRENCH BACKFILL

Backfill and compact all trenches below building slabs-on-grade and to 5 feet laterally beyond any edge in accordance with Section 5.9.2.

8.0 RETAINING WALLS

8.1 LATERAL SOIL PRESSURES

Design proposed retaining walls to resist lateral earth pressures from adjoining natural materials and/or backfill and from any surcharge loads. Provided that adequate drainage is included as recommended below, design walls restrained from movement at the top to resist an equivalent fluid pressure of 60 pounds per cubic foot (pcf). In addition, design restrained walls to resist an additional uniform pressure equivalent to one-half of any surcharge loads applied at the surface.

Design unrestrained retaining walls with adequate drainage to resist an equivalent fluid pressure of 40 pcf plus one-third of any surcharge loads.

The above lateral earth pressures assume level backfill conditions and sufficient drainage behind the walls to prevent any build-up of hydrostatic pressures from surface water infiltration and/or a rise in the groundwater level. If adequate drainage is not provided, we recommend that an additional equivalent fluid pressure of 40 pcf be added to the values recommended above for both restrained and unrestrained walls. Damp-proofing of the walls should be included in areas where wall moisture would be problematic.

Construct a drainage system, as recommended below, to reduce hydrostatic forces behind the retaining wall.

8.2 RETAINING WALL DRAINAGE

Construct either graded rock drains or geosynthetic drainage composites behind the retaining walls to reduce hydrostatic lateral forces. For rock drain construction, we recommend two types of rock drain alternatives:

1. A minimum 12-inch-thick layer of Class 2 Permeable Filter Material (Caltrans Specification 68-2.02F) placed directly behind the wall, or

2. A minimum 12-inch-thick layer of washed, crushed rock with 100 percent passing the ¾-inch sieve and less than 5 percent passing the No. 4 sieve. Envelop rock in a minimum 6-ounce, nonwoven geotextile filter fabric.

For both types of rock drains:

1. Place the rock drain directly behind the walls of the structure.

2. Extend rock drains from the wall base to within 12 inches of the top of the wall.

3. Place a minimum of 4-inch-diameter perforated pipe (glued joints and end caps) at the base of the wall, inside the rock drain and fabric, with perforations placed down.

4. Place pipe at a gradient at least 1 percent to direct water away from the wall by gravity to a drainage facility.

ENGEO should review and approve geosynthetic composite drainage systems prior to use.

8.3 BACKFILL

Backfill behind retaining walls should consist of non-expansive fill and be placed and compacted in accordance with Section 5.9.1.1. Use light compaction equipment within 5 feet of the wall face. If heavy compaction equipment is used, the walls should be temporarily braced to avoid excessive wall movement.

8.4 FOUNDATIONS

Retaining walls may be supported on continuous footings designed in accordance with recommendations presented in Section 6.1.1, except the minimum embedment depth should be increased to at least 18 inches below lowest adjacent soil grade.

9.0 PAVEMENT DESIGN

9.1 FLEXIBLE PAVEMENTS

We obtained a representative bulk sample of the surface soil and performed an R-value test to provide data for pavement design. The result of the test is included in Appendix B and indicates an R-value of 10, which we judged to be appropriate for design. Using estimated traffic indices for various pavement loading requirements, we developed the following recommended pavement sections using Topic 633 of the Caltrans Highway Design Manual (including the asphalt factor of safety), presented in the table below.

TABLE 9.1-1: Recommended Asphalt Concrete Pavement Sections

TRAFFIC INDEX	SECTION	
	ASPHALT CONCRETE (INCHES)	CLASS 2 AGGREGATE BASE (INCHES)
5	3	9
6	3	13
7	4	14½

The civil engineer should determine the appropriate traffic indices based on the estimated traffic loads and frequencies.

9.2 RIGID PAVEMENTS

Use concrete pavement sections to resist heavy loads and turning forces in areas such as fire lanes or trash enclosures. Final design of rigid pavement sections, and accompanying reinforcement, should be performed based on estimated traffic loads and frequencies. We recommend the following minimum design sections for rigid pavements:

- Use a minimum section of 6 inches of Portland Cement concrete over 6 inches of Caltrans Class 2 Aggregate Base.
- Concrete pavement should have a minimum 28-day compressive strength of 3,500 psi.
- Provide minimum control joint spacing in accordance with Portland Cement Association guidelines.

9.3 SUBGRADE AND AGGREGATE BASE COMPACTION

Compact finish subgrade and aggregate base in accordance with Section 5.9.1.3. Aggregate Base should meet the requirements for ¾-inch maximum Class 2 AB in accordance with Section 26-1.02a of the latest Caltrans Standard Specifications.

9.4 CUT-OFF CURBS

Saturated pavement subgrade or aggregate base can cause premature failure or increased maintenance of asphalt concrete pavements. This condition often occurs where landscape areas directly abut and drain toward pavements. If desired to install pavement cutoff barriers, they should be considered where pavement areas lie downslope of any landscape areas that are to be sprinklered or irrigated, and should extend to a depth of at least 4 inches below the base rock layer. Cutoff barriers may consist of deepened concrete curbs or deep-root moisture barriers.

If reduced pavement life and greater than normal pavement maintenance are acceptable to the owner, then the cutoff barrier may be eliminated.

10.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report presents geotechnical recommendations for design of the improvements discussed in Section 1.3 for the Canyon Terrace Apartments project. If changes occur in the nature or design of the project, we should be allowed to review this report and provide additional recommendations, if any. It is the responsibility of the owner to transmit the information and recommendations of this report to the appropriate organizations or people involved in design of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance.

We strived to perform our professional services in accordance with generally accepted geotechnical engineering principles and practices currently employed in the area; no warranty is expressed or implied. There are risks of earth movement and property damages inherent in building on or with earth materials. We are unable to eliminate all risks or provide insurance; therefore, we are unable to guarantee or warrant the results of our services.

This report is based upon field and other conditions discovered at the time of report preparation. We developed this report with limited subsurface exploration data. We assumed that our subsurface exploration data is representative of the actual subsurface conditions across the site. Considering possible underground variability of soil, rock, stockpiled material, and groundwater, additional costs may be required to complete the project. We recommend that the owner establish a contingency fund to cover such costs. If unexpected conditions are encountered, notify ENGEO immediately to review these conditions and provide additional and/or modified recommendations, as necessary.

Our services did not include excavation sloping or shoring, soil volume change factors, flood potential, or a geohazard exploration. In addition, our geotechnical exploration did not include work to determine the existence of possible hazardous materials. If any hazardous materials are encountered during construction, notify the proper regulatory officials immediately.

This document must not be subject to unauthorized reuse, that is, reusing without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time.

Actual field or other conditions will necessitate clarifications, adjustments, modifications or other changes to ENGEO's documents. Therefore, ENGEO must be engaged to prepare the necessary clarifications, adjustments, modifications or other changes before construction activities commence or further activity proceeds. If ENGEO's scope of services does not include on-site construction observation, or if other persons or entities are retained to provide such services, ENGEO cannot be held responsible for any or all claims arising from or resulting from the performance of such services by other persons or entities, and from any or all claims arising from or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

We determined the lines designating the interface between layers on the exploration logs using visual observations. The transition between the materials may be abrupt or gradual. The exploration logs contain information concerning samples recovered, indications of the presence of various materials such as clay, sand, silt, rock, existing fill, etc., and observations of groundwater encountered. The field logs also contain our interpretation of the subsurface conditions between sample locations. Therefore, the logs contain both factual and interpretative information. Our recommendations are based on the contents of the final logs, which represent our interpretation of the field logs.

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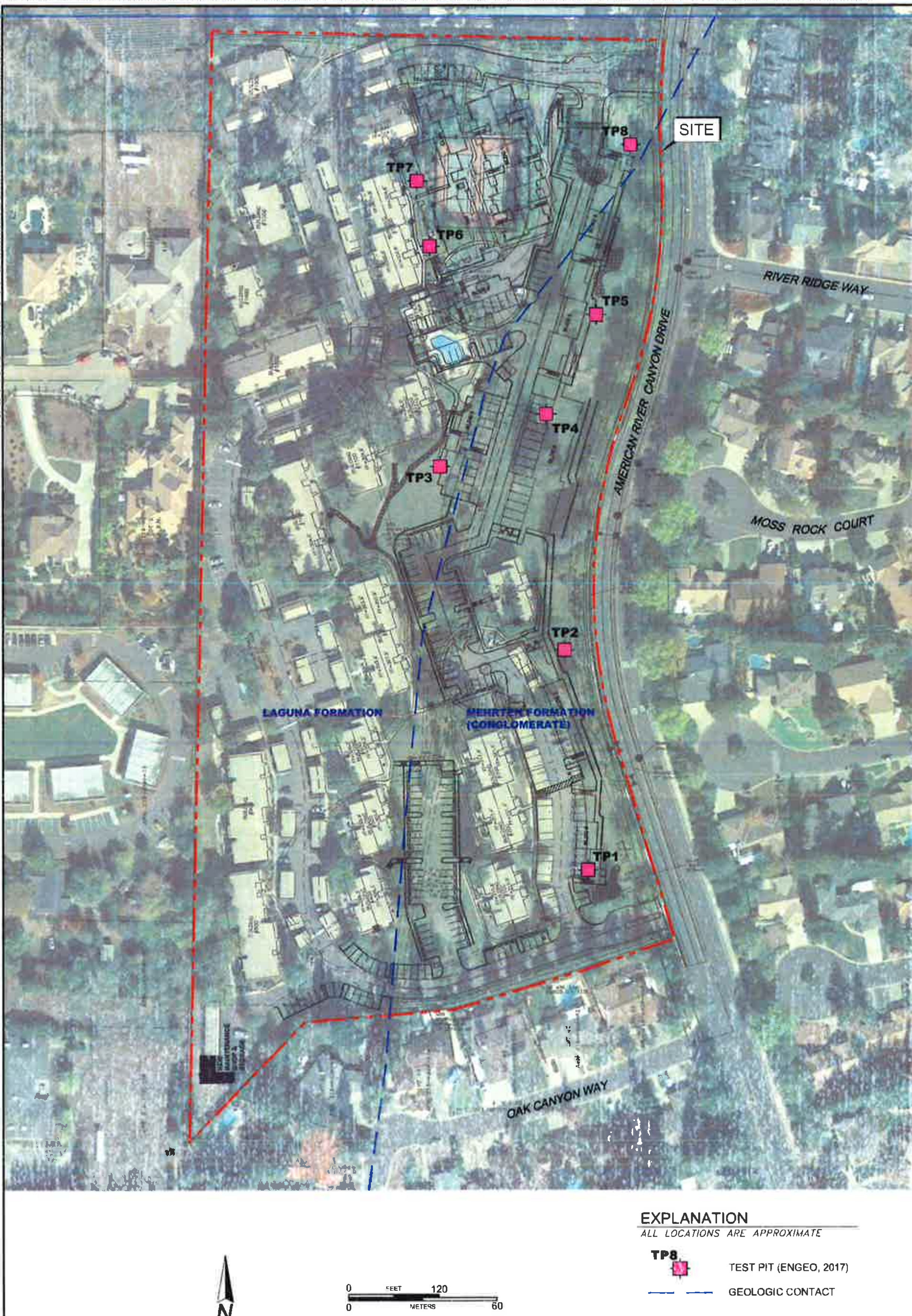
FIGURES

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE

ENGEO Expect Excellence	VICINITY MAP CANYON TERRACE APARTMENTS FOLSOM, CALIFORNIA	PROJECT NO.: 12732.000.000 SCALE: AS SHOWN DRAWN BY: JCS / CHECKED BY: MMG	FIGURE NO. 1

G:\Drafting\DRAFTING2_Dwg_10000 to 12999\12732\000\GEX\12732000000-GEX-1-VicinityMap-0617.dwg Plot Date: 6-22-17 JStephenson

ORIGINAL FIGURE PRINTED IN COLOR



EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

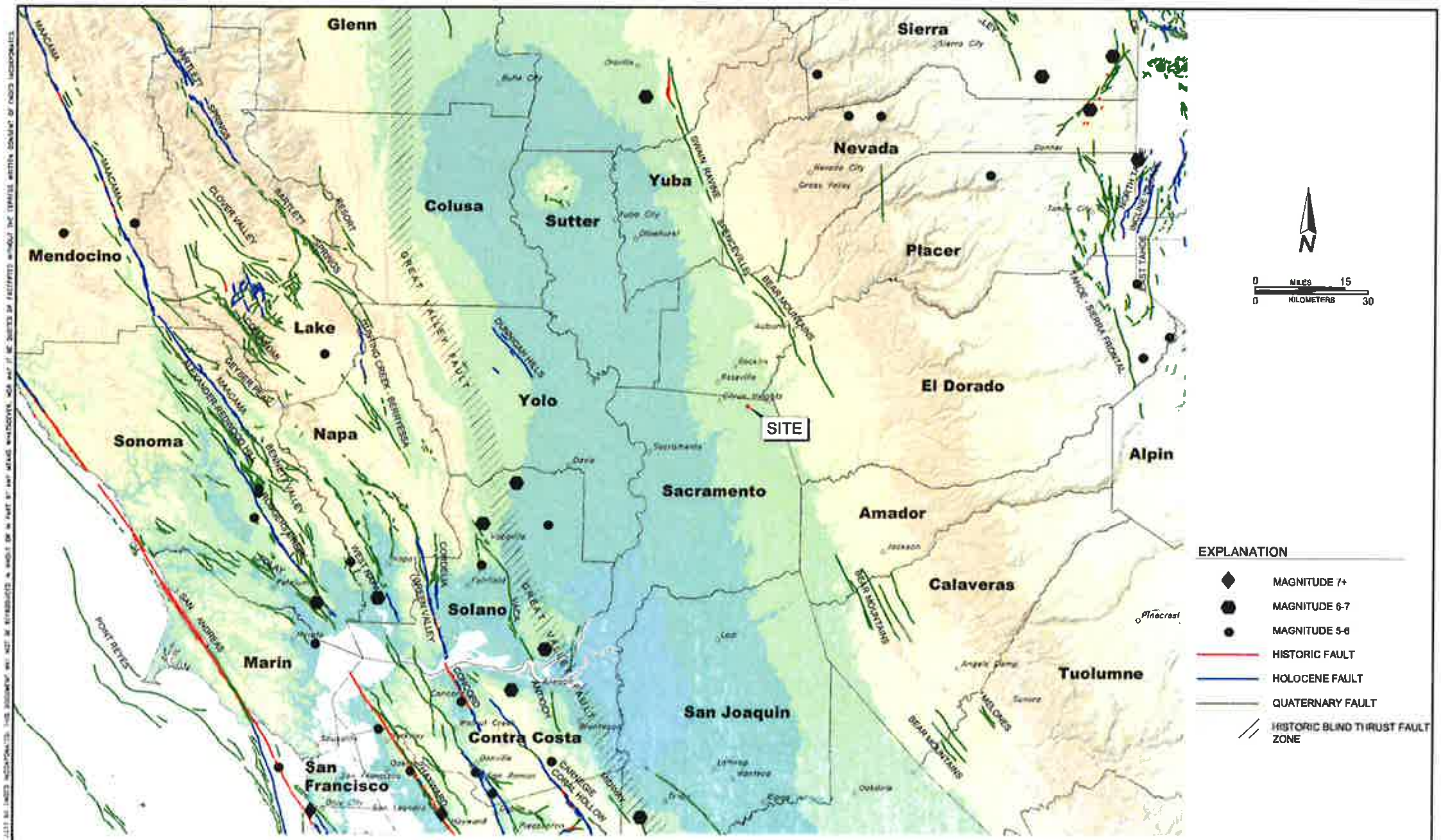
TP8 — TEST PIT (ENGEO, 2017)

GEOLOGIC CONTACT

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE AND OMNI MEANS ENGINEERING SOLUTIONS, JULY 2017

ENGEO — Expect Excellence	SITE PLAN CANYON TERRACE APARTMENTS FOLSOM, CALIFORNIA	PROJECT NO.: 12732.000.000 SCALE: AS SHOWN DRAWN BY: JCS / CHECKED BY: MMG	FIGURE NO. 2

ORIGINAL FIGURE PRINTED IN COLOR



BASE MAP SOURCE:
COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATASET (NED) AT 30 METER RESOLUTION
U.S.G.S. QUATERNARY FAULT DATABASE, NOVEMBER, 2010
U.S.G.S. HISTORIC EARTHQUAKE DATABASE (1800-2000)

ENGEO Expect Excellence	REGIONAL FAULTING AND SEISMICITY CANYON TERRACE APARTMENTS FOLSOM, CALIFORNIA	PROJECT NO.: 12732.000.000 SCALE: AS SHOWN DRAWN BY: JCS CHECKED BY: MMG	FIGURE NO. 3

APPENDIX A

TEST PIT LOGS

TEST PIT LOG TP1

ENGEO
Expect Excellence

Logged By: Abram Magel Logged Date: June 13, 2017 Equipment: Case 580 Super N	Canyon Terrace Apartments Folsom, California 12732.000.000

Depth (Feet)	Description	Depth of Test (Feet)	Fines Content (%)	Moisture Content (%)	Expansion Index
0 - 1½	CLAYEY SAND with GRAVEL and COBBLE (SC/GC), dark reddish brown, wet, fine to coarse sand, approximately 30% fines, well-rounded cobble up to 6-inch diameter [FILL].	½	21.9	15.6	
1½ - 8	MEHRTEN CONGLOMERATE, cobble and gravel in a clayey sand matrix, dark reddish brown, wet, fine to coarse sand, approximately 15% fines, well-rounded cobble up to 6-inch diameter [NATIVE].				
3	Cobble up to 9-inch diameter.				
4	Some cemented sand around cobbles.	4		8.0	
7	Occasional boulders up to 12-inch diameter.				
8	Bottom of test pit at 8 feet. No groundwater encountered.				

TEST PIT LOG TP2

Logged By: Abram Magel
Logged Date: June 13, 2017
Equipment: Case 580 Super N

Canyon Terrace Apartments
Folsom, California
12732.000.000

Depth (Feet)	Description	Depth of Test (Feet)	Fines Content (%)	Moisture Content (%)	Expansion Index
0 - 2	COBBLE and GRAVEL with CLAYEY SAND (GC/SC), dark reddish brown, moist, approximately 15% clayey sand, well-rounded, trace boulders up to 16-inch diameter [FILL].	½		9.5	
2 - 6½	MEHRTEN CONGLOMERATE, cobble, boulders, and gravel in a clayey sand matrix, dark reddish brown, moist, fine to coarse sand, well-rounded cobble up to 6-inch diameter [NATIVE].	2½	13.9		
6½ - 7½	MEHRTEN SANDSTONE/SILTSTONE, gray extremely weak, completely weathered, laminated, minor rust staining, trace mica.				
7½ - 9	MEHRTEN SANDSTONE, dark brown with white and black grains, extremely weak, highly to completely weathered.				
9	Bottom of the test pit at 9 feet. No groundwater encountered.				

TEST PIT LOG TP3

Logged By: Abram Magel Logged Date: June 13, 2017 Equipment: Case 580 Super N	Canyon Terrace Apartments Folsom, California 12732.000.000

Depth (Feet)	Description	Depth of Test (Feet)	Fines Content (%)	Moisture Content (%)	Expansion Index
0 – 2½	CLAYEY SAND (SC), dark brown with rust staining, wet, medium-grained sand, approximately 15% fines [LAGUNA FORMATION].	½		18.7	
2½ - 10½	CEMENTED SILTY SAND with GRAVEL (SM), light yellowish brown, moist, fine to coarse sand, angular to rounded fine gravel, weak to moderate cementation, abundant quartz grains.	2½	26.5		
6	Grades to more cementation.	6		18.8	
9½	Grades to less cementation.				
10½	Bottom of test pit at 10½ feet. No groundwater encountered.				

TEST PIT LOG TP4

Logged By: Abram Magel Logged Date: June 13, 2017 Equipment: Case 580 Super N	Canyon Terrace Apartments Folsom, California 12732.000.000

Depth (Feet)	Description	Depth of Test (Feet)	Fines Content (%)	Moisture Content (%)	Expansion Index
0 – 4	CLAYEY GRAVEL with COBBLE and SAND (GC), dark reddish brown, slightly moist, fine to coarse gravel, fine to coarse sand, approximately 15% fines, well-rounded cobble up to 12 inches, concrete fragments [FILL].	1		7.8	26
4 - 5	CLAYEY SAND with GRAVEL (SC/CL), dark bluish gray, very moist, low plasticity, approximately 20% fine sand, trace cobble up to 6 inches, grass, decomposing organics odor [NATIVE].	4	46.3	20.2	
5 - 10	MEHRTEN CONGLOMERATE, gravel and cobble in clayey sand matrix, dark bluish gray matrix, moist, fine to coarse gravel, well-rounded cobbles up to 4-inch diameter, some cemented sandy clay on cobbles.				
10	Bottom of test pit at 10 feet. No groundwater encountered.				

TEST PIT LOG TP5

Logged By: Abram Magel Logged Date: June 13, 2017 Equipment: Case 580 Super N	Canyon Terrace Apartments Folsom, California 12732.000.000

Depth (Feet)	Description	Depth of Test (Feet)	Fines Content (%)	Moisture Content (%)	Expansion Index
0 – 4	SANDY CLAY with COBBLE (CL), dark reddish brown, slightly moist, low plasticity, approximately 45% fine sand, well-rounded cobble up to 12 inches, concrete fragments and trash [FILL].	½		9.8	26
3½	Grades to moist, approximately 35% sand.				
4 – 7½	MEHRTEN CONGLOMERATE, cobble and gravel in sandy clay matrix, dark bluish gray, moist, well-rounded cobble up to 6 inches, grass, decomposing organics odor [NATIVE].	4	32.1		
7	Some cemented matrix on cobbles.				
7½	Bottom of test pit at 7½ feet. No groundwater encountered.				

No photographs taken

TEST PIT LOG TP6

Logged By: Abram Magel Logged Date: June 13, 2017 Equipment: Case 580 Super N	Canyon Terrace Apartments Folsom, California 12732.000.000

Depth (Feet)	Description	Depth of Test (Feet)	Fines Content (%)	Moisture Content (%)	Expansion Index
0 – 2½	SANDY CLAY with GRAVEL AND COBBLE (CL), dark gray with rust staining, very moist, low plasticity, fine sand, fine to coarse gravel, cobble to 3-inch diameter [FILL].	½		17.6	
2½ - 4	Grades to no cobble [NATIVE].				
4 -9	CEMENTED SANDY SILT (ML), dark yellowish brown, moist, low plasticity, fine to coarse angular sand, trace fine gravel [LAGUNA FORATION].	4	52.5	18.8	
6½	Grades to more yellowish, finer sand, some mica.	6½			
8	Intact fine gravel (some quartz), increasing coarse sand.				
9	Bottom of test pit at 9 feet. No groundwater encountered.				

TEST PIT LOG TP7

Logged By: Abram Magel Logged Date: June 13, 2017 Equipment: Case 580 Super N	Canyon Terrace Apartments Folsom, California 12732.000.000

Depth (Feet)	Description	Depth of Test (Feet)	Fines Content (%)	Moisture Content (%)	Expansion Index
0 - 2½	SANDY CLAY with GRAVEL (CL), dark reddish brown, moist, low plasticity, approximately 40% sand and gravel, trace cobbles to 6-inch diameter, quartz gravel pieces [FILL].	½		9.4	
2½ - 4	Grades to no cobble, with rust staining, grass and decomposing organics [NATIVE].	2	41.5		
4 – 6	CEMENTED SANDY SILT (ML), grayish green, slightly moist, low plasticity, very fine grained sand, some mica, weak to moderate cementation [LAGUNA FORMATION].				
6 – 8	CEMENTED SAND with SILT (SP-SM), dark brown, moist, fine to coarse sand, abundant mica, weak cementation.	6		25.7	
8 – 10	CEMENTED CLAY with SAND (CL), light yellowish brown with rust staining, slightly moist, low plasticity, fine sand, moderate cementation.				
9½	Grades to dark brown with coarse sand.				
10	Bottom of test pit at 10 feet. No groundwater encountered.				

TEST PIT LOG TP8

Logged By: Abram Magel Logged Date: June 8, 2017 Equipment: Case 580 Super N	Canyon Terrace Apartments Folsom, California 12732.000.000

Depth (Feet)	Description	Depth of Test (Feet)	Fines Content (%)	Moisture Content (%)	Expansion Index
0 – 4½	SANDY CLAY with COBBLE (CL), dark reddish brown, very moist, medium plasticity, approximately 20% fine to coarse sand, cobble up to 10-inch diameter [FILL].	½		23.4	64
4½ - 7	FAT CLAY with SAND (CH), olive brown with iron oxide streaks, moist, high plasticity, approximately 30% fine sand [LAGUNA FORMATION].	5			97
7 – 10½	CEMENTED SILTY SAND (SM), grayish green with rust staining, slightly moist, fine to coarse sand, trace fine gravel.	7	25.5	15.9	
8	Grades to more green.				
9½	Grades to more gravel.				
10½	Bottom of test pit at 10½ feet. No groundwater encountered.				

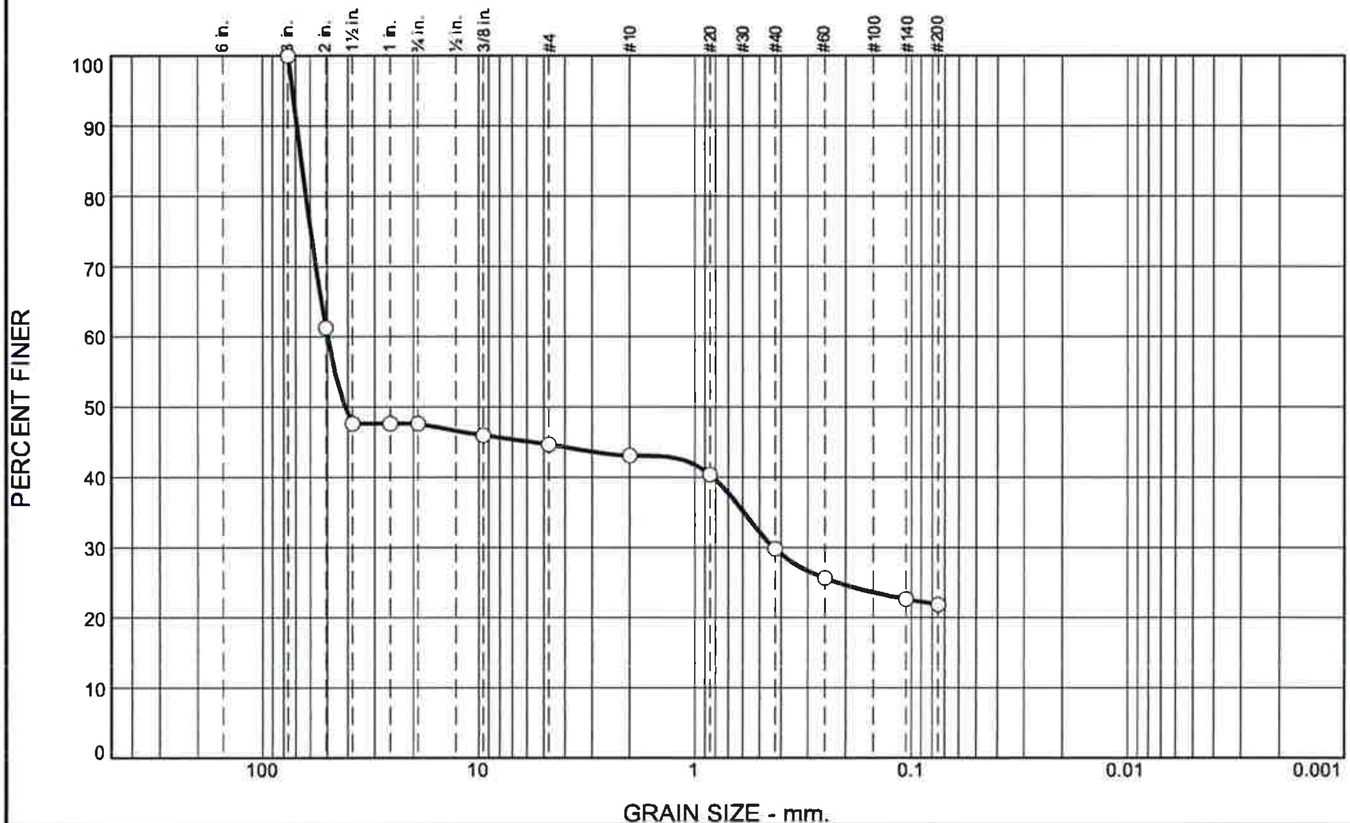
No photographs taken

APPENDIX B

LABORATORY TEST DATA

Particle Size Distribution Report
Expansion Index Test Report
Moisture Content Determination
R-Value Test Report
Analytical Results of Soil Corrosion (2 pages)

Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	52.4	2.9	1.6	13.3	7.9	21.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2.0"	61.3		
1.5"	47.6		
1"	47.6		
3/4"	47.6		
3/8"	46.0		
#4	44.7		
#10	43.1		
#20	40.4		
#40	29.8		
#60	25.6		
#140	22.6		
#200	21.9		

* (no specification provided)

Soil Description

See exploration logs

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 69.3655 D_{85}= 66.1118 D_{60}= 49.9046
D_{50}= 41.3356 D_{30}= 0.4313 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Tested per ASTM D6913

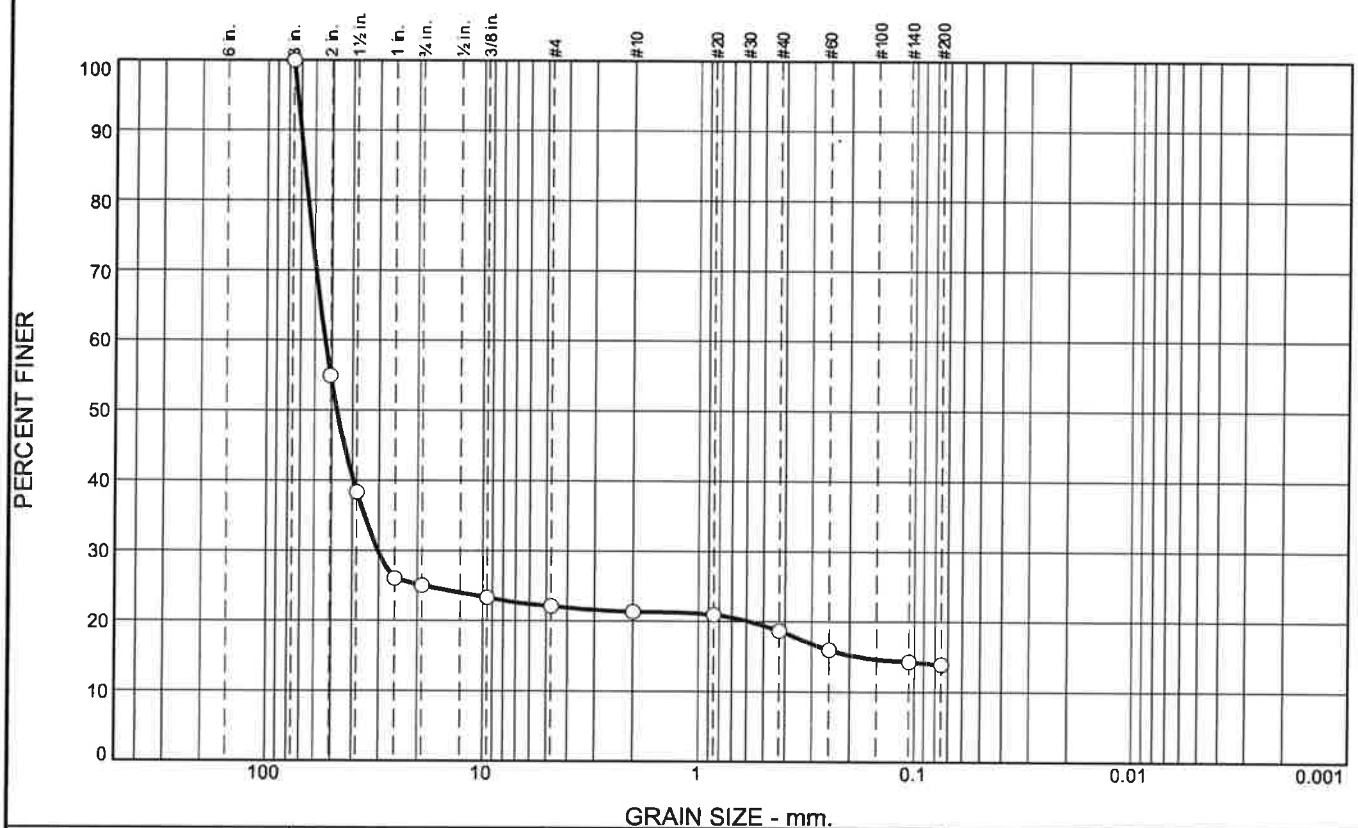
Source of Sample: GEX **Depth:** 0.5 feet
Sample Number: TP1@0.5 **Date:** 06-23-2017

ENGEO INCORPORATED

Client: OMNI-MEANS, Ltd.
Project: Canyon Terrace Apartments
Project No: 12732.000.000 PH001 **Figure**

Tested By: R. Montalvo **Checked By:** M. Gilbert

Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	75.0	2.9	0.8	2.6	4.8	13.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2.0"	55.0		
1.5"	38.3		
1"	26.0		
3/4"	25.0		
3/8"	23.3		
#4	22.1		
#10	21.3		
#20	20.9		
#40	18.7		
#60	16.0		
#140	14.3		
#200	13.9		

* (no specification provided)

Soil Description

See exploration logs

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 70.3659 D_{85}= 67.5707 D_{60}= 53.8287
D_{50}= 47.5175 D_{30}= 30.4439 D_{15}= 0.1827
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Tested per ASTM D6913

Source of Sample: GEX **Depth:** 2.5 feet
Sample Number: TP2@2.5

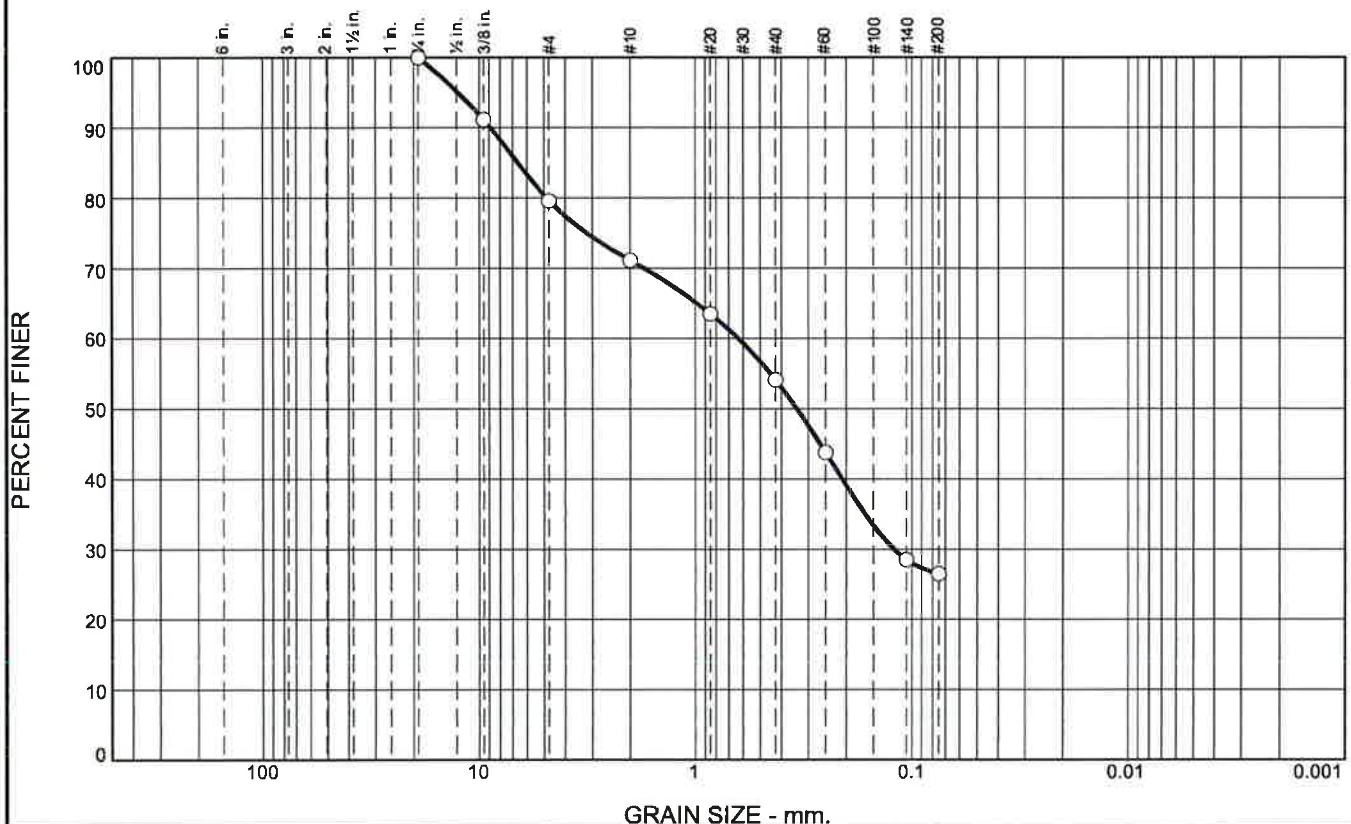
Date: 06-23-2017

ENGEO INCORPORATED

Client: OMNI-MEANS, Ltd.
Project: Canyon Terrace Apartments
Project No: 12732.000.000 PH001 **Figure**

Tested By: R. Montalvo **Checked By:** M. Gilbert

Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	20.4	8.5	17.0	27.6	26.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
3/8"	91.1		
#4	79.6		
#10	71.1		
#20	63.5		
#40	54.1		
#60	43.8		
#140	28.5		
#200	26.5		

* (no specification provided)

Soil Description

See exploration logs

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 8.8773 D_{85}= 6.6326 D_{60}= 0.6324
D_{50}= 0.3395 D_{30}= 0.1210 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Tested per ASTM D6913

Source of Sample: GEX **Depth:** 2.5 feet
Sample Number: TP3@2.5

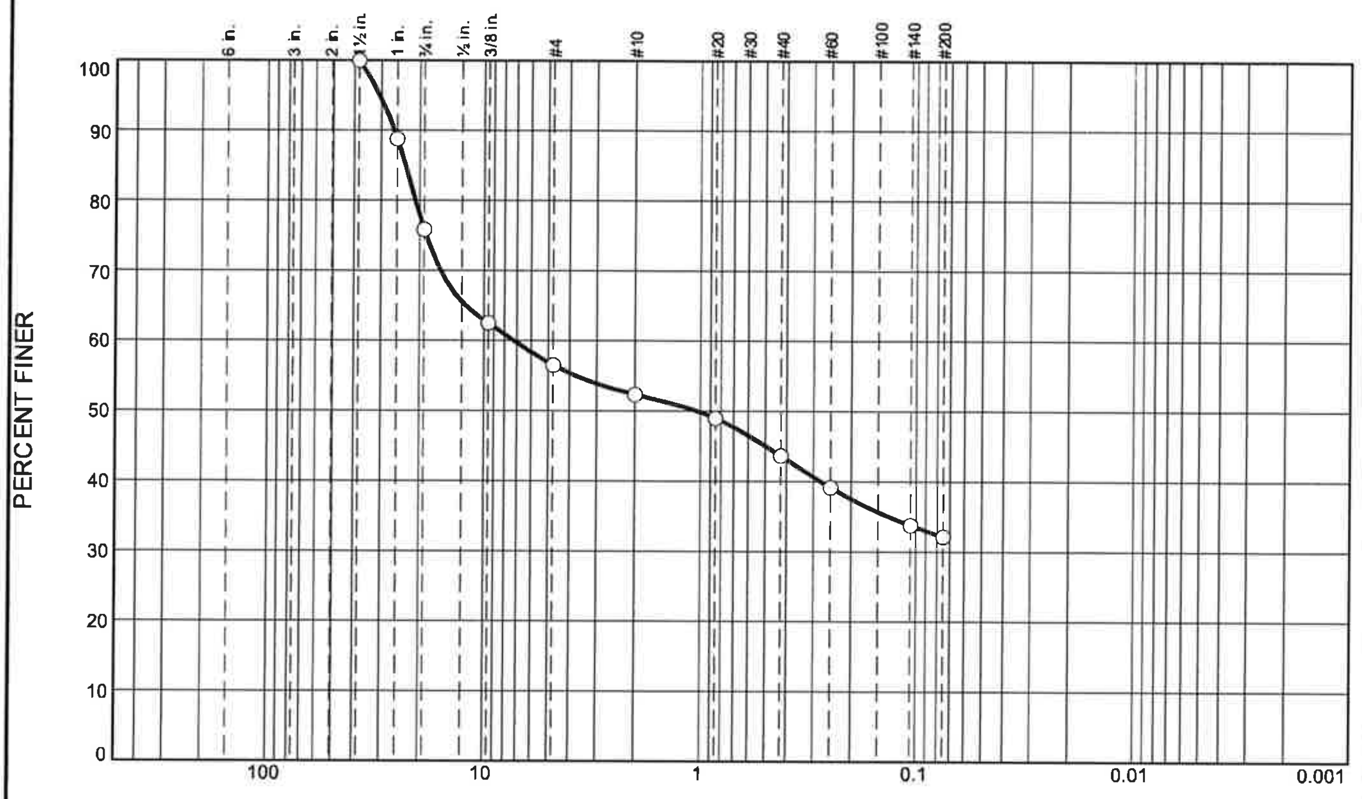
Date: 06-23-2017

ENGEO INCORPORATED

Client: OMNI-MEANS, Ltd.
Project: Canyon Terrace Apartments
Project No: 12732.000.000 PH001 **Figure**

Tested By: R. Montalvo **Checked By:** M. Gilbert

Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	24.2	19.3	4.2	8.7	11.5	32.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0		
1"	88.8		
3/4"	75.8		
3/8"	62.5		
#4	56.5		
#10	52.3		
#20	49.0		
#40	43.6		
#60	39.1		
#140	33.8		
#200	32.1		

* (no specification provided)

Soil Description

See exploration logs

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 26.2085 D_{85}= 23.2932 D_{60}= 7.2307
D_{50}= 1.0342 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Tested per ASTM D6913

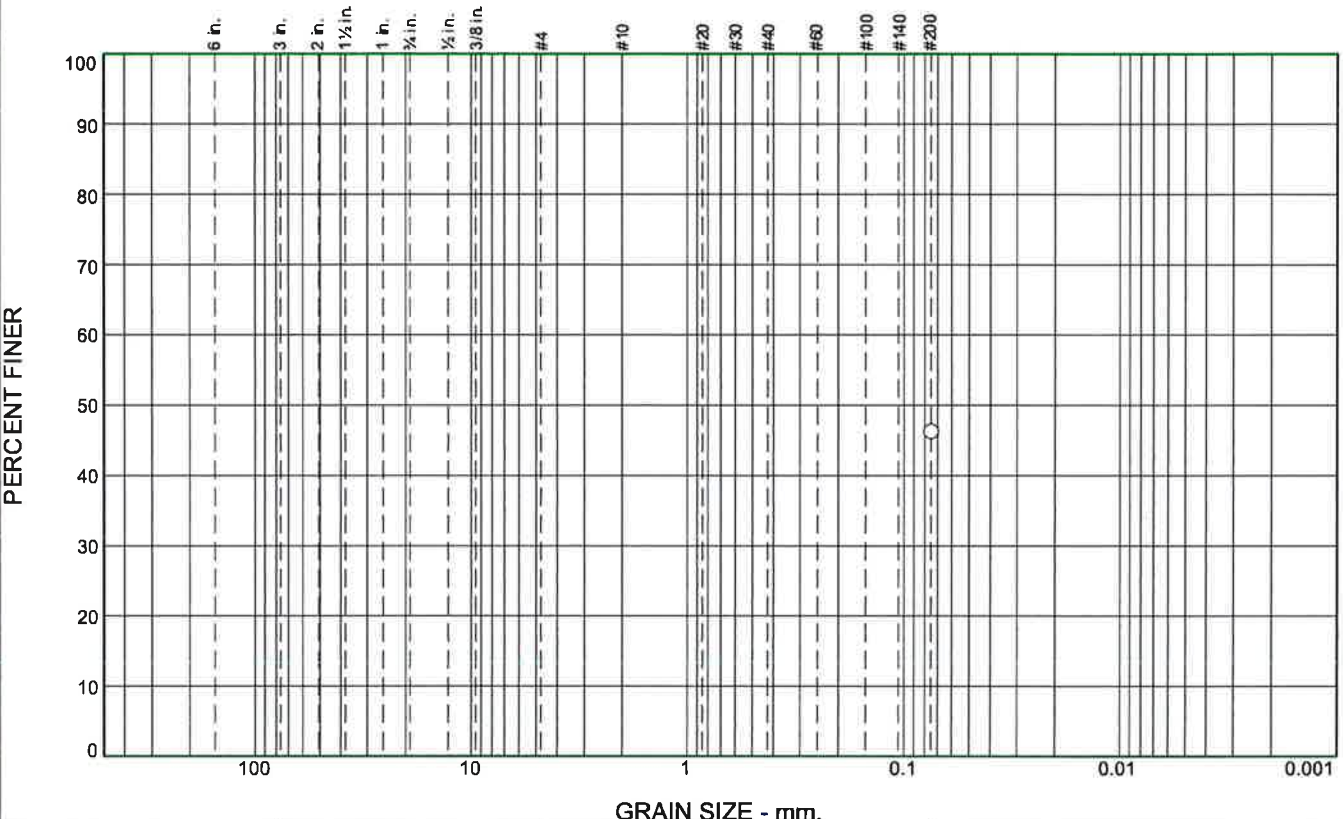
Source of Sample: GEX **Depth:** 4 feet
Sample Number: TP5@4 **Date:** 06-23-2017

ENGEO INCORPORATED

Client: OMNI-MEANS, ITD.
Project: Canyon Terrace Apartments
Project No: 12732.000.000 PH001 **Figure**

Tested By: R. Montalvo **Checked By:** M. Gilbert

Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						46.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	46.3		

* (no specification provided)

Soil Description

See exploration logs

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Tested per ASTM D6913

Source of Sample: GEX **Depth:** 4 feet
Sample Number: TP4@4 **Date:** 06-23-2017

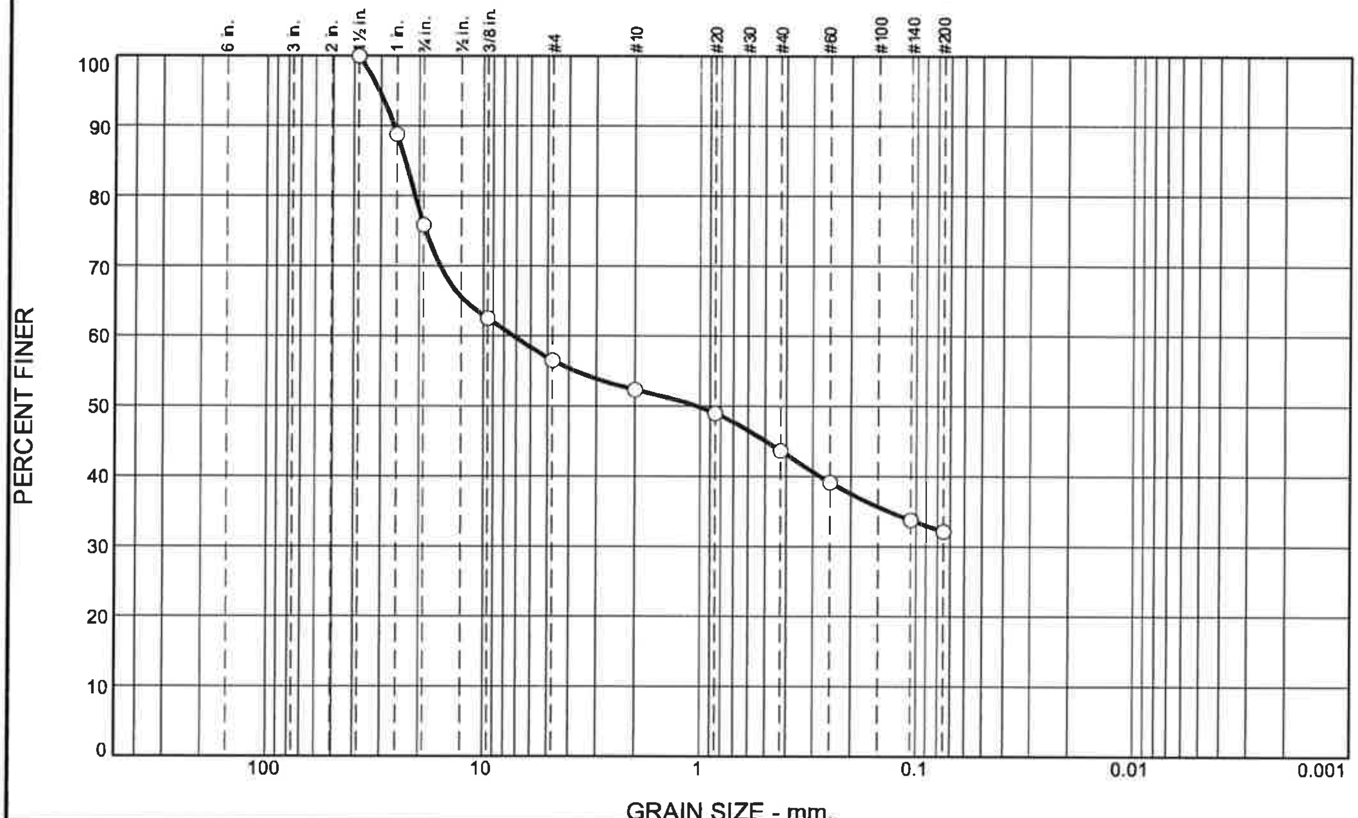
ENGEO INCORPORATED

Client: OMNI-MEANS, Ltd.
Project: Canyon Terrace Apartments

Project No: 12732.000.000 PH001 **Figure**

Tested By: R. Montalvo **Checked By:** M. Gilbert

Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	24.2	19.3	4.2	8.7	11.5	32.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0		
1"	88.8		
3/4"	75.8		
3/8"	62.5		
#4	56.5		
#10	52.3		
#20	49.0		
#40	43.6		
#60	39.1		
#140	33.8		
#200	32.1		

* (no specification provided)

Soil Description

See exploration logs

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 26.2085 D_{85}= 23.2932 D_{60}= 7.2307
D_{50}= 1.0342 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Tested per ASTM D6913

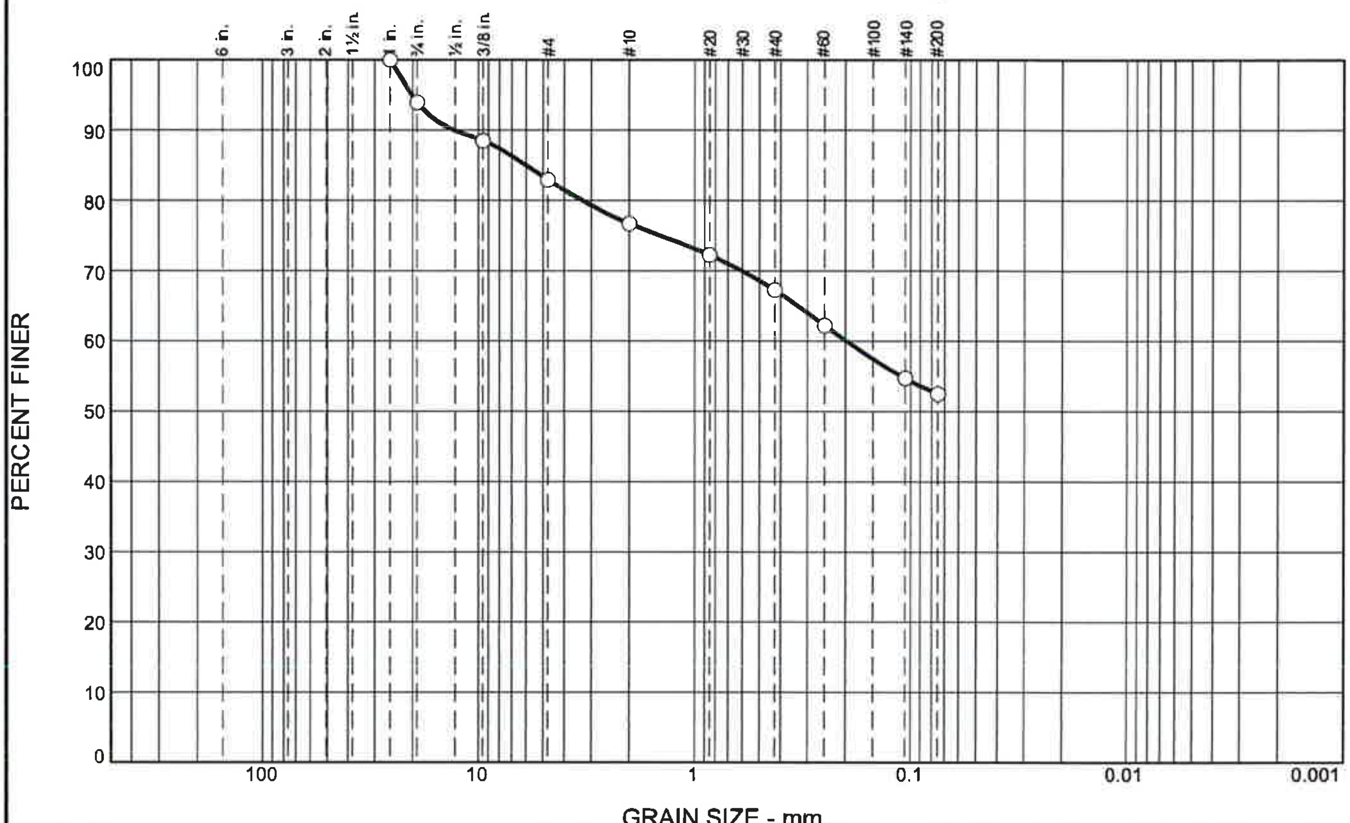
Source of Sample: GEX **Depth:** 4 feet
Sample Number: TP5@4 **Date:** 06-23-2017

ENGEO INCORPORATED

Client: OMNI-MEANS, Ltd.
Project: Canyon Terrace Apartments
Project No: 12732.000.000 PH001 **Figure**

Tested By: R. Montalvo **Checked By:** M. Gilbert

Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.1	11.0	6.2	9.5	14.7	52.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
3/4"	93.9		
3/8"	88.5		
#4	82.9		
#10	76.7		
#20	72.2		
#40	67.2		
#60	62.2		
#140	54.7		
#200	52.5		

* (no specification provided)

Soil Description

See exploration logs

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 12.9347 D_{85}= 6.0261 D_{60}= 0.1981
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Tested per ASTM D6913

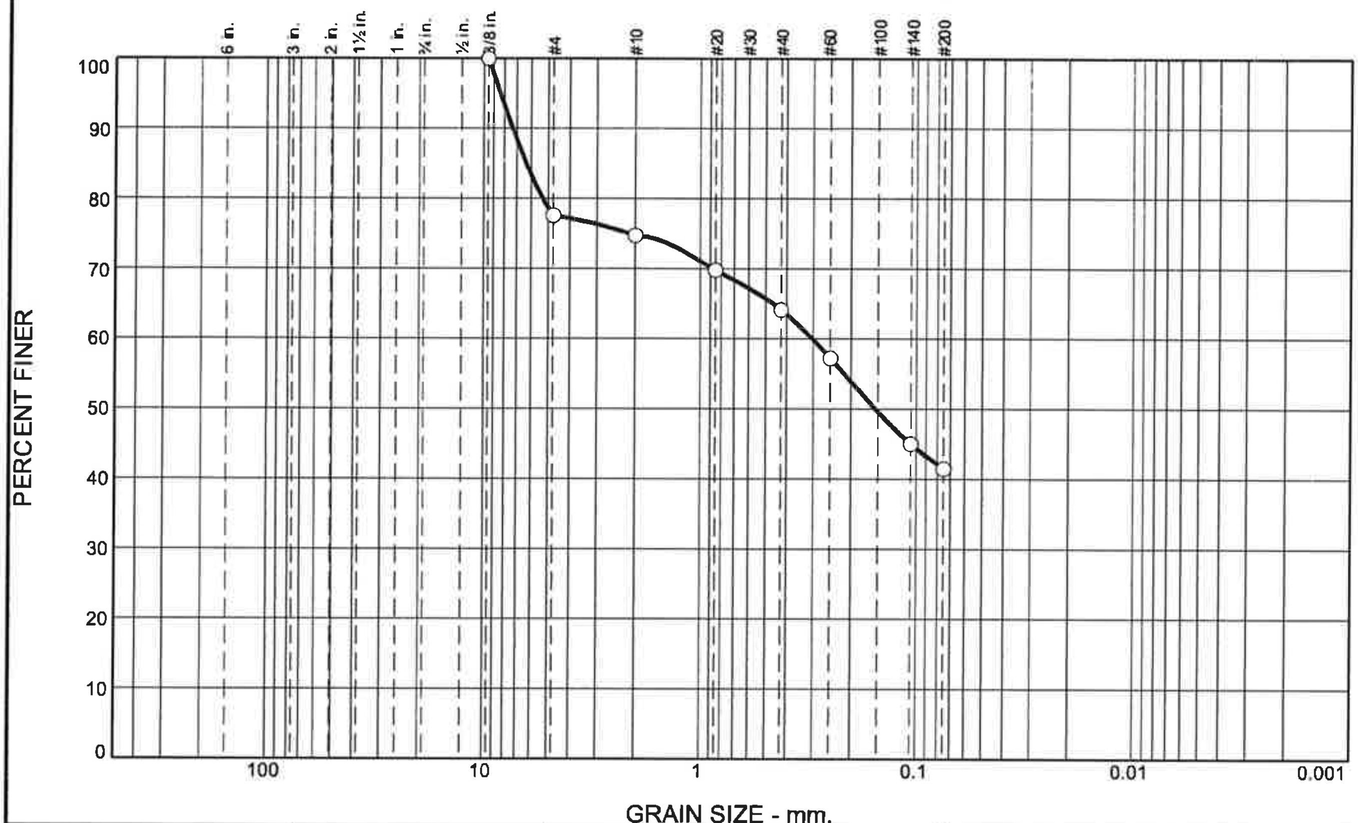
Source of Sample: GEX **Depth:** 4 feet
Sample Number: TP6@4 **Date:** 06-23-2017

ENGEO INCORPORATED

Client: OMNI-MEANS, Ltd.
Project: Canyon Terrace Apartments
Project No: 12732.000.000 PH001 **Figure**

Tested By: R. Montalvo **Checked By:** M. Gilbert

Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	22.5	2.8	10.6	22.6	41.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	77.5		
#10	74.7		
#20	69.8		
#40	64.1		
#60	57.2		
#140	45.0		
#200	41.5		

* (no specification provided)

Soil Description

See exploration logs

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 7.3414 D_{85}= 6.3490 D_{60}= 0.3039
D_{50}= 0.1545 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Tested per ASTM D6913

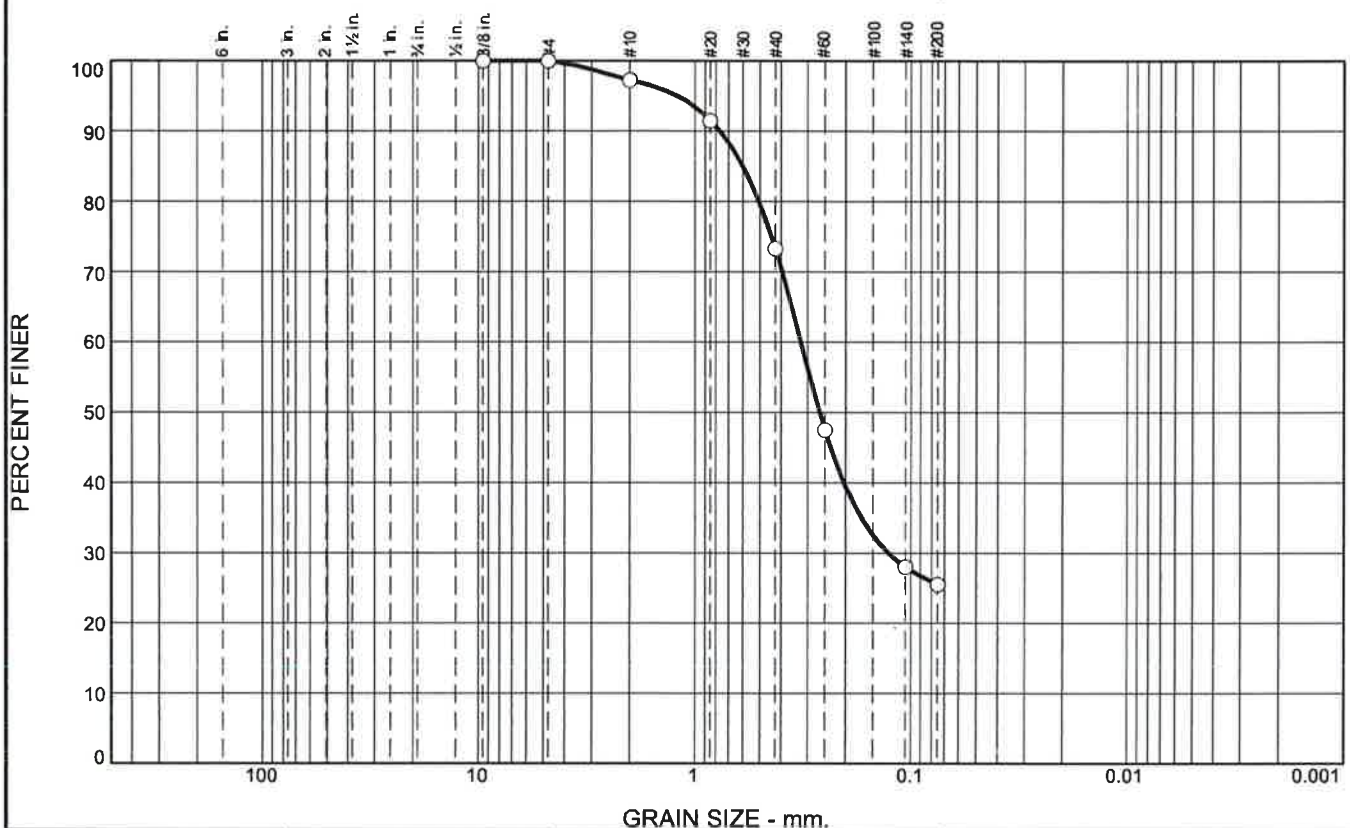
Source of Sample: GEX **Depth:** 2 feet
Sample Number: TP7@2 **Date:** 06-23-2017

ENGEO INCORPORATED

Client: OMNI-MEANS, Ltd.
Project: Canyon Terrace Apartments
Project No: 12732.000.000 PH001 **Figure**

Tested By: R. Montalvo **Checked By:** M. Gilbert

Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	2.8	24.0	47.7	25.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	100.0		
#10	97.2		
#20	91.5		
#40	73.2		
#60	47.5		
#140	28.0		
#200	25.5		

* (no specification provided)

Soil Description

See exploration logs

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.7690 D_{85}= 0.6025 D_{60}= 0.3238
D_{50}= 0.2645 D_{30}= 0.1274 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Tested per ASTM D6913

Source of Sample: GEX **Depth:** 7 feet
Sample Number: TP8@7

Date: 06-23-2017

ENGEO INCORPORATED

Client: OMNI-MEANS, Ltd.
Project: Canyon Terrace Apartments

Project No: 12732.000.000 PH001 **Figure**

Tested By: R. Montalvo **Checked By:** M. Gilbert

EXPANSION INDEX TEST REPORT
ASTM D4829

PROJECT NAME:	Canyon Terrace Apartments		**REPORT DATE:**	6/23/2017
PROJECT NO.:	12732.000.000		**SAMPLE DATE:**	NA
CLIENT:	OMNI-MEANS Ltd.		**TESTED BY:**	R.Montalvo
SAMPLE ID:	TP4@1/TP5@0.5 composite		**REVIEWED BY:**	M. Gilbert
SAMPLE DESCRIPTION:	See exploration logs			

Sample ID	Soil Description	Initial Dry Density (pcf)	Initial Moisture Content (%)	Final Moisture Content (%)	Expansion Index
TP4@1/TP5@0.5 composite	See exploration logs	107.7	10.1	19.2	26

CLASSIFICATION OF EXPANSIVE SOIL

Expansion Index	Potential Expansion
0-20	Very Low
21-50	Low
51-90	Medium
91-130	High
Above 130	Very High

EXPANSION INDEX TEST REPORT
ASTM D4829

PROJECT NAME: Canyon Terrace Apartments

PROJECT NO.: 12732.000.000

CLIENT: OMNI-MEANS Ltd.

SAMPLE ID: TP8@0.5

SAMPLE DESCRIPTION: See exploration logs

REPORT DATE: 6/23/2017

SAMPLE DATE: NA

TESTED BY: R.Montalvo

REVIEWED BY: M. Gilbert

Sample ID	Soil Description	Initial Dry Density (pcf)	Initial Moisture Content (%)	Final Moisture Content (%)	Expansion Index
TP8@0.5	See exploration logs	100.6	12.4	26.1	64

CLASSIFICATION OF EXPANSIVE SOIL

Expansion Index	Potential Expansion
0-20	Very Low
21-50	Low
51-90	Medium
91-130	High
Above 130	Very High

EXPANSION INDEX TEST REPORT
ASTM D4829

PROJECT NAME:	Canyon Terrace Apartments	**REPORT DATE:**	6/23/2017
PROJECT NO.:	12732.000.000	**SAMPLE DATE:**	NA
CLIENT:	OMNI-MEANS Ltd.	**TESTED BY:**	R.Montalvo
SAMPLE ID:	TP8@5	**REVIEWED BY:**	M. Gilbert
SAMPLE DESCRIPTION:	See exploration logs		

Sample ID	Soil Description	Initial Dry Density (pcf)	Initial Moisture Content (%)	Final Moisture Content (%)	Expansion Index
TP8@5	See exploration logs	97.8	13.8	29.2	97

CLASSIFICATION OF EXPANSIVE SOIL

Expansion Index	Potential Expansion
0-20	Very Low
21-50	Low
51-90	Medium
91-130	High
Above 130	Very High

MOISTURE CONTENT DETERMINATION

ASTM D2216

BORING/SAMPLE ID	TP1@0.5	TP1@4	TP2@0.5	TP3@0.5	TP3@6	TP4@1	TP4@4	TP5@0.5
DEPTH (ft)	0.5	4	0.5	0.5	6	1	4	0.5
Method A or B	B	B	B	B	B	B	B	B
%MOISTURE	15.6	8.0	9.5	18.7	18.8	7.8	20.2	9.8

BORING/SAMPLE ID	TP6@0.5	TP6@6.5	TP7@0.5	TP7@6	TP8@0.5	TP8@7		
DEPTH (ft)	0.5	6.5	0.5	6	0.5	7		
Method A or B	B	B	B	B	B	B		
%MOISTURE	17.6	18.8	9.4	25.7	23.4	15.9		

BORING/SAMPLE ID								
DEPTH (ft)								
Method A or B								
%MOISTURE								

BORING/SAMPLE ID								
DEPTH (ft)								
Method A or B								
%MOISTURE								

BORING/SAMPLE ID								
DEPTH (ft)								
Method A or B								
%MOISTURE								

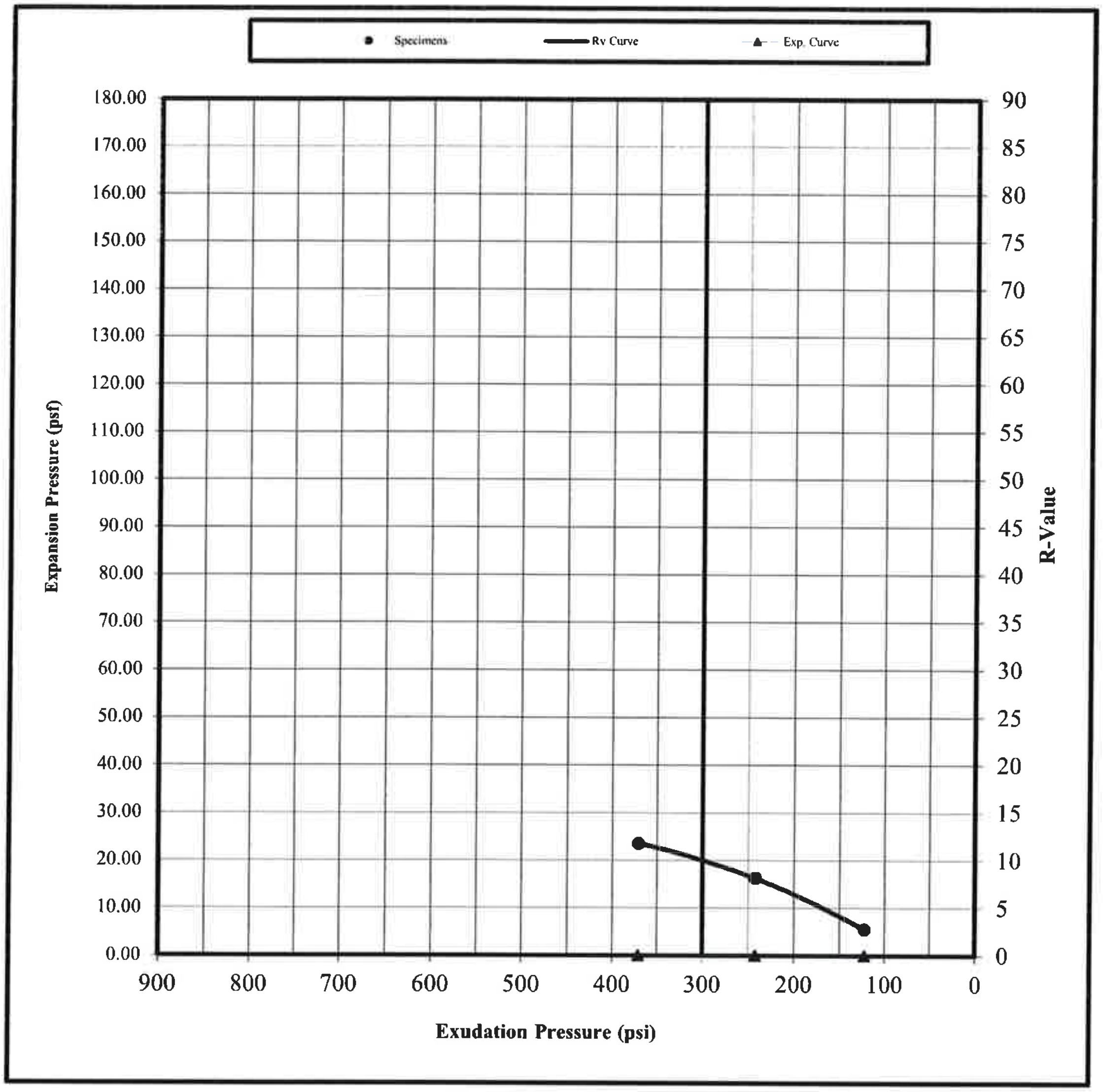
PROJECT NAME: Canyon Terrace Apartments
PROJECT NUMBER: 12732.000.000
CLIENT: OMNI-MEANS, Ltd.
PHASE NUMBER: 001

DATE: 06/21/17

ENGEO INCORPORATED

Tested by: R. Montalvo   Reviewed by: M. Gilbert

R VALUE TEST REPORT
CTM-301



Sample ID/Location: TP-2 @ 0.5'
Description: Dark brown sandy CLAY

Specimen	Specimen 1	Specimen 2	Specimen 3
Exudation Pressure (p.s.i.)	371	243	123
Expansion dial (0.0001")	0	0	0
Expansion Pressure (p.s.f.)	0	0	0
Resistance Value, "R"	12	8	3
% Moisture at Test	16.3	17.2	18.1
Dry Density at Test, p.c.f.	114.1	111.9	108.9
Minimum "R" Value per CALTRANS Standard Specifications	NA		
"R" Value at Exudation Pressure of 300 psi.	10		
Expansion Pressure (psf) at Exudation Pressure of 300 psi.	0		

PROJECT NAME: Canyon Terrace Apartments
PROJECT NUMBER: 12732.000.000
CLIENT: OMNI-MEANS, Ltd
PHASE NUMBER: 001

DATE: 06/23/17

GEO

Tested by: R. Montalvo
Reviewed by: M. Gilbert

Lab Address: 2213 Plaza Drive, Rocklin, CA 95765

Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 06/28/2017
Date Submitted 06/21/2017

To: John Boland
Engeo, Inc.
2213 Plaza Dr.
Rocklin, CA 95765

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

The reported analysis was requested for the following location:
Location : 12732.000.000 PH001 Site ID : TP1@4/TP3@.5.
Thank you for your business.

* For future reference to this analysis please use SUN # 74556-155598.

EVALUATION FOR SOIL CORROSION

Soil pH	5.94	
Minimum Resistivity	2.95 ohm-cm (x1000)	
Chloride	3.8 ppm	00.00038 %
Sulfate	11.9 ppm	00.00119 %

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

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 06/28/2017
Date Submitted 06/21/2017

To: John Boland
Engeo, Inc.
2213 Plaza Dr.
Rocklin, CA 95765

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

The reported analysis was requested for the following location:
Location : 12732.000.000 PH001 Site ID : TP6@1FT.
Thank you for your business.

* For future reference to this analysis please use SUN # 74556-155599.

EVALUATION FOR SOIL CORROSION

Soil pH	5.42		
Minimum Resistivity	3.22	ohm-cm (x1000)	
Chloride	7.1	ppm	00.00071 %
Sulfate	44.5	ppm	00.00445 %

METHODS

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

SAN RAMON

SAN FRANCISCO

SAN JOSE

OAKLAND

LATHROP

ROCKLIN

SANTA CLARITA

IRVINE

CHRISTCHURCH

WELLINGTON

AUCKLAND

ENGEO

Appendix G

Environmental Noise Analysis

Revised Canyon Terrace Apartments

City of Folsom, California

September 26, 2018

jcb Project # 2015-235

Prepared for:

omni·means
ENGINEERS PLANNERS

Attn:
Scott Robertson
943 Reserve Drive, Suite 100
Roseville, CA 95678

Prepared by:

j.c. brennan & associates, Inc.

Jim Brennan

Jim Brennan, INCE
President
Member, Institute of Noise Control Engineering (INCE)

INTRODUCTION

The Canyon Terrace Apartment project is located north of American River Canyon Drive in the City of Folsom, California. The proposed project includes the construction of 96 multi-family residential units in eight, three-story apartment buildings. The project is located adjacent to existing residential uses in all directions of the project. In addition, a small commercial shopping center is adjacent to the project site to the north. Figure 1 shows the site plan.

Traffic noise associated with American River Canyon Drive may affect the project design. Therefore, the City of Folsom has required an analysis to determine if the project will comply with the exterior and interior noise level criteria standards for transportation noise sources. This analysis will assess the traffic noise levels, and will compare them to the noise level standards of the City of Folsom General Plan Noise Element. If necessary, noise control measures will be recommended for the proposed project.

ENVIRONMENTAL SETTING

BACKGROUND INFORMATION ON NOISE

Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

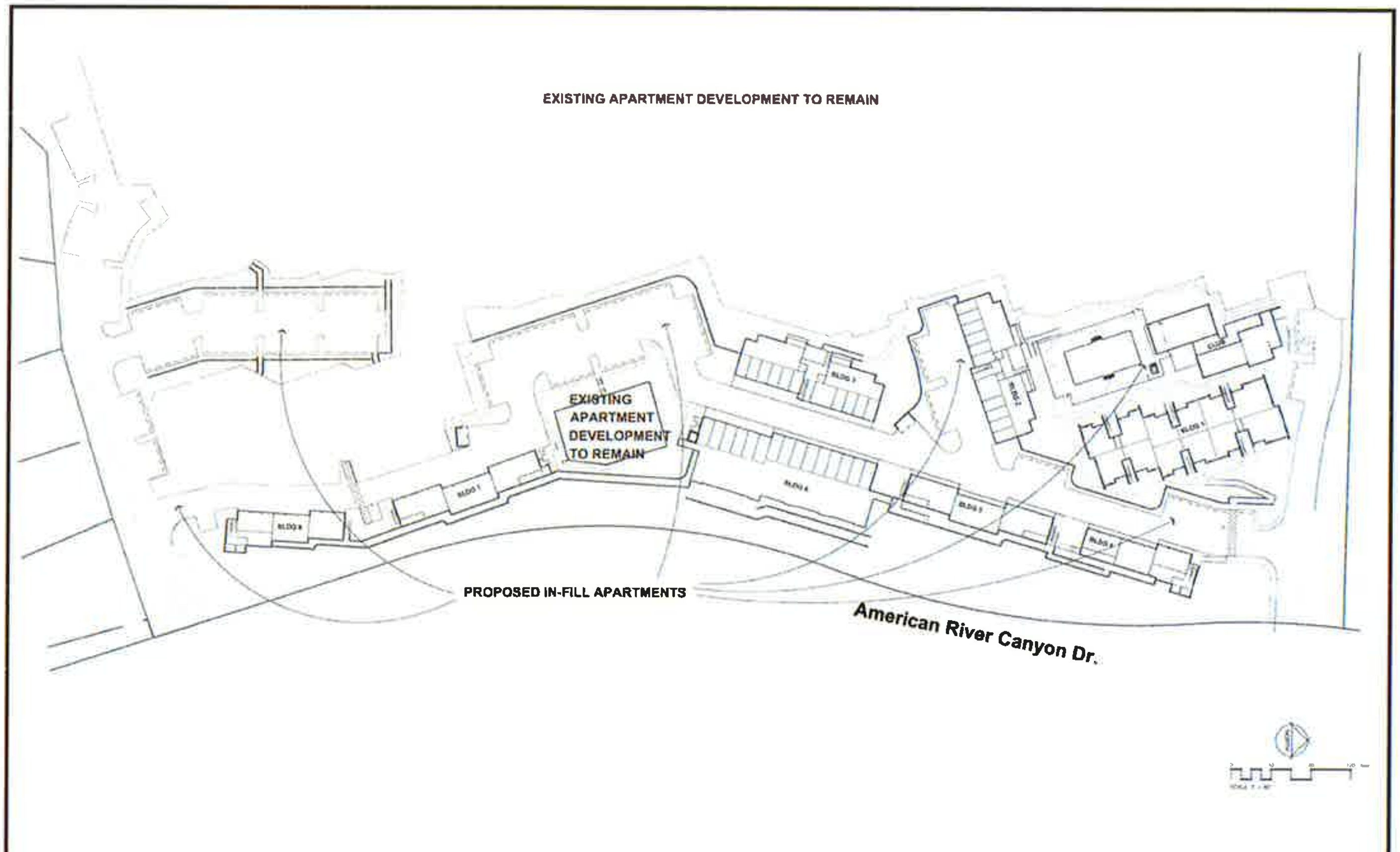
The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. Appendix A provides a summary of acoustical terms used in this report.



Canyon Terrace Apartments
Figure 1: Site Plan

j.c. brennan & associates
consultants in acoustics

Rev. 06/13/17

TABLE 1
TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. November, 2009.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

REGULATORY CONTEXT

REGULATORY SETTING

City of Folsom General Plan

The City of Folsom 2035 General Plan Safety and Noise Element provides the following goals and policies relative to noise.

GOAL SN 6.1: Protect the citizens of Folsom from the harmful effects of exposure to excessive noise and to protect the economic base of Folsom by preventing the encroachment of incompatible land uses within areas affected by existing noise-producing uses. (Existing GP, 30)

a. **SN 6.1.2 Noise Mitigation Measures:** Require effective noise mitigation for new development of residential or other sensitive land uses to reduce noise levels as follows:
    a. For noise due to traffic on public roadways, railroad line operations, and aircraft; achieve compliance with the performance standards within Table SN-2 (Table 2 of this report).

TABLE 2
NOISE COMPATIBILITY STANDARDS

Land Use	Exterior Noise Level Standard for Outdoor Activity Areas[a]	Interior Noise Level Standard	
	L_{dn} / CNEL, dB	L_{dn} / CNEL, dB	L_{eq}, dB[b]
Residential (Low Density Residential, Duplex, Mobile Homes)	60[c]	45	N/A
Residential (Multi Family)	65[d]	45	N/A
Transient Lodging (Motels/Hotels)	65[d]	45	N/A
Mixed-Use Developments	70	45	N/A
Schools, Libraries, Churches, Hospitals, Nursing Homes, Museums	70	45	N/A
Theaters, Auditoriums	70	N/A	35
Playgrounds, Neighborhood Parks	70	N/A	N/A
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75	N/A	N/A
Office Buildings, Business Commercial and Professional	70	N/A	45
Industrial, Manufacturing, and Utilities	75	N/A	45

Where a proposed use is not specifically listed on this table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the Community Development Department.
a. Outdoor activity areas for residential developments are considered to be the back yard patios or decks of single-family residential units, and the patios or common areas where people generally congregate for multifamily development. Outdoor activity areas for nonresidential developments are considered to be those common areas where people generally congregate, including outdoor seating areas. Where the location of outdoor activity areas is unknown, the exterior noise standard shall be applied to the property line of the receiving land use.
b. As determined for a typical worst-case hour during periods of use.
c. Where it is not possible to reduce noise in outdoor activity areas to 60 dB, L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior level of up to 65 dB, L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
d. Where it is not possible to reduce noise in outdoor activity areas to 65 dB, L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior level of up to 70 dB, L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

City of Folsom Municipal Code

Chapter 8.42 of the City of Folsom Municipal Code, entitled **NOISE CONTROL**, provides exterior noise level performance standards for stationary noise sources. In addition, this chapter also provides noise source exemptions which are applicable to this project.

8.42.040 Exterior noise standards.

A. It is unlawful for any person at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any affected single- or multiple-family residence, school church, hospital or public library situated in either the incorporated or unincorporated area to exceed the noise level standrds as set forth in the following table (Included here as Table 3:

TABLE 3

EXTERIOR NOISE LEVEL STANDARDS

Noise Level Category	Cumulative Number of minutes in any 1-hour time period	Daytime (dB) (7 a.m.–10 p.m.)	Nighttime (dB) (10 p.m.–7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65
Note: dB = A-weighted decibels Source: City of Folsom Code, Noise Control 1993			

B. In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.

C. Each of the noise level standards specified above shall be reduced by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring noises.

D. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be the noise level standards as specified above.

Noise Source Exemptions (Section 8.42.060)

Section 8.42.060 of the City of Folsom Municipal Code establishes the following activities that are considered exempt from the associated exterior noise provisions:

A. Activities conducted in unlighted public parks, public playgrounds and public or private school grounds, during the hours of 7 a.m. to dusk, and in lighted public parks, public playgrounds and public or private school grounds, during the hours of 7 a.m. to 11 p.m., including but not limited to school athletic and school entertainment events;

B. Any mechanical device, apparatus, or equipment used, related to or connected with emergency activities or emergency work;

C. Noise sources associated with construction, provided such activities do not take place before 7 a.m. or after 6 p.m. on any day except Saturday or Sunday, or before 8 a.m. or after 5 p.m. on Saturday or Sunday;

D. Noise sources associated with the maintenance of residential property provided such activities take place between the hours of seven a.m. to dusk on any day except Saturday or Sunday, between the hours of 8 a.m. to dusk on Saturday or Sunday;

E. Noise sources associated with agricultural activities on agricultural property;

F. *(Section Expired)*

G. Noise sources associated with the collection of waste or garbage from property devoted to commercial or industrial uses;

H. Any activity to the extent regulation thereof has been preempted by state or Federal law.

EVALUATION OF EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS

Traffic Noise Prediction Methodology

j.c. brennan & associates, Inc. employs the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA RD-77-108) for the prediction of traffic noise levels. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

j.c. brennan & associates, Inc. conducted continuous hourly ambient noise level measurements for a period of 24-hours on the project site from January 20th to January 21st, 2016. The noise level measurements were conducted to determine typical background average (L_{eq}), median (L_{50}) and maximum (L_{max}) noise levels, and to determine the effective day/night distribution of roadway traffic for inclusion in the traffic noise prediction methodology. Instrumentation consisted of a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter, which was calibrated in the field before and after use with an LDL Model CAL200 acoustical calibrator. Table 4 shows the results of the continuous hourly ambient noise level measurements. Figure 2 shows the noise measurement locations. Appendix B shows the complete results of the continuous 24 hour noise level measurement.

TABLE 4
SUMMARY OF MEASURED AMBIENT NOISE LEVELS
JANUARY 20TH AND 21ST, 2016

Site	Measured Ldn	Average Hourly Daytime & Evening (7:00am - 10:00pm)			Average Hourly Nighttime (10:00pm – 7:00am)		
		Leq	L50	Lmax	Leq	L50	Lmax
A	64 dBA	58 dBA	53 dBA	79 dBA	57 dBA	38 dBA	68 dBA
Source: j.c. brennan & associates, Inc. - 2016							

On Friday, June 2, 2017 j.c. brennan & associates, Inc., staff conducted short-term noise level measurements and concurrent counts of traffic on American River Canyon Drive, adjacent to the project site.

The purpose of the short-term traffic noise level measurements was to determine the accuracy of the FHWA model in describing the existing noise environment on the project site, while accounting for existing site conditions such as intervening structures, actual travel speeds, and roadway grade. Noise measurement results were compared to the FHWA model results by entering the observed traffic volume, speed, and distance as inputs to the FHWA model. See Figure 2 for the noise measurement location.

Instrumentation used for the measurement was a Larson Davis Laboratories (LDL) Model 824 precision integrating sound level meter which was calibrated in the field before use with an LDL CAL-200 acoustical calibrator. Table 5 shows the results of the traffic noise calibration. Appendix C provides the complete inputs and results of the FHWA model calibration procedures.

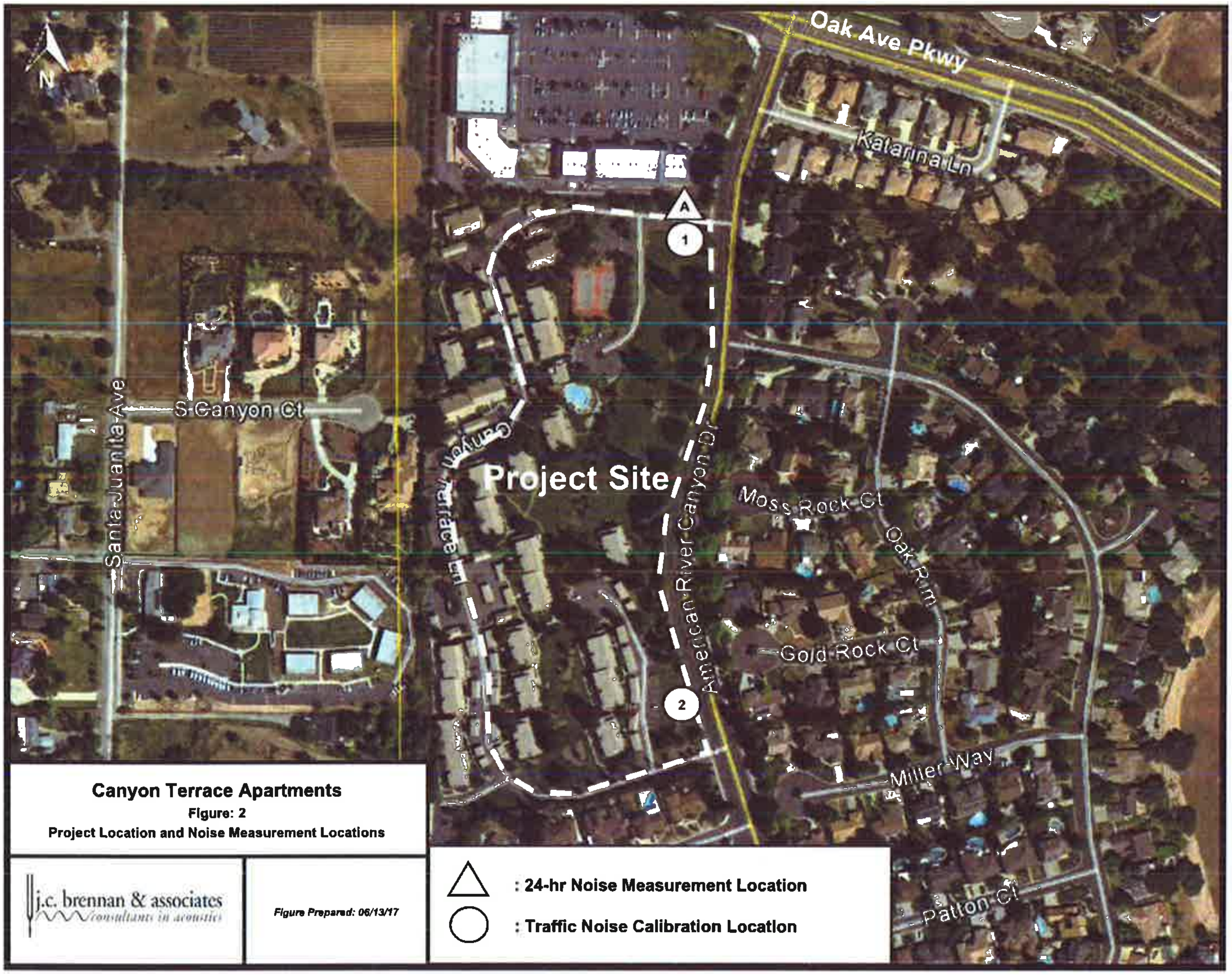
TABLE 5

COMPARISON OF FHWA MODEL TO MEASURED EXISTING TRAFFIC NOISE LEVELS

Vehicles.						Speed (mph)	Dist. (Feet)	Measured, L_{eq}	Modeled, L_{eq}*	Difference
Site	Time	Roadway	Autos	Med. Trk.	Hvy.Trk.					
1	10:40 am	American River Canyon Drive	31	0	0	40	51	60.8	61.4	0.6 dB
2	11:28 am	American River Canyon Drive	32	1	0	40	51	59.8	61.5	1.7 dB

* Acoustically "soft" site assumed
Source: j.c. brennan & associates, Inc. - 2017

The FHWA model over-predicted the traffic noise levels in comparison to the measured levels, as shown in Table 5. Therefore, no adjustments were made to the FHWA traffic noise prediction model.



Canyon Terrace Apartments
Figure: 2
Project Location and Noise Measurement Locations

Existing + Project Traffic Noise Levels

To determine the Existing + Project traffic noise levels on the project site and adjacent roadways, j.c. brennan & associates, Inc., utilized traffic volume predictions provided by Omni-Means, Ltd.

Table 6 shows the predicted Existing + Project traffic noise levels at the nearest building facades and the common outdoor activity areas. A complete listing of the FHWA Traffic Noise Prediction Model inputs is provided in Appendix C.

TABLE 6
PREDICTED AMERICAN RIVER CANYON DRIVE EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS

Segment	Traffic Noise Level, Ldn	Distance to Noise Contours	
		60 dB Ldn	*65 dB Ldn*
Apartments North of River Ridge Way	*60 dB*	*101'*	*47'*
Apartments South of River Ridge Way	*62 dB*	*93'*	*43'*
Pool Area	*43 dB*	*22'*	*10'*
Sources: j.c. brennan & associates, Inc., Omni-Means, and FHWA RD-77-108			

Analysis of Compliance with the City of Folsom Exterior Noise Level Standards:

The Table 5 data indicates that the Existing + Project traffic noise levels at the nearest building facades will not exceed the 65 dB Ldn exterior noise level standard.

Analysis of Compliance with the City of Folsom Interior Traffic Noise Levels:

Standard construction practices, consistent with the uniform building code typically provides an exterior-to-interior noise level reduction of approximately 25 dB, assuming that air conditioning is included for each unit, which allows residents to close windows for the required acoustical isolation. Therefore, as long as exterior noise levels at the building facades do not exceed 70 dB L_{dn}, the interior noise levels will typically comply with the interior noise level standard of 45 dB L_{dn}.

The predicted existing plus project traffic noise levels for 1st floor residential façades facing American River Canyon Drive north of River Ridge Way and South of River Ridge Way are 60 dB L_{dn} and 62 dB Ldn, respectively. Therefore, the interior noise levels are expected to comply with the interior noise level standard of 45 dB L_{dn}. However, due to the loss of ground attenuation a +3 dB offset is generally applied to 2nd floor building facades. The predicted exterior traffic noise levels for 2nd floor building facades of the first row of buildings facing American River Canyon Drive are 63 dB L_{dn} and 65 dB Ldn, respectively. Therefore, it is not expected that 2nd floor units of the first row of buildings facing American River Canyon Drive would exceed the 45 dB Ldn interior noise level standard.

CONSTRUCTION NOISE ANALYSIS

Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise-sensitive areas. Noise levels from typical construction equipment are shown in Table 7.

Noise generated by construction would be the greatest during site grading activities and excavation for underground utilities. Site preparation and grading generally takes approximately 2 to 4 months.

Activities involved in construction would generate maximum noise levels, as indicated in Table 7, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A primary project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would occur during daytime hours, pursuant to the requirements of the City of Folsom Noise Ordinance, as outlined below.

Table 7
Construction Equipment Noise

Type of Equipment	Predicted Noise Levels, L_{max} dB				Distances to Noise Contours (feet)	
	Noise Level at 50'	Noise Level at 100'	Noise Level at 200'	Noise Level at 400'	70 dB L_{max} contour	65 dB L_{max} contour
Auger Drill Rig	84	78	72	66	250	446
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

Source: *Roadway Construction Noise Model User's Guide.* Federal Highway Administration. FHWA-HEP-05-054. January 2006.

Construction activities associated with the proposed project will typically occur at distances of approximately 200 to 400 feet or more from the nearest noise-sensitive receptors. At a distance of 200 feet, construction related noise levels are expected to less than 64-77 dB L_{max}. Based upon Table 4, which shows the measured background noise levels, the maximum construction noise levels are similar to those measured during the daytime periods.

The City of Folsom Municipal Code exempts construction-generated noise that occurs between the hours of 7 a.m. to 6 p.m. Monday through Friday, and 8 a.m. and 5 p.m. Saturday and Sunday from the City's exterior noise standards. These exemptions are typical of City and County Noise Ordinances and reflect the recognition that construction-related noise is temporary in character, is generally acceptable when limited to daylight hours, and is part of what residents of urban areas expect as part of a typical urban noise environment (along with sirens, etc.)."

Construction activities would be temporary in nature, will occur during normal daytime working hours listed above, and will comply with the requirements of the City of Folsom Noise Ordinance. Therefore, construction noise will be a less than significant impact.

CONCLUSIONS

The proposed project is predicted to comply with the City of Folsom 65 dB L_{dn} exterior and 45 dB L_{dn} interior noise level standards, provided that the following mitigation measures are included in the project design:

1. Standard construction practices, consistent with the uniform building code typically provides an exterior-to-interior noise level reduction of approximately 25 dB, assuming that air conditioning is included for each unit, which allows residents to close windows for the required acoustical isolation. Therefore, as long as exterior noise levels at the building facades do not exceed 70 dB L_{dn}, the interior noise levels will typically comply with the interior noise level standard of 45 dB L_{dn}. The predicted exterior traffic noise levels for 2nd floor residential façades facing American River Canyon Drive north of River Ridge Way and South of River Ridge Way are 63 dB L_{dn} and 65 dB Ldn, respectively. Therefore, it is not expected that 2nd floor units of the first row of buildings facing American River Canyon Drive Boulevard could exceed the 45 dB Ldn interior noise level standard.

2. Air-conditioning or mechanical ventilation needs to be provided to allow windows to remain closed for acoustical isolation.

3. Construction activities should be limited to the hours of operations as defined in Chapter 8.42 of the municipal code.

Appendix A
Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50% of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the AMaximum@ level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is s rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

Appendix B
2015-235 Canyon Terrace Appartments
24hr Continuous Noise Monitoring - Site A
Wednesday January 20th - Thursday January 21st, 2016

Hour	Leq	Lmax	L50	L90
11:00	57	75	51	43
12:00	56	76	51	44
13:00	59	79	53	45
14:00	58	79	53	47
15:00	58	81	54	47
16:00	60	89	55	48
17:00	59	81	55	48
18:00	58	81	53	46
19:00	58	80	51	44
20:00	55	73	49	41
21:00	58	86	47	40
22:00	50	70	40	36
23:00	47	72	38	36
0:00	46	63	37	35
1:00	43	67	34	32
2:00	41	63	33	31
3:00	40	61	34	33
4:00	45	65	36	34
5:00	49	64	42	36
6:00	66	85	50	42
7:00	59	75	56	49
8:00	60	78	56	50
9:00	60	80	54	46
10:00	58	77	52	45

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	60.4	54.6	58.4	66.5	39.8	57.2
Lmax (Maximum)	88.7	73.4	79.3	85.5	61.0	67.9
L50 (Median)	56.1	47.2	52.6	50.2	33.1	38.2
L90 (Background)	49.5	40.3	45.6	42.5	31.5	35.0

Computed Ldn, dB	63.8
% Daytime Energy	69%
% Nighttime Energy	31%

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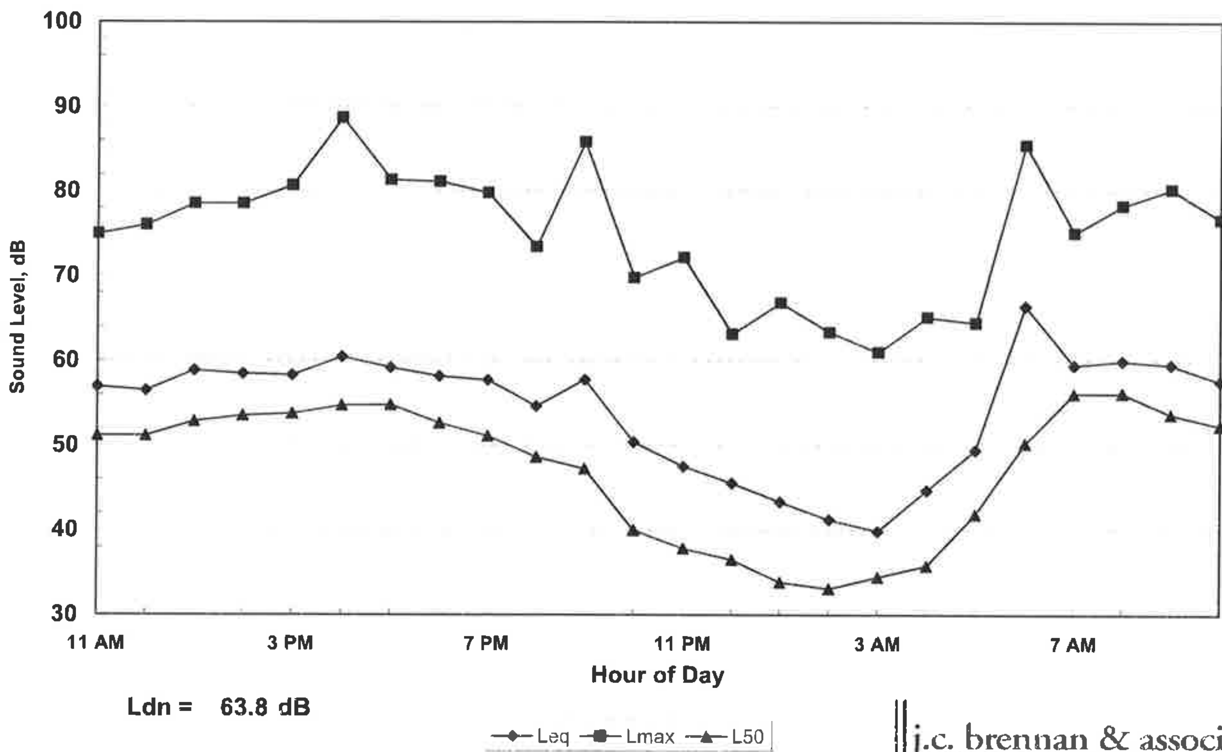
Appendix B
2015-235 Canyon Terrace Appartments
24hr Continuous Noise Monitoring - Site A
Wednesday January 20th - Thursday January 21st, 2016



Ldn = 63.8 dB

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Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Calibration Worksheet

Project Information:	Job Number:	2015-235
	Project Name:	FHWA Model
	Roadway Tested:	American River Canyon Drive
	Test Location:	Site 1
	Test Date:	June 2, 2017
Weather Conditions:	Temperature (Fahrenheit):	76
	Relative Humidity:	Dry
	Wind Speed and Direction:	5-10 from southwest
	Cloud Cover:	Clear
Sound Level Meter:	Sound Level Meter:	LDL Model 824
	Calibrator:	LDL Model CA200
	Meter Calibrated:	Immediately before and after test
	Meter Settings:	A-weighted, slow response
Microphone:	Microphone Location:	On Project Site
	Distance to Centerline (feet):	51
	Microphone Height:	5 feet above ground
	Intervening Ground (Hard or Soft):	**Soft**
	Elevation Relative to Road (feet):	5
Roadway Condition:	Pavement Type	Asphalt
	Pavement Condition:	Good
	Number of Lanes:	5
	Posted Maximum Speed (mph):	40
Test Parameters:	Test Time:	10:43 AM
	Test Duration (minutes):	10
	Observed Number Automobiles:	31
	Observed Number Medium Trucks:	1
	Observed Number Heavy Trucks:	1
	Observed Average Speed (mph):	45
Model Calibration:	Measured Average Level (L_{eq}):	60.8
	Level Predicted by FHWA Model:	61.4
	Difference:	***0.6 dB***

Conclusions: Note that the project site is at a lower elevation than the road.

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Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Calibration Worksheet

Project Information:	Job Number:	2015-235
	Project Name:	FHWA Model
	Roadway Tested:	American River Canyon Drive
	Test Location:	Site 2
	Test Date:	June 2, 2017
Weather Conditions:	Temperature (Fahrenheit):	76
	Relative Humidity:	Dry
	Wind Speed and Direction:	5-10 from southwest
	Cloud Cover:	Clear
Sound Level Meter:	Sound Level Meter:	LDL Model 824
	Calibrator:	LDL Model CA200
	Meter Calibrated:	Immediately before and after test
	Meter Settings:	A-weighted, slow response
Microphone:	Microphone Location:	On Project Site
	Distance to Centerline (feet):	51
	Microphone Height:	5 feet above ground
	Intervening Ground (Hard or Soft):	**Soft**
	Elevation Relative to Road (feet):	4
Roadway Condition:	Pavement Type	Asphalt
	Pavement Condition:	Good
	Number of Lanes:	5
	Posted Maximum Speed (mph):	40
Test Parameters:	Test Time:	11:28 AM
	Test Duration (minutes):	10
	Observed Number Automobiles:	32
	Observed Number Medium Trucks:	1
	Observed Number Heavy Trucks:	1
	Observed Average Speed (mph):	45
Model Calibration:	Measured Average Level (L_{eq}):	59.8
	Level Predicted by FHWA Model:	61.5
	Difference:	***1.7 dB***
Conclusions:	Note that the project site is at a lower elevation than the road.	

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Appendix C
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-235 Canyon Terrace Apartments
Descriptioı Existing + Project Traffic
Ldn/CNEL Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	(dB)
1	American River Canyon Drive	Apartments North of River Ridge Way (Section B)	3,340	69	0	31	2.0	1.0	45	100	0
2	American River Canyon Drive	Apartments South of River Ridge Way (Section A)	2,980	69	0	31	2.0	1.0	45	66.5	0
3	American River Canyon Drive	Pool Area	3,340	69	0	31	2.0	1.0	45	290	-10

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2016-195 Adobe Drive Townhomes
Description: Existing + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	American River Canyon Drive	Apartments North of River Ridge Way (Se	58.8	50.2	51.7	60.0
2	American River Canyon Drive	Apartments South of River Ridge Way (Se	61.0	52.3	53.8	62.2
3	American River Canyon Drive	Pool Area	41.9	33.2	34.7	43.1

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2016-195 Adobe Drive Townhomes

Description: Existing + Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	American River Canyon Drive	Apartments North of River Ridge Way (S	10	22	47	101	217
2	American River Canyon Drive	Apartments South of River Ridge Way (S	9	20	43	93	201
3	American River Canyon Drive	Pool Area	2	5	10	22	47

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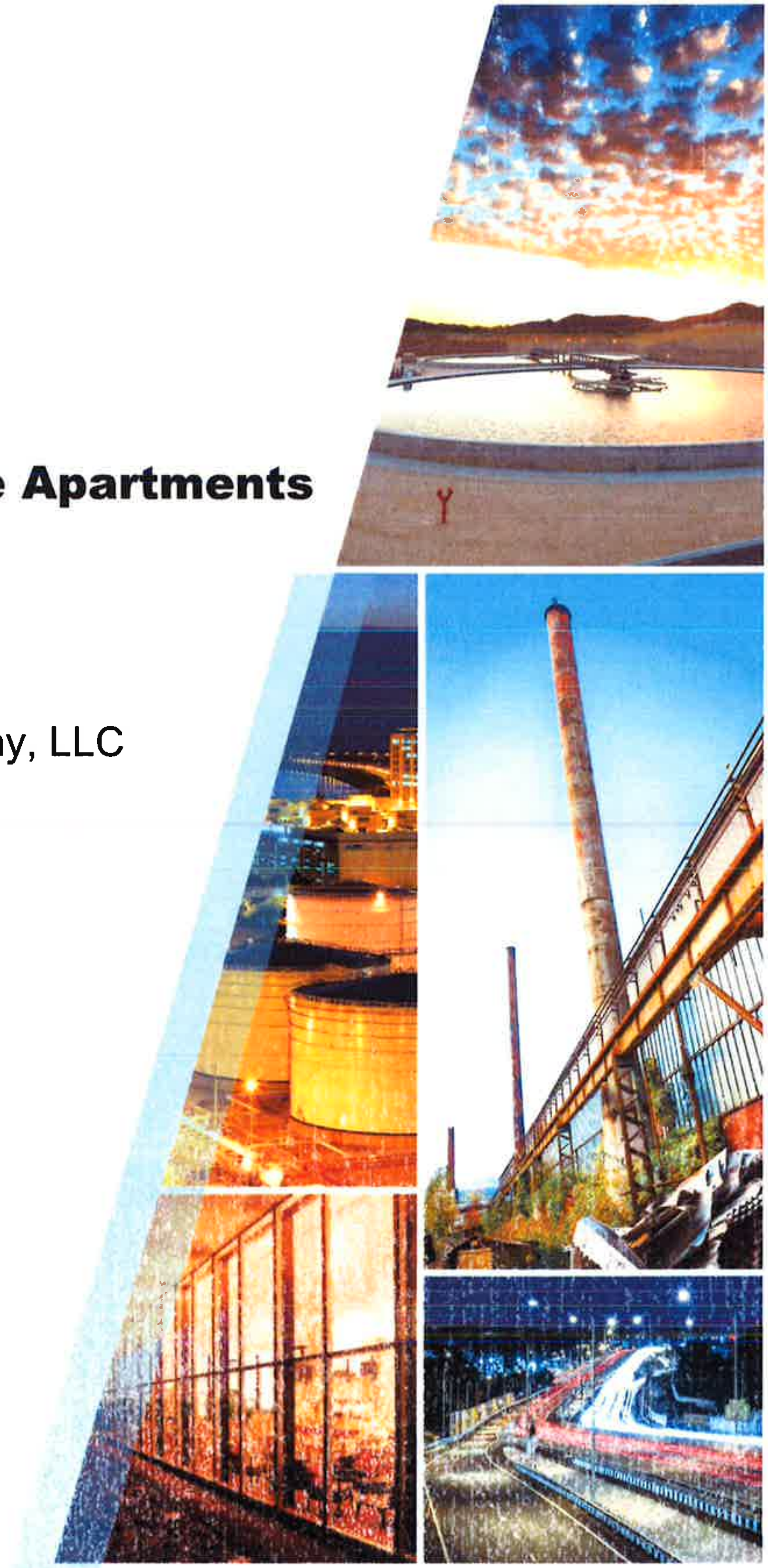
Appendix H

Canyon Terrace Apartments
Traffic Impact Analysis Report

Canyon Terrace Apartments

Traffic Impact Analysis



The Ezralow Company, LLC

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1. Executive Summary

This report has been prepared to present the results of the Traffic Impact Analysis Report (TIAR) performed by Omni-Means for the expansion of existing Canyon Terrace Apartments in the City of Folsom, California. Through the construction of eight (8) new apartment buildings, the proposed expansion will add 96 residential units and 233 new parking spaces to the existing residential development at Canyon Terrace Apartments. Access to and from the proposed project would be provided via the two existing driveways along American River Canyon Drive.

For the purpose of this TIAR, the proposed project is assumed to be completed in one phase. The proposed expansion is projected to generate an additional 49 weekday AM and 68 weekday PM peak hour trips.

The traffic analyses were conducted for the following traffic scenarios:

- *Existing* Conditions
- *Existing Plus Project* Conditions
- *Year 2035 No Project* Conditions
- *Year 2035 Plus Project* Conditions

Impacts of the project were evaluated at seven (7) key intersections within the immediate vicinity of the project site. Additionally, the project's proposed access driveways were evaluated to determine their ability to serve the proposed project safely and effectively.

1.1 Findings

The following section presents a concise overview of major findings obtained during the evaluation of the analysis scenarios.

1.1.1 Existing Conditions

- Intersection turning movement counts were obtained for the AM and PM peak hours at all study intersections on Wednesday, May 11, 2016, a typical school day. All counts were obtained in the absence of inclement weather and any known special events in the area.
- All seven (7) study intersections were found to operate at an acceptable LOS A or B in the AM peak hour.
- All seven study intersections were found to operate at an acceptable LOS A, B or C in the PM peak hour.
- In both peak hours, all study intersections conform to the *City of Folsom General Plan* policy by operating at LOS D or better.

1.1.2 Existing Plus Project Conditions

- *Existing Plus Project* conditions were analyzed by superimposing the projected trips generated by the proposed project on existing traffic counts obtained at the study intersections.
- All seven (7) study intersections were found to operate at an acceptable LOS A or B in the AM peak hour, with the project-generated trips causing the delay to increase minimally. Although the project-generated traffic causes the LOS to deteriorate at multiple intersections, all intersections operate acceptably by providing level of service of LOS D or better.

- All seven study intersections were found to operate at an acceptable LOS A, B or C in the PM peak hour.
- Both project driveways will operate at LOS B during the AM peak hour. In the PM peak hour, the North Driveway operates at LOS B, while the South Driveway operates at LOS A. Neither driveway has enough traffic to meet the Peak Hour signal warrant (Warrant 3).
- As both driveways indicate minimal queuing, existing driveway throat depths are adequate in providing acceptable queuing operations under the *Existing Plus Project* Conditions.
- All of the study locations conform to the City's level of service policy (stated within the General Plan), by operating at LOS D or better during both peak hours.
- The traffic impacts of the proposed project were found to be less than significant in both peak-hour periods of the *Existing Plus Project* conditions. Therefore, no off-site mitigations were necessary.

1.1.3 Year 2035 No Project Conditions

- The *Year 2035 No Project* Conditions were analyzed using scenarios that will exist following the buildout of the City consistent with the levels identified in the City's 2035 Travel Demand Model (TDM).
- All seven study intersections were found to operate at an acceptable LOS A or B in both the AM and PM peak hours.
- All of the study intersections are projected to conform to the City's level of service policy (stated within the General Plan), by operating at LOS D or better during both peak hours.

1.1.4 Year 2035 Plus Project Conditions

- The *Year 2035 Plus Project* Conditions were analyzed by superimposing traffic generated by the full build-out of the proposed project onto *Year 2035 No Project* traffic volumes.
- All seven study intersections were found to operate at an acceptable LOS A or B in both the AM and PM peak hours.
- Both project driveways will operate with acceptable LOS during both AM and PM peak hour periods. Neither driveway has enough traffic to meet the Peak Hour signal warrant (Warrant 3).
- As both driveways indicate minimal queuing, existing driveway throat depths are adequate in providing acceptable queuing operations under the 2035 Plus Project Conditions.
- All of the study intersections are projected to conform to the City's level of service policy (stated within the General Plan), by operating at LOS D or better during both peak hours.
- The traffic impacts of the proposed project were found to be less than significant in both peak hour periods of the *Year 2035 Plus Project* Conditions. Therefore, no off-site mitigations were necessary.

2. Introduction

The Ezralow Company, LLC has retained Omni-Means to complete a Traffic Impact Analysis Report (TIAR) for the proposed expansion of the existing Canyon Terrace Apartments in the City of Folsom, California. The project is located approximately 360 feet south of the intersection of Canyon Terrace Drive and American Canyon River Drive, in Folsom, California.

Under the direction of the City Staff, the following traffic scenarios were analyzed as part of this TIAR:

- *Existing* Conditions
- *Existing Plus Project* Conditions
- *Year 2035 No Project* Conditions
- *Year 2035 Plus Project* Conditions

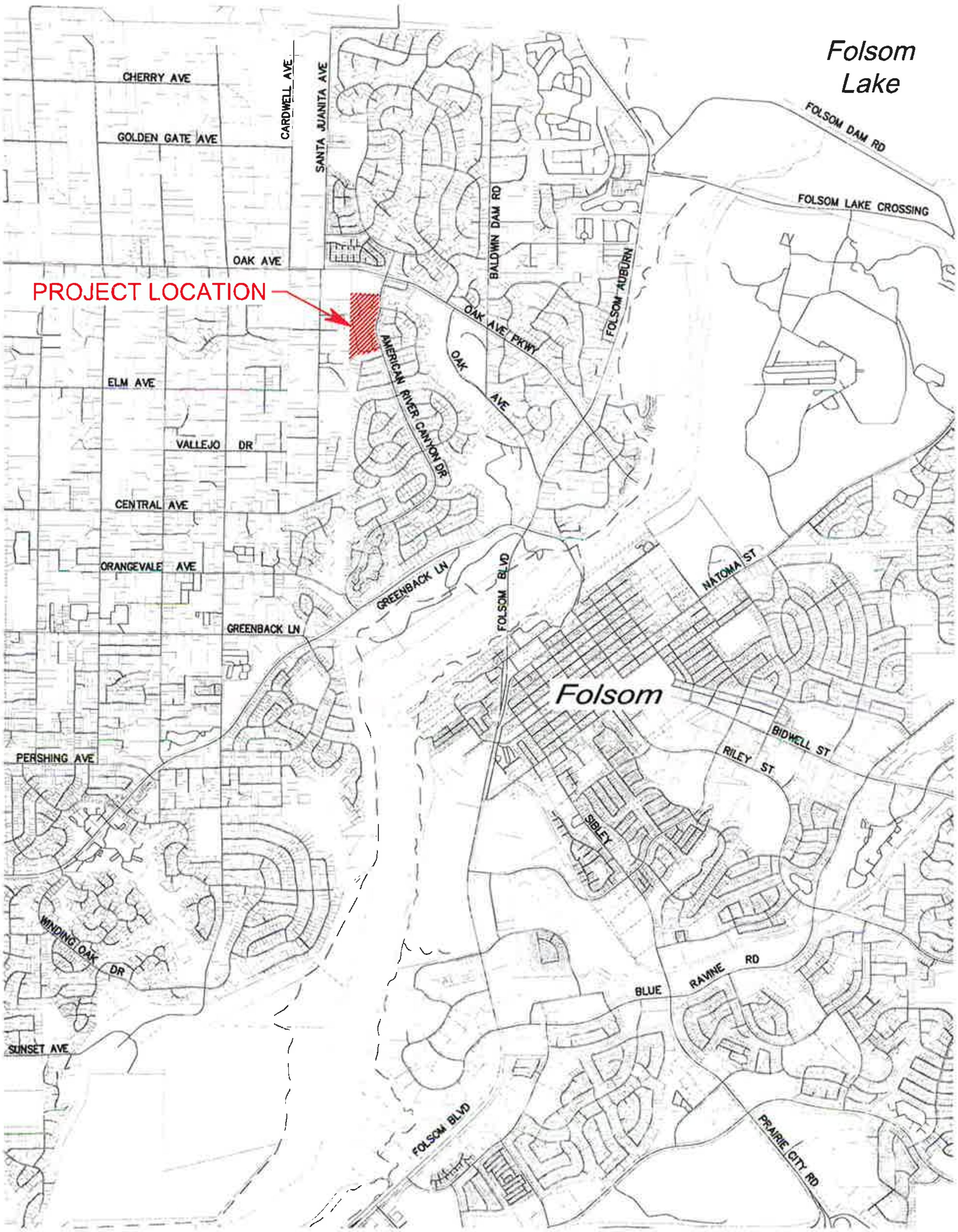
Existing Conditions analyze the existing traffic operations at the study locations using Year 2017 peak hour traffic counts and intersection configurations.

Existing Plus Project Conditions analyze the current conditions with the proposed project. Projected trips generated by the proposed project are superimposed on existing traffic counts and existing intersection configurations remain the same. Additionally, queuing analysis was conducted at the proposed project driveways to determine minimum throat depths. To reduce any impacts of the proposed project to acceptable levels, mitigations are recommended for locations where the project's impacts were found to be significant.

Year 2035 No Project Conditions analyze the scenario that would exist following the buildout of land uses consistent with the City of Folsom Year 2035 TDM. The Year 2035 No Project Conditions evaluate traffic operations in Year 2035 excluding the proposed project. Traffic volumes for Year 2035 were forecasted using the City of Folsom TDM.

Year 2035 Plus Project Conditions analyze the scenario in which traffic impacts associated with the project are investigated in comparison to the *Year 2035 No Project* Conditions. To reduce the proposed project impacts to less than significant, mitigations were recommended for locations where the project's impacts were found to be significant.

Figure 1 presents the project study area.



Canyon Terrace Apartments TIAR

Figure 1

Project Vicinity Map

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3. Project Setting

Located within the County of Sacramento, the City of Folsom is a suburban development that spans an area of 24.3 square miles. The US Census Bureau reports that in 2016 the population of Folsom was approximately 77,271 people.

3.1 Transportation System

Roadways which provide primary circulation within the vicinity of the project site are as follows:

Oak Avenue Parkway is a 4-6 lane, undivided arterial that operates at a posted speed limit of 45 mph. Oak Avenue Parkway traverses the cities of Citrus Heights and Folsom in the east-west direction and intersects with American River Canyon Drive in the project vicinity. Long term improvements to Oak Avenue Parkway include the extension of this roadway to the south, and a creation of the Oak Avenue Parkway interchange with US Highway 50 (known as the Lincoln Highway).

American River Canyon Drive is a 4-lane, divided collector facility that operates at a posted speed limit of 40 mph within the project vicinity. American River Canyon Drive intersects with Oak Avenue Parkway at its northern terminus and with Greenback Lane at its southern terminus. Throughout its entirety, American River Canyon Drive traverses through suburban residential developments, and provides access to neighborhood streets.

3.2 Study Intersections

The following list of critical study intersections were selected in coordination with the project team and the City of Folsom Staff for analysis within this study for weekday AM and PM peak-hour conditions:

1. American River Canyon Drive & Oak Avenue Parkway
2. American River Canyon Drive & Canyon Terrace Lane (North Driveway)
3. American River Canyon Drive & River Ridge Way (North)
4. American River Canyon Drive & Canyon Terrace Drive (South Driveway)
5. American River Canyon Drive & Crow Canyon Drive (North)
6. American River Canyon Drive & Crow Canyon Drive (South)
7. American River Canyon Drive & Canyon Rim Drive/ Crow Canyon Drive

3.3 Driveway Analysis

Additionally, the existing access/circulation system serving the proposed expansion project was evaluated to determine its ability to serve the proposed project safely and effectively. A queuing analysis was performed at existing driveways to determine the 95th percentile queue lengths created during the weekday AM and PM peak hour scenarios of the Plus Project conditions.

3.4 Data Collection

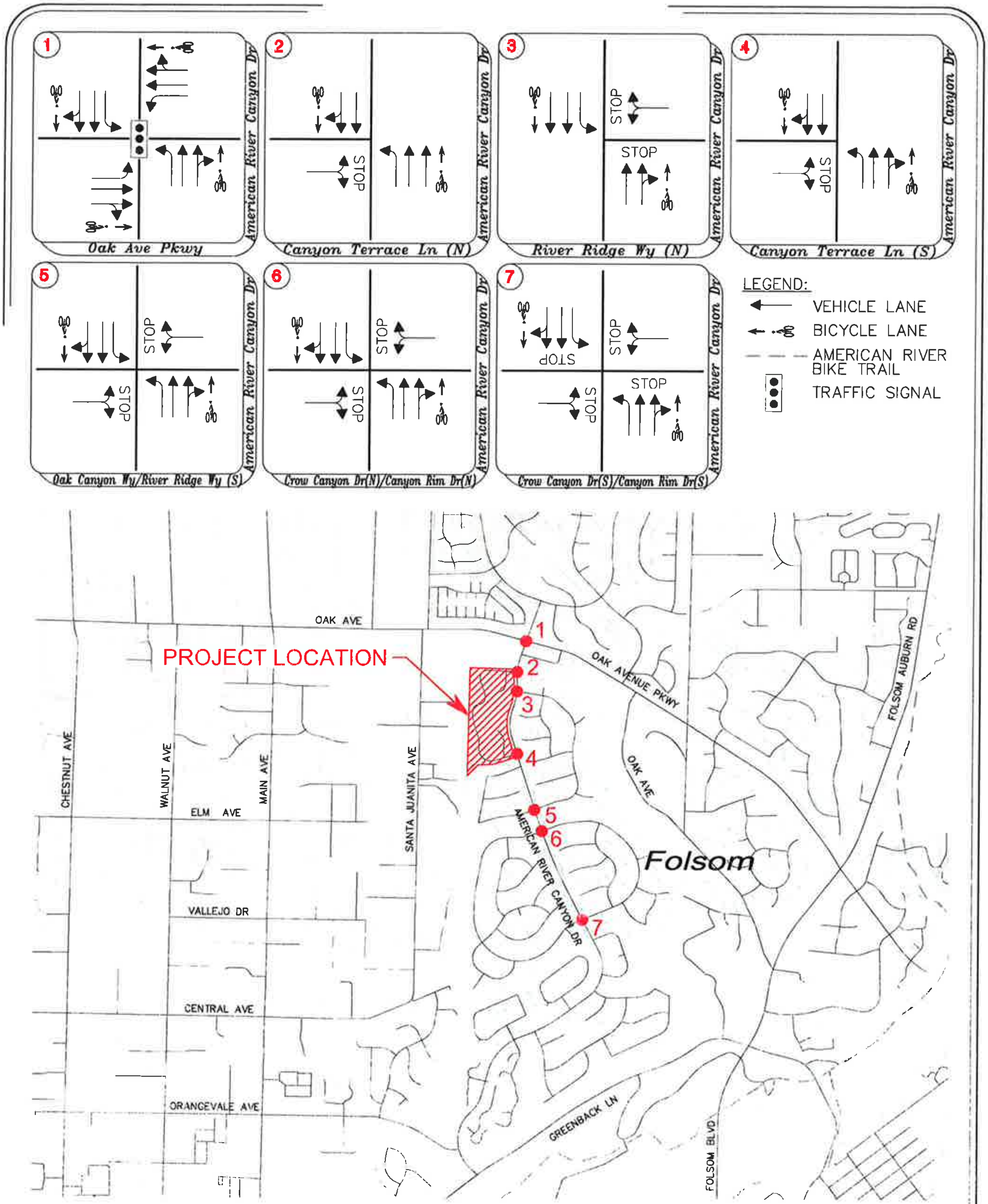
Weekday AM and PM peak hour turning movement counts were collected on Wednesday, May 11, 2016 at the following intersections:

1. American River Canyon Drive & Oak Avenue Parkway
2. American River Canyon Drive & Canyon Terrace Lane (North Driveway)
3. American River Canyon Drive & River Ridge Way (North)
4. American River Canyon Drive & Canyon Terrace Lane (South Driveway)
5. American River Canyon Drive & Crow Canyon Drive (North)
6. American River Canyon Drive & Crow Canyon Drive (South)
7. American River Canyon Drive & Canyon Rim Drive/ Crow Canyon Drive

The AM peak hour is defined as a one-hour peak traffic flow counted between 7:00 a.m. and 9:00 a.m. The PM peak hour is defined as one-hour peak traffic flow counted between 4:00 p.m. and 6:00 p.m. The counts were obtained while schools in the area were in session, and in the absence of inclement weather and special events. The traffic counts were conducted in May, 2016.

From a land use perspective, with the exception of the vacant project site, the segment of American Canyon River Road would be considered built out. Furthermore, American Canyon River Road is not a route of regional significance. As such, at best, traffic on this facility is expected to grow marginally. This is further substantiated by the City of Folsom Travel Demand Model data which predicts a less than 1% per year growth for this segment. As such, the traffic growth on this segment is expected to be negligible and use of 2016 is appropriate for this study.

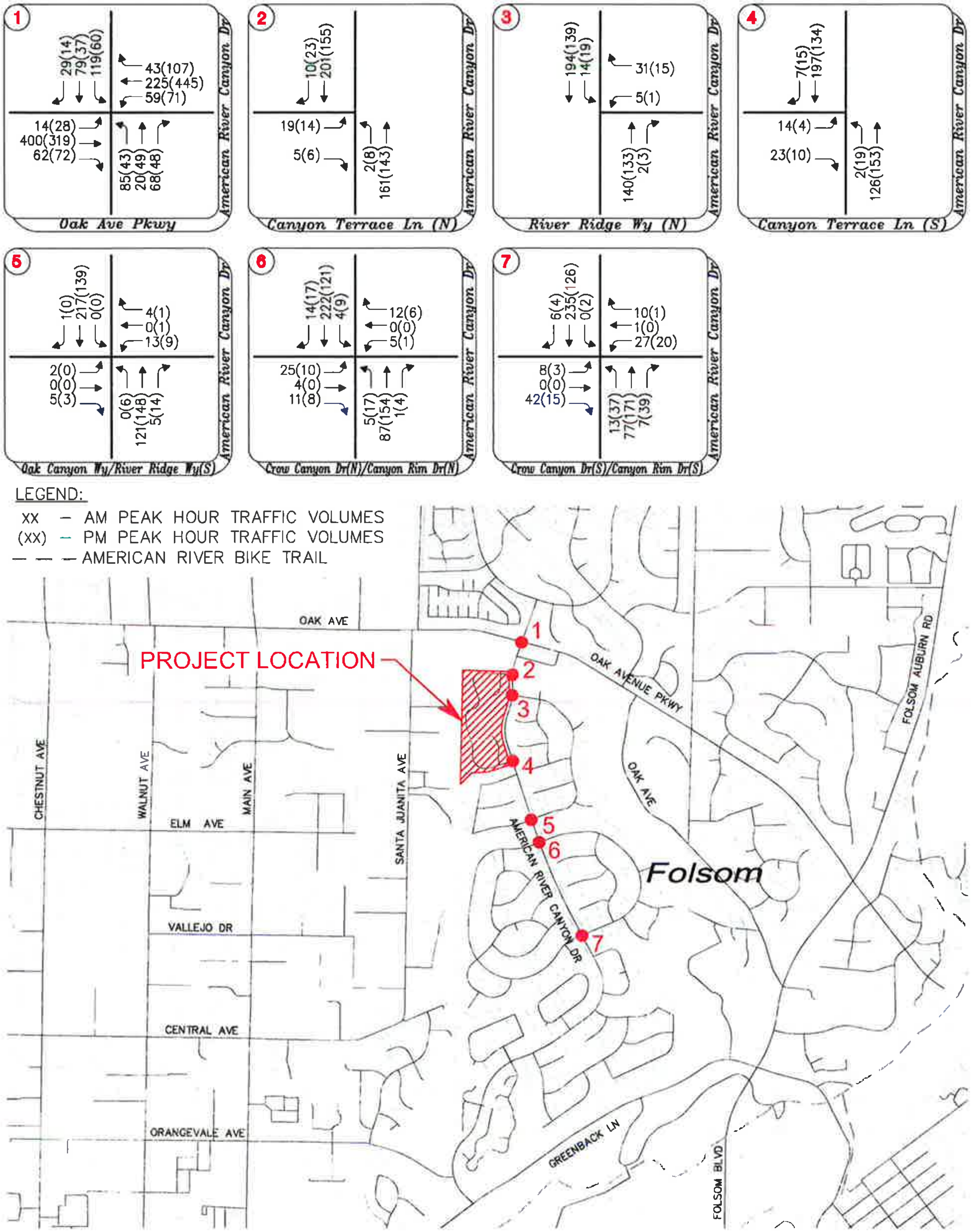
Figure 2 presents the existing lane geometrics and intersection control types. Figure 3 presents the existing peak hour traffic volumes obtained from weekday AM and PM turning movement counts.



Canyon Terrace Apartments TIAR

Figure 2

Existing Lane Geometrics and Control



Canyon Terrace Apartments TIAR Figure 3

Existing Peak Hour Traffic Volumes

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4. Analysis Methodologies and Parameters

The following section outlines the methodology and analysis parameters used to quantify traffic operations at study intersections and project driveways.

4.1 Level of Service Methodologies

The following section outlines the level of service methodologies and analysis parameters used to quantify traffic operations at study intersections.

4.1.1 Intersection Delay

Levels of Service (LOS) have been calculated for all intersection control types using the methods documented in the Transportation Research Board's *Highway Capacity Manual, Fourth Edition 2010.* Traffic operations have been quantified through the determination of "Level of Service" (LOS). Level of service is a qualitative measure of traffic operating conditions, whereby a letter grade A through F is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. For signalized intersections, intersection delays and LOS are average values for all intersection movements. For two-way stop-controlled (TWSC) intersections, the intersection delays and LOS is represented by the worst approach. The delay-based LOS criteria for different types of intersection control are outlined in Table 1.

Intersection LOS was calculated for the study intersections using Synchro 9 software by Trafficware. Although HCM 2010 is the latest version of the HCM methodologies, this methodology is unable to analyze U-Turn movements at intersections. Therefore, HCM 2000 methodology was implemented at all signalized intersections.

Table 1: Level of Service (LOS) Criteria for Intersections

Level of Service	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle (sec) Signalized/ Roundabouts	Stopped Delay/Vehicle (sec) Unsignalized/ All-Way Stop
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	< 10.0	< 10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10 and ≤ 20.0	>10 and ≤ 15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	>20 and ≤ 35.0	>15 and ≤ 25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35 and ≤ 55.0	>25 and ≤ 35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55 and ≤ 80.0	>35 and ≤ 50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0	> 50.0

4.2 Level of Service Policies

The following section presents the level of service policies relevant to this traffic impact study.

4.2.1 City of Folsom LOS Guidelines

The following LOS Guidelines included within the Transportation and Circulation Element of the City of Folsom General Plan (last updated August 2018).

- **M4.1.3** Strive to achieve at least a traffic Level of Service "D" (or better) for local streets and roadways throughout the City.

4.3 Significance and Mitigation Thresholds

The following section presents the significance and mitigation thresholds used to evaluate the impacts created by the project. These criteria for determining significant impacts were obtained from the City of Folsom General Plan (released in 1993).

4.3.1 Signalized Intersections

The proposed project creates a significant impact on traffic operations at signalized intersections within the City of Folsom if the project causes the following:

- The project causes an intersection with acceptable LOS (i.e. LOS "D" or better) to decline to an unacceptable LOS, or;
- The project increases the overall average delay by more than 5 seconds per vehicle at an intersection having an unacceptable LOS without project traffic.

4.3.2 Unsignalized Intersections

As the mitigation thresholds listed within the City's General Plan are only applicable to signalized intersections, the project team has developed the following significance thresholds to evaluate the project impacts at unsignalized (both AWSC and TWSC) intersections:

- The project causes the worst-case movement's acceptable LOS to decline to an unacceptable LOS and the peak hour signal warrant is met, or
- The project increases the average delay for the worst-case movement by more than 5-seconds per vehicle at an intersection that has an unacceptable LOS without the project and the intersection also meets the peak hour signal warrant.

Intersections at which the project creates a significant impact (as described by the guidelines listed above), the project must either contribute their fair share to implement mitigation measures that will restore the intersection traffic operations to LOS D or construct incremental improvements that will improve the LOS to less than "no project" conditions.

4.3.3 Queue Increase

The proposed project creates a significant impact at existing driveways, if the project causes the following:

- The project causes an unacceptable increase in 95th percentile queue lengths at existing driveways.

4.4 Technical Analysis Parameters

This TIAR provides a "preliminary operational level" evaluation of traffic operating conditions. Table 2 presents the technical analysis parameters used in this study.

Table 2: Technical Analysis Parameters

	Technical Analysis Parameter
1	Analysis Period - 15 Minutes
2	Peah Hour Factor (PHF)- from counts for Existing conditions, 0.92 or higher for Year 2035 conditions. If PHF Greater than 0.92 for Existing conditions, then that PHF is used for future conditions.
3	% Trucks: weekday peak hour analysis - from counts
4	25 ft. assumed vehicle length for stacking and queues
5	Cycle Length - Based on signal timings from City for existing conditions, for future 80 sec min, 150 sec max (optimize signal timing)
6	Total Lost Time Per Signal Phase - 4 seconds (24 sec max for 8-phase signal)
7	Pedestrian Speed - 3.5 ft/s and 10 mph for bicycles

4.5 Warrant Analysis

A supplemental traffic signal "warrant" analysis has been completed for unsignalized intersections determined to be operating at unacceptable LOS. The term "signal warrant" refers to the list of established criteria used by public agencies to quantitatively justify or ascertain the need for installation of a traffic signal at an unsignalized intersection. This study has employed the signal warrant criteria presented in the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD) for all unsignalized study intersection.

The California MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. Specifically, this study utilizes the peak hour volume-based Warrant 3 as one representative type of traffic signal warrant analysis.

It should be noted that the Peak Hour Volume Warrant was only applied when the intersection was found to be operating at unacceptable LOS. Therefore, there may be instances when the unsignalized intersection operates at acceptable LOS conditions but still meets the Peak Hour Volume Warrant.

5. Existing Conditions

The *Existing* conditions presents the analysis scenarios in which current operations at study locations are analyzed and establishes the baseline traffic conditions.

5.1 Existing Intersection Operations

Existing weekday AM and PM peak hour intersection traffic operations were quantified utilizing the existing traffic volumes and intersection lane geometrics and control types. Table 3 presents the intersection operations for *Existing* conditions.

Table 3: Existing Intersection Operations

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Oak Ave Pkwy/American River Canyon Dr	Signal	D	17.7	B	14.5	B
2	Canyon Terrace Ln (North)/American River Canyon Dr [North Dwy]	TWSC	D	10.4	B	10.0	B
3	River Ridge Way (North)/American River Canyon Dr	TWSC	D	11.5	B	10.8	B
4	Canyon Terrace Ln (South)/American River Canyon Dr [South Dwy]	TWSC	D	10.0	B	9.3	A
5	River Ridge Way (South) & Oak Canyon Way/American River Canyon Dr	TWSC	D	10.2	B	10.4	B
6	Crow Canyon Dr (North)/American River Canyon Dr	TWSC	D	11.3	B	10.1	B
7	Crow Canyon Dr (South)/American River Canyon Dr	AWSC	D	8.6	A	8.2	A

Notes:
1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal

As presented in Table 3, all study intersections, all existing intersections currently operate acceptably.

5.2 Collision History

The following section presents the collision history obtained for roadways within the project vicinity. Table 4 presents the collision history along American River Canyon Drive within the project vicinity.

Table 4: Existing Collision History in Project Vicinity

Collision History in Vicinity of Canyon Terrace Ln (01/01/2013 - 12/31/2017)

Year	Location	Crash Type	Crash Severity	Fatalities	Injuries	Violation Category
2013	American River Canyon Dr/Crow Canyon Dr	Vechicle/Pedestrian	Severe Injuries	0	2	Improper Turning
	American River Canypn Dr/Orangevale Ave	Broadside	Visible Injuries Only	0	1	Automobile Right-of-Way
2014	American River Canyon Dr/Bob White Ln	Hit Object	Visible Injuries Only	0	1	Unsafe Lane Change
	American River Canyon Dr/Crow Canyon Dr	Hit Object	Visible Injuries Only	0	1	DUI[1]
2015	American River Canyon Dr/Water View Wy	Rear End	Complaint of Pain Only	0	1	Unsafe Speed
	American River Canyon Dr/Oak Avenue Pkwy	Broadside	Complaint of Pain Only	0	1	Traffic Signals and Signs
2016	-	-	-	-	-	-
2017	American River Canyon Dr/Crow Canyon Dr	Rear End	Complaint of Pain Only	0	3	Unsafe Speed
	American River Canyon Dr/Oak Avenue Pkwy	Hit Object	Visible Injuries Only	0	4	Unsafe Speed

Notes:
1. DUI = Driving Under the Influence
Collision records for Years 2016 and 2017 are only provisional.
Sources: TIMS & SWITRS databases.

The existing collision history along American River Canyon Drive was obtained through the assessment of collision records obtained from the Transportation Injury Mapping System (TIMS) and the Statewide Integrated Traffic Records System (SWITRS) collision databases for the years 2013 through 2017. Note that only provisional data was available for 2016 and 2017.

As indicated within Table 4, over the course of the five year period (between 2013 and 2017), 8 collisions have occurred along American River Canyon Road. There is not a specific crash pattern or hot spot within the segment.

It should be noted that the information provided within this TIAR represents only collisions that were reported to the Folsom Police Department. Collisions that were not reported are not included. Any such accidents are expected to be minor property damage only (PDO collisions) and no injuries.

6. Project Description

The existing residential development at Canyon Terrace Apartments contains 200 multi-family dwelling units and 324 parking spaces. These existing dwelling units are distributed among 15 buildings constructed on a site with a total acreage of 16.97 acres. Vehicular access to the existing apartment buildings at Canyon Terrace is provided by two existing driveways at American River Canyon Drive.

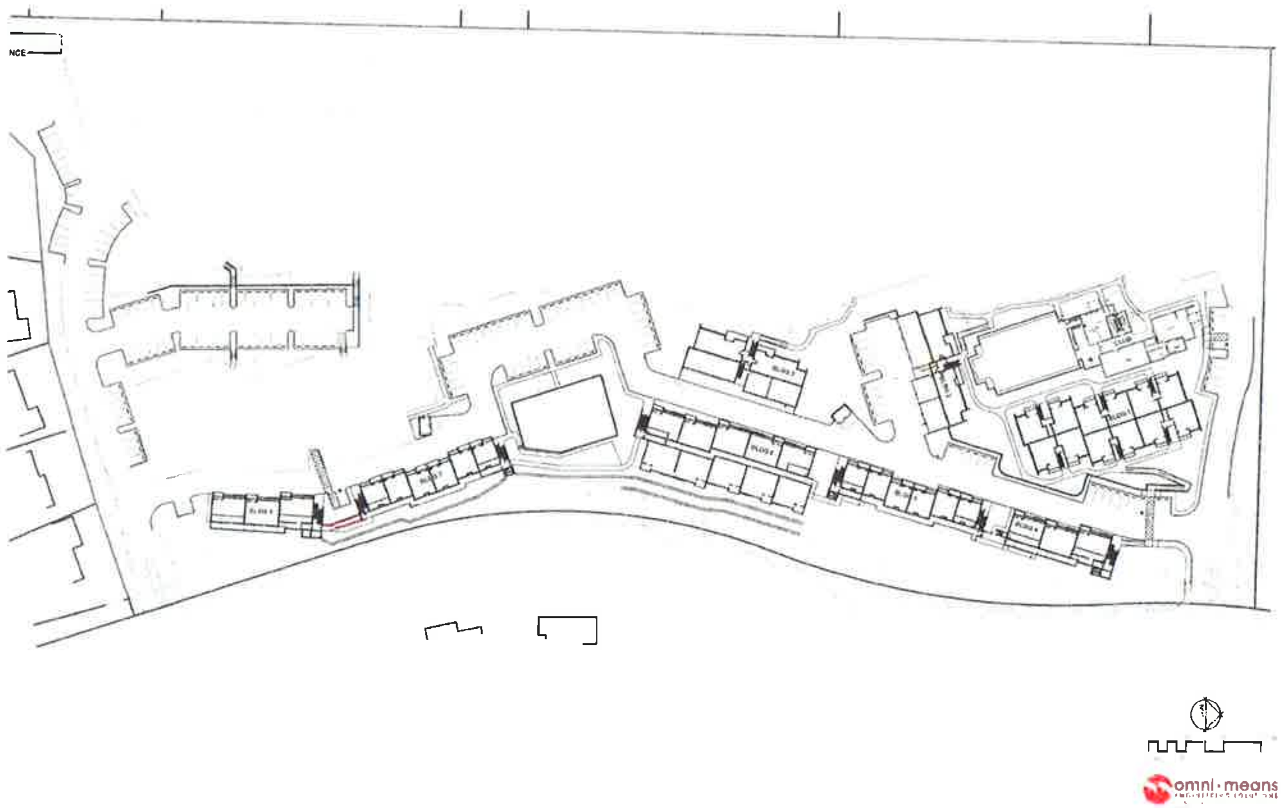
The proposed expansion of the Canyon Terrace Apartments is projected to construct 96 new residential units and 233 new parking spaces. The proposed parking would be allocated as follows:

- 127 surface stalls (including 3 ADA compliant spaces)
- 79 garage stalls
- 27 carport stalls

6.1 Project Site Access

The proposed project would be located approximately 360 feet south of the existing intersection of Oak Avenue Parkway and American River Canyon Drive. Vehicular access would be provided via two existing driveways on American River Canyon Drive, with full access permitted at each driveway.

Figure 4 presents the site plan for the proposed project.



Canyon Terrace Apartments TIAR

Figure 4

Project Site Plan

6.2 Alternative Modes of Transportation

The following section presents an overview of the existing and proposed pedestrian, bicycle and transit services within the project vicinity.

6.2.1 Pedestrian Facilities

The following section presents the off-site and on-site pedestrian facilities present at the proposed project site.

Off-Site

Existing conditions indicate the presence of continuous sidewalks along the easterly and westerly sides of American River Canyon Drive along the project frontage.

At the time of the study, the proposed project is anticipated to generate moderate pedestrian traffic. As existing conditions indicate the presence of adequate pedestrian infrastructure within the project vicinity, no off-site improvements are proposed along the project frontage.

On-Site

Pedestrian facilities with ADA compliant features are provided adjacent to the residential and community recreation facilities of the existing apartment complex.

The proposed project is to construct new on-site sidewalks and pedestrian pathways containing ADA compliant features to provide connectivity between the proposed buildings, community recreation facilities and the parking lots.

6.2.2 Bicycle Facilities

The following section presents the off-site and on-site bicycle facilities present at the proposed project site.

Off-Site

Existing conditions indicate the presence of Class II bicycle facilities on both easterly and westerly sides of American River Canyon Drive along the project frontage.

At the time of the study, the proposed project is anticipated to generate moderate bicycle traffic along roadways within the project vicinity. According to the City of Folsom Bikeways Master Plan (released July 2007), no new Class I or II bike facilities are proposed along Oak Avenue Parkway, American River Canyon Drive or Greenback Lane. As existing conditions indicate the presence of adequate bike infrastructure within the project vicinity, no off-site improvements are proposed along the project frontage.

On-Site

Existing conditions do not indicate the presence of bike facilities within the apartment complex. As the project is anticipated to increase on-site bicycle activity moderately, no on-site improvements are proposed.

6.2.3 Transit Facilities

Transit needs within the City of Folsom are provided by the Folsom Stage Line bus service operated by the City of Folsom Transit Division. The Folsom Stage Line bus service provides both Fixed-Route and Dial-A-Ride services exclusively within the Folsom city limits Monday through Friday. Currently, the service operates three (3) fixed routes, namely Routes 10, 20 and 30.

The following bus route operates along northbound American River Canyon Drive along the project frontage:

- ***Folsom Stage Line Fixed Route 10***
  - Provides connectivity to light rail stations and bus services operated by Sacramento Regional transit District.
  - Notable stops served by Route 10 includes historic Folsom, East Bidwell, the Broadstone Market Place, Broadstone Plaza, the Folsom Aquatics Center, Folsom Lake College, Intel, Kaiser Permanente and Folsom Premium Outlets.
  - This route provides only weekday service from 6:00 a.m. and 9:00 p.m.
  - Bus stops for Route 10 are located at the following intersections along American River Canyon Drive:
    - American River Canyon Drive (NB) & Oak Avenue Parkway
    - American River Canyon Drive (NB) & River Ridge Way

Details pertaining to the schedule and route maps for Route 10 and other fixed-route lines may be obtained from the following website:
https://www.folsom.ca.us/city_hall/depts/admin/transit/stage_line/default.asp

6.3 Project Trip Generation Methodology

The following section presents the assumptions and methodology used in the development of project only traffic volumes for the Existing Plus Project and Year 2035 Plus Project.

6.3.1 Project Trip Generation

The average trip rates developed from existing conditions were used to derive the total weekday AM and PM peak hour trips for the expanded apartment complex containing a total of 296 dwelling units (i.e. addition of 96 net new dwelling units). As the Institute of Transportation Engineers (ITE) *Trip Generation Manual 9th Edition* states local data should be used when available, the methodology used within this study is consistent with the recommendation provided by ITE. Table 5 presents a summary of the project trip generation for the proposed addition of 96 dwelling units to the existing residential development at Canyon Terrace Apartments.

Table 5: Project Trip Generation

Land Use Category (ITE Code)	Unit[1]	Daily Trip Rate/Unit[2]	AM Peak Hour Trip Rate/Unit Total	AM In %	AM Out %	PM Peak Hour Trip Rate/Unit Total	PM In %	PM Out %
Apartment (220)	DU	7.35	0.53	20%	80%	0.73	65%	35%
Project Name	**Quantity (Units)**	**Daily Trips**	**AM Peak Hour Trips Total**	**In**	**Out**	**PM Peak Hour Trips Total**	**In**	**Out**
Canyon Terrace Apartments	96	705	51	10	41	70	46	25
Net New Project Trips		**705**	**51**	**10**	**41**	**70**	**46**	**25**

Notes:

1. DU = dwelling unit

2. Trip rates based on ITE Trip Generation Manual 9th edition fitted-curve equations

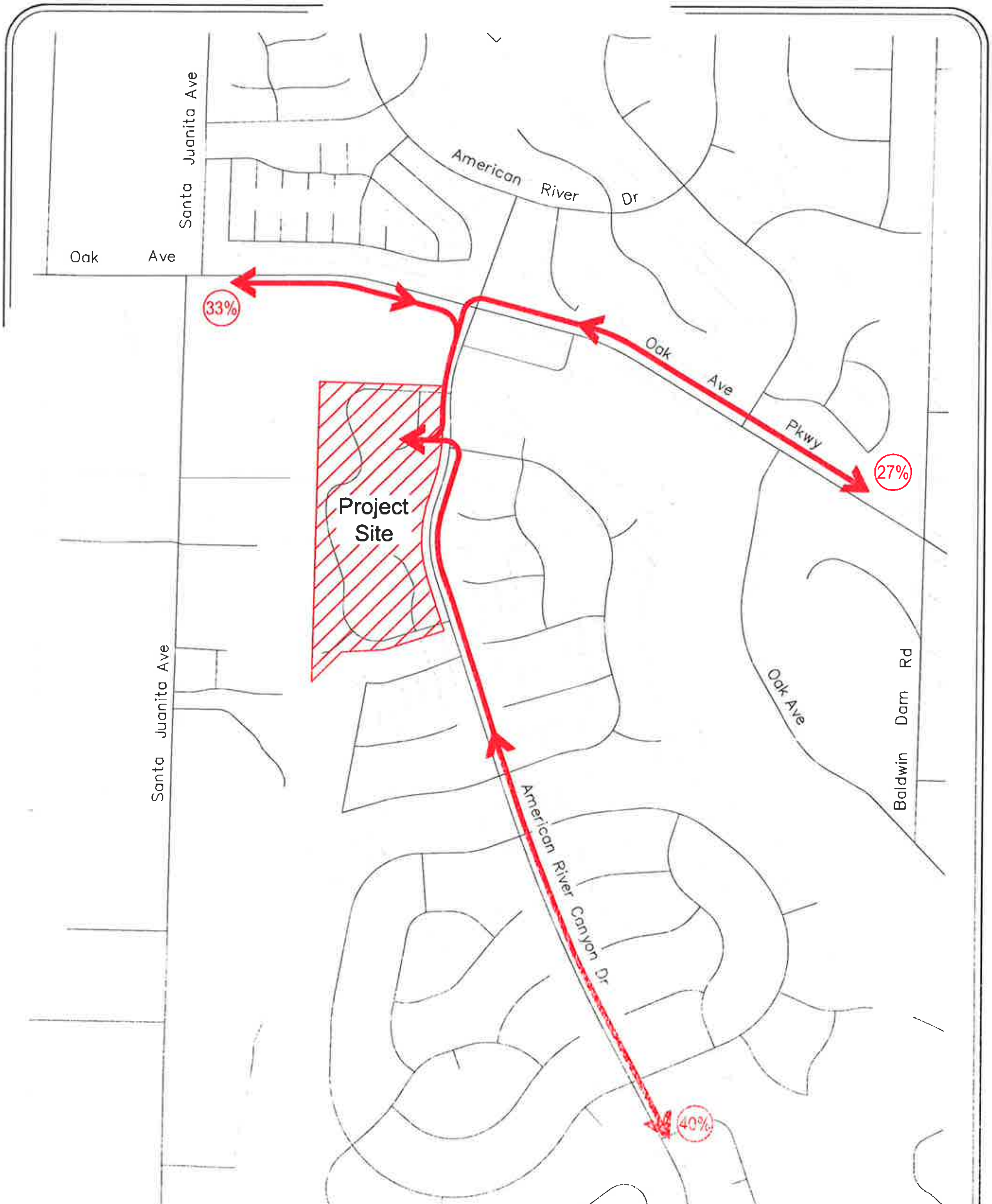
As presented in the Table 5, the proposed addition of 96 dwelling units to the existing site is anticipated to generate approximately 51 AM and 70 PM peak hour trips in total.

6.3.2 Project Trip Distribution

The directional trip distribution for the proposed project and the specific assignment of project-generated trips were established based on an understanding of existing and projected future traffic flows and travel patterns within the vicinity of the project site. Figure 5 presents the directional trip distribution characteristics for both the *Existing Plus Project* and *Year 2035 Plus Project* Conditions.

Approximately 40% of the traffic from the project site is headed south on American River Canyon Drive. However, not all of this traffic is expected to head to the American River Canyon Drive/Greenback Lane intersection, which is approximately a mile away from the southernmost intersection on American River Canyon Drive analyzed in the study. Even if 30% of the project traffic were to travel to the American River Canyon Drive/Greenback Lane intersection, this will add approximately 22 trips to the intersection in the PM peak period during which time the project generates the highest trips. A review of the available data (2014) from the City of Folsom on the segment of Greenback Lane in the vicinity of this intersection indicated that this segment carries approximately 3,400 PM peak vehicles per hour. The project is expected to add less than 1% to this intersection and was therefore, not included in the analysis.

From a land use perspective, with the exception of the vacant project site, the segment of American Canyon River Road would be considered built out. Furthermore, American Canyon River Road is not a route of regional significance. As such, traffic on this facility is expected to grow marginally. This is further substantiated by the City of Folsom Travel Demand Model data which predicts a less than 1% per year growth for this segment. As such, use of same distribution patterns is appropriate for this study.



Canyon Terrace Apartments TIAR

Figure 5

Trip Distribution

7. Existing Plus Project Conditions

The *Existing Plus Project* Conditions is the analysis scenario in which trips generated by the proposed project are superimposed on existing traffic volumes and existing intersection geometries. Figure 6 presents the forecast volumes for the *Existing Plus Project* Conditions.

7.1 Intersection Operations

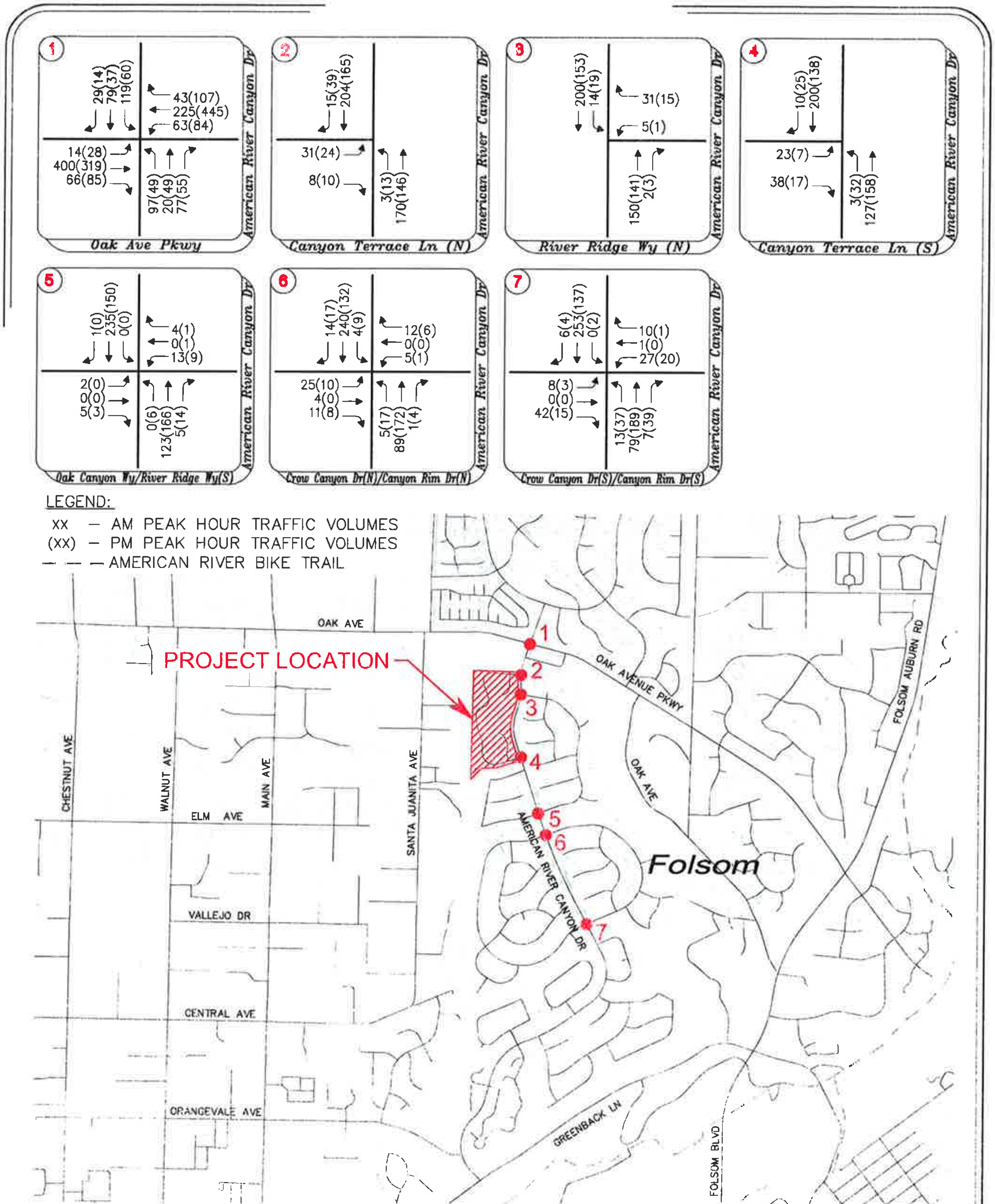
Table 6 presents a summary of the traffic operations at the study intersections for *Existing Plus Project* Conditions.

Table 6: Existing Plus Project Intersection Operations

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Oak Ave Pkwy/American River Canyon Dr	Signal	D	18.1	B	14.7	B
2	Canyon Terrace Ln (North)/American River Canyon Dr [North Dwy]	TWSC	D	10.7	B	10.3	B
3	River Ridge Way (North)/American River Canyon Dr	TWSC	D	11.6	B	11.0	B
4	Canyon Terrace Ln (South)/American River Canyon Dr [South Dwy]	TWSC	D	10.2	B	9.5	A
5	River Ridge Way (South) & Oak Canyon Way/American River Canyon Dr	TWSC	D	10.3	B	10.7	B
6	Crow Canyon Dr (North)/American River Canyon Dr	TWSC	D	11.5	B	10.2	B
7	Crow Canyon Dr (South)/American River Canyon Dr	AWSC	D	8.8	A	8.3	A

Notes:
1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal

As presented in Table 6, all study intersections are projected to operate acceptably in the *Existing Plus Project* Conditions.



Canyon Terrace Apartments TIAR

Figure 6

Existing Plus Project Peak Hour Traffic Volumes

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7.2 Driveway Queuing Analysis

Table 7 presents a summary of the on-site queuing operations at the two project driveways. 95th percentile queues reported were obtained from Sim-Traffic, which predicts the 95th percentile queues to the nearest foot.

Table 7: 95th Percentile Driveway Queues

Int. #	Intersection/Approach	Control Type	AM Peak Hour 95th % Queue (ft) Existing	AM Peak Hour 95th % Queue (ft) Existing Plus Project	PM Peak Hour 95th % Queue (ft) Existing	PM Peak Hour 95th % Queue (ft) Existing Plus Project	Available Storage (ft)
2	***American River Canyon Dr/ Canyon Terrace Ln (North Dwy)***						
	Eastbound Left/Right	TWSC	44	49	41	47	110
	Norhtbound Thru/Left		4	6	13	16	TWLTL
4	***American River Canyon Dr/ Canyon Terrace Ln (South Dwy)***						
	Eastbound Left/Right	TWSC	44	54	35	47	110
	Norhtbound Thru/Left		5	6	11	23	TWLTL

Note: ***Bold*** *text indicates deficient queuing operations*
TWLTL - Center Two Way Left turn Lane to accommodate left turns into the project site

As presented in Table 7, based on an average effective vehicle length of 25 feet per vehicle (Synchro Studio 9 User Guide, Trafficware, 201), the 95th percentile queues are projected to be 1 to 2 vehicles for the turn movements expected from the project site. In summary, the existing throat depths provide acceptable driveway queuing operations.

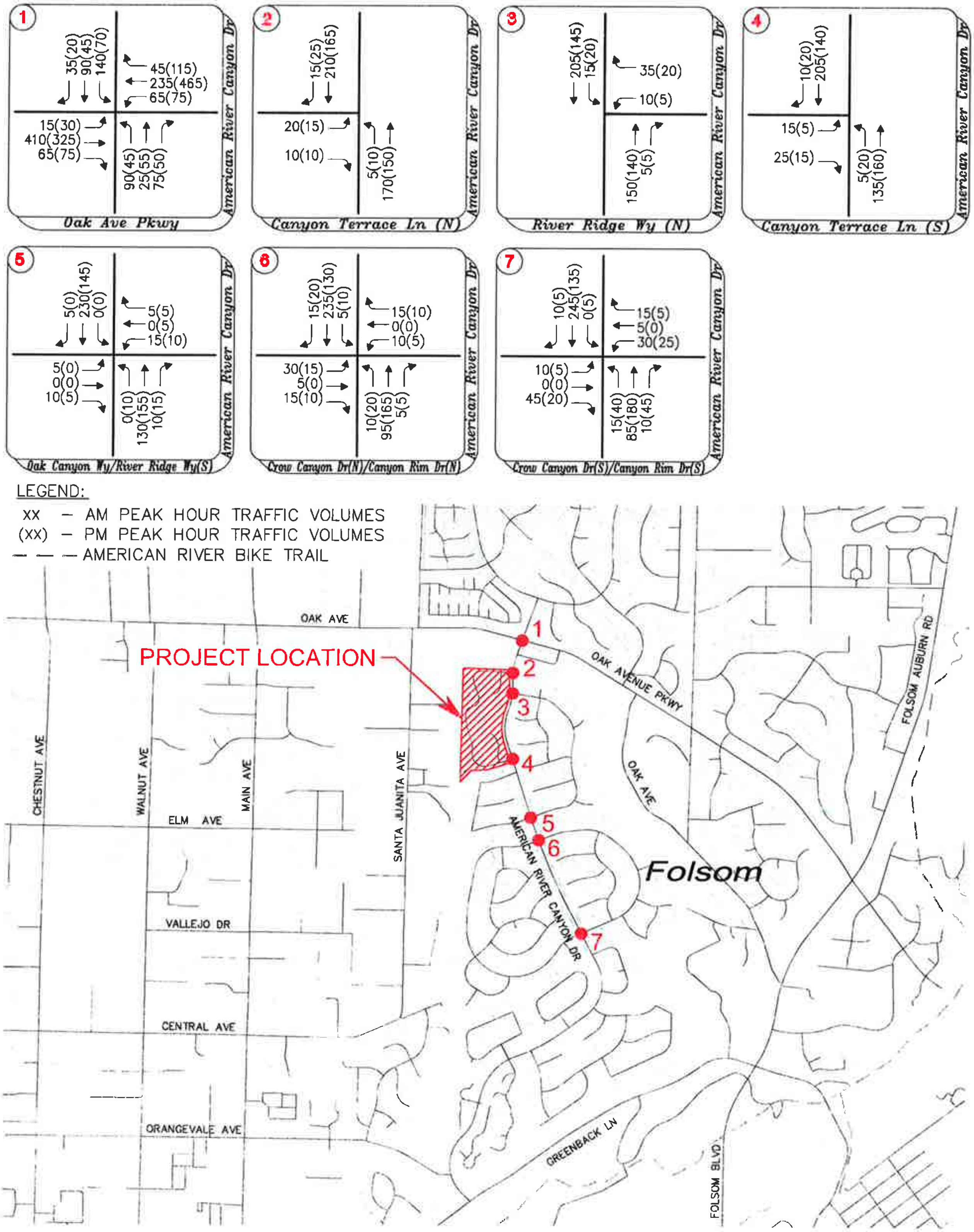
8. Cumulative (Year 2035) Conditions

Year 2035 Conditions analyze the scenario that will exist with the buildout of land uses consistent with the City of Folsom 2035 TDM. *Year 2035* Conditions represent the long term, future year scenarios used in the evaluation of traffic operations. The projected turning movement volumes at the intersections were developed using the City of Folsom 2035 TDM.

9. Year 2035 No Project Conditions

The *Year 2035 No Project* Conditions present the scenario in which future operations at study locations, assuming no project development, are analyzed.

Figure 7 presents the *Year 2035 No Project* peak hour volumes.



Canyon Terrace Apartments TIAR

Figure 7

Year 2035 No Project Peak Hour Traffic Volumes

9.1 Year 2035 No Project Intersection Operations

Table 8 presents a summary of the traffic operations at the intersections for the *Year 2035 No Project* Conditions.

Table 8: Year 2035 No Project Intersection Operations

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Oak Ave Pkwy/American River Canyon Dr	Signal	D	18.6	B	14.9	B
2	Canyon Terrace Ln (North)/American River Canyon Dr [North Dwy]	TWSC	D	10.2	B	9.9	A
3	River Ridge Way (North)/American River Canyon Dr	TWSC	D	11.3	B	10.9	B
4	Canyon Terrace Ln (South)/American River Canyon Dr [South Dwy]	TWSC	D	9.9	A	9.3	A
5	River Ridge Way (South) & Oak Canyon Way/American River Canyon Dr	TWSC	D	10.4	B	10.6	B
6	Crow Canyon Dr (North)/American River Canyon Dr	TWSC	D	11.7	B	10.3	B
7	Crow Canyon Dr (South)/American River Canyon Dr	AWSC	D	8.7	A	8.3	A

Notes:
1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal

As presented in Table 8, all intersections are projected to operate acceptably during the Year 2035 No Project Conditions.

10. Year 2035 Plus Project Conditions

Year 2035 Plus Project Conditions were simulated by superimposing traffic generated by full build-out of the proposed project onto *Year 2035 No Project* traffic volumes.

Figure 8 presents the Year 2035 Plus Project peak hour traffic volumes.

10.1 Year 2035 Plus Project Intersection Operations

Table 9 presents a summary of the traffic operations at the intersections for the *Year 2035 Plus Project* Conditions.

Table 9: Year 2035 Plus Project Intersection Operations

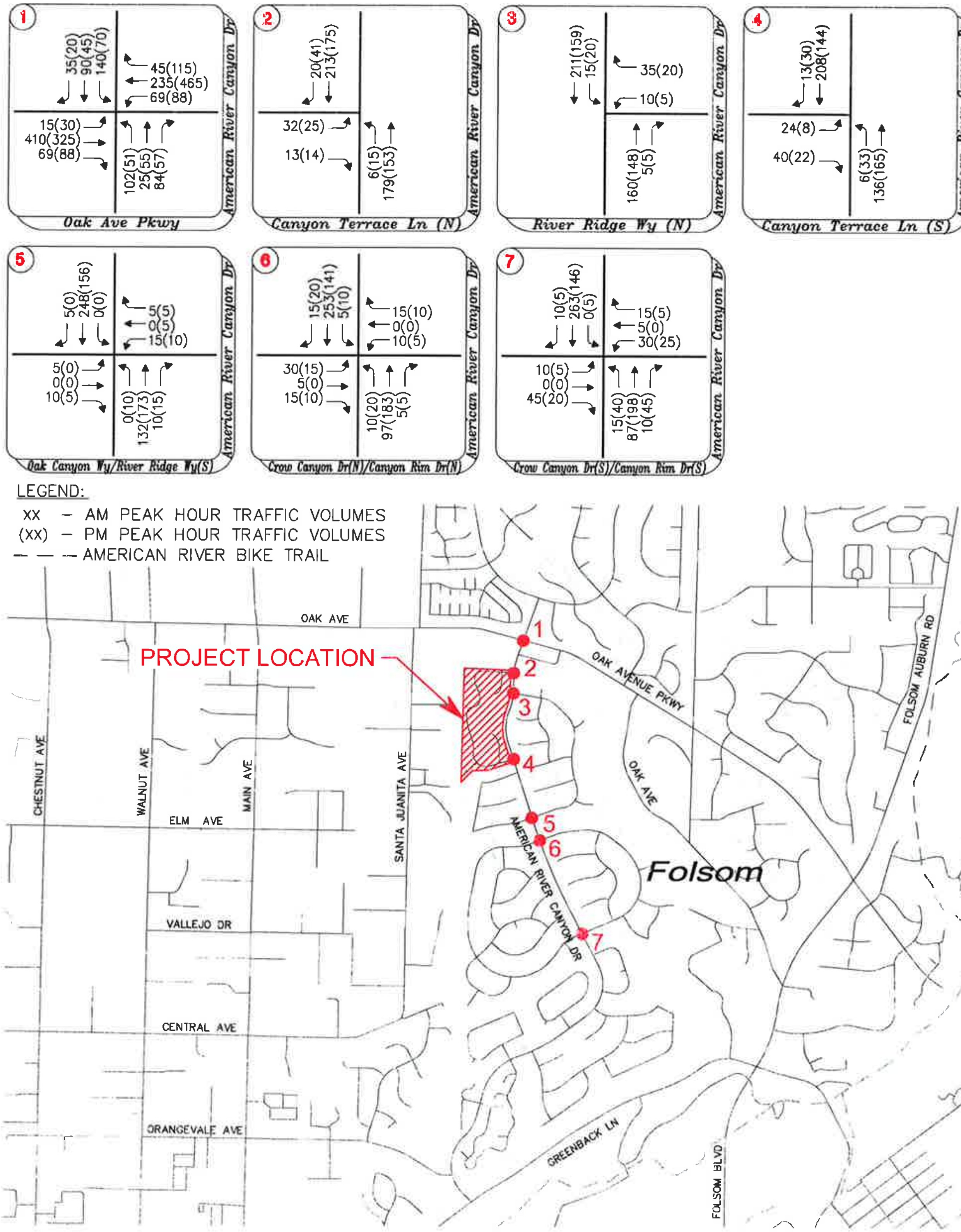
#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Oak Ave Pkwy/American River Canyon Dr	Signal	D	19.0	B	15.2	B
2	Canyon Terrace Ln (North)/American River Canyon Dr [North Dwy]	TWSC	D	10.5	B	10.2	B
3	River Ridge Way (North)/American River Canyon Dr	TWSC	D	11.5	B	11.0	B
4	Canyon Terrace Ln (South)/American River Canyon Dr [South Dwy]	TWSC	D	10.1	B	9.4	A
5	River Ridge Way (South) & Oak Canyon Way/American River Canyon Dr	TWSC	D	10.5	B	10.8	B
6	Crow Canyon Dr (North)/American River Canyon Dr	TWSC	D	11.9	B	10.5	B
7	Crow Canyon Dr (South)/American River Canyon Dr	AWSC	D	8.8	A	8.4	A

Notes:
1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC, Signal

As presented in Table 9, all intersections are projected to operate acceptably during the *Year 2035 Plus Project* Conditions.

Canyon Terrace Apartments TIAR

Figure 8



Year 2035 Plus Project Peak Hour Traffic Volumes

10.2 Driveway Queuing Analysis

Table 10 presents a summary of on-site queuing operations at the two project driveways for the *Year 2035 Plus Project* Conditions.

Table 10: Year 2035 Plus Project 95th Percentile Driveway Queues

Int. #	Intersection/Approach	Control Type	AM Peak Hour 95th % Queue (ft)		PM Peak Hour 95th % Queue (ft)		Available Storage (ft)
			2035	2035+Project	2035	2035+Project	
2	*American River Canyon Dr/ Canyon Terrace Ln (North Dwy)*						
	Eastbound Left/Right	TWSC	47	51	43	53	110
	Norhtbound Thru/Left		12	15	12	20	TWLTL
4	*American River Canyon Dr/ Canyon Terrace Ln (South Dwy)*						
	Eastbound Left/Right	TWSC	51	52	39	41	110
	Norhtbound Thru/Left		7	8	12	30	TWLTL

Note: ***Bold*** *text indicates deficient queuing operations*
TWLTL - Center Two Way Left turn Lane to accommodate left turns into the project site

As presented in Table 10, based on an average effective vehicle length of 25 feet per vehicle (Synchro Studio 9 User Guide, Trafficware, 201), the 95th percentile queues are projected to be 1 to 2 vehicles for the turn movements expected from the project site. In summary, the existing throat depths provide acceptable driveway queuing operations.

11. Project Impacts, Mitigation Measures and recommended Improvements

This section presents recommended project related mitigation measures at the study intersections, which were developed based on the findings from the analyses presented within prior sections of this report. The mitigations are provided for both *Existing* Conditions and *Year 2035* Conditions separately, so it is possible that the same mitigations at one location are applicable for both conditions.

11.1 Impact Significance Criteria

The following section presents the significance and mitigation thresholds used to evaluate the impacts created by the project. These criteria for determining significant impacts were obtained from the City of Folsom General Plan (released in 1993).

11.1.1 Signalized Intersections

The proposed project creates a significant impact on traffic operations at signalized intersections within the City of Folsom if the project causes the following:

- The project causes an intersection with acceptable LOS (i.e. LOS "D" or better) to decline to an unacceptable LOS, or;
- The project increases the overall average delay by more than 5 seconds per vehicle at an intersection having an unacceptable LOS without project traffic.

11.1.2 Unsignalized Intersections

As the mitigation thresholds listed within the City's General Plan are only applicable to signalized intersections, the project team has developed the following significance thresholds to evaluate the project impacts at unsignalized (both AWSC and TWSC) intersections:

- The project causes the worst-case movement's acceptable LOS to decline to an unacceptable LOS and the peak hour signal warrant is met, or
- The project increases the average delay for the worst-case movement by more than 5-seconds per vehicle at an intersection that has an unacceptable LOS without the project and the intersection also meets the peak hour signal warrant.
- Intersections at which the project creates a significant impact (as described by the guidelines listed above), the project must either contribute their fair share to implement mitigation measures that will restore the intersection traffic operations to LOS D or construct incremental improvements that will improve the LOS to less than "no project" conditions.

11.1.3 Driveway Queues

The proposed project creates a significant impact at existing driveways, if the project causes the following:

- The project causes unacceptable increase in 95th percentile queue lengths at existing driveways

11.2 Existing Plus Project Impacts

The proposed project does not create any significant impacts for the *Existing Plus Project* Conditions. Therefore, no off-site mitigations are necessary.

11.3 Year 2035 Plus Project Impacts

The proposed project does not create any significant impacts during the *Year 2035 Plus Project* Conditions. Therefore, no off-site mitigations are necessary.

12. Additional Analysis

This section presents results of five additional intersections based on a request from City of Folsom for the Canyon Terrace Apartments Transportation Impact Analysis Report (TIAR).

The following five additional intersections were analyzed:

8. Greenback Lane & American River Canyon Drive
9. Santa Juanita Avenue (West) & Oak Ave
10. Santa Juanita Avenue (East) & Oak Ave
11. Oak Avenue Parkway & Baldwin Dam Road
12. Folsom Auburn Road & Oak Avenue Parkway

The following traffic analysis scenarios were conducted:

- Existing Conditions
- Existing Plus Project Conditions
- Year 2035 No Project Conditions
- Year 2035 Plus Project Conditions

Impacts of the project were evaluated at five (5) additional intersection within the vicinity of the project site.

12.1.1 Data Collection

Weekday AM and PM peak hour turning movement counts were collected on Tuesday December 4, 2018 for the intersections of Folsom Auburn Road & Oak Avenue Parkway and Oak Avenue Parkway & Baldwin Dam Road.

Weekday AM and PM peak hour turning movement counts were collected on Wednesday December 12, 2018 for the intersections of Greenback Lane & American River Canyon Road and Santa Juanita Avenue (West and East) & Oak Avenue.

12.1.2 Pedestrian Facilities

The following discussion presents the existing pedestrian facilities and examines the impact of project conditions on the existing infrastructure.

12.1.2.1 Existing Pedestrian Facilities

There exists pedestrian facilities along the primary roadway of American River Canyon Drive along its entire easterly side and the majority of its westerly side, from oak Avenue Parkway to Morning Dove Lane. Additionally, there exist pedestrian facilities along Oak Avenue Parkway, from Baldwin Dam Road to Santa Juanita Avenue on the northerly side and form the end of the shopping center to the end of the residential area on the southerly side. The residential roadways connected to American River Canyon Drive do not provide pedestrian facilities.

12.1.2.2 Project Impact to Pedestrian Facilities

Due to the lack of any heavy commercial or employment centers in the immediate project vicinity, the weekday AM and PM peak hour pedestrian counts for Existing conditions indicate the presence of minimal pedestrian traffic at the stated roadways. With the development of the proposed project, the pedestrian traffic is expected to increase slightly due to the commercial area and bus stops located within close proximity to the proposed project.

12.1.3 Bicycle Facilities

The following discussion presents the existing bicycle facilities and examines the impact of project conditions on the existing infrastructure.

12.1.3.1 Existing Bicycle Facilities

In the vicinity of the project, class II bike lanes are identified along both sides of American River Canyon Drive, Oak Avenue Parkway, and Greenback Lane.

12.1.3.2 Project Impact on Bicycle Facilities

Under existing conditions, the study roadways have very light bicycle use. With the development of the proposed project, the bicycle traffic is expected to increase slightly due to the commercial area within close proximity to the proposed project.

12.1.4 Transit Assessment

The following discussion presents the existing transit services and examines the impact of project conditions on these existing facilities.

12.1.4.1 Existing Transit Services

Within the project vicinity there are two bus stops (one for the northbound direction and one for the southbound direction) just north of the proposed project site near the intersection of Oak Avenue Parkway. Both of these bus stops are part of Route 10.

12.1.4.2 Project Impact on Transit Facilities

The proposed project is expected generate moderate demand on existing transit services. As this increase in ridership is expected to be satisfied by the current services, no additional transit routes or stops are anticipated to be installed. There is approximately 25% usage along the primary route that services the proposed project site. The expected increase in ridership with the proposed project should be accommodated.

12.2 Findings

The following section presents the major findings obtained during the evaluation of the analysis scenarios.

12.2.1 Existing Conditions

The Existing Conditions analysis reflects the current operations at study locations. This establishes baseline conditions.

Existing weekday AM and PM peak hour intersection operations were quantified utilizing the existing traffic volumes and intersection lane geometrics and control types. Table 1 presents the intersection operations for Existing conditions.

Table 11 – Existing Intersection Operations

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour Delay	AM Peak Hour LOS	AM Peak Hour Warrant Met?[3]	PM Peak Hour Delay	PM Peak Hour LOS	PM Peak Hour Warrant Met?[3]
8	Greenback Ln & American River Canyon Dr	Signal	D	11.1	B	-	18.2	B	-
9	Santa Juanita Ave & Oak Ave (West)	AWSC	D	11.8	B	-	15.2	C	-
10	Santa Juanita Ave & Oak Ave (East)	AWSC	D	15.1	C	-	19.4	C	-
11	**Oak Ave Pkwy & Baldwin Dam Rd**	**AWSC**	**D**	**35.7**	**E**	**No**	28.1	D	-
12	Folsom Auburn Rd & Oak Ave Pkwy	Signal	D	50.2	D	-	53.5	D	-

Notes:
1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC and Signal
3. Warrant = Based on California MUTCD Warrant 3
4. **Bold** = Unacceptable Conditions

As presented in Table 1, all study intersections currently operate at acceptable LOS, except the following intersection:

- Oak Avenue Parkway & Baldwin Dam Road

12.2.2 Existing Plus Project Conditions

The Existing Plus Project Conditions present the analysis scenario in which the trips generated by the proposed project are added onto existing traffic volumes. Table 2 presents the intersection operations for Existing Plus Project conditions.

Table 12 – Existing Plus Project Intersection Operations

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour Delay	AM Peak Hour LOS	AM Peak Hour Warrant Met?[3]	PM Peak Hour Delay	PM Peak Hour LOS	PM Peak Hour Warrant Met?[3]
8	Greenback Ln & American River Canyon Dr	Signal	D	11.5	B	-	19.7	B	-
9	Santa Juanita Ave & Oak Ave (West)	AWSC	D	12.0	B	-	15.6	C	-
10	Santa Juanita Ave & Oak Ave (East)	AWSC	D	15.4	C	-	20.3	C	-
11	**Oak Ave Pkwy & Baldwin Dam Rd**	**AWSC**	**D**	**37.9**	**E**	**No**	30.4	D	-
12	Folsom Auburn Rd & Oak Ave Pkwy	Signal	D	52.0	D	-	54.9	D	-

Notes:
1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC and Signal
3. Warrant = Based on California MUTCD Warrant 3
4. **Bold** = Unacceptable Conditions

As presented in Table 2, all study intersections are projected to operate at acceptable LOS, except the following intersection:

- Oak Avenue Parkway & Baldwin Dam Road

12.2.3 Year 2035 No Project Conditions

Year 2035 Conditions analyze the scenario that will exist with the buildout of the land uses consistent with the City of Folsom 2035 Travel Demand Model. Year 2035 represents the long term, future year scenarios used in the evaluation of traffic operations.

Year 2035 No Project conditions reflects future operations at study locations, assuming no project development, are analyzed.

Table 3 presents the intersection operations for Year 2035 No Project conditions.

Table 13 – Year 2035 No Project Intersection Operations

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
8	Greenback Ln & American River Canyon Dr	Signal	D	13.6	B	-	41.2	D	-
9	Santa Juanita Ave & Oak Ave (West)	AWSC	D	12.2	B	-	15.6	C	-
10	Santa Juanita Ave & Oak Ave (East)	AWSC	D	15.9	C	-	20.0	C	-
11	**Oak Ave Pkwy & Baldwin Dam Rd**	**AWSC**	**D**	34.4	D	-	**35.5**	**E**	**No**
12	**Folsom Auburn Rd & Oak Ave Pkwy**	**Signal**	**D**	**60.4**	**E**	-	**61.4**	**E**	-

Notes:
1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC and Signal
3. Warrant = Based on California MUTCD Warrant 3
4. **Bold** = Unacceptable Conditions

As presented in Table 3 all study intersections are projected to operate at acceptable LOS, except the following two intersections:

- Oak Avenue Parkway & Baldwin Dam Road
- Folsom Auburn Road & Oak Avenue Parkway

12.2.4 Year 2035 Plus Project Conditions

Year 2035 Plus Project Conditions present the analysis scenario in which the trips generated by the proposed project are added onto Year 2035 No Project traffic volumes.

Table 4 presents the intersection operations for Year 2035 Plus Project conditions.

Table 14 – Year 2035 Plus Project Intersection Operations

				AM Peak Hour			PM Peak Hour		
#	Intersection	Control Type[1]	Target LOS	Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
8	Greenback Ln & American River Canyon Dr	Signal	D	14.2	B	-	45.2	D	-
9	Santa Juanita Ave & Oak Ave (West)	AWSC	D	12.5	B	-	16.0	C	-
10	Santa Juanita Ave & Oak Ave (East)	AWSC	D	16.3	C	-	21.1	C	-
11	**Oak Ave Pkwy & Baldwin Dam Rd**	**AWSC**	**D**	**36.6**	**E**	**No**	**38.7**	**E**	**No**
12	**Folsom Auburn Rd & Oak Ave Pkwy**	**Signal**	**D**	**62.8**	**E**	**-**	**63.5**	**E**	**-**

Notes:
1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC and Signal
3. Warrant = Based on California MUTCD Warrant 3
4. **Bold** = Unacceptable Conditions

As presented in Table 4, all study intersections are projected to operate at acceptable LOS, except the following two intersections:

- Oak Avenue Parkway & Baldwin Dam Road
- Folsom Auburn Road & Oak Avenue Parkway

12.3 Significant Impacts

The City of Folsom General Plan has the following significant thresholds for intersections determined to operate at unacceptable LOS:

12.3.1 Signalized Intersections

The proposed project creates a significant impact on traffic operations at signalized intersections within the City of Folsom if the project causes the following:

- The project causes an intersection with acceptable LOS (i.e. LOS "D" or better) to decline to an unacceptable LOS, or;
- The project increases the overall average delay by more than 5 seconds per vehicle at an intersection having an unacceptable LOS without project traffic.

12.3.2 Unsignalized Intersections

Consistent with the City practice, the project team has utilized the following significance thresholds for assessing impacts at unsignalized intersections (both AWSC and TWSC):

- The project causes the worst-case movement's acceptable LOS to decline to an unacceptable LOS and the peak hour signal warrant is met, or;

- The project increases the average delay for the worst-case movement by more than 5 seconds per vehicle at an intersection that has an unacceptable LOS without the project and the intersection also meets the peak hour signal warrant.

12.4 Impact Assessment

12.4.1 Existing Plus Project Conditions- Unsignalized Intersections

The intersection of Baldwin Dam Road/Oak Avenue Parkway was found to be currently operating at an unacceptable LOS of E under Existing conditions during the AM peak hour. The addition of the project traffic increases the delay at this intersection by 2.2 seconds in the AM peak hour. The project does not trigger the peak hour warrant to be met nor does it increase the delay by more than the 5 seconds threshold for unsignalized intersections.

12.4.2 Cumulative Plus Project Conditions- Signalized Intersections

Cumulative conditions are defined as build-out of the 2035 General Plan adopted in October, 2018. The intersection of Folsom Auburn Road and Oak Avenue Parkway is projected to operate at unacceptable LOS E under Cumulative conditions (build-out of the 2035 General Plan). The addition of the project traffic to these Cumulative conditions increases the delay at this intersection by 2.4 seconds in the AM peak hour and 2.1 seconds in the PM peak hour. The increase in delay is less than the five seconds threshold for signalized intersections.

12.4.3 Cumulative Plus Project Conditions- Unsignalized Intersections

The intersection of Oak Avenue Parkway and Baldwin Dam Road currently operates at an unacceptable LOS of E under Existing conditions in the AM peak hour, and continues to operate at that LOS after the addition of the project. The intersection is projected to operate at an acceptable LOS of D in the AM peak hour and an unacceptable LOS of E during PM peak hour under Cumulative conditions (build-out of the 2035 General Plan). The addition of the project traffic to the 2035 General Plan build-out conditions results in a return to the existing LOS of E in the AM peak hour, and increases the delay at this intersection by 3.2 seconds in the PM peak hour. While the project causes the intersection LOS to go from acceptable to unacceptable and a return to the existing LOS condition in the circumstances described, the project does not cause the peak hour warrant to be met in the AM peak hour, nor does it increase the delay by more than the five seconds threshold for unsignalized intersections in the PM peak hour. Therefore, transportation and traffic related impacts would be less than significant and potentially cumulative impacts would be avoided.

12.5 Conclusions

Based upon the significant impact thresholds described above, the proposed project is not projected to create significant impacts at any of the five study intersections analyzed within this section.

Therefore, no mitigation measures are needed.

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental and construction services to private and public sector clients.

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Appendix A: Synchro/SimTraffic Outputs

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	14	400	62	59	225	43	85	20	68	119	79	29
Future Volume (veh/h)	14	400	62	59	225	43	85	20	68	119	79	29
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	15	430	67	63	242	46	91	22	73	128	85	31
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	16	923	143	78	997	186	115	288	250	164	488	169
Arrive On Green	0.01	0.30	0.30	0.04	0.34	0.34	0.07	0.16	0.16	0.09	0.19	0.19
Sat Flow, veh/h	1757	3036	470	1757	2940	549	1757	1752	1519	1757	2543	881
Grp Volume(v), veh/h	15	247	250	63	143	145	91	22	73	128	57	59
Grp Sat Flow(s),veh/h/ln	1757	1752	1753	1757	1752	1737	1757	1752	1519	1757	1752	1671
Q Serve(g_s), s	0.4	5.6	5.6	1.7	2.8	2.9	2.5	0.5	2.1	3.5	1.3	1.4
Cycle Q Clear(g_c), s	0.4	5.6	5.6	1.7	2.8	2.9	2.5	0.5	2.1	3.5	1.3	1.4
Prop In Lane	1.00		0.27	1.00		0.32	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	16	533	533	78	594	589	115	288	250	164	336	321
V/C Ratio(X)	0.94	0.46	0.47	0.81	0.24	0.25	0.79	0.08	0.29	0.78	0.17	0.18
Avail Cap(c_a), veh/h	902	2484	2484	902	2484	2462	902	1440	1248	902	1440	1373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	13.7	13.8	23.1	11.6	11.6	22.4	17.2	17.9	21.6	16.4	16.5
Incr Delay (d2), s/veh	48.9	0.8	0.9	7.4	0.3	0.3	4.5	0.0	0.2	3.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.8	2.8	1.0	1.4	1.5	1.3	0.3	0.9	1.8	0.6	0.7
LnGrp Delay(d),s/veh	73.0	14.6	14.6	30.5	11.8	11.9	26.9	17.3	18.1	24.7	16.5	16.6
LnGrp LOS	E	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		512			351			186			244	
Approach Delay, s/veh		16.3			15.2			22.3			20.8	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	12.9	4.9	21.8	7.7	14.2	6.6	20.1
Change Period (Y+Rc), s	4.5	4.9	4.5	5.3	4.5	4.9	4.5	5.3
Max Green Setting (Gmax), s	25.0	40.0	25.0	69.0	25.0	40.0	25.0	69.0
Max Q Clear Time (g_c+I1), s	5.5	4.1	2.4	4.9	4.5	3.4	3.7	7.6
Green Ext Time (p_c), s	0.0	0.8	0.0	6.9	0.0	0.8	0.0	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Intersection						
Int Delay, s/veh	0.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	5	2	161	201	10
Future Vol, veh/h	19	5	2	161	201	10
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	23	6	2	192	239	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	346	126	251	0	-	0
Stage 1	245	-	-	-	-	-
Stage 2	101	-	-	-	-	-
Critical Hdwy	6.88	6.98	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	2.24	-	-	-
Pot Cap-1 Maneuver	619	895	1297	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	906	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	618	895	1297	-	-	-
Mov Cap-2 Maneuver	654	-	-	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	905	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1297	-	693	-	-
HCM Lane V/C Ratio	0.002	-	0.041	-	-
HCM Control Delay (s)	7.8	-	10.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	4.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	31	140	2	14	194
Future Vol, veh/h	5	31	140	2	14	194
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	6	37	167	2	17	231

Major/Minor	Minor1		Minor2		Major2	
Conflicting Flow All	238	0	264	121	0	0
Stage 1	0	-	264	-	-	-
Stage 2	238	-	0	-	-	-
Critical Hdwy	7.58	6.98	6.58	6.98	4.18	-
Critical Hdwy Stg 1	-	-	5.58	-	-	-
Critical Hdwy Stg 2	6.58	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	4.04	3.34	2.24	-
Pot Cap-1 Maneuver	691	-	635	901	-	-
Stage 1	-	-	684	-	-	-
Stage 2	738	-	-	-	-	-
Platoon blocked, %						-
Mov Cap-1 Maneuver	550	-	635	901	-	-
Mov Cap-2 Maneuver	550	-	635	-	-	-
Stage 1	-	-	684	-	-	-
Stage 2	557	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		11.5	
HCM LOS	-	B	

Minor Lane/Major Mvmt	NBLn1	NBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	635	640	-	-	-
HCM Lane V/C Ratio	0.131	0.134	-	-	-
HCM Control Delay (s)	11.5	11.5	-	-	-
HCM Lane LOS	B	B	-	-	-
HCM 95th %tile Q(veh)	0.5	0.5	-	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	23	2	126	197	7
Future Vol, veh/h	14	23	2	126	197	7
Conflicting Peds, #/hr	0	0	16	0	0	16
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	28	2	154	240	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	343	140	265	0	-	0
Stage 1	261	-	-	-	-	-
Stage 2	82	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	627	882	1296	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	607	869	1296	-	-	-
Mov Cap-2 Maneuver	642	-	-	-	-	-
Stage 1	747	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1296	-	766	-	-
HCM Lane V/C Ratio	0.002	-	0.059	-	-
HCM Control Delay (s)	7.8	-	10	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	5	13	0	4	0	121	5	0	217	1
Future Vol, veh/h	2	0	5	13	0	4	0	121	5	0	217	1
Conflicting Peds, #/hr	0	0	2	0	0	0	8	0	10	10	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	0	5	14	0	4	0	132	5	0	236	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	310	391	128	264	389	78	245	0	0	147	0	0
Stage 1	244	244	-	144	144	-	-	-	-	-	-	-
Stage 2	66	147	-	120	245	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	617	541	895	665	542	964	1311	-	-	1425	-	-
Stage 1	735	700	-	841	774	-	-	-	-	-	-	-
Stage 2	934	772	-	869	700	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	610	532	886	653	533	955	1309	-	-	1425	-	-
Mov Cap-2 Maneuver	610	532	-	653	533	-	-	-	-	-	-	-
Stage 1	729	695	-	833	767	-	-	-	-	-	-	-
Stage 2	930	765	-	862	695	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	10.2	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1309	-	-	785	705	1425	-	-
HCM Lane V/C Ratio	-	-	-	0.01	0.026	-	-	-
HCM Control Delay (s)	0	-	-	9.6	10.2	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	4	11	5	0	12	5	87	1	4	222	14
Future Vol, veh/h	25	4	11	5	0	12	5	87	1	4	222	14
Conflicting Peds, #/hr	0	0	0	0	0	0	15	0	7	7	0	15
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	60	-	-	55	-	-
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, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	27	4	12	5	0	13	5	95	1	4	241	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	331	387	143	245	393	55	272	0	0	103	0	0
Stage 1	273	273	-	113	113	-	-	-	-	-	-	-
Stage 2	58	114	-	132	280	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.66	7.06	7.66	6.66	7.06	4.26	-	-	4.26	-	-
Critical Hdwy Stg 1	6.66	5.66	-	6.66	5.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.66	-	6.66	5.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4.08	3.38	3.58	4.08	3.38	2.28	-	-	2.28	-	-
Pot Cap-1 Maneuver	584	533	860	673	528	981	1246	-	-	1444	-	-
Stage 1	693	668	-	863	787	-	-	-	-	-	-	-
Stage 2	930	786	-	841	663	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	565	518	848	651	513	974	1246	-	-	1444	-	-
Mov Cap-2 Maneuver	565	518	-	651	513	-	-	-	-	-	-	-
Stage 1	680	657	-	854	779	-	-	-	-	-	-	-
Stage 2	914	778	-	821	652	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.3	9.3	0.4	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1246	-	-	616	850	1444	-	-
HCM Lane V/C Ratio	0.004	-	-	0.071	0.022	0.003	-	-
HCM Control Delay (s)	7.9	-	-	11.3	9.3	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	42	27	1	10	13	77	7	0	235	6
Future Vol, veh/h	8	0	42	27	1	10	13	77	7	0	235	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	0	48	31	1	11	15	88	8	0	267	7
Number of Lanes	0	1	0	0	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	8.1	8.8	8.1	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	16%	71%	0%	0%	0%
Vol Thru, %	0%	100%	79%	0%	3%	100%	100%	93%
Vol Right, %	0%	0%	21%	84%	26%	0%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	51	33	50	38	0	157	84
LT Vol	13	0	0	8	27	0	0	0
Through Vol	0	51	26	0	1	0	157	78
RT Vol	0	0	7	42	10	0	0	6
Lane Flow Rate	15	58	37	57	43	0	178	96
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.023	0.082	0.05	0.078	0.068	0	0.242	0.129
Departure Headway (Hd)	5.548	5.045	4.894	4.965	5.655	4.902	4.902	4.852
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	646	711	732	722	634	0	733	741
Service Time	3.271	2.769	2.618	2.691	3.381	2.622	2.622	2.572
HCM Lane V/C Ratio	0.023	0.082	0.051	0.079	0.068	0	0.243	0.13
HCM Control Delay	8.4	8.2	7.9	8.1	8.8	7.6	9.2	8.3
HCM Lane LOS	A	A	A	A	A	N	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0.3	0.2	0	0.9	0.4

Intersection: 2: American River Canyon Drive & Canyon Terrace Ln (north)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	40	6
Average Queue (ft)	18	0
95th Queue (ft)	44	4
Link Distance (ft)	231	198
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: American River Canyon Drive & Canyon Terrace Ln (south)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	40	10
Average Queue (ft)	20	0
95th Queue (ft)	44	5
Link Distance (ft)	218	729
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	28	319	72	71	445	107	43	49	48	60	37	14
Future Volume (veh/h)	28	319	72	71	445	107	43	49	48	60	37	14
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	30	339	77	76	473	114	46	52	51	64	39	15
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	1024	230	95	1103	264	55	194	168	79	309	112
Arrive On Green	0.02	0.36	0.36	0.05	0.39	0.39	0.03	0.11	0.11	0.04	0.12	0.12
Sat Flow, veh/h	1774	2874	645	1774	2824	676	1774	1798	1555	1774	2537	918
Grp Volume(v), veh/h	30	207	209	76	295	292	46	51	52	64	26	28
Grp Sat Flow(s),veh/h/ln	1774	1770	1749	1774	1770	1731	1774	1770	1583	1774	1770	1685
Q Serve(g_s), s	0.7	3.7	3.8	1.9	5.3	5.4	1.1	1.2	1.3	1.6	0.6	0.6
Cycle Q Clear(g_c), s	0.7	3.7	3.8	1.9	5.3	5.4	1.1	1.2	1.3	1.6	0.6	0.6
Prop In Lane	1.00		0.37	1.00		0.39	1.00		0.98	1.00		0.54
Lane Grp Cap(c), veh/h	34	630	623	95	691	676	55	191	171	79	215	205
V/C Ratio(X)	0.88	0.33	0.34	0.80	0.43	0.43	0.84	0.27	0.30	0.81	0.12	0.13
Avail Cap(c_a), veh/h	1012	2786	2753	1012	2786	2724	1012	1615	1445	1012	1615	1537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	10.3	10.3	20.5	9.8	9.8	21.1	18.0	18.0	20.8	17.2	17.2
Incr Delay (d2), s/veh	22.3	0.4	0.4	5.8	0.6	0.6	12.1	0.3	0.4	7.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.9	1.9	1.0	2.6	2.7	0.7	0.6	0.6	0.9	0.3	0.3
LnGrp Delay(d),s/veh	43.8	10.7	10.7	26.3	10.3	10.4	33.3	18.2	18.4	28.2	17.3	17.3
LnGrp LOS	D	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		446			663			149			118	
Approach Delay, s/veh		12.9			12.2			22.9			23.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	9.6	5.3	22.4	5.8	10.2	6.8	20.9
Change Period (Y+Rc), s	4.5	4.9	4.5	5.3	4.5	4.9	4.5	5.3
Max Green Setting (Gmax), s	25.0	40.0	25.0	69.0	25.0	40.0	25.0	69.0
Max Q Clear Time (g_c+I1), s	3.6	3.3	2.7	7.4	3.1	2.6	3.9	5.8
Green Ext Time (p_c), s	0.0	0.5	0.0	9.6	0.0	0.5	0.0	9.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	6	8	143	155	23
Future Vol, veh/h	14	6	8	143	155	23
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	7	9	163	176	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	293	106	207	0	-	0
Stage 1	194	-	-	-	-	-
Stage 2	99	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	674	928	1361	-	-	-
Stage 1	820	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	663	924	1361	-	-	-
Mov Cap-2 Maneuver	691	-	-	-	-	-
Stage 1	816	-	-	-	-	-
Stage 2	904	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1361	-	748	-	-
HCM Lane V/C Ratio	0.007	-	0.03	-	-
HCM Control Delay (s)	7.7	-	10	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	15	133	3	19	139
Future Vol, veh/h	1	15	133	3	19	139
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	17	148	3	21	154

Major/Minor	Minor1		Minor2		Major2	
Conflicting Flow All	197	2	199	79	2	0
Stage 1	2	-	197	-	-	-
Stage 2	195	-	2	-	-	-
Critical Hdwy	7.54	6.94	6.54	6.94	4.14	-
Critical Hdwy Stg 1	-	-	5.54	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	4.02	3.32	2.22	-
Pot Cap-1 Maneuver	744	1081	696	965	1619	-
Stage 1	-	-	737	-	-	-
Stage 2	788	-	-	-	-	-
Platoon blocked, %						-
Mov Cap-1 Maneuver	611	1079	686	965	1619	-
Mov Cap-2 Maneuver	611	-	686	-	-	-
Stage 1	-	-	727	-	-	-
Stage 2	618	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	10.8	0.9
HCM LOS	A	B	

Minor Lane/Major Mvmt	NBLn1	NBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	686	695	1030	1619	-
HCM Lane V/C Ratio	0.108	0.111	0.017	0.013	-
HCM Control Delay (s)	10.9	10.8	8.6	7.3	-
HCM Lane LOS	B	B	A	A	-
HCM 95th %tile Q(veh)	0.4	0.4	0.1	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	10	19	153	134	15
Future Vol, veh/h	4	10	19	153	134	15
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	12	23	187	163	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	314	92	183	0	-	0
Stage 1	174	-	-	-	-	-
Stage 2	140	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	651	944	1382	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	639	943	1382	-	-	-
Mov Cap-2 Maneuver	677	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	854	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1382	-	848	-	-
HCM Lane V/C Ratio	0.017	-	0.02	-	-
HCM Control Delay (s)	7.6	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	3	9	1	1	6	148	14	0	139	0
Future Vol, veh/h	0	0	3	9	1	1	6	148	14	0	139	0
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	3	10	1	1	7	161	15	0	151	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	249	345	80	259	338	89	155	0	0	177	0	0
Stage 1	155	155	-	183	183	-	-	-	-	-	-	-
Stage 2	94	190	-	76	155	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	681	574	961	670	580	948	1415	-	-	1389	-	-
Stage 1	829	766	-	798	745	-	-	-	-	-	-	-
Stage 2	899	739	-	921	766	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	674	568	957	665	574	947	1415	-	-	1389	-	-
Mov Cap-2 Maneuver	674	568	-	665	574	-	-	-	-	-	-	-
Stage 1	822	763	-	793	741	-	-	-	-	-	-	-
Stage 2	892	735	-	918	763	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	10.4	0.3	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1415	-	-	957	674	1389	-	-
HCM Lane V/C Ratio	0.005	-	-	0.003	0.018	-	-	-
HCM Control Delay (s)	7.6	-	-	8.8	10.4	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	8	1	0	6	17	154	4	9	121	17
Future Vol, veh/h	10	0	8	1	0	6	17	154	4	9	121	17
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	60	-	-	55	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	9	1	0	7	20	177	5	10	139	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	302	396	83	309	402	92	163	0	0	183	0	0
Stage 1	174	174	-	219	219	-	-	-	-	-	-	-
Stage 2	128	222	-	90	183	-	-	-	-	-	-	-
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	627	540	960	620	535	947	1413	-	-	1389	-	-
Stage 1	811	754	-	763	721	-	-	-	-	-	-	-
Stage 2	862	718	-	907	747	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	610	526	956	604	521	946	1413	-	-	1389	-	-
Mov Cap-2 Maneuver	610	526	-	604	521	-	-	-	-	-	-	-
Stage 1	796	746	-	751	710	-	-	-	-	-	-	-
Stage 2	844	707	-	892	739	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	9.2	0.7	0.5
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1413	-	-	727	875	1389	-	-
HCM Lane V/C Ratio	0.014	-	-	0.028	0.009	0.007	-	-
HCM Control Delay (s)	7.6	-	-	10.1	9.2	7.6	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	15	20	0	1	37	171	39	2	126	4
Future Vol, veh/h	3	0	15	20	0	1	37	171	39	2	126	4
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	17	23	0	1	42	194	44	2	143	5
Number of Lanes	0	1	0	0	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	7.8	8.9	8.2	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	17%	95%	100%	0%	0%
Vol Thru, %	0%	100%	59%	0%	0%	0%	100%	91%
Vol Right, %	0%	0%	41%	83%	5%	0%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	114	96	18	21	2	84	46
LT Vol	37	0	0	3	20	2	0	0
Through Vol	0	114	57	0	0	0	84	42
RT Vol	0	0	39	15	1	0	0	4
Lane Flow Rate	42	130	109	20	24	2	95	52
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.061	0.169	0.133	0.028	0.039	0.003	0.129	0.07
Departure Headway (Hd)	5.185	4.684	4.4	4.989	5.92	5.382	4.881	4.82
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	682	754	802	721	608	668	738	747
Service Time	2.985	2.484	2.199	2.698	3.629	3.088	2.587	2.526
HCM Lane V/C Ratio	0.062	0.172	0.136	0.028	0.039	0.003	0.129	0.07
HCM Control Delay	8.3	8.5	7.9	7.8	8.9	8.1	8.3	7.9
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.6	0.5	0.1	0.1	0	0.4	0.2

Intersection: 2: American River Canyon Drive & Canyon Terrace Ln (north)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	36	31
Average Queue (ft)	15	2
95th Queue (ft)	41	13
Link Distance (ft)	231	198
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: American River Canyon Drive & Canyon Terrace Ln (south)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	21
Average Queue (ft)	11	1
95th Queue (ft)	35	11
Link Distance (ft)	218	729
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	400	66	63	225	43	97	20	77	119	79	29
Future Volume (veh/h)	14	400	66	63	225	43	97	20	77	119	79	29
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	15	430	71	68	242	46	104	22	83	128	85	31
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	16	911	149	84	1005	188	133	296	257	164	475	164
Arrive On Green	0.01	0.30	0.30	0.05	0.34	0.34	0.08	0.17	0.17	0.09	0.19	0.19
Sat Flow, veh/h	1757	3008	493	1757	2940	549	1757	1752	1520	1757	2543	881
Grp Volume(v), veh/h	15	249	252	68	143	145	104	22	83	128	57	59
Grp Sat Flow(s),veh/h/ln	1757	1752	1748	1757	1752	1737	1757	1752	1520	1757	1752	1671
Q Serve(g_s), s	0.4	5.7	5.8	1.9	2.9	3.0	2.9	0.5	2.4	3.5	1.4	1.5
Cycle Q Clear(g_c), s	0.4	5.7	5.8	1.9	2.9	3.0	2.9	0.5	2.4	3.5	1.4	1.5
Prop In Lane	1.00		0.28	1.00		0.32	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	16	531	530	84	599	594	133	296	257	164	327	312
V/C Ratio(X)	0.94	0.47	0.48	0.81	0.24	0.24	0.78	0.07	0.32	0.78	0.17	0.19
Avail Cap(c_a), veh/h	885	2436	2430	885	2436	2415	885	1412	1225	885	1412	1346
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	14.1	14.1	23.4	11.7	11.7	22.5	17.4	18.1	22.0	17.0	17.0
Incr Delay (d2), s/veh	48.6	0.9	0.9	6.6	0.3	0.3	3.8	0.0	0.3	3.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.9	2.9	1.1	1.4	1.5	1.5	0.3	1.0	1.8	0.7	0.7
LnGrp Delay(d),s/veh	73.2	14.9	15.0	30.0	12.0	12.0	26.3	17.4	18.4	25.1	17.1	17.1
LnGrp LOS	E	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		516			356			209			244	
Approach Delay, s/veh		16.6			15.4			22.2			21.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	13.3	5.0	22.3	8.2	14.2	6.9	20.3
Change Period (Y+Rc), s	4.5	4.9	4.5	5.3	4.5	4.9	4.5	5.3
Max Green Setting (Gmax), s	25.0	40.0	25.0	69.0	25.0	40.0	25.0	69.0
Max Q Clear Time (g_c+I1), s	5.5	4.4	2.4	5.0	4.9	3.5	3.9	7.8
Green Ext Time (p_c), s	0.0	0.8	0.0	6.9	0.0	0.8	0.0	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	8	3	170	204	15
Future Vol, veh/h	31	8	3	170	204	15
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	37	10	4	202	243	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	360	130	261	0	-	0
Stage 1	252	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.88	6.98	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	2.24	-	-	-
Pot Cap-1 Maneuver	607	889	1286	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	605	889	1286	-	-	-
Mov Cap-2 Maneuver	645	-	-	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1286	-	683	-	-
HCM Lane V/C Ratio	0.003	-	0.068	-	-
HCM Control Delay (s)	7.8	-	10.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	31	150	2	14	200
Future Vol, veh/h	5	31	150	2	14	200
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	6	37	179	2	17	238

Major/Minor	Minor1		Minor2		Major2	
Conflicting Flow All	248	0	271	125	0	0
Stage 1	0	-	271	-	-	-
Stage 2	248	-	0	-	-	-
Critical Hdwy	7.58	6.98	6.58	6.98	4.18	-
Critical Hdwy Stg 1	-	-	5.58	-	-	-
Critical Hdwy Stg 2	6.58	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	4.04	3.34	2.24	-
Pot Cap-1 Maneuver	680	-	630	896	-	-
Stage 1	-	-	679	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %						-
Mov Cap-1 Maneuver	530	-	630	896	-	-
Mov Cap-2 Maneuver	530	-	630	-	-	-
Stage 1	-	-	679	-	-	-
Stage 2	535	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		11.6	
HCM LOS	-	B	

Minor Lane/Major Mvmt	NBLn1	NBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	630	635	-	-	-
HCM Lane V/C Ratio	0.142	0.144	-	-	-
HCM Control Delay (s)	11.7	11.6	-	-	-
HCM Lane LOS	B	B	-	-	-
HCM 95th %tile Q(veh)	0.5	0.5	-	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	38	3	127	200	10
Future Vol, veh/h	23	38	3	127	200	10
Conflicting Peds, #/hr	0	0	16	0	0	16
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	46	4	155	244	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	351	144	272	0	-	0
Stage 1	266	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	620	877	1288	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	599	864	1288	-	-	-
Mov Cap-2 Maneuver	637	-	-	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	912	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1288	-	762	-	-
HCM Lane V/C Ratio	0.003	-	0.098	-	-
HCM Control Delay (s)	7.8	-	10.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	5	13	0	4	0	123	5	0	235	1
Future Vol, veh/h	2	0	5	13	0	4	0	123	5	0	235	1
Conflicting Peds, #/hr	0	0	2	0	0	0	8	0	10	10	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	0	5	14	0	4	0	134	5	0	255	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	331	413	138	276	411	80	265	0	0	149	0	0
Stage 1	264	264	-	146	146	-	-	-	-	-	-	-
Stage 2	67	149	-	130	265	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	596	526	882	652	527	961	1289	-	-	1423	-	-
Stage 1	715	686	-	839	773	-	-	-	-	-	-	-
Stage 2	933	771	-	857	686	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	589	517	874	641	518	952	1287	-	-	1423	-	-
Mov Cap-2 Maneuver	589	517	-	641	518	-	-	-	-	-	-	-
Stage 1	710	681	-	831	766	-	-	-	-	-	-	-
Stage 2	929	764	-	850	681	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	10.3	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1287	-	-	768	694	1423	-	-
HCM Lane V/C Ratio	-	-	-	0.01	0.027	-	-	-
HCM Control Delay (s)	0	-	-	9.7	10.3	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	4	11	5	0	12	5	89	1	4	240	14
Future Vol, veh/h	25	4	11	5	0	12	5	89	1	4	240	14
Conflicting Peds, #/hr	0	0	0	0	0	0	15	0	7	7	0	15
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	60	-	-	55	-	-
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, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	27	4	12	5	0	13	5	97	1	4	261	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	351	408	153	256	415	56	291	0	0	105	0	0
Stage 1	292	292	-	115	115	-	-	-	-	-	-	-
Stage 2	59	116	-	141	300	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.66	7.06	7.66	6.66	7.06	4.26	-	-	4.26	-	-
Critical Hdwy Stg 1	6.66	5.66	-	6.66	5.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.66	-	6.66	5.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4.08	3.38	3.58	4.08	3.38	2.28	-	-	2.28	-	-
Pot Cap-1 Maneuver	564	518	847	661	513	980	1225	-	-	1441	-	-
Stage 1	675	655	-	860	785	-	-	-	-	-	-	-
Stage 2	928	785	-	830	649	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	546	504	835	640	499	973	1225	-	-	1441	-	-
Mov Cap-2 Maneuver	546	504	-	640	499	-	-	-	-	-	-	-
Stage 1	663	644	-	851	777	-	-	-	-	-	-	-
Stage 2	912	777	-	810	638	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	9.4	0.4	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1225	-	-	598	844	1441	-	-
HCM Lane V/C Ratio	0.004	-	-	0.073	0.022	0.003	-	-
HCM Control Delay (s)	8	-	-	11.5	9.4	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	42	27	1	10	13	79	7	0	253	6
Future Vol, veh/h	8	0	42	27	1	10	13	79	7	0	253	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	0	48	31	1	11	15	90	8	0	288	7
Number of Lanes	0	1	0	0	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	8.2	8.9	8.2	9.1
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	16%	71%	0%	0%	0%
Vol Thru, %	0%	100%	79%	0%	3%	100%	100%	93%
Vol Right, %	0%	0%	21%	84%	26%	0%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	53	33	50	38	0	169	90
LT Vol	13	0	0	8	27	0	0	0
Through Vol	0	53	26	0	1	0	169	84
RT Vol	0	0	7	42	10	0	0	6
Lane Flow Rate	15	60	38	57	43	0	192	103
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.023	0.084	0.052	0.079	0.068	0	0.261	0.139
Departure Headway (Hd)	5.569	5.066	4.918	5.015	5.704	4.906	4.906	4.86
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	644	708	729	714	628	0	734	739
Service Time	3.294	2.791	2.644	2.745	3.436	2.627	2.627	2.58
HCM Lane V/C Ratio	0.023	0.085	0.052	0.08	0.068	0	0.262	0.139
HCM Control Delay	8.4	8.3	7.9	8.2	8.9	7.6	9.4	8.4
HCM Lane LOS	A	A	A	A	A	N	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0.3	0.2	0	1	0.5

Intersection: 2: American River Canyon Drive & Canyon Terrace Ln (north)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	49	10
Average Queue (ft)	23	0
95th Queue (ft)	49	6
Link Distance (ft)	231	198
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: American River Canyon Drive & Canyon Terrace Ln (south)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	59	14
Average Queue (ft)	30	0
95th Queue (ft)	54	6
Link Distance (ft)	218	729
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	28	319	85	84	445	107	49	49	55	60	37	14
Future Volume (veh/h)	28	319	85	84	445	107	49	49	55	60	37	14
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	30	339	90	89	473	114	52	52	59	64	39	15
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	988	259	113	1129	270	63	194	173	79	302	109
Arrive On Green	0.02	0.36	0.36	0.06	0.40	0.40	0.04	0.11	0.11	0.04	0.12	0.12
Sat Flow, veh/h	1774	2777	727	1774	2824	676	1774	1770	1579	1774	2536	917
Grp Volume(v), veh/h	30	214	215	89	295	292	52	52	59	64	26	28
Grp Sat Flow(s),veh/h/ln	1774	1770	1734	1774	1770	1731	1774	1770	1579	1774	1770	1684
Q Serve(g_s), s	0.8	4.0	4.1	2.2	5.4	5.5	1.3	1.2	1.6	1.6	0.6	0.7
Cycle Q Clear(g_c), s	0.8	4.0	4.1	2.2	5.4	5.5	1.3	1.2	1.6	1.6	0.6	0.7
Prop In Lane	1.00		0.42	1.00		0.39	1.00		1.00	1.00		0.54
Lane Grp Cap(c), veh/h	34	629	617	113	708	692	63	194	173	79	210	200
V/C Ratio(X)	0.88	0.34	0.35	0.79	0.42	0.42	0.83	0.27	0.34	0.81	0.13	0.14
Avail Cap(c_a), veh/h	986	2714	2660	986	2714	2654	986	1573	1404	986	1573	1497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	10.6	10.7	20.8	9.7	9.7	21.6	18.4	18.5	21.3	17.7	17.8
Incr Delay (d2), s/veh	22.0	0.4	0.4	4.6	0.5	0.5	9.9	0.3	0.4	7.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.0	2.0	1.2	2.7	2.7	0.8	0.6	0.7	0.9	0.3	0.3
LnGrp Delay(d),s/veh	44.0	11.1	11.1	25.4	10.2	10.3	31.5	18.6	18.9	28.6	17.8	17.9
LnGrp LOS	D	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		459			676			163			118	
Approach Delay, s/veh		13.2			12.3			22.9			23.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	9.8	5.4	23.3	6.1	10.3	7.4	21.3
Change Period (Y+Rc), s	4.5	4.9	4.5	5.3	4.5	4.9	4.5	5.3
Max Green Setting (Gmax), s	25.0	40.0	25.0	69.0	25.0	40.0	25.0	69.0
Max Q Clear Time (g_c+I1), s	3.6	3.6	2.8	7.5	3.3	2.7	4.2	6.1
Green Ext Time (p_c), s	0.0	0.6	0.0	9.8	0.0	0.6	0.0	9.8

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	10	13	146	165	39
Future Vol, veh/h	24	10	13	146	165	39
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	11	15	166	188	44

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	328	121	237	0	-	0
Stage 1	215	-	-	-	-	-
Stage 2	113	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	641	908	1327	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	628	904	1327	-	-	-
Mov Cap-2 Maneuver	666	-	-	-	-	-
Stage 1	796	-	-	-	-	-
Stage 2	885	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1327	-	722	-	-
HCM Lane V/C Ratio	0.011	-	0.054	-	-
HCM Control Delay (s)	7.7	-	10.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	15	141	3	19	153
Future Vol, veh/h	1	15	141	3	19	153
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	17	157	3	21	170

Major/Minor	Minor1		Minor2		Major2	
Conflicting Flow All	210	2	214	87	2	0
Stage 1	2	-	212	-	-	-
Stage 2	208	-	2	-	-	-
Critical Hdwy	7.54	6.94	6.54	6.94	4.14	-
Critical Hdwy Stg 1	-	-	5.54	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	4.02	3.32	2.22	-
Pot Cap-1 Maneuver	729	1081	682	954	1619	-
Stage 1	-	-	726	-	-	-
Stage 2	775	-	-	-	-	-
Platoon blocked, %						-
Mov Cap-1 Maneuver	589	1079	672	954	1619	-
Mov Cap-2 Maneuver	589	-	672	-	-	-
Stage 1	-	-	717	-	-	-
Stage 2	596	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	11	0.8
HCM LOS	A	B	

Minor Lane/Major Mvmt	NBLn1	NBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	672	680	1026	1619	-
HCM Lane V/C Ratio	0.117	0.12	0.017	0.013	-
HCM Control Delay (s)	11.1	11	8.6	7.3	-
HCM Lane LOS	B	B	A	A	-
HCM 95th %tile Q(veh)	0.4	0.4	0.1	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	17	32	158	138	25
Future Vol, veh/h	7	17	32	158	138	25
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	21	39	193	168	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	359	100	200	0	-	0
Stage 1	185	-	-	-	-	-
Stage 2	174	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	610	933	1362	-	-	-
Stage 1	825	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	591	932	1362	-	-	-
Mov Cap-2 Maneuver	643	-	-	-	-	-
Stage 1	824	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1362	-	824	-	-
HCM Lane V/C Ratio	0.029	-	0.036	-	-
HCM Control Delay (s)	7.7	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	3	9	1	1	6	166	14	0	150	0
Future Vol, veh/h	0	0	3	9	1	1	6	166	14	0	150	0
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	3	10	1	1	7	180	15	0	163	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	271	377	86	284	369	99	167	0	0	197	0	0
Stage 1	167	167	-	202	202	-	-	-	-	-	-	-
Stage 2	104	210	-	82	167	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	657	551	952	644	557	934	1401	-	-	1366	-	-
Stage 1	816	757	-	778	731	-	-	-	-	-	-	-
Stage 2	888	725	-	914	757	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	650	546	948	639	552	933	1401	-	-	1366	-	-
Mov Cap-2 Maneuver	650	546	-	639	552	-	-	-	-	-	-	-
Stage 1	809	754	-	773	727	-	-	-	-	-	-	-
Stage 2	881	721	-	911	754	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	10.7	0.2	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1401	-	-	948	648	1366	-	-
HCM Lane V/C Ratio	0.005	-	-	0.003	0.018	-	-	-
HCM Control Delay (s)	7.6	-	-	8.8	10.7	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	8	1	0	6	17	172	4	9	132	17
Future Vol, veh/h	10	0	8	1	0	6	17	172	4	9	132	17
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	60	-	-	55	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	9	1	0	7	20	198	5	10	152	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	324	428	90	337	436	102	175	0	0	203	0	0
Stage 1	186	186	-	240	240	-	-	-	-	-	-	-
Stage 2	138	242	-	97	196	-	-	-	-	-	-	-
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	605	518	950	593	512	933	1399	-	-	1366	-	-
Stage 1	798	745	-	742	706	-	-	-	-	-	-	-
Stage 2	851	704	-	899	737	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	588	504	946	577	499	932	1399	-	-	1366	-	-
Mov Cap-2 Maneuver	588	504	-	577	499	-	-	-	-	-	-	-
Stage 1	784	737	-	731	695	-	-	-	-	-	-	-
Stage 2	833	693	-	884	729	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.2	0.7	0.4
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1399	-	-	707	857	1366	-	-
HCM Lane V/C Ratio	0.014	-	-	0.029	0.009	0.008	-	-
HCM Control Delay (s)	7.6	-	-	10.2	9.2	7.7	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	15	20	0	1	37	189	39	2	137	4
Future Vol, veh/h	3	0	15	20	0	1	37	189	39	2	137	4
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	17	23	0	1	42	215	44	2	156	5
Number of Lanes	0	1	0	0	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	7.9	9	8.3	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	17%	95%	100%	0%	0%
Vol Thru, %	0%	100%	62%	0%	0%	0%	100%	92%
Vol Right, %	0%	0%	38%	83%	5%	0%	0%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	126	102	18	21	2	91	50
LT Vol	37	0	0	3	20	2	0	0
Through Vol	0	126	63	0	0	0	91	46
RT Vol	0	0	39	15	1	0	0	4
Lane Flow Rate	42	143	116	20	24	2	104	56
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.062	0.191	0.146	0.029	0.04	0.003	0.141	0.076
Departure Headway (Hd)	5.3	4.799	4.531	5.056	5.987	5.401	4.9	4.844
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	680	752	796	709	599	665	734	742
Service Time	3	2.499	2.231	2.781	3.711	3.116	2.615	2.559
HCM Lane V/C Ratio	0.062	0.19	0.146	0.028	0.04	0.003	0.142	0.075
HCM Control Delay	8.4	8.6	8	7.9	9	8.1	8.4	8
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.7	0.5	0.1	0.1	0	0.5	0.2

Intersection: 2: American River Canyon Drive & Canyon Terrace Ln (north)

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	51	26	5
Average Queue (ft)	21	2	0
95th Queue (ft)	47	16	4
Link Distance (ft)	231	198	376
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: American River Canyon Drive & Canyon Terrace Ln (south)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	52	32
Average Queue (ft)	20	5
95th Queue (ft)	47	23
Link Distance (ft)	218	729
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	15	410	65	65	235	45	90	25	75	140	90	35
Future Volume (veh/h)	15	410	65	65	235	45	90	25	75	140	90	35
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	16	441	70	70	253	48	97	27	81	151	97	38
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	17	916	144	87	1008	188	124	293	254	192	513	191
Arrive On Green	0.01	0.30	0.30	0.05	0.34	0.34	0.07	0.17	0.17	0.11	0.21	0.21
Sat Flow, veh/h	1757	3027	477	1757	2941	549	1757	1752	1520	1757	2490	926
Grp Volume(v), veh/h	16	254	257	70	149	152	97	27	81	151	67	68
Grp Sat Flow(s),veh/h/ln	1757	1752	1751	1757	1752	1737	1757	1752	1520	1757	1752	1664
Q Serve(g_s), s	0.5	6.1	6.2	2.0	3.2	3.3	2.8	0.7	2.4	4.3	1.6	1.8
Cycle Q Clear(g_c), s	0.5	6.1	6.2	2.0	3.2	3.3	2.8	0.7	2.4	4.3	1.6	1.8
Prop In Lane	1.00		0.27	1.00		0.32	1.00		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	17	531	530	87	601	595	124	293	254	192	361	343
V/C Ratio(X)	0.93	0.48	0.48	0.80	0.25	0.26	0.78	0.09	0.32	0.79	0.18	0.20
Avail Cap(c_a), veh/h	849	2337	2336	849	2337	2317	849	1355	1175	849	1355	1286
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	14.7	14.7	24.3	12.2	12.2	23.7	18.2	19.0	22.5	17.0	17.0
Incr Delay (d2), s/veh	44.9	0.9	0.9	6.2	0.3	0.3	4.1	0.1	0.3	2.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.1	3.1	1.1	1.6	1.6	1.5	0.3	1.0	2.2	0.8	0.8
LnGrp Delay(d),s/veh	70.5	15.6	15.7	30.5	12.5	12.5	27.7	18.3	19.2	25.1	17.0	17.1
LnGrp LOS	E	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		527			371			205			286	
Approach Delay, s/veh		17.3			15.9			23.1			21.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	13.5	5.0	23.0	8.1	15.6	7.1	21.0
Change Period (Y+Rc), s	4.5	4.9	4.5	5.3	4.5	4.9	4.5	5.3
Max Green Setting (Gmax), s	25.0	40.0	25.0	69.0	25.0	40.0	25.0	69.0
Max Q Clear Time (g_c+I1), s	6.3	4.4	2.5	5.3	4.8	3.8	4.0	8.2
Green Ext Time (p_c), s	0.0	0.9	0.0	7.2	0.0	0.9	0.0	7.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.6
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	10	5	170	210	15
Future Vol, veh/h	20	10	5	170	210	15
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	22	11	5	185	228	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	339	122	245	0	-	0
Stage 1	236	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.88	6.98	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	2.24	-	-	-
Pot Cap-1 Maneuver	626	900	1304	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	624	900	1304	-	-	-
Mov Cap-2 Maneuver	659	-	-	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1304	-	724	-	-
HCM Lane V/C Ratio	0.004	-	0.045	-	-
HCM Control Delay (s)	7.8	-	10.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	4.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	35	150	5	15	205
Future Vol, veh/h	10	35	150	5	15	205
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	11	38	163	5	16	223

Major/Minor	Minor1		Minor2		Major2	
Conflicting Flow All	232	0	255	117	0	0
Stage 1	0	-	255	-	-	-
Stage 2	232	-	0	-	-	-
Critical Hdwy	7.58	6.98	6.58	6.98	4.18	-
Critical Hdwy Stg 1	-	-	5.58	-	-	-
Critical Hdwy Stg 2	6.58	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	4.04	3.34	2.24	-
Pot Cap-1 Maneuver	698	-	643	907	-	-
Stage 1	-	-	690	-	-	-
Stage 2	744	-	-	-	-	-
Platoon blocked, %						-
Mov Cap-1 Maneuver	558	-	643	907	-	-
Mov Cap-2 Maneuver	558	-	643	-	-	-
Stage 1	-	-	690	-	-	-
Stage 2	565	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		11.3	
HCM LOS	-	B	

Minor Lane/Major Mvmt	NBLn1	NBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	643	655	-	-	-
HCM Lane V/C Ratio	0.127	0.133	-	-	-
HCM Control Delay (s)	11.4	11.3	-	-	-
HCM Lane LOS	B	B	-	-	-
HCM 95th %tile Q(veh)	0.4	0.5	-	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	25	5	135	205	10
Future Vol, veh/h	15	25	5	135	205	10
Conflicting Peds, #/hr	0	0	16	0	0	16
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	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	16	27	5	147	223	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	328	133	250	0	-	0
Stage 1	244	-	-	-	-	-
Stage 2	84	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	641	892	1313	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	619	878	1313	-	-	-
Mov Cap-2 Maneuver	653	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	912	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1313	-	778	-	-
HCM Lane V/C Ratio	0.004	-	0.056	-	-
HCM Control Delay (s)	7.8	-	9.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	10	15	0	5	0	130	10	0	230	5
Future Vol, veh/h	5	0	10	15	0	5	0	130	10	0	230	5
Conflicting Peds, #/hr	0	0	2	0	0	0	8	0	10	10	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	5	0	11	16	0	5	0	141	11	0	250	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	332	423	138	284	420	86	263	0	0	162	0	0
Stage 1	261	261	-	157	157	-	-	-	-	-	-	-
Stage 2	71	162	-	127	263	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	595	519	882	644	521	952	1291	-	-	1407	-	-
Stage 1	718	688	-	827	764	-	-	-	-	-	-	-
Stage 2	928	761	-	861	687	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	587	510	874	629	512	943	1289	-	-	1407	-	-
Mov Cap-2 Maneuver	587	510	-	629	512	-	-	-	-	-	-	-
Stage 1	713	683	-	819	757	-	-	-	-	-	-	-
Stage 2	923	754	-	849	682	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	10.4	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1289	-	-	752	686	1407	-	-
HCM Lane V/C Ratio	-	-	-	0.022	0.032	-	-	-
HCM Control Delay (s)	0	-	-	9.9	10.4	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

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	30	5	15	10	0	15	10	95	5	5	235	15
Future Vol, veh/h	30	5	15	10	0	15	10	95	5	5	235	15
Conflicting Peds, #/hr	0	0	0	0	0	0	15	0	7	7	0	15
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	60	-	-	55	-	-
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, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	33	5	16	11	0	16	11	103	5	5	255	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	362	426	151	276	433	61	287	0	0	116	0	0
Stage 1	289	289	-	135	135	-	-	-	-	-	-	-
Stage 2	73	137	-	141	298	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.66	7.06	7.66	6.66	7.06	4.26	-	-	4.26	-	-
Critical Hdwy Stg 1	6.66	5.66	-	6.66	5.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.66	-	6.66	5.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4.08	3.38	3.58	4.08	3.38	2.28	-	-	2.28	-	-
Pot Cap-1 Maneuver	554	506	850	639	501	972	1230	-	-	1428	-	-
Stage 1	678	657	-	837	770	-	-	-	-	-	-	-
Stage 2	911	768	-	830	651	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	532	489	838	611	484	966	1230	-	-	1428	-	-
Mov Cap-2 Maneuver	532	489	-	611	484	-	-	-	-	-	-	-
Stage 1	662	645	-	824	758	-	-	-	-	-	-	-
Stage 2	888	756	-	804	639	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	9.8	0.7	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1230	-	-	592	784	1428	-	-
HCM Lane V/C Ratio	0.009	-	-	0.092	0.035	0.004	-	-
HCM Control Delay (s)	8	-	-	11.7	9.8	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	45	30	5	15	15	85	10	0	245	10
Future Vol, veh/h	10	0	45	30	5	15	15	85	10	0	245	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	49	33	5	16	16	92	11	0	266	11
Number of Lanes	0	1	0	0	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	8.2	8.9	8.2	9
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	18%	60%	0%	0%	0%
Vol Thru, %	0%	100%	74%	0%	10%	100%	100%	89%
Vol Right, %	0%	0%	26%	82%	30%	0%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	57	38	55	50	0	163	92
LT Vol	15	0	0	10	30	0	0	0
Through Vol	0	57	28	0	5	0	163	82
RT Vol	0	0	10	45	15	0	0	10
Lane Flow Rate	16	62	42	60	54	0	178	100
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.025	0.087	0.057	0.084	0.085	0	0.244	0.135
Departure Headway (Hd)	5.596	5.093	4.909	5.034	5.606	4.952	4.952	4.875
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	640	703	729	711	639	0	726	736
Service Time	3.327	2.824	2.641	2.768	3.341	2.679	2.679	2.602
HCM Lane V/C Ratio	0.025	0.088	0.058	0.084	0.085	0	0.245	0.136
HCM Control Delay	8.5	8.3	7.9	8.2	8.9	7.7	9.3	8.4
HCM Lane LOS	A	A	A	A	A	N	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0.3	0.3	0	1	0.5

Intersection: 2: American River Canyon Drive & Canyon Terrace Ln (north)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	49	22
Average Queue (ft)	20	1
95th Queue (ft)	47	12
Link Distance (ft)	231	198
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: American River Canyon Drive & Canyon Terrace Ln (south)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	56	16
Average Queue (ft)	24	1
95th Queue (ft)	51	7
Link Distance (ft)	218	729
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

HCM 2010 Signalized Intersection Summary
1: American River Canyon Drive & Oak Avenue Parkway

Cumulative Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	325	75	75	465	115	45	55	50	70	45	20
Future Volume (veh/h)	30	325	75	75	465	115	45	55	50	70	45	20
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	32	346	80	80	495	122	48	59	53	74	48	21
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	1036	237	100	1117	274	57	204	164	92	315	129
Arrive On Green	0.02	0.36	0.36	0.06	0.40	0.40	0.03	0.11	0.11	0.05	0.13	0.13
Sat Flow, veh/h	1774	2863	654	1774	2810	688	1774	1866	1497	1774	2441	999
Grp Volume(v), veh/h	32	212	214	80	311	306	48	56	56	74	34	35
Grp Sat Flow(s),veh/h/ln	1774	1770	1747	1774	1770	1728	1774	1770	1594	1774	1770	1670
Q Serve(g_s), s	0.8	4.0	4.1	2.0	5.9	5.9	1.2	1.3	1.5	1.9	0.8	0.9
Cycle Q Clear(g_c), s	0.8	4.0	4.1	2.0	5.9	5.9	1.2	1.3	1.5	1.9	0.8	0.9
Prop In Lane	1.00		0.37	1.00		0.40	1.00		0.94	1.00		0.60
Lane Grp Cap(c), veh/h	37	640	632	100	704	687	57	194	174	92	228	216
V/C Ratio(X)	0.87	0.33	0.34	0.80	0.44	0.45	0.84	0.29	0.32	0.80	0.15	0.16
Avail Cap(c_a), veh/h	971	2672	2638	971	2672	2610	971	1549	1395	971	1549	1462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	10.6	10.6	21.3	10.1	10.1	22.0	18.7	18.8	21.4	17.7	17.7
Incr Delay (d2), s/veh	20.0	0.4	0.4	5.3	0.6	0.6	11.1	0.3	0.4	5.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.0	2.0	1.1	3.0	2.9	0.8	0.6	0.7	1.1	0.4	0.4
LnGrp Delay(d),s/veh	42.3	11.0	11.0	26.6	10.6	10.7	33.1	19.0	19.2	27.3	17.8	17.8
LnGrp LOS	D	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		458			697			160			143	
Approach Delay, s/veh		13.2			12.5			23.3			22.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	9.9	5.4	23.5	6.0	10.8	7.1	21.8
Change Period (Y+Rc), s	4.5	4.9	4.5	5.3	4.5	4.9	4.5	5.3
Max Green Setting (Gmax), s	25.0	40.0	25.0	69.0	25.0	40.0	25.0	69.0
Max Q Clear Time (g_c+I1), s	3.9	3.5	2.8	7.9	3.2	2.9	4.0	6.1
Green Ext Time (p_c), s	0.0	0.6	0.0	10.2	0.0	0.6	0.0	10.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Intersection						
Int Delay, s/veh	0.9					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	10	10	150	165	25
Future Vol, veh/h	15	10	10	150	165	25
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	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	16	11	11	163	179	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	301	108	212	0	-	0
Stage 1	198	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	666	925	1356	-	-	-
Stage 1	816	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	654	921	1356	-	-	-
Mov Cap-2 Maneuver	685	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	898	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1356	-	763	-	-
HCM Lane V/C Ratio	0.008	-	0.036	-	-
HCM Control Delay (s)	7.7	-	9.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	5.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	20	140	5	20	145
Future Vol, veh/h	5	20	140	5	20	145
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
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	5	22	152	5	22	158

Major/Minor	Minor1		Minor2		Major2	
Conflicting Flow All	202	2	203	81	2	0
Stage 1	2	-	201	-	-	-
Stage 2	200	-	2	-	-	-
Critical Hdwy	7.54	6.94	6.54	6.94	4.14	-
Critical Hdwy Stg 1	-	-	5.54	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	4.02	3.32	2.22	-
Pot Cap-1 Maneuver	738	1081	692	963	1619	-
Stage 1	-	-	734	-	-	-
Stage 2	783	-	-	-	-	-
Platoon blocked, %						-
Mov Cap-1 Maneuver	600	1079	681	963	1619	-
Mov Cap-2 Maneuver	600	-	681	-	-	-
Stage 1	-	-	724	-	-	-
Stage 2	607	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	10.9	0.9
HCM LOS	A	B	

Minor Lane/Major Mvmt	NBLn1	NBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	681	695	930	1619	-
HCM Lane V/C Ratio	0.112	0.117	0.029	0.013	-
HCM Control Delay (s)	11	10.9	9	7.3	-
HCM Lane LOS	B	B	A	A	-
HCM 95th %tile Q(veh)	0.4	0.4	0.1	0	-

Intersection						
Int Delay, s/veh	0.9					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	20	160	140	20
Future Vol, veh/h	5	15	20	160	140	20
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	16	22	174	152	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	294	88	175	0	-	0
Stage 1	164	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	670	950	1392	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	658	949	1392	-	-	-
Mov Cap-2 Maneuver	690	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	864	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1392	-	868	-	-
HCM Lane V/C Ratio	0.016	-	0.025	-	-
HCM Control Delay (s)	7.6	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	5	10	5	5	10	155	15	0	145	0
Future Vol, veh/h	0	0	5	10	5	5	10	155	15	0	145	0
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	5	11	5	5	11	168	16	0	158	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	271	370	83	278	361	93	162	0	0	186	0	0
Stage 1	162	162	-	199	199	-	-	-	-	-	-	-
Stage 2	109	208	-	79	162	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	657	556	957	650	562	943	1407	-	-	1379	-	-
Stage 1	821	761	-	781	733	-	-	-	-	-	-	-
Stage 2	882	726	-	918	761	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	642	549	953	642	555	942	1407	-	-	1379	-	-
Mov Cap-2 Maneuver	642	549	-	642	555	-	-	-	-	-	-	-
Stage 1	811	758	-	774	727	-	-	-	-	-	-	-
Stage 2	864	720	-	913	758	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	10.6	0.4	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1407	-	-	953	669	1379	-	-
HCM Lane V/C Ratio	0.008	-	-	0.006	0.032	-	-	-
HCM Control Delay (s)	7.6	-	-	8.8	10.6	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	10	5	0	10	20	165	5	10	130	20
Future Vol, veh/h	15	0	10	5	0	10	20	165	5	10	130	20
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	60	-	-	55	-	-
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	16	0	11	5	0	11	22	179	5	11	141	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	311	407	86	319	416	93	167	0	0	186	0	0
Stage 1	178	178	-	227	227	-	-	-	-	-	-	-
Stage 2	133	229	-	92	189	-	-	-	-	-	-	-
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	618	532	956	610	526	946	1408	-	-	1386	-	-
Stage 1	806	751	-	755	715	-	-	-	-	-	-	-
Stage 2	857	713	-	905	743	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	598	517	952	592	511	945	1408	-	-	1386	-	-
Mov Cap-2 Maneuver	598	517	-	592	511	-	-	-	-	-	-	-
Stage 1	790	742	-	742	703	-	-	-	-	-	-	-
Stage 2	834	701	-	888	734	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	9.7	0.8	0.5
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1408	-	-	702	788	1386	-	-
HCM Lane V/C Ratio	0.015	-	-	0.039	0.021	0.008	-	-
HCM Control Delay (s)	7.6	-	-	10.3	9.7	7.6	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	20	25	0	5	40	180	45	5	135	5
Future Vol, veh/h	5	0	20	25	0	5	40	180	45	5	135	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	22	27	0	5	43	196	49	5	147	5
Number of Lanes	0	1	0	0	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	8	8.9	8.3	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	20%	83%	100%	0%	0%
Vol Thru, %	0%	100%	57%	0%	0%	0%	100%	90%
Vol Right, %	0%	0%	43%	80%	17%	0%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	120	105	25	30	5	90	50
LT Vol	40	0	0	5	25	5	0	0
Through Vol	0	120	60	0	0	0	90	45
RT Vol	0	0	45	20	5	0	0	5
Lane Flow Rate	43	130	114	27	33	5	98	54
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.064	0.175	0.144	0.038	0.053	0.008	0.134	0.073
Departure Headway (Hd)	5.33	4.829	4.528	5.075	5.821	5.438	4.937	4.867
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	674	745	794	706	616	660	728	738
Service Time	3.045	2.543	2.242	2.8	3.545	3.155	2.654	2.584
HCM Lane V/C Ratio	0.064	0.174	0.144	0.038	0.054	0.008	0.135	0.073
HCM Control Delay	8.4	8.6	8	8	8.9	8.2	8.4	8
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.6	0.5	0.1	0.2	0	0.5	0.2

Intersection: 2: American River Canyon Drive & Canyon Terrace Ln (north)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	39	30
Average Queue (ft)	17	2
95th Queue (ft)	43	13
Link Distance (ft)	231	198
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: American River Canyon Drive & Canyon Terrace Ln (south)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	38
Average Queue (ft)	15	3
95th Queue (ft)	39	20
Link Distance (ft)	218	729
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	410	69	69	235	45	102	25	84	140	90	35
Future Volume (veh/h)	15	410	69	69	235	45	102	25	84	140	90	35
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	16	441	74	74	253	48	110	27	90	151	97	38
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	17	906	151	93	1015	189	141	300	260	192	499	185
Arrive On Green	0.01	0.30	0.30	0.05	0.35	0.35	0.08	0.17	0.17	0.11	0.20	0.20
Sat Flow, veh/h	1757	2999	500	1757	2941	549	1757	1752	1520	1757	2490	925
Grp Volume(v), veh/h	16	256	259	74	149	152	110	27	90	151	67	68
Grp Sat Flow(s),veh/h/ln	1757	1752	1747	1757	1752	1737	1757	1752	1520	1757	1752	1663
Q Serve(g_s), s	0.5	6.3	6.4	2.2	3.2	3.3	3.2	0.7	2.7	4.4	1.7	1.8
Cycle Q Clear(g_c), s	0.5	6.3	6.4	2.2	3.2	3.3	3.2	0.7	2.7	4.4	1.7	1.8
Prop In Lane	1.00		0.29	1.00		0.32	1.00		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	17	529	527	93	605	599	141	300	260	192	351	333
V/C Ratio(X)	0.93	0.48	0.49	0.80	0.25	0.25	0.78	0.09	0.35	0.79	0.19	0.20
Avail Cap(c_a), veh/h	834	2297	2290	834	2297	2277	834	1331	1155	834	1331	1264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	15.0	15.1	24.7	12.3	12.4	23.8	18.4	19.2	22.9	17.5	17.6
Incr Delay (d2), s/veh	44.6	0.9	0.9	5.7	0.3	0.3	3.5	0.0	0.3	2.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.1	3.2	1.2	1.6	1.6	1.7	0.3	1.2	2.3	0.8	0.8
LnGrp Delay(d),s/veh	70.7	15.9	16.0	30.3	12.6	12.7	27.3	18.4	19.5	25.5	17.6	17.7
LnGrp LOS	E	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		531			375			227			286	
Approach Delay, s/veh		17.6			16.1			23.2			21.8	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	13.9	5.0	23.5	8.7	15.5	7.3	21.2
Change Period (Y+Rc), s	4.5	4.9	4.5	5.3	4.5	4.9	4.5	5.3
Max Green Setting (Gmax), s	25.0	40.0	25.0	69.0	25.0	40.0	25.0	69.0
Max Q Clear Time (g_c+I1), s	6.4	4.7	2.5	5.3	5.2	3.8	4.2	8.4
Green Ext Time (p_c), s	0.0	0.9	0.0	7.2	0.0	0.9	0.0	7.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	13	6	179	213	20
Future Vol, veh/h	32	13	6	179	213	20
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	35	14	7	195	232	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	352	127	253	0	-	0
Stage 1	242	-	-	-	-	-
Stage 2	110	-	-	-	-	-
Critical Hdwy	6.88	6.98	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	2.24	-	-	-
Pot Cap-1 Maneuver	614	893	1295	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	611	893	1295	-	-	-
Mov Cap-2 Maneuver	650	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	891	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1295	-	705	-	-
HCM Lane V/C Ratio	0.005	-	0.069	-	-
HCM Control Delay (s)	7.8	-	10.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	35	160	5	15	211
Future Vol, veh/h	10	35	160	5	15	211
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	11	38	174	5	16	229

Major/Minor	Minor1		Minor2		Major2	
Conflicting Flow All	240	0	262	121	0	0
Stage 1	0	-	262	-	-	-
Stage 2	240	-	0	-	-	-
Critical Hdwy	7.58	6.98	6.58	6.98	4.18	-
Critical Hdwy Stg 1	-	-	5.58	-	-	-
Critical Hdwy Stg 2	6.58	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	4.04	3.34	2.24	-
Pot Cap-1 Maneuver	689	-	637	901	-	-
Stage 1	-	-	685	-	-	-
Stage 2	736	-	-	-	-	-
Platoon blocked, %						-
Mov Cap-1 Maneuver	540	-	637	901	-	-
Mov Cap-2 Maneuver	540	-	637	-	-	-
Stage 1	-	-	685	-	-	-
Stage 2	546	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		11.5	
HCM LOS	-	B	

Minor Lane/Major Mvmt	NBLn1	NBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	637	648	-	-	-
HCM Lane V/C Ratio	0.137	0.143	-	-	-
HCM Control Delay (s)	11.5	11.5	-	-	-
HCM Lane LOS	B	B	-	-	-
HCM 95th %tile Q(veh)	0.5	0.5	-	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	40	6	136	208	13
Future Vol, veh/h	24	40	6	136	208	13
Conflicting Peds, #/hr	0	0	16	0	0	16
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	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	26	43	7	148	226	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	336	136	256	0	-	0
Stage 1	249	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	634	888	1306	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	612	874	1306	-	-	-
Mov Cap-2 Maneuver	647	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	907	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1306	-	772	-	-
HCM Lane V/C Ratio	0.005	-	0.09	-	-
HCM Control Delay (s)	7.8	-	10.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	10	15	0	5	0	132	10	0	248	5
Future Vol, veh/h	5	0	10	15	0	5	0	132	10	0	248	5
Conflicting Peds, #/hr	0	0	2	0	0	0	8	0	10	10	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	5	0	11	16	0	5	0	143	11	0	270	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	352	444	148	296	442	87	283	0	0	164	0	0
Stage 1	280	280	-	159	159	-	-	-	-	-	-	-
Stage 2	72	164	-	137	283	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	576	505	869	631	506	951	1269	-	-	1405	-	-
Stage 1	700	675	-	824	763	-	-	-	-	-	-	-
Stage 2	926	759	-	849	673	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	568	496	861	616	497	942	1267	-	-	1405	-	-
Mov Cap-2 Maneuver	568	496	-	616	497	-	-	-	-	-	-	-
Stage 1	695	670	-	816	756	-	-	-	-	-	-	-
Stage 2	921	752	-	837	668	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.5	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1267	-	-	735	674	1405	-	-
HCM Lane V/C Ratio	-	-	-	0.022	0.032	-	-	-
HCM Control Delay (s)	0	-	-	10	10.5	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

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	30	5	15	10	0	15	10	97	5	5	253	15
Future Vol, veh/h	30	5	15	10	0	15	10	97	5	5	253	15
Conflicting Peds, #/hr	0	0	0	0	0	0	15	0	7	7	0	15
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	60	-	-	55	-	-
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, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	33	5	16	11	0	16	11	105	5	5	275	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	383	449	161	288	454	62	306	0	0	118	0	0
Stage 1	309	309	-	137	137	-	-	-	-	-	-	-
Stage 2	74	140	-	151	317	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.66	7.06	7.66	6.66	7.06	4.26	-	-	4.26	-	-
Critical Hdwy Stg 1	6.66	5.66	-	6.66	5.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	5.66	-	6.66	5.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.58	4.08	3.38	3.58	4.08	3.38	2.28	-	-	2.28	-	-
Pot Cap-1 Maneuver	535	491	837	627	487	971	1209	-	-	1425	-	-
Stage 1	659	643	-	835	768	-	-	-	-	-	-	-
Stage 2	910	766	-	819	638	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	513	475	825	599	471	965	1209	-	-	1425	-	-
Mov Cap-2 Maneuver	513	475	-	599	471	-	-	-	-	-	-	-
Stage 1	644	632	-	822	756	-	-	-	-	-	-	-
Stage 2	886	754	-	793	627	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.9	9.8	0.7	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1209	-	-	573	775	1425	-	-
HCM Lane V/C Ratio	0.009	-	-	0.095	0.035	0.004	-	-
HCM Control Delay (s)	8	-	-	11.9	9.8	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	45	30	5	15	15	87	10	0	263	10
Future Vol, veh/h	10	0	45	30	5	15	15	87	10	0	263	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	49	33	5	16	16	95	11	0	286	11
Number of Lanes	0	1	0	0	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	8.3	8.9	8.3	9
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	18%	60%	0%	0%	0%
Vol Thru, %	0%	100%	74%	0%	10%	100%	100%	90%
Vol Right, %	0%	0%	26%	82%	30%	0%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	58	39	55	50	0	175	98
LT Vol	15	0	0	10	30	0	0	0
Through Vol	0	58	29	0	5	0	175	88
RT Vol	0	0	10	45	15	0	0	10
Lane Flow Rate	16	63	42	60	54	0	191	106
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.025	0.09	0.058	0.084	0.085	0	0.262	0.144
Departure Headway (Hd)	5.616	5.113	4.932	5.082	5.654	4.956	4.956	4.884
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	638	701	726	704	633	0	726	735
Service Time	3.347	2.844	2.663	2.819	3.391	2.682	2.682	2.61
HCM Lane V/C Ratio	0.025	0.09	0.058	0.085	0.085	0	0.263	0.144
HCM Control Delay	8.5	8.4	8	8.3	8.9	7.7	9.4	8.4
HCM Lane LOS	A	A	A	A	A	N	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0.3	0.3	0	1	0.5

Intersection: 2: American River Canyon Drive & Canyon Terrace Ln (north)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	54	35
Average Queue (ft)	22	2
95th Queue (ft)	51	15
Link Distance (ft)	231	198
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: American River Canyon Drive & Canyon Terrace Ln (south)

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	61	18
Average Queue (ft)	25	1
95th Queue (ft)	52	8
Link Distance (ft)	218	729
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↱		↰	↑↱		↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	30	325	88	88	465	115	51	55	57	70	45	20
Future Volume (veh/h)	30	325	88	88	465	115	51	55	57	70	45	20
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	32	346	94	94	495	122	54	59	61	74	48	21
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	992	266	120	1140	279	66	199	177	93	311	127
Arrive On Green	0.02	0.36	0.36	0.07	0.41	0.41	0.04	0.11	0.11	0.05	0.13	0.13
Sat Flow, veh/h	1774	2762	740	1774	2810	688	1774	1770	1579	1774	2441	999
Grp Volume(v), veh/h	32	220	220	94	311	306	54	59	61	74	34	35
Grp Sat Flow(s),veh/h/ln	1774	1770	1732	1774	1770	1728	1774	1770	1579	1774	1770	1670
Q Serve(g_s), s	0.8	4.3	4.4	2.5	5.9	6.0	1.4	1.4	1.7	1.9	0.8	0.9
Cycle Q Clear(g_c), s	0.8	4.3	4.4	2.5	5.9	6.0	1.4	1.4	1.7	1.9	0.8	0.9
Prop In Lane	1.00		0.43	1.00		0.40	1.00		1.00	1.00		0.60
Lane Grp Cap(c), veh/h	37	636	622	120	718	701	66	199	177	93	226	213
V/C Ratio(X)	0.87	0.35	0.35	0.79	0.43	0.44	0.82	0.30	0.34	0.80	0.15	0.16
Avail Cap(c_a), veh/h	945	2600	2545	945	2600	2540	945	1508	1345	945	1508	1422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	11.0	11.0	21.6	10.1	10.1	22.5	19.1	19.2	22.0	18.2	18.3
Incr Delay (d2), s/veh	19.7	0.4	0.5	4.2	0.5	0.6	9.2	0.3	0.4	5.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.2	2.2	1.3	3.0	2.9	0.9	0.7	0.7	1.1	0.4	0.4
LnGrp Delay(d),s/veh	42.6	11.4	11.5	25.8	10.6	10.6	31.6	19.4	19.7	27.8	18.3	18.4
LnGrp LOS	D	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		472			711			174			143	
Approach Delay, s/veh		13.6			12.6			23.3			23.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	10.2	5.5	24.4	6.2	10.9	7.7	22.2
Change Period (Y+Rc), s	4.5	4.9	4.5	5.3	4.5	4.9	4.5	5.3
Max Green Setting (Gmax), s	25.0	40.0	25.0	69.0	25.0	40.0	25.0	69.0
Max Q Clear Time (g_c+I1), s	3.9	3.7	2.8	8.0	3.4	2.9	4.5	6.4
Green Ext Time (p_c), s	0.0	0.7	0.0	10.4	0.0	0.7	0.0	10.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	14	15	153	175	41
Future Vol, veh/h	25	14	15	153	175	41
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	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	27	15	16	166	190	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	334	122	240	0	-	0
Stage 1	218	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	636	906	1324	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	622	902	1324	-	-	-
Mov Cap-2 Maneuver	662	-	-	-	-	-
Stage 1	793	-	-	-	-	-
Stage 2	881	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1324	-	732	-	-
HCM Lane V/C Ratio	0.012	-	0.058	-	-
HCM Control Delay (s)	7.8	-	10.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	20	148	5	20	159
Future Vol, veh/h	5	20	148	5	20	159
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
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	5	22	161	5	22	173

Major/Minor	Minor1		Minor2		Major2	
Conflicting Flow All	214	2	218	88	2	0
Stage 1	2	-	216	-	-	-
Stage 2	212	-	2	-	-	-
Critical Hdwy	7.54	6.94	6.54	6.94	4.14	-
Critical Hdwy Stg 1	-	-	5.54	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	4.02	3.32	2.22	-
Pot Cap-1 Maneuver	724	1081	679	953	1619	-
Stage 1	-	-	723	-	-	-
Stage 2	770	-	-	-	-	-
Platoon blocked, %						-
Mov Cap-1 Maneuver	579	1079	668	953	1619	-
Mov Cap-2 Maneuver	579	-	668	-	-	-
Stage 1	-	-	713	-	-	-
Stage 2	585	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	11	0.8
HCM LOS	A	B	

Minor Lane/Major Mvmt	NBLn1	NBLn2	WBLn1	SBL	SBT
Capacity (veh/h)	668	681	920	1619	-
HCM Lane V/C Ratio	0.12	0.126	0.03	0.013	-
HCM Control Delay (s)	11.1	11	9	7.3	-
HCM Lane LOS	B	B	A	A	-
HCM 95th %tile Q(veh)	0.4	0.4	0.1	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	22	33	165	144	30
Future Vol, veh/h	8	22	33	165	144	30
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	24	36	179	157	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	335	96	190	0	-	0
Stage 1	174	-	-	-	-	-
Stage 2	161	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	632	938	1374	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	614	937	1374	-	-	-
Mov Cap-2 Maneuver	659	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	825	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1374	-	842	-	-
HCM Lane V/C Ratio	0.026	-	0.039	-	-
HCM Control Delay (s)	7.7	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	5	10	5	5	10	173	15	0	156	0
Future Vol, veh/h	0	0	5	10	5	5	10	173	15	0	156	0
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	5	11	5	5	11	188	16	0	170	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	292	401	89	304	393	103	174	0	0	205	0	0
Stage 1	174	174	-	219	219	-	-	-	-	-	-	-
Stage 2	118	227	-	85	174	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	635	534	948	623	540	929	1393	-	-	1356	-	-
Stage 1	808	751	-	760	718	-	-	-	-	-	-	-
Stage 2	871	712	-	910	751	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	620	527	944	615	533	928	1393	-	-	1356	-	-
Mov Cap-2 Maneuver	620	527	-	615	533	-	-	-	-	-	-	-
Stage 1	799	748	-	753	712	-	-	-	-	-	-	-
Stage 2	853	706	-	905	748	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	10.8	0.4	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1393	-	-	944	645	1356	-	-
HCM Lane V/C Ratio	0.008	-	-	0.006	0.034	-	-	-
HCM Control Delay (s)	7.6	-	-	8.8	10.8	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	10	5	0	10	20	183	5	10	141	20
Future Vol, veh/h	15	0	10	5	0	10	20	183	5	10	141	20
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	60	-	-	55	-	-
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	16	0	11	5	0	11	22	199	5	11	153	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	333	439	92	344	447	103	179	0	0	205	0	0
Stage 1	190	190	-	246	246	-	-	-	-	-	-	-
Stage 2	143	249	-	98	201	-	-	-	-	-	-	-
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	597	510	947	586	505	932	1394	-	-	1364	-	-
Stage 1	794	742	-	736	701	-	-	-	-	-	-	-
Stage 2	845	699	-	898	734	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	577	496	943	568	491	931	1394	-	-	1364	-	-
Mov Cap-2 Maneuver	577	496	-	568	491	-	-	-	-	-	-	-
Stage 1	778	733	-	724	689	-	-	-	-	-	-	-
Stage 2	822	687	-	880	725	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	9.8	0.7	0.4
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1394	-	-	683	768	1364	-	-
HCM Lane V/C Ratio	0.016	-	-	0.04	0.021	0.008	-	-
HCM Control Delay (s)	7.6	-	-	10.5	9.8	7.7	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	20	25	0	5	40	198	45	5	146	5
Future Vol, veh/h	5	0	20	25	0	5	40	198	45	5	146	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	22	27	0	5	43	215	49	5	159	5
Number of Lanes	0	1	0	0	1	0	1	2	0	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	1	1
HCM Control Delay	8.1	8.9	8.4	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	20%	83%	100%	0%	0%
Vol Thru, %	0%	100%	59%	0%	0%	0%	100%	91%
Vol Right, %	0%	0%	41%	80%	17%	0%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	132	111	25	30	5	97	54
LT Vol	40	0	0	5	25	5	0	0
Through Vol	0	132	66	0	0	0	97	49
RT Vol	0	0	45	20	5	0	0	5
Lane Flow Rate	43	143	121	27	33	5	106	58
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.065	0.193	0.153	0.039	0.053	0.008	0.146	0.079
Departure Headway (Hd)	5.341	4.839	4.555	5.14	5.885	5.456	4.954	4.889
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	673	743	789	697	609	658	725	734
Service Time	3.058	2.557	2.272	2.87	3.615	3.176	2.675	2.61
HCM Lane V/C Ratio	0.064	0.192	0.153	0.039	0.054	0.008	0.146	0.079
HCM Control Delay	8.4	8.7	8.1	8.1	8.9	8.2	8.5	8
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.7	0.5	0.1	0.2	0	0.5	0.3

Intersection: 2: American River Canyon Drive & Canyon Terrace Ln (north)

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	61	38	3
Average Queue (ft)	26	3	0
95th Queue (ft)	53	20	3
Link Distance (ft)	231	198	376
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: American River Canyon Drive & Canyon Terrace Ln (south)

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	37	46	7
Average Queue (ft)	16	6	0
95th Queue (ft)	41	30	5
Link Distance (ft)	218	729	802
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	53	1705	857	76	300	126
Future Volume (veh/h)	53	1705	857	76	300	126
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	1722	866	77	303	127
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	68	2404	1889	168	350	312
Arrive On Green	0.04	0.68	0.57	0.57	0.20	0.20
Sat Flow, veh/h	1781	3647	3394	293	1781	1585
Grp Volume(v), veh/h	54	1722	466	477	303	127
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1818	1781	1585
Q Serve(g_s), s	2.0	20.6	10.3	10.3	11.2	4.7
Cycle Q Clear(g_c), s	2.0	20.6	10.3	10.3	11.2	4.7
Prop In Lane	1.00			0.16	1.00	1.00
Lane Grp Cap(c), veh/h	68	2404	1017	1040	350	312
V/C Ratio(X)	0.79	0.72	0.46	0.46	0.86	0.41
Avail Cap(c_a), veh/h	538	3404	1699	1738	958	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	6.9	8.4	8.4	26.4	23.8
Incr Delay (d2), s/veh	7.6	0.5	0.2	0.2	2.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.4	2.9	3.0	4.6	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.0	7.4	8.6	8.6	28.9	24.1
LnGrp LOS	D	A	A	A	C	C
Approach Vol, veh/h		1776	943		430	
Approach Delay, s/veh		8.4	8.6		27.5	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	7.1	43.9	51.0	16.8
Change Period (Y+Rc), s	4.5	5.1	* 5.1	3.5
Max Green Setting (Gmax), s	20.5	64.9	* 65	36.5
Max Q Clear Time (g_c+I1), s	4.0	12.3	22.6	13.2
Green Ext Time (p_c), s	0.0	4.4	23.3	0.2

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	392	24	32	318	19	27
Future Vol, veh/h	392	24	32	318	19	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	413	25	34	335	20	28
Number of Lanes	1	0	0	1	1	0

Approach	EB		WB		NB	
Opposing Approach	WB		EB			
Opposing Lanes	1		1		0	
Conflicting Approach Left			NB		EB	
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB				WB	
Conflicting Lanes Right	1		0		1	
HCM Control Delay	12.5		11.4		8.9	
HCM LOS	B		B		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	41%	0%	9%
Vol Thru, %	0%	94%	91%
Vol Right, %	59%	6%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	46	416	350
LT Vol	19	0	32
Through Vol	0	392	318
RT Vol	27	24	0
Lane Flow Rate	48	438	368
Geometry Grp	1	1	1
Degree of Util (X)	0.072	0.537	0.464
Departure Headway (Hd)	5.387	4.416	4.531
Convergence, Y/N	Yes	Yes	Yes
Cap	662	819	796
Service Time	3.445	2.442	2.558
HCM Lane V/C Ratio	0.073	0.535	0.462
HCM Control Delay	8.9	12.5	11.4
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.2	3.3	2.5

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	350	270	64	113	80
Future Vol, veh/h	69	350	270	64	113	80
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	368	284	67	119	84
Number of Lanes	0	1	1	1	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	19.2	12.2	11
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	16%	0%	0%	100%	0%
Vol Thru, %	84%	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	419	270	64	113	80
LT Vol	69	0	0	113	0
Through Vol	350	270	0	0	0
RT Vol	0	0	64	0	80
Lane Flow Rate	441	284	67	119	84
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.674	0.452	0.094	0.234	0.137
Departure Headway (Hd)	5.504	5.72	5.011	7.089	5.87
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	657	631	715	507	611
Service Time	3.528	3.446	2.737	4.825	3.605
HCM Lane V/C Ratio	0.671	0.45	0.094	0.235	0.137
HCM Control Delay	19.2	13.1	8.3	12	9.5
HCM Lane LOS	C	B	A	B	A
HCM 95th-tile Q	5.2	2.3	0.3	0.9	0.5

Intersection	
Intersection Delay, s/veh	35.7
Intersection LOS	E

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	90	537	322	8	27	82
Future Vol, veh/h	90	537	322	8	27	82
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	617	370	9	31	94
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	51.1	14.6	10.6
HCM LOS	F	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	14%	0%	100%	0%
Vol Thru, %	86%	98%	0%	0%
Vol Right, %	0%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	627	330	27	82
LT Vol	90	0	27	0
Through Vol	537	322	0	0
RT Vol	0	8	0	82
Lane Flow Rate	721	379	31	94
Geometry Grp	2	2	7	7
Degree of Util (X)	0.984	0.552	0.066	0.168
Departure Headway (Hd)	4.913	5.238	7.637	6.409
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	742	687	469	559
Service Time	2.913	3.273	5.39	4.161
HCM Lane V/C Ratio	0.972	0.552	0.066	0.168
HCM Control Delay	51.1	14.6	10.9	10.5
HCM Lane LOS	F	B	B	B
HCM 95th-tile Q	15.7	3.4	0.2	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	3	352	38	6	25	166	692	12	14	1186	127
Future Volume (veh/h)	187	3	352	38	6	25	166	692	12	14	1186	127
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	197	3	371	40	6	26	175	728	13	15	1248	134
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	3	313	198	37	108	206	1949	35	18	1425	153
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.12	0.55	0.55	0.01	0.44	0.44
Sat Flow, veh/h	527	10	997	490	118	344	1781	3572	64	1781	3238	347
Grp Volume(v), veh/h	571	0	0	72	0	0	175	362	379	15	683	699
Grp Sat Flow(s),veh/h/ln	1535	0	0	952	0	0	1781	1777	1859	1781	1777	1808
Q Serve(g_s), s	34.2	0.0	0.0	0.0	0.0	0.0	12.3	14.8	14.8	1.1	44.5	45.0
Cycle Q Clear(g_c), s	40.0	0.0	0.0	5.8	0.0	0.0	12.3	14.8	14.8	1.1	44.5	45.0
Prop In Lane	0.35		0.65	0.56		0.36	1.00		0.03	1.00		0.19
Lane Grp Cap(c), veh/h	520	0	0	343	0	0	206	969	1014	18	782	796
V/C Ratio(X)	1.10	0.00	0.00	0.21	0.00	0.00	0.85	0.37	0.37	0.84	0.87	0.88
Avail Cap(c_a), veh/h	520	0	0	343	0	0	629	969	1014	350	963	979
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	0.0	31.7	0.0	0.0	55.3	16.5	16.5	62.9	32.4	32.5
Incr Delay (d2), s/veh	68.8	0.0	0.0	0.3	0.0	0.0	9.5	0.2	0.2	62.7	7.6	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.2	0.0	0.0	1.6	0.0	0.0	5.9	5.6	5.9	0.8	19.4	20.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.7	0.0	0.0	32.0	0.0	0.0	64.7	16.8	16.7	125.7	40.0	40.4
LnGrp LOS	F	A	A	C	A	A	E	B	B	F	D	D
Approach Vol, veh/h		571			72			916			1397	
Approach Delay, s/veh		113.7			32.0			25.9			41.2	
Approach LOS		F			C			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	75.7		45.7	19.4	62.3		45.7				
Change Period (Y+Rc), s	* 4.7	* 6.2		* 5.7	* 4.7	* 6.2		* 5.7				
Max Green Setting (Gmax), s	* 25	* 69		* 40	* 45	* 69		* 40				
Max Q Clear Time (g_c+I1), s	3.1	16.8		42.0	14.3	47.0		7.8				
Green Ext Time (p_c), s	0.0	4.4		0.0	0.5	9.1		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			50.2									
HCM 6th LOS			D									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	161	1230	1847	219	130	111
Future Volume (veh/h)	161	1230	1847	219	130	111
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	164	1255	1885	223	133	113
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	197	2883	2092	243	170	152
Arrive On Green	0.11	0.81	0.65	0.65	0.10	0.10
Sat Flow, veh/h	1781	3647	3302	372	1781	1585
Grp Volume(v), veh/h	164	1255	1027	1081	133	113
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1803	1781	1585
Q Serve(g_s), s	8.3	9.5	44.0	48.1	6.7	6.4
Cycle Q Clear(g_c), s	8.3	9.5	44.0	48.1	6.7	6.4
Prop In Lane	1.00			0.21	1.00	1.00
Lane Grp Cap(c), veh/h	197	2883	1158	1176	170	152
V/C Ratio(X)	0.83	0.44	0.89	0.92	0.78	0.75
Avail Cap(c_a), veh/h	395	2883	1249	1267	704	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	2.5	13.3	14.0	40.8	40.7
Incr Delay (d2), s/veh	3.5	0.1	7.3	10.2	2.9	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	1.3	15.4	17.8	3.0	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.7	2.7	20.6	24.1	43.7	43.4
LnGrp LOS	D	A	C	C	D	D
Approach Vol, veh/h		1419	2108		246	
Approach Delay, s/veh		7.4	22.4		43.6	
Approach LOS		A	C		D	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.7	65.3				80.0		12.3
Change Period (Y+Rc), s	4.5	5.1				* 5.1		3.5
Max Green Setting (Gmax), s	20.5	64.9				* 65		36.5
Max Q Clear Time (g_c+I1), s	10.3	50.1				11.5		8.7
Green Ext Time (p_c), s	0.0	10.1				15.2		0.1

Intersection Summary		
HCM 6th Ctrl Delay		18.2
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	351	8	28	494	8	19
Future Vol, veh/h	351	8	28	494	8	19
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	386	9	31	543	9	21
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.2	17.5	9
HCM LOS	B	C	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	30%	0%	5%
Vol Thru, %	0%	98%	95%
Vol Right, %	70%	2%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	27	359	522
LT Vol	8	0	28
Through Vol	0	351	494
RT Vol	19	8	0
Lane Flow Rate	30	395	574
Geometry Grp	1	1	1
Degree of Util (X)	0.046	0.502	0.707
Departure Headway (Hd)	5.617	4.585	4.438
Convergence, Y/N	Yes	Yes	Yes
Cap	634	785	815
Service Time	3.683	2.614	2.463
HCM Lane V/C Ratio	0.047	0.503	0.704
HCM Control Delay	9	12.2	17.5
HCM Lane LOS	A	B	C
HCM 95th-tile Q	0.1	2.9	6

Intersection	
Intersection Delay, s/veh	19.4
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	73	297	411	81	125	111
Future Vol, veh/h	73	297	411	81	125	111
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	326	452	89	137	122
Number of Lanes	0	1	1	1	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	20.8	21.8	12.1
HCM LOS	C	C	B

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	20%	0%	0%	100%	0%
Vol Thru, %	80%	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	370	411	81	125	111
LT Vol	73	0	0	125	0
Through Vol	297	411	0	0	0
RT Vol	0	0	81	0	111
Lane Flow Rate	407	452	89	137	122
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.677	0.748	0.13	0.287	0.213
Departure Headway (Hd)	5.994	5.962	5.251	7.515	6.29
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	602	605	681	478	568
Service Time	4.04	3.707	2.996	5.273	4.048
HCM Lane V/C Ratio	0.676	0.747	0.131	0.287	0.215
HCM Control Delay	20.8	24.4	8.8	13.3	10.8
HCM Lane LOS	C	C	A	B	B
HCM 95th-tile Q	5.2	6.6	0.4	1.2	0.8

Intersection	
Intersection Delay, s/veh	28.1
Intersection LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	402	674	11	19	44
Future Vol, veh/h	36	402	674	11	19	44
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	419	702	11	20	46
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	15.9	37.6	10
HCM LOS	C	E	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	8%	0%	100%	0%
Vol Thru, %	92%	98%	0%	0%
Vol Right, %	0%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	438	685	19	44
LT Vol	36	0	19	0
Through Vol	402	674	0	0
RT Vol	0	11	0	44
Lane Flow Rate	456	714	20	46
Geometry Grp	2	2	7	7
Degree of Util (X)	0.624	0.921	0.042	0.082
Departure Headway (Hd)	4.926	4.648	7.686	6.457
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	725	778	469	558
Service Time	3.003	2.713	5.386	4.157
HCM Lane V/C Ratio	0.629	0.918	0.043	0.082
HCM Control Delay	15.9	37.6	10.7	9.7
HCM Lane LOS	C	E	B	A
HCM 95th-tile Q	4.4	12.9	0.1	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	3	255	26	5	12	436	1283	21	22	907	220
Future Volume (veh/h)	137	3	255	26	5	12	436	1283	21	22	907	220
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	146	3	271	28	5	13	464	1365	22	23	965	234
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	4	249	166	33	64	483	2256	36	29	1065	258
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.27	0.63	0.63	0.02	0.38	0.38
Sat Flow, veh/h	531	18	998	519	134	257	1781	3579	58	1781	2836	686
Grp Volume(v), veh/h	420	0	0	46	0	0	464	677	710	23	604	595
Grp Sat Flow(s),veh/h/ln	1547	0	0	909	0	0	1781	1777	1860	1781	1777	1746
Q Serve(g_s), s	34.8	0.0	0.0	0.0	0.0	0.0	41.1	36.5	36.5	2.1	51.5	51.8
Cycle Q Clear(g_c), s	40.0	0.0	0.0	5.2	0.0	0.0	41.1	36.5	36.5	2.1	51.5	51.8
Prop In Lane	0.35		0.65	0.61		0.28	1.00		0.03	1.00		0.39
Lane Grp Cap(c), veh/h	416	0	0	263	0	0	483	1120	1173	29	667	656
V/C Ratio(X)	1.01	0.00	0.00	0.17	0.00	0.00	0.96	0.60	0.61	0.79	0.90	0.91
Avail Cap(c_a), veh/h	416	0	0	263	0	0	500	1120	1173	278	765	752
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	0.0	0.0	46.8	0.0	0.0	57.5	17.7	17.7	78.5	47.3	47.4
Incr Delay (d2), s/veh	46.3	0.0	0.0	0.3	0.0	0.0	29.9	0.9	0.9	36.3	13.1	13.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	0.0	0.0	1.5	0.0	0.0	22.0	14.2	14.8	1.2	24.4	24.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	107.5	0.0	0.0	47.1	0.0	0.0	87.5	18.6	18.6	114.9	60.4	61.1
LnGrp LOS	F	A	A	D	A	A	F	B	B	F	E	E
Approach Vol, veh/h		420			46			1851			1222	
Approach Delay, s/veh		107.5			47.1			35.9			61.8	
Approach LOS		F			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	107.2		45.7	48.2	66.4		45.7				
Change Period (Y+Rc), s	* 4.7	* 6.2		* 5.7	* 4.7	* 6.2		* 5.7				
Max Green Setting (Gmax), s	* 25	* 69		* 40	* 45	* 69		* 40				
Max Q Clear Time (g_c+I1), s	4.1	38.5		42.0	43.1	53.8		7.2				
Green Ext Time (p_c), s	0.0	10.2		0.0	0.3	6.4		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			53.5
HCM 6th LOS			D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	54	1705	857	77	312	132	
Future Volume (veh/h)	54	1705	857	77	312	132	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	55	1722	866	78	315	133	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	69	2389	1873	169	361	322	
Arrive On Green	0.04	0.67	0.57	0.57	0.20	0.20	
Sat Flow, veh/h	1781	3647	3390	297	1781	1585	
Grp Volume(v), veh/h	55	1722	467	477	315	133	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1817	1781	1585	
Q Serve(g_s), s	2.1	21.2	10.6	10.6	11.8	5.0	
Cycle Q Clear(g_c), s	2.1	21.2	10.6	10.6	11.8	5.0	
Prop In Lane	1.00			0.16	1.00	1.00	
Lane Grp Cap(c), veh/h	69	2389	1009	1032	361	322	
V/C Ratio(X)	0.79	0.72	0.46	0.46	0.87	0.41	
Avail Cap(c_a), veh/h	530	3351	1673	1711	943	839	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	32.8	7.2	8.7	8.7	26.6	23.9	
Incr Delay (d2), s/veh	7.4	0.6	0.2	0.2	2.6	0.3	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.0	4.7	3.0	3.1	4.8	1.8	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	40.2	7.7	8.9	8.9	29.2	24.2	
LnGrp LOS	D	A	A	A	C	C	
Approach Vol, veh/h		1777	944		448		
Approach Delay, s/veh		8.7	8.9		27.7		
Approach LOS		A	A		C		
Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	7.2	44.3				51.4	17.5
Change Period (Y+Rc), s	4.5	5.1				* 5.1	3.5
Max Green Setting (Gmax), s	20.5	64.9				* 65	36.5
Max Q Clear Time (g_c+I1), s	4.1	12.6				23.2	13.8
Green Ext Time (p_c), s	0.0	4.4				23.1	0.2
Intersection Summary							
HCM 6th Ctrl Delay			11.5				
HCM 6th LOS			B				

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	396	24	32	330	19	27
Future Vol, veh/h	396	24	32	330	19	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	417	25	34	347	20	28
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.6	11.7	8.9
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	41%	0%	9%
Vol Thru, %	0%	94%	91%
Vol Right, %	59%	6%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	46	420	362
LT Vol	19	0	32
Through Vol	0	396	330
RT Vol	27	24	0
Lane Flow Rate	48	442	381
Geometry Grp	1	1	1
Degree of Util (X)	0.073	0.544	0.48
Departure Headway (Hd)	5.424	4.43	4.536
Convergence, Y/N	Yes	Yes	Yes
Cap	658	813	793
Service Time	3.482	2.458	2.566
HCM Lane V/C Ratio	0.073	0.544	0.48
HCM Control Delay	8.9	12.6	11.7
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.2	3.3	2.6

Intersection	
Intersection Delay, s/veh	15.4
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰↑	↑	↱	↰	↱
Traffic Vol, veh/h	69	354	282	64	113	80
Future Vol, veh/h	69	354	282	64	113	80
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	373	297	67	119	84
Number of Lanes	0	1	1	1	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	19.7	12.5	11.1
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	16%	0%	0%	100%	0%
Vol Thru, %	84%	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	423	282	64	113	80
LT Vol	69	0	0	113	0
Through Vol	354	282	0	0	0
RT Vol	0	0	64	0	80
Lane Flow Rate	445	297	67	119	84
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.684	0.473	0.094	0.236	0.138
Departure Headway (Hd)	5.528	5.732	5.023	7.132	5.912
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	655	629	713	504	606
Service Time	3.552	3.46	2.751	4.871	3.65
HCM Lane V/C Ratio	0.679	0.472	0.094	0.236	0.139
HCM Control Delay	19.7	13.5	8.3	12.1	9.6
HCM Lane LOS	C	B	A	B	A
HCM 95th-tile Q	5.4	2.5	0.3	0.9	0.5

Intersection	
Intersection Delay, s/veh	37.9
Intersection LOS	E

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	90	546	326	8	27	82
Future Vol, veh/h	90	546	326	8	27	82
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	628	375	9	31	94
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	54.7	14.8	10.6
HCM LOS	F	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	14%	0%	100%	0%
Vol Thru, %	86%	98%	0%	0%
Vol Right, %	0%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	636	334	27	82
LT Vol	90	0	27	0
Through Vol	546	326	0	0
RT Vol	0	8	0	82
Lane Flow Rate	731	384	31	94
Geometry Grp	2	2	7	7
Degree of Util (X)	0.999	0.56	0.066	0.169
Departure Headway (Hd)	4.922	5.255	7.673	6.445
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	746	687	466	556
Service Time	2.922	3.289	5.424	4.195
HCM Lane V/C Ratio	0.98	0.559	0.067	0.169
HCM Control Delay	54.7	14.8	11	10.5
HCM Lane LOS	F	B	B	B
HCM 95th-tile Q	16.5	3.5	0.2	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	3	358	38	6	25	168	692	12	14	1186	129
Future Volume (veh/h)	190	3	358	38	6	25	168	692	12	14	1186	129
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	200	3	377	40	6	26	177	728	13	15	1248	136
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	203	3	312	197	37	108	208	1954	35	18	1424	155
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.12	0.55	0.55	0.01	0.44	0.44
Sat Flow, veh/h	528	9	997	489	118	344	1781	3572	64	1781	3232	351
Grp Volume(v), veh/h	580	0	0	72	0	0	177	362	379	15	684	700
Grp Sat Flow(s),veh/h/ln	1534	0	0	951	0	0	1781	1777	1859	1781	1777	1807
Q Serve(g_s), s	34.1	0.0	0.0	0.0	0.0	0.0	12.5	14.8	14.8	1.1	44.8	45.2
Cycle Q Clear(g_c), s	40.0	0.0	0.0	5.9	0.0	0.0	12.5	14.8	14.8	1.1	44.8	45.2
Prop In Lane	0.34		0.65	0.56		0.36	1.00		0.03	1.00		0.19
Lane Grp Cap(c), veh/h	518	0	0	342	0	0	208	972	1017	18	783	796
V/C Ratio(X)	1.12	0.00	0.00	0.21	0.00	0.00	0.85	0.37	0.37	0.84	0.87	0.88
Avail Cap(c_a), veh/h	518	0	0	342	0	0	627	972	1017	349	960	976
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	0.0	0.0	31.9	0.0	0.0	55.4	16.5	16.5	63.1	32.5	32.6
Incr Delay (d2), s/veh	76.5	0.0	0.0	0.3	0.0	0.0	9.5	0.2	0.2	62.7	7.7	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.3	0.0	0.0	1.6	0.0	0.0	6.0	5.6	5.9	0.8	19.5	20.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	121.5	0.0	0.0	32.2	0.0	0.0	64.9	16.7	16.7	125.8	40.2	40.6
LnGrp LOS	F	A	A	C	A	A	E	B	B	F	D	D
Approach Vol, veh/h		580			72			918			1399	
Approach Delay, s/veh		121.5			32.2			26.0			41.4	
Approach LOS		F			C			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	76.1		45.7	19.6	62.5		45.7				
Change Period (Y+Rc), s	* 4.7	* 6.2		* 5.7	* 4.7	* 6.2		* 5.7				
Max Green Setting (Gmax), s	* 25	* 69		* 40	* 45	* 69		* 40				
Max Q Clear Time (g_c+I1), s	3.1	16.8		42.0	14.5	47.2		7.9				
Green Ext Time (p_c), s	0.0	4.4		0.0	0.5	9.1		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			52.0									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	171	1230	1847	227	135	117
Future Volume (veh/h)	171	1230	1847	227	135	117
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	1255	1885	232	138	119
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	207	2884	2069	249	174	155
Arrive On Green	0.12	0.81	0.65	0.65	0.10	0.10
Sat Flow, veh/h	1781	3647	3287	385	1781	1585
Grp Volume(v), veh/h	174	1255	1031	1086	138	119
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1801	1781	1585
Q Serve(g_s), s	9.1	9.8	46.2	50.7	7.2	6.9
Cycle Q Clear(g_c), s	9.1	9.8	46.2	50.7	7.2	6.9
Prop In Lane	1.00			0.21	1.00	1.00
Lane Grp Cap(c), veh/h	207	2884	1151	1167	174	155
V/C Ratio(X)	0.84	0.44	0.90	0.93	0.79	0.77
Avail Cap(c_a), veh/h	385	2884	1216	1232	685	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	2.6	14.0	14.8	41.8	41.7
Incr Delay (d2), s/veh	3.5	0.1	8.4	11.9	3.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	1.4	16.7	19.4	3.2	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	2.7	22.4	26.6	44.9	44.7
LnGrp LOS	D	A	C	C	D	D
Approach Vol, veh/h		1429	2117		257	
Approach Delay, s/veh		7.8	24.6		44.8	
Approach LOS		A	C		D	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	15.5	66.6	82.1	12.8
Change Period (Y+Rc), s	4.5	5.1	* 5.1	3.5
Max Green Setting (Gmax), s	20.5	64.9	* 65	36.5
Max Q Clear Time (g_c+I1), s	11.1	52.7	11.8	9.2
Green Ext Time (p_c), s	0.0	8.8	15.2	0.1

Intersection Summary	
HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	364	8	28	500	8	19
Future Vol, veh/h	364	8	28	500	8	19
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	400	9	31	549	9	21
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.6	18	9
HCM LOS	B	C	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	30%	0%	5%
Vol Thru, %	0%	98%	95%
Vol Right, %	70%	2%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	27	372	528
LT Vol	8	0	28
Through Vol	0	364	500
RT Vol	19	8	0
Lane Flow Rate	30	409	580
Geometry Grp	1	1	1
Degree of Util (X)	0.047	0.522	0.718
Departure Headway (Hd)	5.66	4.593	4.454
Convergence, Y/N	Yes	Yes	Yes
Cap	629	785	812
Service Time	3.73	2.626	2.482
HCM Lane V/C Ratio	0.048	0.521	0.714
HCM Control Delay	9	12.6	18
HCM Lane LOS	A	B	C
HCM 95th-tile Q	0.1	3.1	6.3

Intersection	
Intersection Delay, s/veh	20.3
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	73	310	417	81	125	111
Future Vol, veh/h	73	310	417	81	125	111
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	341	458	89	137	122
Number of Lanes	0	1	1	1	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	22.1	22.8	12.2
HCM LOS	C	C	B

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	19%	0%	0%	100%	0%
Vol Thru, %	81%	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	383	417	81	125	111
LT Vol	73	0	0	125	0
Through Vol	310	417	0	0	0
RT Vol	0	0	81	0	111
Lane Flow Rate	421	458	89	137	122
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.703	0.762	0.13	0.289	0.215
Departure Headway (Hd)	6.01	5.987	5.277	7.566	6.341
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	602	605	677	474	565
Service Time	4.059	3.736	3.025	5.329	4.102
HCM Lane V/C Ratio	0.699	0.757	0.131	0.289	0.216
HCM Control Delay	22.1	25.5	8.8	13.4	10.8
HCM Lane LOS	C	D	A	B	B
HCM 95th-tile Q	5.7	6.9	0.4	1.2	0.8

Intersection	
Intersection Delay, s/veh	30.4
Intersection LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	409	687	11	19	44
Future Vol, veh/h	36	409	687	11	19	44
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	426	716	11	20	46
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	16.4	41.1	10.1
HCM LOS	C	E	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	8%	0%	100%	0%
Vol Thru, %	92%	98%	0%	0%
Vol Right, %	0%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	445	698	19	44
LT Vol	36	0	19	0
Through Vol	409	687	0	0
RT Vol	0	11	0	44
Lane Flow Rate	464	727	20	46
Geometry Grp	2	2	7	7
Degree of Util (X)	0.636	0.941	0.043	0.083
Departure Headway (Hd)	4.943	4.66	7.733	6.503
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	723	771	466	554
Service Time	3.025	2.728	5.433	4.203
HCM Lane V/C Ratio	0.642	0.943	0.043	0.083
HCM Control Delay	16.4	41.1	10.8	9.8
HCM Lane LOS	C	E	B	A
HCM 95th-tile Q	4.6	13.8	0.1	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	3	258	26	5	12	445	1283	21	22	907	224
Future Volume (veh/h)	141	3	258	26	5	12	445	1283	21	22	907	224
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	150	3	274	28	5	13	473	1365	22	23	965	238
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	4	244	165	33	64	496	2267	37	29	1049	258
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.28	0.63	0.63	0.02	0.37	0.37
Sat Flow, veh/h	538	16	992	523	136	259	1781	3579	58	1781	2826	695
Grp Volume(v), veh/h	427	0	0	46	0	0	473	677	710	23	606	597
Grp Sat Flow(s),veh/h/ln	1546	0	0	918	0	0	1781	1777	1860	1781	1777	1744
Q Serve(g_s), s	33.7	0.0	0.0	0.0	0.0	0.0	41.3	35.8	35.8	2.0	51.6	51.9
Cycle Q Clear(g_c), s	38.9	0.0	0.0	5.2	0.0	0.0	41.3	35.8	35.8	2.0	51.6	51.9
Prop In Lane	0.35		0.64	0.61		0.28	1.00		0.03	1.00		0.40
Lane Grp Cap(c), veh/h	410	0	0	262	0	0	496	1126	1178	29	660	647
V/C Ratio(X)	1.04	0.00	0.00	0.18	0.00	0.00	0.95	0.60	0.60	0.79	0.92	0.92
Avail Cap(c_a), veh/h	410	0	0	262	0	0	554	1126	1178	281	715	702
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	0.0	0.0	46.8	0.0	0.0	56.2	17.2	17.2	77.7	47.5	47.6
Incr Delay (d2), s/veh	55.5	0.0	0.0	0.3	0.0	0.0	25.7	0.9	0.9	36.4	16.2	17.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.9	0.0	0.0	1.4	0.0	0.0	21.6	13.8	14.5	1.2	25.0	24.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.4	0.0	0.0	47.1	0.0	0.0	81.8	18.1	18.1	114.1	63.8	64.6
LnGrp LOS	F	A	A	D	A	A	F	B	B	F	E	E
Approach Vol, veh/h		427			46			1860			1226	
Approach Delay, s/veh		116.4			47.1			34.3			65.1	
Approach LOS		F			D			C			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	106.6		44.6	48.8	65.0		44.6
Change Period (Y+Rc), s	* 4.7	* 6.2		* 5.7	* 4.7	* 6.2		* 5.7
Max Green Setting (Gmax), s	* 25	* 91		* 39	* 49	* 64		* 39
Max Q Clear Time (g_c+I1), s	4.0	37.8		40.9	43.3	53.9		7.2
Green Ext Time (p_c), s	0.0	11.5		0.0	0.8	5.0		0.2

Intersection Summary	
HCM 6th Ctrl Delay	54.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	65	1955	1000	90	315	135
Future Volume (veh/h)	65	1955	1000	90	315	135
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	66	1975	1010	91	318	136
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	85	2464	1946	175	357	318
Arrive On Green	0.05	0.69	0.59	0.59	0.20	0.20
Sat Flow, veh/h	1781	3647	3390	297	1781	1585
Grp Volume(v), veh/h	66	1975	544	557	318	136
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1817	1781	1585
Q Serve(g_s), s	3.0	31.1	14.7	14.7	14.1	6.1
Cycle Q Clear(g_c), s	3.0	31.1	14.7	14.7	14.1	6.1
Prop In Lane	1.00			0.16	1.00	1.00
Lane Grp Cap(c), veh/h	85	2464	1049	1072	357	318
V/C Ratio(X)	0.78	0.80	0.52	0.52	0.89	0.43
Avail Cap(c_a), veh/h	450	2849	1422	1454	802	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	8.6	9.8	9.8	31.5	28.3
Incr Delay (d2), s/veh	5.7	1.6	0.2	0.2	3.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	8.0	4.5	4.6	6.0	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.8	10.2	10.1	10.1	34.6	28.7
LnGrp LOS	D	B	B	B	C	C
Approach Vol, veh/h		2041	1101		454	
Approach Delay, s/veh		11.3	10.1		32.8	
Approach LOS		B	B		C	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	8.4	53.0	61.3	19.8
Change Period (Y+Rc), s	4.5	5.1	* 5.1	3.5
Max Green Setting (Gmax), s	20.5	64.9	* 65	36.5
Max Q Clear Time (g_c+I1), s	5.0	16.7	33.1	16.1
Green Ext Time (p_c), s	0.0	5.5	23.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	405	25	35	325	20	30
Future Vol, veh/h	405	25	35	325	20	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	426	26	37	342	21	32
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	13	11.8	9
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	40%	0%	10%
Vol Thru, %	0%	94%	90%
Vol Right, %	60%	6%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	50	430	360
LT Vol	20	0	35
Through Vol	0	405	325
RT Vol	30	25	0
Lane Flow Rate	53	453	379
Geometry Grp	1	1	1
Degree of Util (X)	0.079	0.558	0.48
Departure Headway (Hd)	5.433	4.442	4.562
Convergence, Y/N	Yes	Yes	Yes
Cap	656	810	788
Service Time	3.494	2.471	2.593
HCM Lane V/C Ratio	0.081	0.559	0.481
HCM Control Delay	9	13	11.8
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.3	3.5	2.6

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	75	360	275	70	115	85
Future Vol, veh/h	75	360	275	70	115	85
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	379	289	74	121	89
Number of Lanes	0	1	1	1	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	20.8	12.5	11.1
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	17%	0%	0%	100%	0%
Vol Thru, %	83%	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	435	275	70	115	85
LT Vol	75	0	0	115	0
Through Vol	360	275	0	0	0
RT Vol	0	0	70	0	85
Lane Flow Rate	458	289	74	121	89
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.706	0.465	0.104	0.241	0.148
Departure Headway (Hd)	5.552	5.778	5.069	7.165	5.945
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	650	625	707	501	603
Service Time	3.579	3.508	2.799	4.904	3.684
HCM Lane V/C Ratio	0.705	0.462	0.105	0.242	0.148
HCM Control Delay	20.8	13.5	8.4	12.2	9.7
HCM Lane LOS	C	B	A	B	A
HCM 95th-tile Q	5.8	2.5	0.3	0.9	0.5

Intersection	
Intersection Delay, s/veh	34.4
Intersection LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	95	560	340	10	30	90
Future Vol, veh/h	95	560	340	10	30	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	609	370	11	33	98
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	49.4	14.6	10.6
HCM LOS	E	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	15%	0%	100%	0%
Vol Thru, %	85%	97%	0%	0%
Vol Right, %	0%	3%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	655	350	30	90
LT Vol	95	0	30	0
Through Vol	560	340	0	0
RT Vol	0	10	0	90
Lane Flow Rate	712	380	33	98
Geometry Grp	2	2	7	7
Degree of Util (X)	0.976	0.554	0.069	0.174
Departure Headway (Hd)	4.933	5.247	7.628	6.4
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	740	689	469	560
Service Time	2.933	3.282	5.38	4.151
HCM Lane V/C Ratio	0.962	0.552	0.07	0.175
HCM Control Delay	49.4	14.6	10.9	10.5
HCM Lane LOS	E	B	B	B
HCM 95th-tile Q	15.3	3.4	0.2	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	5	370	40	10	30	175	725	15	15	1240	135
Future Volume (veh/h)	195	5	370	40	10	30	175	725	15	15	1240	135
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	205	5	389	42	11	32	184	763	16	16	1305	142
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	4	298	178	53	115	214	2001	42	19	1465	159
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.12	0.56	0.56	0.01	0.45	0.45
Sat Flow, veh/h	520	13	987	454	175	380	1781	3559	75	1781	3233	350
Grp Volume(v), veh/h	599	0	0	85	0	0	184	381	398	16	715	732
Grp Sat Flow(s),veh/h/ln	1520	0	0	1008	0	0	1781	1777	1857	1781	1777	1807
Q Serve(g_s), s	32.9	0.0	0.0	0.0	0.0	0.0	13.4	15.8	15.8	1.2	48.8	49.4
Cycle Q Clear(g_c), s	40.0	0.0	0.0	7.1	0.0	0.0	13.4	15.8	15.8	1.2	48.8	49.4
Prop In Lane	0.34		0.65	0.49		0.38	1.00		0.04	1.00		0.19
Lane Grp Cap(c), veh/h	495	0	0	345	0	0	214	999	1044	19	805	819
V/C Ratio(X)	1.21	0.00	0.00	0.25	0.00	0.00	0.86	0.38	0.38	0.84	0.89	0.89
Avail Cap(c_a), veh/h	495	0	0	345	0	0	605	999	1044	336	925	941
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	0.0	0.0	34.4	0.0	0.0	57.2	16.2	16.2	65.4	33.2	33.3
Incr Delay (d2), s/veh	111.9	0.0	0.0	0.4	0.0	0.0	9.8	0.2	0.2	57.8	9.6	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	31.7	0.0	0.0	2.1	0.0	0.0	6.4	6.0	6.3	0.8	21.7	22.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	159.5	0.0	0.0	34.8	0.0	0.0	67.0	16.4	16.4	123.2	42.7	43.4
LnGrp LOS	F	A	A	C	A	A	E	B	B	F	D	D
Approach Vol, veh/h		599			85			963			1463	
Approach Delay, s/veh		159.5			34.8			26.1			43.9	
Approach LOS		F			C			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	80.7		45.7	20.6	66.3		45.7				
Change Period (Y+Rc), s	* 4.7	* 6.2		* 5.7	* 4.7	* 6.2		* 5.7				
Max Green Setting (Gmax), s	* 25	* 69		* 40	* 45	* 69		* 40				
Max Q Clear Time (g_c+I1), s	3.2	17.8		42.0	15.4	51.4		9.1				
Green Ext Time (p_c), s	0.0	4.7		0.0	0.5	8.6		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			60.4									
HCM 6th LOS			E									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	185	1410	2155	260	135	120
Future Volume (veh/h)	185	1410	2155	260	135	120
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	1439	2199	265	138	122
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	221	2904	2076	245	173	154
Arrive On Green	0.12	0.82	0.65	0.65	0.10	0.10
Sat Flow, veh/h	1781	3647	3295	378	1781	1585
Grp Volume(v), veh/h	189	1439	1200	1264	138	122
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1802	1781	1585
Q Serve(g_s), s	10.4	12.5	64.9	64.9	7.6	7.5
Cycle Q Clear(g_c), s	10.4	12.5	64.9	64.9	7.6	7.5
Prop In Lane	1.00			0.21	1.00	1.00
Lane Grp Cap(c), veh/h	221	2904	1152	1169	173	154
V/C Ratio(X)	0.86	0.50	1.04	1.08	0.80	0.79
Avail Cap(c_a), veh/h	365	2904	1152	1169	650	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	2.8	17.6	17.6	44.2	44.2
Incr Delay (d2), s/veh	5.1	0.2	38.1	51.2	3.2	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	1.9	32.6	37.3	3.4	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.1	3.0	55.7	68.8	47.5	47.7
LnGrp LOS	D	A	F	F	D	D
Approach Vol, veh/h		1628	2464		260	
Approach Delay, s/veh		8.2	62.4		47.6	
Approach LOS		A	E		D	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	16.9	70.0	86.9	13.2
Change Period (Y+Rc), s	4.5	5.1	* 5.1	3.5
Max Green Setting (Gmax), s	20.5	64.9	* 65	36.5
Max Q Clear Time (g_c+I1), s	12.4	66.9	14.5	9.6
Green Ext Time (p_c), s	0.0	0.0	18.8	0.1

Intersection Summary	
HCM 6th Ctrl Delay	41.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	360	10	30	505	10	20
Future Vol, veh/h	360	10	30	505	10	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	391	11	33	549	11	22
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.4	18.1	9.1
HCM LOS	B	C	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	33%	0%	6%
Vol Thru, %	0%	97%	94%
Vol Right, %	67%	3%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	30	370	535
LT Vol	10	0	30
Through Vol	0	360	505
RT Vol	20	10	0
Lane Flow Rate	33	402	582
Geometry Grp	1	1	1
Degree of Util (X)	0.051	0.514	0.72
Departure Headway (Hd)	5.681	4.603	4.458
Convergence, Y/N	Yes	Yes	Yes
Cap	626	784	814
Service Time	3.752	2.633	2.485
HCM Lane V/C Ratio	0.053	0.513	0.715
HCM Control Delay	9.1	12.4	18.1
HCM Lane LOS	A	B	C
HCM 95th-tile Q	0.2	3	6.3

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	75	305	420	85	130	115
Future Vol, veh/h	75	305	420	85	130	115
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	332	457	92	141	125
Number of Lanes	0	1	1	1	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	21.6	22.6	12.3
HCM LOS	C	C	B

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	20%	0%	0%	100%	0%
Vol Thru, %	80%	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	380	420	85	130	115
LT Vol	75	0	0	130	0
Through Vol	305	420	0	0	0
RT Vol	0	0	85	0	115
Lane Flow Rate	413	457	92	141	125
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.692	0.761	0.136	0.297	0.22
Departure Headway (Hd)	6.033	6.003	5.292	7.554	6.329
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	599	603	675	475	565
Service Time	4.084	3.753	3.042	5.316	4.09
HCM Lane V/C Ratio	0.689	0.758	0.136	0.297	0.221
HCM Control Delay	21.6	25.4	8.9	13.5	10.9
HCM Lane LOS	C	D	A	B	B
HCM 95th-tile Q	5.4	6.9	0.5	1.2	0.8

Intersection	
Intersection Delay, s/veh	35.5
Intersection LOS	E

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	420	705	15	20	50
Future Vol, veh/h	40	420	705	15	20	50
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	438	734	16	21	52
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	17.6	49.4	10.3
HCM LOS	C	E	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	9%	0%	100%	0%
Vol Thru, %	91%	98%	0%	0%
Vol Right, %	0%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	460	720	20	50
LT Vol	40	0	20	0
Through Vol	420	705	0	0
RT Vol	0	15	0	50
Lane Flow Rate	479	750	21	52
Geometry Grp	2	2	7	7
Degree of Util (X)	0.666	0.98	0.045	0.096
Departure Headway (Hd)	5.002	4.706	7.832	6.601
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	714	765	460	546
Service Time	3.095	2.784	5.532	4.301
HCM Lane V/C Ratio	0.671	0.98	0.046	0.095
HCM Control Delay	17.6	49.4	10.9	10
HCM Lane LOS	C	E	B	A
HCM 95th-tile Q	5.1	15.7	0.1	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	5	270	30	10	15	455	1340	25	25	950	230
Future Volume (veh/h)	145	5	270	30	10	15	455	1340	25	25	950	230
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	154	5	287	32	11	16	484	1426	27	27	1011	245
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	5	238	150	53	63	484	2278	43	35	1096	265
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.27	0.64	0.64	0.02	0.39	0.39
Sat Flow, veh/h	528	19	986	483	221	262	1781	3568	67	1781	2838	685
Grp Volume(v), veh/h	446	0	0	59	0	0	484	710	743	27	632	624
Grp Sat Flow(s),veh/h/ln	1533	0	0	966	0	0	1781	1777	1858	1781	1777	1746
Q Serve(g_s), s	33.2	0.0	0.0	0.0	0.0	0.0	45.0	39.8	39.9	2.5	56.1	56.5
Cycle Q Clear(g_c), s	40.0	0.0	0.0	6.8	0.0	0.0	45.0	39.8	39.9	2.5	56.1	56.5
Prop In Lane	0.35		0.64	0.54		0.27	1.00		0.04	1.00		0.39
Lane Grp Cap(c), veh/h	400	0	0	267	0	0	484	1135	1187	35	686	674
V/C Ratio(X)	1.12	0.00	0.00	0.22	0.00	0.00	1.00	0.63	0.63	0.78	0.92	0.93
Avail Cap(c_a), veh/h	400	0	0	267	0	0	484	1135	1187	269	741	728
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	0.0	0.0	49.8	0.0	0.0	60.2	18.0	18.0	80.8	48.4	48.5
Incr Delay (d2), s/veh	80.3	0.0	0.0	0.4	0.0	0.0	40.7	1.1	1.0	30.3	16.1	17.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.8	0.0	0.0	2.0	0.0	0.0	25.2	15.5	16.2	1.4	27.0	26.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	144.3	0.0	0.0	50.2	0.0	0.0	101.0	19.1	19.1	111.1	64.5	65.7
LnGrp LOS	F	A	A	D	A	A	F	B	B	F	E	E
Approach Vol, veh/h		446			59			1937			1283	
Approach Delay, s/veh		144.3			50.2			39.5			66.0	
Approach LOS		F			D			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	111.9		45.7	49.7	70.1		45.7				
Change Period (Y+Rc), s	* 4.7	* 6.2		* 5.7	* 4.7	* 6.2		* 5.7				
Max Green Setting (Gmax), s	* 25	* 69		* 40	* 45	* 69		* 40				
Max Q Clear Time (g_c+I1), s	4.5	41.9		42.0	47.0	58.5		8.8				
Green Ext Time (p_c), s	0.0	10.6		0.0	0.0	5.4		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			61.4									
HCM 6th LOS			E									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	66	1955	1000	91	327	141
Future Volume (veh/h)	66	1955	1000	91	327	141
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	1975	1010	92	330	142
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	86	2447	1928	176	369	328
Arrive On Green	0.05	0.69	0.59	0.59	0.21	0.21
Sat Flow, veh/h	1781	3647	3387	300	1781	1585
Grp Volume(v), veh/h	67	1975	545	557	330	142
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1816	1781	1585
Q Serve(g_s), s	3.1	32.1	15.1	15.1	14.8	6.4
Cycle Q Clear(g_c), s	3.1	32.1	15.1	15.1	14.8	6.4
Prop In Lane	1.00			0.17	1.00	1.00
Lane Grp Cap(c), veh/h	86	2447	1040	1063	369	328
V/C Ratio(X)	0.78	0.81	0.52	0.52	0.90	0.43
Avail Cap(c_a), veh/h	444	2807	1401	1433	790	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	9.0	10.2	10.2	31.8	28.4
Incr Delay (d2), s/veh	5.6	1.7	0.3	0.2	3.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	8.5	4.7	4.8	6.3	2.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.3	10.7	10.4	10.4	34.9	28.8
LnGrp LOS	D	B	B	B	C	C
Approach Vol, veh/h		2042	1102		472	
Approach Delay, s/veh		11.8	10.4		33.0	
Approach LOS		B	B		C	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	8.5	53.3	61.8	20.5
Change Period (Y+Rc), s	4.5	5.1	* 5.1	3.5
Max Green Setting (Gmax), s	20.5	64.9	* 65	36.5
Max Q Clear Time (g_c+I1), s	5.1	17.1	34.1	16.8
Green Ext Time (p_c), s	0.0	5.5	22.6	0.2

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	409	25	35	337	20	30
Future Vol, veh/h	409	25	35	337	20	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	431	26	37	355	21	32
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	13.2	12.1	9
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	40%	0%	9%
Vol Thru, %	0%	94%	91%
Vol Right, %	60%	6%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	50	434	372
LT Vol	20	0	35
Through Vol	0	409	337
RT Vol	30	25	0
Lane Flow Rate	53	457	392
Geometry Grp	1	1	1
Degree of Util (X)	0.08	0.565	0.497
Departure Headway (Hd)	5.468	4.456	4.567
Convergence, Y/N	Yes	Yes	Yes
Cap	652	809	787
Service Time	3.532	2.488	2.6
HCM Lane V/C Ratio	0.081	0.565	0.498
HCM Control Delay	9	13.2	12.1
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.3	3.6	2.8

Intersection	
Intersection Delay, s/veh	16.3
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	75	364	287	70	115	85
Future Vol, veh/h	75	364	287	70	115	85
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	383	302	74	121	89
Number of Lanes	0	1	1	1	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	21.4	12.8	11.2
HCM LOS	C	B	B

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	17%	0%	0%	100%	0%
Vol Thru, %	83%	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	439	287	70	115	85
LT Vol	75	0	0	115	0
Through Vol	364	287	0	0	0
RT Vol	0	0	70	0	85
Lane Flow Rate	462	302	74	121	89
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.715	0.486	0.104	0.242	0.149
Departure Headway (Hd)	5.573	5.79	5.08	7.207	5.987
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	652	622	706	499	599
Service Time	3.6	3.519	2.81	4.948	3.726
HCM Lane V/C Ratio	0.709	0.486	0.105	0.242	0.149
HCM Control Delay	21.4	13.9	8.4	12.2	9.8
HCM Lane LOS	C	B	A	B	A
HCM 95th-tile Q	6	2.7	0.3	0.9	0.5

Intersection	
Intersection Delay, s/veh	36.6
Intersection LOS	E

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	95	569	344	10	30	90
Future Vol, veh/h	95	569	344	10	30	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	618	374	11	33	98
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	52.9	14.9	10.7
HCM LOS	F	B	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	14%	0%	100%	0%
Vol Thru, %	86%	97%	0%	0%
Vol Right, %	0%	3%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	664	354	30	90
LT Vol	95	0	30	0
Through Vol	569	344	0	0
RT Vol	0	10	0	90
Lane Flow Rate	722	385	33	98
Geometry Grp	2	2	7	7
Degree of Util (X)	0.991	0.563	0.069	0.175
Departure Headway (Hd)	4.943	5.264	7.662	6.433
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	736	685	467	557
Service Time	2.943	3.298	5.415	4.186
HCM Lane V/C Ratio	0.981	0.562	0.071	0.176
HCM Control Delay	52.9	14.9	11	10.6
HCM Lane LOS	F	B	B	B
HCM 95th-tile Q	16	3.5	0.2	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	5	376	40	10	30	177	725	15	15	1240	137
Future Volume (veh/h)	198	5	376	40	10	30	177	725	15	15	1240	137
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	208	5	396	42	11	32	186	763	16	16	1305	144
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	4	297	177	53	114	216	2006	42	19	1463	161
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.12	0.56	0.56	0.01	0.45	0.45
Sat Flow, veh/h	519	12	989	453	175	379	1781	3559	75	1781	3228	355
Grp Volume(v), veh/h	609	0	0	85	0	0	186	381	398	16	716	733
Grp Sat Flow(s),veh/h/ln	1520	0	0	1007	0	0	1781	1777	1857	1781	1777	1806
Q Serve(g_s), s	32.9	0.0	0.0	0.0	0.0	0.0	13.6	15.8	15.8	1.2	49.0	49.7
Cycle Q Clear(g_c), s	40.0	0.0	0.0	7.1	0.0	0.0	13.6	15.8	15.8	1.2	49.0	49.7
Prop In Lane	0.34		0.65	0.49		0.38	1.00		0.04	1.00		0.20
Lane Grp Cap(c), veh/h	494	0	0	343	0	0	216	1001	1046	19	805	819
V/C Ratio(X)	1.23	0.00	0.00	0.25	0.00	0.00	0.86	0.38	0.38	0.83	0.89	0.90
Avail Cap(c_a), veh/h	494	0	0	343	0	0	603	1001	1046	335	922	937
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.8	0.0	0.0	34.6	0.0	0.0	57.3	16.1	16.1	65.6	33.3	33.5
Incr Delay (d2), s/veh	121.7	0.0	0.0	0.4	0.0	0.0	9.8	0.2	0.2	57.7	9.7	10.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	33.0	0.0	0.0	2.1	0.0	0.0	6.5	6.0	6.3	0.8	21.8	22.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	169.5	0.0	0.0	35.0	0.0	0.0	67.1	16.4	16.3	123.4	43.0	43.7
LnGrp LOS	F	A	A	D	A	A	E	B	B	F	D	D
Approach Vol, veh/h		609			85			965			1465	
Approach Delay, s/veh		169.5			35.0			26.1			44.2	
Approach LOS		F			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	81.1		45.7	20.8	66.5		45.7
Change Period (Y+Rc), s	* 4.7	* 6.2		* 5.7	* 4.7	* 6.2		* 5.7
Max Green Setting (Gmax), s	* 25	* 69		* 40	* 45	* 69		* 40
Max Q Clear Time (g_c+I1), s	3.2	17.8		42.0	15.6	51.7		9.1
Green Ext Time (p_c), s	0.0	4.7		0.0	0.5	8.6		0.5

Intersection Summary	
HCM 6th Ctrl Delay	62.8
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	195	1410	2155	268	140	126
Future Volume (veh/h)	195	1410	2155	268	140	126
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	199	1439	2199	273	143	129
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	230	2895	2044	248	179	159
Arrive On Green	0.13	0.81	0.64	0.64	0.10	0.10
Sat Flow, veh/h	1781	3647	3283	388	1781	1585
Grp Volume(v), veh/h	199	1439	1204	1268	143	129
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1801	1781	1585
Q Serve(g_s), s	11.1	12.8	64.9	64.9	8.0	8.1
Cycle Q Clear(g_c), s	11.1	12.8	64.9	64.9	8.0	8.1
Prop In Lane	1.00			0.22	1.00	1.00
Lane Grp Cap(c), veh/h	230	2895	1139	1154	179	159
V/C Ratio(X)	0.86	0.50	1.06	1.10	0.80	0.81
Avail Cap(c_a), veh/h	361	2895	1139	1154	642	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	2.9	18.2	18.2	44.5	44.6
Incr Delay (d2), s/veh	7.8	0.2	43.3	57.7	3.1	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	2.1	34.5	39.6	3.6	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	51.0	3.1	61.5	75.9	47.6	48.3
LnGrp LOS	D	A	F	F	D	D
Approach Vol, veh/h		1638	2472		272	
Approach Delay, s/veh		8.9	68.9		47.9	
Approach LOS		A	E		D	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	17.6	70.0	87.6	13.7
Change Period (Y+Rc), s	4.5	5.1	* 5.1	3.5
Max Green Setting (Gmax), s	20.5	64.9	* 65	36.5
Max Q Clear Time (g_c+I1), s	13.1	66.9	14.8	10.1
Green Ext Time (p_c), s	0.0	0.0	18.8	0.1

Intersection Summary	
HCM 6th Ctrl Delay	45.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	16
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	373	10	30	511	10	20
Future Vol, veh/h	373	10	30	511	10	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	405	11	33	555	11	22
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.8	18.7	9.1
HCM LOS	B	C	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	33%	0%	6%
Vol Thru, %	0%	97%	94%
Vol Right, %	67%	3%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	30	383	541
LT Vol	10	0	30
Through Vol	0	373	511
RT Vol	20	10	0
Lane Flow Rate	33	416	588
Geometry Grp	1	1	1
Degree of Util (X)	0.052	0.533	0.731
Departure Headway (Hd)	5.724	4.612	4.474
Convergence, Y/N	Yes	Yes	Yes
Cap	622	783	806
Service Time	3.797	2.646	2.503
HCM Lane V/C Ratio	0.053	0.531	0.73
HCM Control Delay	9.1	12.8	18.7
HCM Lane LOS	A	B	C
HCM 95th-tile Q	0.2	3.2	6.6

Intersection	
Intersection Delay, s/veh	21.1
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	75	318	426	85	130	115
Future Vol, veh/h	75	318	426	85	130	115
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	346	463	92	141	125
Number of Lanes	0	1	1	1	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	23.1	23.7	12.4
HCM LOS	C	C	B

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	19%	0%	0%	100%	0%
Vol Thru, %	81%	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	393	426	85	130	115
LT Vol	75	0	0	130	0
Through Vol	318	426	0	0	0
RT Vol	0	0	85	0	115
Lane Flow Rate	427	463	92	141	125
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.718	0.776	0.137	0.299	0.222
Departure Headway (Hd)	6.051	6.032	5.321	7.609	6.383
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	598	597	672	472	560
Service Time	4.103	3.782	3.071	5.373	4.146
HCM Lane V/C Ratio	0.714	0.776	0.137	0.299	0.223
HCM Control Delay	23.1	26.7	8.9	13.6	11
HCM Lane LOS	C	D	A	B	B
HCM 95th-tile Q	5.9	7.2	0.5	1.2	0.8

Intersection	
Intersection Delay, s/veh	38.7
Intersection LOS	E

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	427	718	15	20	50
Future Vol, veh/h	40	427	718	15	20	50
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	445	748	16	21	52
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	18.2	54.5	10.3
HCM LOS	C	F	B

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	9%	0%	100%	0%
Vol Thru, %	91%	98%	0%	0%
Vol Right, %	0%	2%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	467	733	20	50
LT Vol	40	0	20	0
Through Vol	427	718	0	0
RT Vol	0	15	0	50
Lane Flow Rate	486	764	21	52
Geometry Grp	2	2	7	7
Degree of Util (X)	0.678	1.001	0.045	0.094
Departure Headway (Hd)	5.02	4.718	7.879	6.647
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	710	764	457	542
Service Time	3.109	2.79	5.579	4.347
HCM Lane V/C Ratio	0.685	1	0.046	0.096
HCM Control Delay	18.2	54.5	10.9	10
HCM Lane LOS	C	F	B	A
HCM 95th-tile Q	5.3	16.8	0.1	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	5	273	30	10	15	464	1340	25	25	950	234
Future Volume (veh/h)	149	5	273	30	10	15	464	1340	25	25	950	234
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	159	5	290	32	11	16	494	1426	27	27	1011	249
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	4	236	151	54	64	484	2280	43	35	1094	269
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.27	0.64	0.64	0.02	0.39	0.39
Sat Flow, veh/h	536	17	978	488	223	264	1781	3568	67	1781	2827	694
Grp Volume(v), veh/h	454	0	0	59	0	0	494	710	743	27	634	626
Grp Sat Flow(s),veh/h/ln	1531	0	0	975	0	0	1781	1777	1858	1781	1777	1744
Q Serve(g_s), s	33.2	0.0	0.0	0.0	0.0	0.0	45.0	39.8	39.9	2.5	56.4	56.9
Cycle Q Clear(g_c), s	40.0	0.0	0.0	6.8	0.0	0.0	45.0	39.8	39.9	2.5	56.4	56.9
Prop In Lane	0.35		0.64	0.54		0.27	1.00		0.04	1.00		0.40
Lane Grp Cap(c), veh/h	399	0	0	269	0	0	484	1136	1188	35	688	675
V/C Ratio(X)	1.14	0.00	0.00	0.22	0.00	0.00	1.02	0.62	0.63	0.78	0.92	0.93
Avail Cap(c_a), veh/h	399	0	0	269	0	0	484	1136	1188	269	740	726
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	0.0	0.0	49.9	0.0	0.0	60.4	18.0	18.0	80.9	48.4	48.6
Incr Delay (d2), s/veh	88.6	0.0	0.0	0.4	0.0	0.0	46.5	1.1	1.0	30.3	16.3	17.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.7	0.0	0.0	2.0	0.0	0.0	26.0	15.5	16.2	1.4	27.2	27.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	152.7	0.0	0.0	50.3	0.0	0.0	106.9	19.1	19.0	111.2	64.8	66.0
LnGrp LOS	F	A	A	D	A	A	F	B	B	F	E	E
Approach Vol, veh/h		454			59			1947			1287	
Approach Delay, s/veh		152.7			50.3			41.3			66.3	
Approach LOS		F			D			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	112.1		45.7	49.7	70.4		45.7				
Change Period (Y+Rc), s	* 4.7	* 6.2		* 5.7	* 4.7	* 6.2		* 5.7				
Max Green Setting (Gmax), s	* 25	* 69		* 40	* 45	* 69		* 40				
Max Q Clear Time (g_c+I1), s	4.5	41.9		42.0	47.0	58.9		8.8				
Green Ext Time (p_c), s	0.0	10.6		0.0	0.0	5.3		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			63.5									
HCM 6th LOS			E									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix I

Mitigation Monitoring and Reporting Program

MITIGATION MONITORING AND REPORTING PROGRAM
CANYON TERRACE APARTMENTS

Purpose of Mitigation Monitoring and Reporting Program: The California Environmental Quality Act (CEQA), Public Resources Code Section 21081.6, requires that a Mitigation Monitoring and Reporting Program (MMRP) be established upon completing findings. CEQA stipulates that "the public agency shall adopt a reporting or monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation."

This MMRP has been prepared in compliance with Section 21081.6 of CEQA to ensure that all required mitigation measures are implemented and completed according to schedule and maintained in a satisfactory manner during the construction and operation of the project, as required. A table (attached) has been prepared to assist the responsible parties in implementing the MMRP. The table identifies individual mitigation measures, monitoring/mitigation timing, the responsible person/agency for implementing the measure, and space to confirm implementation of the mitigation measures. The numbering of mitigation measures follows the numbering sequence found in the Initial Study and Mitigated Negative Declaration.

The City of Folsom is the lead agency for the project under CEQA and shall administer and implement the MMRP. The City is responsible for review of all monitoring reports, enforcement actions, and document disposition. The City shall rely on information provided by the project site observers/monitors (e.g., construction manager, project manager, biologist, archaeologist, etc.) as accurate and up-to-date and shall provide personnel to field check mitigation measure status, as required.

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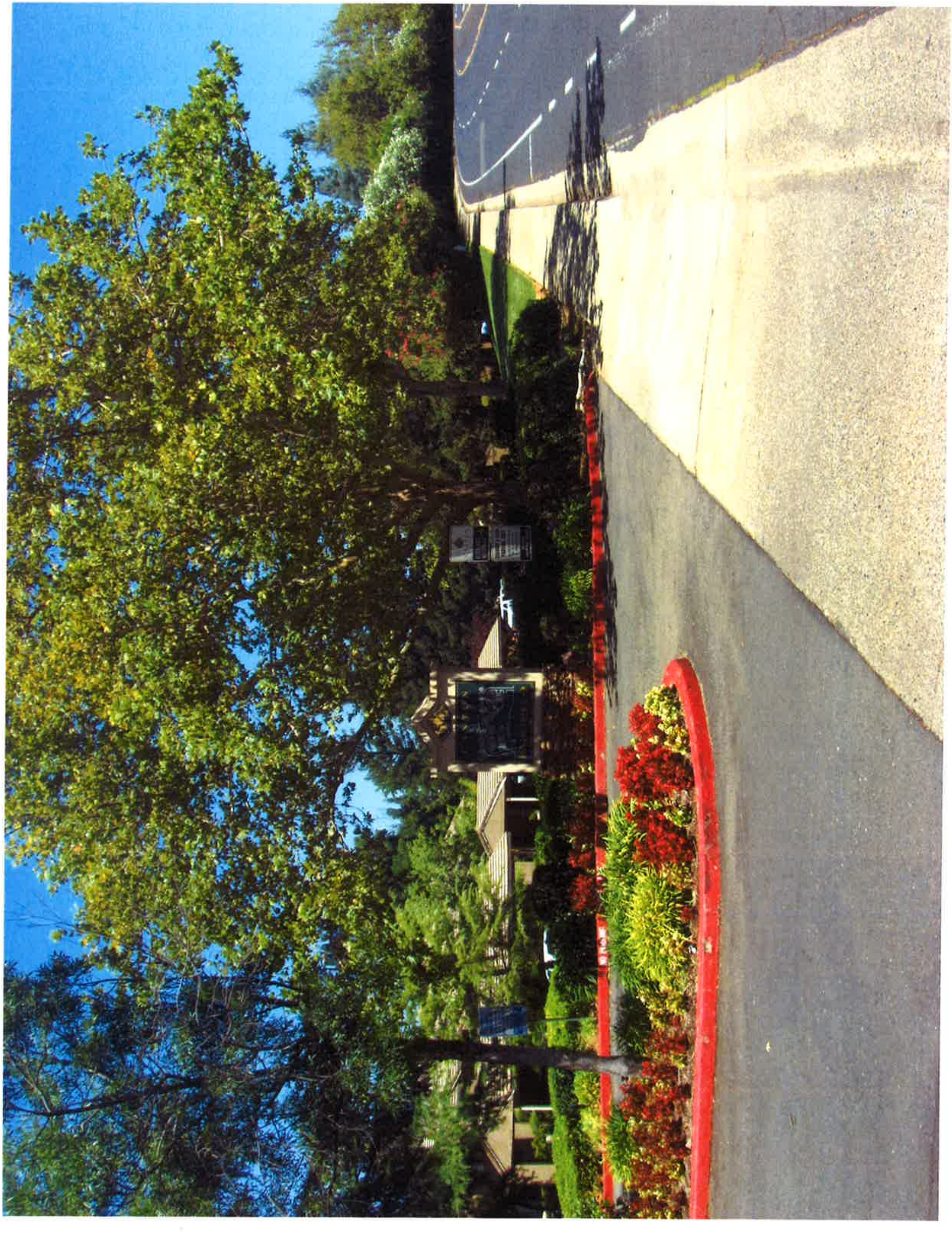
MITIGATION MONITORING AND REPORTING PROGRAM CHECKLIST FOR THE CANYON TERRACE APARTMENTS

Mitigation Measure	Monitoring / Mitigation Timing	Reporting / Responsible Party	Verification of Compliance	
			Initials	Date
BIOLOGICAL RESOURCES				
Mitigation Measure BIO-01: Avoid and minimize impacts to nesting birds. • If demolition activities occur during the typical bird nesting season (February 15 through August 31), pre-construction nesting bird surveys shall be conducted by a qualified biologist on the project site and within a 500-foot radius of proposed demolition or construction areas, where access is available, no more than 14 days prior to the initiation of demolition or construction. If no nests are found, no further mitigation is required. • If active nests are identified in these areas, the City shall coordinate with CDFW to develop measures to avoid disturbance of active nests prior to the initiation of any demolition or construction activities, or demolition or construction could be delayed until the young have fledged. Avoidance measures may include establishment of a buffer zone and monitoring of the nest by a qualified biologist until the young have fledged the nest and are independent of the site. If a buffer zone is implemented, the size of the buffer zone shall be determined by a qualified biologist in coordination with CDFW and shall be appropriate for the species of bird and nest location.	Prior to demolition or construction if project activities are initiated between February 15 through August 31; this measure shall be included in all project conditions of approval and implemented 14 days prior to the start of demolition or construction activities.	City of Folsom; Construction Contractor		
CULTURAL RESOURCES				
Mitigation Measure CUL-01: Avoid and minimize impacts to previously unknown archaeological resources. In accordance with Section 15064.5 of the State CEQA Guidelines, if buried archaeological resources are discovered during demolition or construction, operations shall stop within 50 feet of the find, and a qualified archaeologist shall be consulted to determine whether the resource is significant and requires further study. The archaeologist shall make recommendations to the Lead Agency concerning appropriate measures that will be implemented to protect the resource(s), including but not limited to excavation and evaluation of the finds, consistent with Section 15064.5 of the CEQA Guidelines and 36 CFR 800. Cultural resources could consist of but are not limited to stone, bone, wood, or shell artifacts, or features including hearths, structural	Prior to and during demolition and construction – this mitigation measure shall be included in all construction documents for implementation during demolition or construction.	City of Folsom; Archaeologist or Qualified Cultural Resource Monitor; and Construction Contractor		

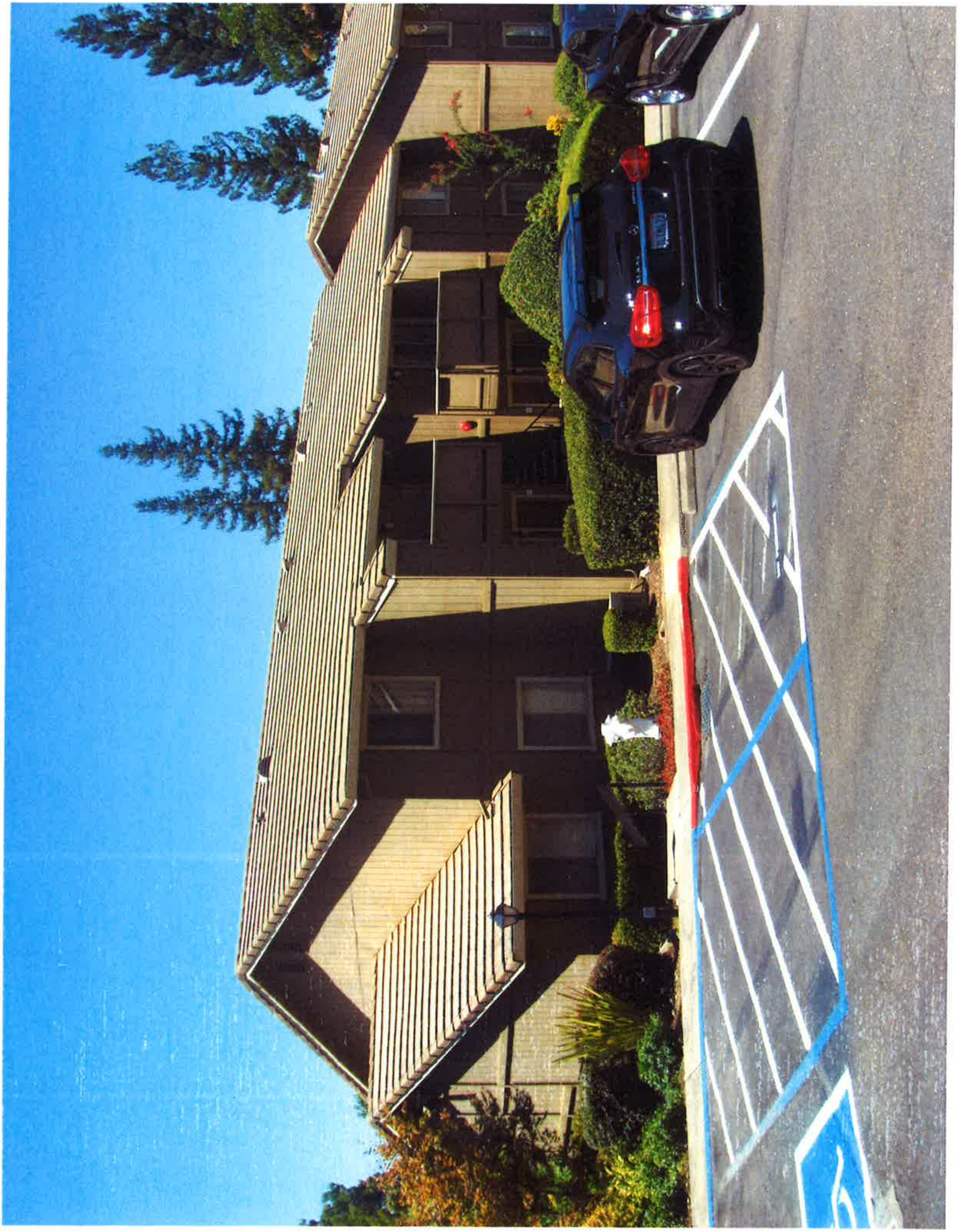
remains, or historic dumpsites. Any previously undiscovered resources found during demolition or construction within the project area should be recorded on appropriate Department of Parks and Recreation (DPR) 523 forms and evaluated for significance in terms of CEQA criteria.				
Mitigation Measure CUL-02: Avoid and minimize impacts related to accidental discovery of human remains. If human remains are encountered during excavations associated with this project, all work will halt within 50 feet of the find, and the County Coroner will be notified (per Section 7050.5 of the California Health and Safety Code and Section 15064.5 of the State CEQA Guidelines). If the coroner determines that the remains are of Native American origin, he/she will contact the NAHC. The NAHC will be responsible for designating the most likely descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Public Resources Code Section 5097.98. The MLD will make his/her recommendations within 48 hours of their notification by the NAHC.	Prior to and during demolition and construction – this mitigation measure shall be included in all construction documents for implementation during demolition or construction.	City of Folsom; Archaeologist or Qualified Cultural Resource Monitor; and Construction Contractor		
HAZARDS AND HAZARDOUS MATERIALS				
Mitigation Measure HAZ-01: Conduct Asbestos and Lead-Based Paint Surveys and Testing Prior to initiating demolition activities, the project applicant shall retain a qualified inspector to survey the buildings and structures to be demolished for hazardous materials. If hazardous materials are found to be present, the project applicant shall have a licensed contractor properly remove and dispose of these hazardous materials in accordance with federal, state, and local laws.	Prior to demolition – this mitigation measure shall be included in all construction documents for implementation prior to demolition.	City of Folsom; Qualified Inspector; and Construction Contractor		
TRIBAL CULTURAL RESOURCES				
Mitigation Measure TCR-01: Avoid and minimize impacts to previously unknown Tribal Cultural Resources. If potential tribal cultural resources or human remains are discovered by Native American Representatives or Monitors from interested Native American Tribes, qualified cultural resources specialists or other Project personnel during construction activities, work will cease in the immediate vicinity of the find (based on the apparent distribution of cultural resources), whether or not a Native American Monitor from an interested Native American Tribe is present. The City shall immediately notify a qualified archaeologist and interested Native American Tribes to consult on the significance of the find and make recommendations for further evaluation and	Prior to and during demolition and construction – this mitigation measure shall be included in all construction documents for implementation during demolition or construction.	City of Folsom; Native American Representative/ Monitor or Qualified Cultural Resource Monitor; and Construction Contractor		

treatment as necessary. These recommendations and actions taken (or not taken) based on consultation will be documented in the project record. If the discovery includes human remains, the procedures in Mitigation Measure CUL-02 shall be implemented.				
Mitigation Measure TCR-02: Accommodate a post-ground disturbance field visit for interested tribes. A minimum of seven days prior to beginning earthwork or other soil disturbance activities, the applicant shall notify the City of the proposed earthwork start-date, in order to provide the City representative sufficient time to contact the United Auburn Indian Community (UAIC). A UAIC tribal representative shall be invited to inspect the project location, including any soil piles, trenches, or other disturbed areas, within the first five days of ground-breaking activity. Construction activity may be ongoing during this time. Should the tribe choose not to perform a field visit within the first five days, construction activities may continue as scheduled, as long as the notification was made.	Prior to and during demolition and construction – this mitigation measure shall be included in all construction documents for implementation during demolition or construction.	City of Folsom; Native American Representative/ Monitor or Qualified Cultural Resource Monitor; and Construction Contractor		
Mitigation Measure TCR-03: Provide construction personnel with procedures for unanticipated discoveries during ground-disturbing activities. A construction worker tribal cultural resources awareness brochure and training program for personnel involved in project implementation will be developed by a qualified professional prior to the initiation of construction activities on the project. The brochure will be distributed during a training session that will be conducted by a qualified professional. Native American representatives and monitors from culturally affiliated and interested Native American tribes will be given the opportunity to contribute information to include in the program, if they so desire. The program will include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The construction worker tribal cultural resources awareness program will also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project property and will outline what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program will also underscore the requirement for confidentiality and culturally-appropriate treatment of any discovery that is determined by the City, in consultation with tribes, to be of significance to Native American tribal values.	Prior to and during demolition and construction – this mitigation measure shall be included in all construction documents for implementation during demolition or construction.	City of Folsom; Native American Representative/ Monitor or Qualified Cultural Resource Monitor; and Construction Contractor		

Attachment 25
Site Photographs




RENTAL OFFICE



Attachment 26
Public Comment Letters

Steven Banks

From: Greg Ozdinski <gregoz@comcast.net>
Sent: Tuesday, May 7, 2019 2:15 PM
To: Steven Banks
Cc: service@arcma.info; Charlotte Bracht; Manuel Zamorano; Patrick & Lorie Jo O'Donnell; Cris Gerard; Lorrie Vaccari; Cindy & Dave Dunnette; Frank Watson; Jeff & Crystal Anderson; Jill and Al Crichton; Sharon Kindel
Subject: City Plan PN-17-270

Regarding: Canyon Terrace Folsom LLC
Apartment Expansion and Remodeling at Canyon Terrace, Folsom

Steve Banks,

Per our telephone conversation this morning we are 29 year residents of American River Canyon south, Folsom. We noticed, the "Request for Entitlements Sign for a General Plan Amendment" yesterday, May 6th, 2019. We have talked to neighbors and not one has seen any written notice to neighbors from the City of Folsom in writing about this project. That being said, there has not been adequate time for notice to gather proper written community response. We urge you to postpone your Planning Commission meeting on May 15, 2019 in order for the city to send out a written notice to all owners along the American River Canyon Drive that live between Greenback and Oak Avenue. We have 5 units totaling 672 homes in American River Canyon south that should be notified.

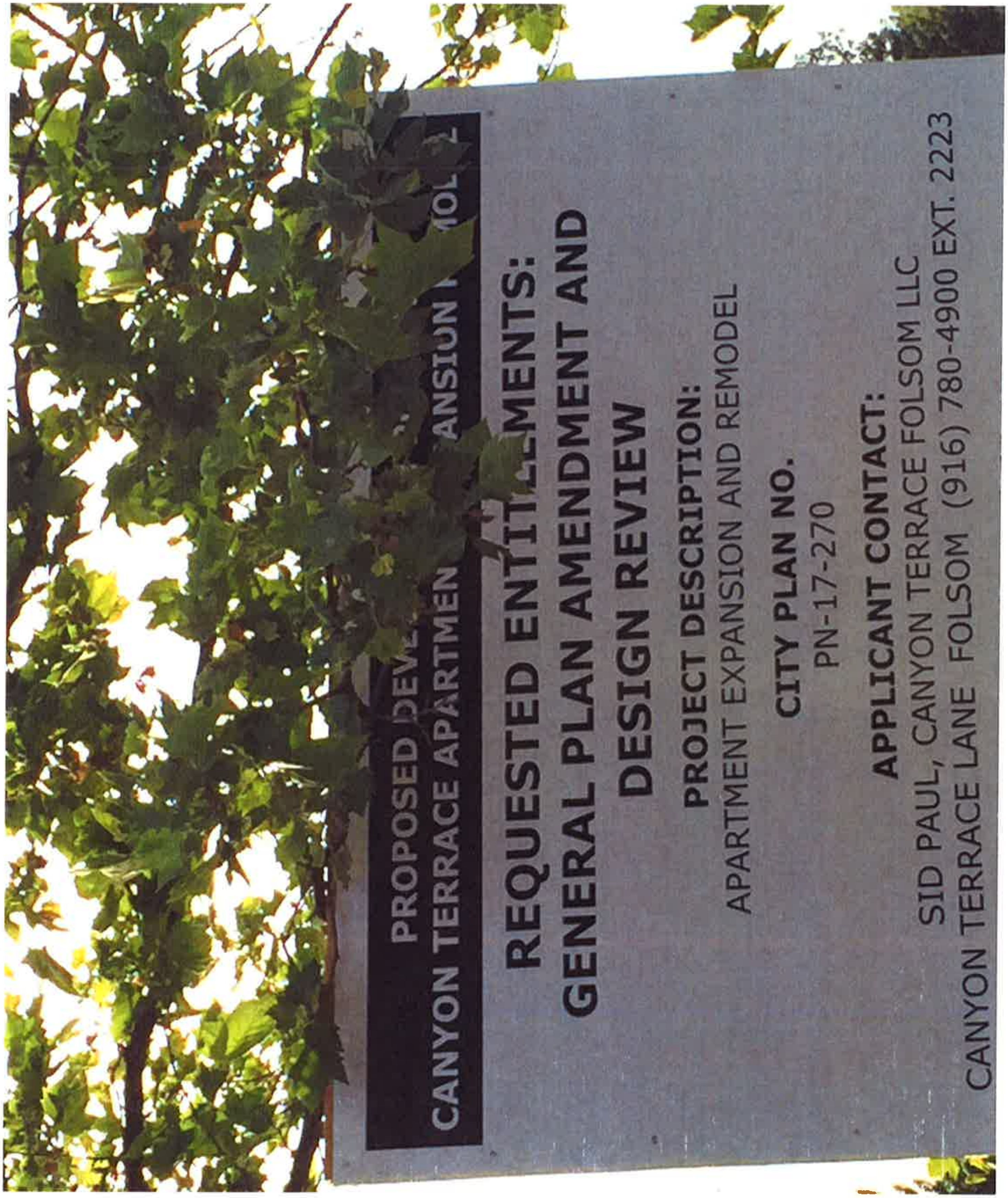
The impact of added traffic, concern for our safety in the community is an issue the City of Folsom has overlooked by not reaching out to homeowners more than 300 feet from the proposed project. We suspect a project expansion such as this will cause road damage, more traffic, added safety issues to our community. Who will pay for the road repairs? We still need individual streets repaved and that has yet to be done in our community of American River Canyon South.

We already have safety issues at two intersections Crow Canyon and Water View Way and different city departments are aware. The Parkway along American River Canyon is maintained by owners, ARCMA. Adding new units, the LLC wanting to expand should have to take on added costs and fees to help maintain the ARCMA Parkway as a "Condition". The City provides no help to maintain a very long area of established trees and greenbelt. If the City is to collect impact fees, then a portion of those fees should be contributed to help maintain our Parkway, "LLC yearly Parkway Maintenance fees".

Please, we request a written notice expanded to all of the 672 owners of American River Canyon south. We request this project not be approved for expansion until the City of Folsom has completed the due diligence to inform the community as a whole. The project for remodel is one topic, but to try and run an Expansion Project with 96 units to an already congested area with safety concerns, intersections concerns is not in the best interest of our residential community. The proposed 96, 1 to 3 bedroom apartments will add at least 200 additional people driving in our community which already has safety concerns.

This is an absolute NO for the Canyon Terrance Expansion from Deb and Greg Ozdinski American River Canyon south.

Sincerely,


GENERAL PLAN AMENDMENT AND
DESIGN REVIEW
PROJECT DESCRIPTION:
APARTMENT EXPANSION AND REMODEL
CITY PLAN NO.
PN-17-270
APPLICANT CONTACT:
SID PAUL, CANYON TERRACE FOLSOM LLC
CANYON TERRACE LANE FOLSOM (916) 780-4900 EXT. 2223

Steven Banks

From: Fred Kindel <f.kindel@att.net>
Sent: Tuesday, May 7, 2019 6:08 PM
To: Steven Banks
Cc: Sharon Kindel; gregoz@comcast.net; Charlotte@brachtusa.com
Subject: RE: City Plan PN-17-270 & Canyon Terrace Apts Expansion

Hi, Steve Banks, City of Folsom

I forward here a message copied to us from Greg Ozdinski to you on this subject.

Please add us to the list of persons interested in this proposal to receive all pertinent information about it.

One item that occurs to us now is that we homeowners are tasked to provide annual funds for upkeep of the wonderful American River Canyon Parkway. Will the new residents of the apartments expansion be required to help in this annual expense to maintain the Parkway's beauty?

Fred & Sharon Kindel

118 Canyon Rim Dr, Folsom CA 95630 emails: f.kindel@att.net & s.kindel@att.net
Begin forwarded message:

> **From:** Greg Ozdinski <gregoz@comcast.net>
> **Date:** May 7, 2019 at 2:15:04 PM PDT
> **To:** sbanks@folsom.ca.us
> **Cc:** service@arcma.info, Charlotte Bracht <charlotte@brachtusa.com>, Manuel Zamorano <manuel_zamorano48@yahoo.com>, "Patrick & Lorie Jo O'Donnell" <odonnell@jps.net>, Cris Gerard <cristiegerard@gmail.com>, Lorrie Vaccari <lorrievaccari@comcast.net>, Cindy & Dave Dunnette <cdunnett@golyon.com>, Frank Watson <frank@ftw-law.com>, Jeff & Crystal Anderson <folsomlakeortho@sbcglobal.net>, Jill and Al Crichton <jillcrichton10@yahoo.com>, Sharon Kindel <s.kindel@att.net>
> **Subject: City Plan PN-17-270**
>
> Regarding: Canyon Terrace Folsom LLC
> Apartment Expansion and Remodeling at Canyon Terrace, Folsom
>
> Steve Banks,
>
> Per our telephone conversation this morning we are 29 year residents of American River Canyon south, Folsom. We noticed, the "Request for Entitlements Sign for a General Plan Amendment" yesterday, May 6th, 2019. We have talked to neighbors and not one has seen any written notice to neighbors from the City of Folsom in writing about this project. That being said, there has not been adequate time for notice to gather proper written community response. We urge you to postpone your Planning Commission meeting on May 15, 2019 in order for the city to send out a written notice to all owners along the American River Canyon Drive that live between Greenback and Oak Avenue. We have 5 units totaling 672 homes in American River Canyon south that should be notified.

Steven Banks

From: Cris Gerard <cristiegerard@gmail.com>
Sent: Tuesday, May 7, 2019 2:24 PM
To: Steven Banks
Subject: Apartment project on American River Canyon Drive

Hello Steve,
I am a resident in American River Canyon and walk American River Canyon Drive, "our parkway" every day. I am also the past president of the American River Canyon Maintenance Association.

I have a conflicting board meeting the night of the meeting on this, so I am sharing my thoughts via this email.

I have concerns with the proposed new development.

First and foremost what kind of fees will the developer pay to ensure the added traffic from construction forward on American River Canyon Drive (the parkway) is maintained in its current condition in the years forward?

What kind of fees will the developer pay or plans does he have to maintain the frontage of the property along the sidewalk to blend in to the existing beautiful parkway. I don't think more Oleanders will cut it. The existing Oleanders are constantly overgrown and currently maintained by the city. Not good and definitely not the "look" of the rest of the parkway. Will he work with the ARCMA board on solutions for the entire frontage?

The number, 96 units will add approx 150 vehicles. There is already too much cut through traffic using the parkway and that has significantly increased over the last several years. Speeding is already an issue with police enforcement lacking.

The three stop signs along the parkway are barely enough to slow the traffic and almost daily there is at least one vehicle that speeds through or jams on the brakes for one of the Stop signs. This does not mix well with the school bus stop at/near one of those Stop corners and all the walkers on the parkway We constantly hear this issue from residents.

More specifically the stop sign at River Ridge, across from the proposed development has only a one way stop, traffic from Oak Ave does not stop and the left hand turn there is already an issue with oncoming traffic from Greenback running the Stop sign.

With adding approximately 300 people to the area, what about outdoor space for the residents. Any place for kids to play? Any plans to add crosswalks? The kids will need to get safely to a bus stop.

And another very important consideration. Jamming in this many units in this now open space-and all that comes after-will likely impact home values in areas close to the parkway and that's an issue for me and well as many others.

And lastly, this development would turn this neighborhood and parkway into a busy city street that will require signals to regulate all the new traffic. That's not the look I want, nor what I bought into.

Please share these concerns at the meeting on the 15th.
Say no to the developer or let him try this in American River Canyon North.

Cris Gerard
Resident.
American River Canyon

Steven Banks

From:	Frank Watson <frank@ftw-law.com>
Sent:	Tuesday, May 7, 2019 2:21 PM
To:	Greg Ozdinski; Steven Banks
Cc:	service@arcma.info; Charlotte Bracht; Manuel Zamorano; Patrick & Lorie Jo O'Donnell; Cris Gerard; Lorrie Vaccari; Cindy & Dave Dunnette; Jeff & Crystal Anderson; Jill and Al Crichton; Sharon Kindel
Subject:	RE: City Plan PN-17-270

An ABSOLUTE NO from me and my family, too.

Do we need to engage legal counsel specializing in this area to ensure full compliance?

Franklin T. Watson
Attorney at Law

WATSON LAW FIRM
1849 Iron Point Road, Suite 140
Folsom, California 95630

Tel: (916) 986-9696
Fax: (916) 986-9797
Cell: (916) 761-9825
frank@ftw-law.com
www.ftw-law.com

From: Greg Ozdinski <gregoz@comcast.net>
Sent: Tuesday, May 7, 2019 2:15 PM
To: sbanks@folsom.ca.us
Cc: service@arcma.info; Charlotte Bracht <charlotte@brachtusa.com>; Manuel Zamorano <manuel_zamorano48@yahoo.com>; Patrick & Lorie Jo O'Donnell <odonnell@jps.net>; Cris Gerard <cristiegerard@gmail.com>; Lorrie Vaccari <lorrievaccari@comcast.net>; Cindy & Dave Dunnette <cdunnett@golyon.com>; Frank Watson <frank@ftw-law.com>; Jeff & Crystal Anderson <folsomlakeortho@sbcglobal.net>; Jill and Al Crichton <jillcrichton10@yahoo.com>; Sharon Kindel <s.kindel@att.net>
Subject: City Plan PN-17-270

Regarding: Canyon Terrace Folsom LLC
Apartment Expansion and Remodeling at Canyon Terrace, Folsom

Steve Banks,

Steven Banks

From: Patrick & Lorie Jo O'Donnell <odonnell@jps.net>
Sent: Tuesday, May 7, 2019 3:17 PM
To: 'Greg Ozdinski'; Steven Banks
Cc: service@arcma.info; 'Charlotte Bracht'; 'Manuel Zamorano'; 'Cris Gerard'; 'Lorrie Vaccari'; 'Cindy & Dave Dunnette'; 'Frank Watson'; 'Jeff & Crystal Anderson'; 'Jill and Al Crichton'; 'Sharon Kindel'
Subject: RE: City Plan PN-17-270

Deb and Greg,
Thank you for sending this letter to Steve and disseminating to all of us. Manuel Zamorano initially notified us as he lives within the 300' limit. We plan on attending the May 15 meeting. But agree that this date for the planning commission meeting should be postponed pending adequate notification of the entire American River Canyon South community. Is ARC North aware of this development proposal?

Patrick and I are in complete agreement with all of the points of concern which were raised in your letter, traffic, safety and parkway maintenance. Additionally there should be noise abatement noted on any EIR, as 200+ vehicles on the canyon increase the noise level to existing residents. Which says nothing about increasing the canyon's carbon footprint. In light of possibly irreversible climate change, shouldn't we all be mindful about decreasing our carbon footprint on this planet? With the high density apartment village across from the middle school on Riley Street and East Bidwell does Folsom really need another high density living environment?

We await our letter of notification with the postponed planning commission date.
Lorie Jo and Patrick O'Donnell

From: Greg Ozdinski [mailto:gregoz@comcast.net]
Sent: Tuesday, May 07, 2019 2:15 PM
To: sbanks@folsom.ca.us
Cc: service@arcma.info; Charlotte Bracht; Manuel Zamorano; Patrick & Lorie Jo O'Donnell; Cris Gerard; Lorrie Vaccari; Cindy & Dave Dunnette; Frank Watson; Jeff & Crystal Anderson; Jill and Al Crichton; Sharon Kindel
Subject: City Plan PN-17-270

Regarding: Canyon Terrace Folsom LLC
Apartment Expansion and Remodeling at Canyon Terrace, Folsom

Steve Banks,

Per our telephone conversation this morning we are 29 year residents of American River Canyon south, Folsom. We noticed, the "Request for Entitlements Sign for a General Plan Amendment" yesterday, May 6th, 2019. We have talked to neighbors and not one has seen any written notice to neighbors from the City of Folsom in writing about this project. That being said, there has not been adequate time for notice to gather proper written community response. We urge you to postpone your Planning Commission meeting on May 15, 2019 in order for the city to send out a written notice to all owners along the American River Canyon Drive that

Steven Banks

From: dbabij@gmail.com
Sent: Tuesday, May 7, 2019 8:09 PM
To: Steven Banks
Subject: Proposed apartments

Please know how much we are opposed
To the encroaching,
Imposing, mistaken idea of building apartments in Canyon Terrace .... above vacant space in a shopping center ....
The congestion alone
To the immediate area
Will add to an already busy Oak Ave. Parkway....
That is one of the many obvious reasons That we oppose the building of the apartments.
Mr. & Mrs. Barry Babij
Carmody Circle
Folsom

Steven Banks

From: Anita Falk <afalk95829@yahoo.com>
Sent: Tuesday, May 7, 2019 8:17 PM
To: Steven Banks
Subject: Canyon Terrace addition

Dear Mr. Banks,

I am writing to express my opposition to the proposed 96 unit addition to the Canyon Terrace apartment complex, which is located on American River Canyon Drive in American River Canyon South.

The proposed addition would adversely impact the quality of the neighborhood, and I expect it would decrease the value of my home. My husband and I have owned our home in American River Canyon North for over 14 years. We enjoy the tranquility and quality of life and have found it to be a wonderful place to raise our children.

Please stop the development project.

Sincerely,
Anita Falk

Sent from my iPhone

Steven Banks

From: amdbfd@gmail.com
Sent: Tuesday, May 7, 2019 8:20 PM
To: Steven Banks
Subject: Concerned about proposed ARC apartments

Dear Steve,

We heard about the proposed plans for apartments in American River Canyon. We are very concerned that the infrastructure in the area can not handle the increase of traffic that this proposal would present.

I hope you allow this residence in the area ample time to review the proposal and provide feedback before anything is approved.

Thank you very much for your time and consideration.

Sincerely,

Bill Driscoll
Crater Peak Pl

Sent from Bill's iPhone

Steven Banks

From: Becky Williams <robinwilliams01@comcast.net>
Sent: Tuesday, May 7, 2019 8:21 PM
To: Steven Banks
Subject: Additional Apartments in ARCS

Mr. Banks,
I am writing to express my opposition to adding 90+ apartment units in ARCS along ARC Drive. It will add more traffic congestion to an already well traveled vicinity by existing Folsom, Orangevale and Granite Bay residents. It will also take away from the aesthetic quality of the existing apartment complex property. I'm especially disappointed that this was approved without community input.
Please add my comments to the record if allowed. Thank you.
Rebecca Williams
ARCN resident
Sent from my iPhone

Steven Banks

From:	Stephen Landau <salandau@comcast.net>
Sent:	Tuesday, May 7, 2019 8:37 PM
To:	Steven Banks; Charlotte
Subject:	96 Additional Apartments in the ARC community

Mr. Bank,

It is our understanding that during the 08 financial crisis, the owners of the Canyon Terrace wanted to convert the apartments into owner occupied condominiums and the City of Folsom would not approve the upgrade. Consequently, the community of the North and South ARC has had to deal with the traffic, tenant turnover and lack of responsibility for the upkeep of the area ARC parkway. As a owner with a significant financial investment in this community, I do not want an outsider profiting off the time, monetary and emotional commitment of the owners in ARC community. It is also incredibly disturbing to receive this information at this later date when it could have been shared at the ARC meeting on April 23rd and there was no mention of this proposal in the latest Folsom City newsletter.We fought hard to stop the last apartment proposal at Oak Ave Parkway and we will rally hard to stop this one. The ARC is a beautiful high end community that has participated enough with one apartment complex that impacts the beauty and image of ARC community. We resoundingly vote: NO MORE APARTMENTS !!!!

Steve and Donna Landau 107 Grey Canyon Drive

Steven Banks

From: Susie <rschult8@comcast.net>
Sent: Tuesday, May 7, 2019 8:40 PM
To: Steven Banks
Subject: Proposed 96 Apartments in American River Canyon South

We are extremely concerned about the possibility of 96 additional apartments being added to the existing apartment complex at Canyon Terrace. We have lived in Folsom since 1978 and have seen our community balloon. This area is not prepared, nor do we want it to be prepared, to add additional congestion. We do not want Oak Avenue to become a four lane road. This is a somewhat rural area and we would like to keep it that way. It is faster for me to go to Roseville/Granite Bay than it is to go into Folsom because of the traffic congestion. We opted to build our home in American River Canyon North rather than Hillcrest because we liked the rural environment. Let's keep it that way!

The City is interested in revenue only and not how it may affect the people who live here. Listen to your constituents. We don't want additional apartments and we don't want a four lane Oak Avenue!

Bob & Susie Schultz

Sent from my iPad

Steven Banks

From: SANDRA QUIROGA <richsanq@comcast.net>
Sent: Tuesday, May 7, 2019 8:44 PM
To: Steven Banks

Subject: OBJECTION to apartment units on American River Canyon

We have lived in our ARC home since 1984. In that time, more construction and more traffic has occurred. ARC is already a race track for many vehicles. There is no advantage for the current home owners within lower American River Canyon to add additional families. There are definite detriments in addition to added vehicle traffic.

Folsom has other 'vacant' land to add housing including apartments. This property is not standing dormant. We the homeowners have diligently paid our dues toward the expenses to maintain the beauty and integrity of our parkway.

WHAT money has come from the owners, renters or investors from Southern California of these apartments to fund our maintenance expenses?

It is ludicrous to have notification JUST prior to the city meeting. The project south of 50 is a major sore spot for us. Nothing will convince me that we really have WATER for all those coming households. Added traffic is obviously another major concern for all of us in Folsom. The possibility of adding so many additional households in the ARC apartments is the icing on the cake.

Please think of all the repercussions. Those investors have many other options in the greater Sacramento area or elsewhere in California.

Sincerely,

Sandy Quiroga

Steven Banks

From: Mary Pauley <mary.pauley@gmail.com>
Sent: Tuesday, May 7, 2019 8:52 PM
To: Steven Banks; Mary Pauley
Subject: Just Say NO to Additional 96 Apartment Units in American River Canyon

Dear Steve Banks;

We have a very important situation that needs IMMEDIATE attention.......There are 96 additional 1-3 bedroom apartments that are apparently going to be built at Canyon Terrace in American River South (above Vics) without prior community approval. Removing Green Space in the Parkway is unthinkable, let alone packing an additional 96 units into our already crowded parkway; and also changing our parkway landscape forever! Per my estimation, we are talking on the low side 153 residents and cars, but on the higher side, 350+ residents and cars. Why does this affect American River North?

- Road congestion in the morning is awful if you try to get to 50 before 9 a.m. I always wait 2 lights to take a right on Auburn-Folsom, but certainly can be 3 lights...and then there is the trek to 50. Many Orangevale and GB folks use Oak Avenue as well, so I often need to go to the waterfall entrance versus Cascade Falls so I can take a left. Alternately, I will head straight over ARC to Greenback, and take a left there so I can get on the bridge. And if I mess up, and take a left from Cascade Falls and Oak Avenue is totally backed up, I will take a left into the Baldwin Dam neighborhood, and eventually cross the Dam bridge and head up Green Valley. I do not make appointments in Folsom before 9:30 if I can help it.
- Apparently, this developer was shot down 4-5 years ago, but what changed to make this project acceptable at this time? The developer's fees will help the city of Folsom enlarge Oak Avenue to **4 Lanes**(!) and also reconfigure Oak Avenue/Folsom-Auburn and Baldwin Dam intersections. My take: The city of Folsom benefits by getting this additional infrastructure paid for by the developer, but **completely changes our rural landscape, quality of life, and property values** so Folsom can save money and pay for the newer annexed side of Folsom, etc.
- We moved here 29 years ago and the infrastructure was built for ARCN and ARCS; now you're allowing development within a developed area to occur, without considering the impact to the surrounding 2000+ homes. We have experienced years of waiting for our roads to be fixed and then slurried, how long might it take for Folsom to fix the roads to accommodate the increased traffic congestion? Plus, who signed up for 4 lanes like Hazel Avenue? We can't imagine the construction mess and congestion on an already congested Oak Avenue, and would have to sell our home and move, even though this was supposed to be our retirement home within 5 years.

We are asking that you please consider the impact of 2000+ plus homes on the basis of adding 96 apartments to this side of the river. Supposedly, Folsom is one of the most desirable places to raise a family in CA, but you will be destroying that for us on this side of the river if you allow an additional 96 units to be built in an already congested and less than maintained area.

Sincerely,

--

Mary and Mike Pauley

Steven Banks

From: Bill Leis <coolairguy@sbcglobal.net>
Sent: Tuesday, May 7, 2019 9:04 PM
To: Steven Banks
Subject: Canyon Terrace Apartment Expansion

Mr. Banks,

I am writing this email to express my opposition to the proposed expansion of the Canyon Terrace Apartment complex. As a resident of American River Parkway it is my opinion that the apartments could be built elsewhere.
This was not in the original master plan for the ARC community.
This will create additional traffic, noise and stress on the already taxed infrastructure of the neighborhood.
Not to mention it will lower home values in ARC.
Please reconsider allowing this project to be built.
Thank you for your understanding.

Bill

Steven Banks

From: Deborah Oyler <deb7701@gmail.com>
Sent: Tuesday, May 7, 2019 9:27 PM
To: Steven Banks
Subject: Additional Apartments in American River Canyon neighborhood - No Please!

Hello, Steve-

I am a resident of American River Canyon North. I just learned of the proposed addition of 96 apartments. I'm not sure how it slipped by us, but so far this is brand new news to many of us in ARC and ARCN.

How strongly can I say that this is not in the best interest of our neighborhoods? There is already considerable traffic congestion in the mornings. At the time I leave in the morning, the traffic backs up from the light at Oak and Folsom-Auburn to the ARCN entrance at Cascade Falls. Many of us resort to taking American River Canyon Drive to Greenback, and already drivers go way too fast, particularly when children are walking to their buses. More traffic means more annoyed and irresponsible drivers, and hazards to our children.

I also understand that the proposal includes future widening of Oak Avenue, which will only draw more traffic along this route. It's already an access route for those coming from the direction of Hazel. And already I see many people avoiding the traffic at Oak and Folsom-Auburn by cutting through the Baldwin Dam neighborhood, where, by the way, children are walking to the elementary school! We don't need to add to the congestion.

What about fixing our roads that are in disrepair, rather than expending resources to placate developers? Isn't the development south of 50 enough of an increase?

This is the kind of "progress" that will cost us safety, lower property values, and create the type of headaches that many of us fled when we left the Bay Area years ago.

Please, please, please, don't allow this to sneak into our neighborhood.

Thank you for your consideration.

Regards,

Deborah Oyler
259 Alabaster Point Way
925-324-6322

Steven Banks

From: Chad Barth <chad.barth@yahoo.com>
Sent: Tuesday, May 7, 2019 9:39 PM
To: Steven Banks
Subject: Vehemently oppose additional apartments

Mr. Banks,

We vehemently oppose the proposed additional apartments on American River Canyon Drive. This will drastically change traffic patterns and the surrounding landscape.

Thank you for listening,

Chad Barth
American River Canyon North Resident

Sent from Yahoo Mail on Android

Steven Banks

From: Gmail <james.ruben@gmail.com>
Sent: Tuesday, May 7, 2019 9:40 PM
To: Steven Banks
Subject: Opposition to canyon Terrace expansion

I am against expansion at this location. There is incremental systematic destruction of the rural nature of our neighborhood which must stop. Thank you.

Sincerely, James Ruben MD.

Sent from my iPhone

Steven Banks

From: Nicole Henao <nicolemariehenao@gmail.com>
Sent: Tuesday, May 7, 2019 10:44 PM
To: Steven Banks
Subject: ARCN new apartments in ARCS

Dear Steven,
My husband John and I own a home in ARCN. We do not support the building of an apartment complex in ARCS. We chose this neighborhood based on its rural features. This development will turn ARCN and ARCS into something it was never intended to be.
We urge you to reconsider.
Thank you,
Nicole Henao
916-276-7968
Sent from my iPhon

Steven Banks

From: Andrew Ramos <drewman1372@yahoo.com>
Sent: Wednesday, May 8, 2019 5:39 AM
To: Steven Banks
Subject: PLEASE NO NEW CONSTRUCTION

Steve,

Just heard about new construction in American River Canyon South. Please consider that it will bring yet more traffic to an already congested area, especially in the mornings and after work. Getting over the bridge and to hwy 50 is already a nightmare. Please do not approve, or motion to further, this construction. Thanks.

Drew Ramos
Folsom Resident for 25 years

Sent from my iPhone

Steven Banks

From: Mary Heffington <heff1015@yahoo.com>
Sent: Wednesday, May 8, 2019 6:01 AM
To: Steven Banks
Subject: Proposed apartments .

Hello Steve-

I have just learned of the apartments above the old Vics. What is the folsom planning department doing to our neighborhood? Oak avenue is a thoroughfare for traffic now. I am sending this note to express my opposition.

Sincerely,
Mary Heffington's
115 Cascade Falls

Steven Banks

From: John Salvato <johnasalvato@gmail.com>
Sent: Wednesday, May 8, 2019 6:27 AM
To: Steven Banks
Subject: Canyon terrace plans

Good morning,

I am opposed to the plan to add additional apartment units to this development site. We do not need additional traffic and congestion in this relatively quiet neighborhood.

John Salvato
331 American River Canyon Drive

Steven Banks

From: Susan Wetklow <susan.wetklow@gmail.com>
Sent: Wednesday, May 8, 2019 6:59 AM
To: Steven Banks
Subject: Canyon Terrace Apartment Expansion

Hello Mr. Banks,

I am writing to let you know that my husband and I, residents of American River Canyon South, for 35 years, have concerns over the proposed expansion of the Canyon Terrace apartment complex. I was shocked to learn that they do not contribute to the maintenance of the parkway, yet enjoy the use.

We'd like to express our concerns of the traffic impact to American River Canyon Drive. The addition of the additional units will cause more traffic issues through the neighborhood. It's already difficult to try and cross the street.

Sincerely,
Mark and Susan Wetklow
216 Oak Canyon Way
916-214-1074

Steven Banks

From: Nancy Shaw <ltnshaw@gmail.com>
Sent: Wednesday, May 8, 2019 7:46 AM
To: Steven Banks
Subject: New apartment units proposed on ARC drive

Steve,
My husband and I wish to express our concerns regarding the proposed expansion of the Canyon Terrace Apartments. As property owners on Oak Canyon Way, we share a fence line with the development. We are extremely concerned about the additional noise and traffic the new units will create. In the past when we have had concerns with activities in the area behind us, the complex management has not been responsive.
We are also worried about how this expansion would affect our property value. In addition to having a much larger apartment complex in the neighborhood. The new units will negatively impact the American River Canyon Parkway. Today, it is a beautiful street and walkway. The proposed changes will create an industrial look at this end of the parkway. The additional traffic will make it more dangerous to walk and drive on it.
Please help the ARC community to stop this development and to protect our neighborhood.

Sincerely,
Nancy and Larry Shaw

Sent from my iPad

Steven Banks

From: Pauline Fults <pauline.fults@yahoo.com>
Sent: Wednesday, May 8, 2019 8:25 AM
To: Steven Banks
Subject: Proposed apartments project

Hello,
My name is Pauline Miller and I live in ARCN. I'm very much against this proposed project. I vote to not build. It will ruin the landscape of this area and add too much traffic and chaos to the neighborhood. The builders and investors need to look elsewhere for an apartment building. We already have too much traffic on Oak Ave. on the morning commute. Not feasible for another apartment building as we already have more housing already along Oak as it is. Thank you for allowing me to send this email.

Canyon Falls Dr. Resident
Pauline and Jerry Miller

Sent from my iPhone

Steven Banks

From: Julie Leis <jnb89@sbcglobal.net>
Sent: Wednesday, May 8, 2019 8:38 AM
To: Steven Banks
Subject: Canyon Terrace Apartment Expansion -- Opposed

Hello —

Please let this serve as my opposition to the Canyon Terrace Apartment Expansion project.

This will increase the amount of traffic and noise from the traffic on the ARC location. As a master planned community back when ARC first began, a project of the requested size was not part of that plan. It will detract from the look and image of what ARC represents. As you drive in our wonderful neighborhood now, we see vegetation and large trees it is a great looking area. We as residents and we who pay our HOA dues do so with the understanding and agreement to keep the look as natural as possible. Apartment residents enjoy this area without an HOA fee assessed to them. Adding more buildings will take away from that look. This is NOT the bay area and there is significant locations available elsewhere to build.

This will a drain on our city and resources available.

Our property values will decrease.

The reason we moved to ARC was because of how it looked. If passed a move may need to be considered.

Thank you for your time Julie Leis

Steven Banks

From: Steve Serafin (Samuel Hale) <Steve@samuelhale.com>
Sent: Wednesday, May 8, 2019 9:10 AM
To: Steven Banks
Cc: Shirlee Serafin
Subject: American River Canyon

Hello Mr. Banks:

My wife and I have been residents of American River Canyon North for the past 15 years. Suffice it to ay that traffic patterns have changed in that span of time.

We are absolutely pro development and really like the growth that Folsom in particular has enjoyed over the past few years. With that comes a balance that does not upset the quality of life in Folsom.

Our neighborhood blog alerted us that there is a 96 unit apartment complex being built at Canyon Terrace in American River South (above the former Vics) that will back up to ARC Drive. It looks like that will add 100 to 400 new residents to the area.

Traffic is already very bad along Oak Avenue and Auburn Folsom Road – so bad we and our neighbors have had to alter our driving patterns and our schedules. It has become "out of balance" with the infrastructure and it is effecting the quality of life we expect in Folsom.

So, the purpose of this correspondence is the request that infrastructure improvements to the immediate area are addressed as a part of, or as a condition of, moving forward with this project.

Thank you for your consideration.

Regards,

Steve and Shirlee Serafin
343 American River Canyon Drive
Folsom, Ca 95630

Steven Banks

From: Rich Smith <rich.smith@pacbell.net>
Sent: Wednesday, May 8, 2019 10:22 AM
To: Steven Banks
Cc: Charlotte Bracht
Subject: Proposed addition of 96 apartment units in American River Canyon

Steve,

My wife (Pam Blackmore) and I (Rich Smith) live at 112 Burnt Creek Way, Folsom which is in American River Canyon (ARC). We want to let you know we are **opposed** to the proposed 96 apartment units to be developed on American River Canyon Drive next door to the shopping center at the corner of American River Canyon Drive and Oak Ave.

We feel this will disrupt the nature of the ARC neighborhoods by adding much more traffic to American River Canyon Drive, resulting in more wear and tear on the street surfaces. We already have problems with speeding vehicles and people that just don't think Stop Signs apply to them, especially in front of the apartments. This is a roadway that has many curves and hills which limit visibility when pulling in and of the 2 apartment exits. We have already seen "close calls" with vehicles narrowly missing each other when entering and exiting the apartments.

In addition those of us who live in the single family homes pay dues to a maintenance association to maintain the parkway on both sides of American River Canyon Drive. We have noticed over the past few years more trash (litter) on the street, in the grass, and bushes.

So by adding these additional units we believe we have more trash, speeding vehicles, and more stop sign runners.

Thank you for you attention to this.

Rich Smith and Pam Blackmore
112 Burnt Creek Way
Folsom, CA 95630
916-989-2119 home

Steven Banks

From: Charlotte Bracht <charlotte@brachtusa.com>
Sent: Wednesday, May 8, 2019 10:38 AM
To: Rich Smith; Steven Banks
Subject: Re: Proposed addition of 96 apartment units in American River Canyon

Dear Steve,

I am in agreement with the email below. I plan to attend the meeting on May 15th.

Thank you,
Charlotte

Charlotte Bracht, Broker / Owner / Realtor
(916) 989-9660
(916) 276-7379 (cell)
(916) 989-1904 (fax)
CA BRE#: 01003202
charlotte@brachtusa.com

On 5/8/2019 10:22 AM, Rich Smith wrote:

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Thank you for you attention to this.

Rich Smith and Pam Blackmore
112 Burnt Creek Way
Folsom, CA 95630
916-989-2119 home

Steven Banks

From: Charlady08 <charlady08@aol.com>
Sent: Wednesday, May 8, 2019 11:15 AM
To: Steven Banks
Subject: Please no more apartments.

I am almost 76 live alone and the traffic has gotten so much worse in the last 18 years I can't believe it. Widening Oak Ave would for sure bring much more traffic noise up the hill where I live. Sound goes up the canyon. I am a light sleeper and in summer with windows open traffic can be heard on Oak & Auburn Folsom Blvd. Will it be on the same property where there are alreday apartments. Pretty now with all the laws and trees, don't think those that live there will be happy either. Is there a meeting to go to? Charlene Michelson
AMRC Charlady08@aol.com

Maybe we would finally get a little market with all the new residents?

Steven Banks

From: Bruce Powell <sonofmack2@gmail.com>
Sent: Wednesday, May 8, 2019 10:47 AM
To: Steven Banks
Subject: plans for new Apt. units at ARC Drive & Oak Ave,

To Mr. Steve Banks of the Folsom Planning Committee,

It has come to the attention of my wife and myself that the owners of the large apartment complex near the corner of Oak Avenue Parkway and American River Canyon Drive wants to expand their property by some 90 plus units.
As traffic on the roads in this area are already busy the addition of another 200 or more souls to the mix would just exacerbate the situation. Not to mention the fact that none of these new tenets like the present ones would be contributing any monies to our maintenance association for the upkeep of the parkway. We also feel that this addition of units to the apartment complex would drive down single family home values in our area and further strain the utilities. My wife and I are against this proposed addition and with be at the meeting on the 15th of this month to voice our concerns.

Sincerely,

Bruce and Catherine Powell
151 Fall River Drive
Folsom, CA 95630
1-916-989-0660

Steven Banks

From: Charlotte Bracht <charlotte@brachtusa.com>
Sent: Wednesday, May 8, 2019 10:38 AM
To: Rich Smith; Steven Banks
Subject: Re: Proposed addition of 96 apartment units in American River Canyon

Dear Steve,

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Thank you,
Charlotte

Charlotte Bracht, Broker / Owner / Realtor
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So by adding these additional units we believe we have more trash, speeding vehicles, and more stop sign runners.

Thank you for you attention to this.

Rich Smith and Pam Blackmore
112 Burnt Creek Way
Folsom, CA 95630
916-989-2119 home

Steven Banks

From: mina jahangiri <jahangirijoon@gmail.com>
Sent: Wednesday, May 8, 2019 2:38 PM
To: Steven Banks
Subject: 96 new apartment units proposed on ARC Drive

Hi Mr. Banks, My Name is Mina Jahangiri, me and my husband lived in ARC community since 2002. we love our quite neighborhood and we certainly reject the idea of adding 96 new apartment to exciting one. please help us to keep this neighborhood the way it is and not add any more traffic and extra noises to it.
Your help in advanced greatly appreciated.

Best Regard, Mina Jahangiri

CITY OF FOLSOM
DISTINCTIVE BY NATURE

COMMUNITY DEVELOPMENT

DATE: 5/15/19 Planning Commission Meeting

TO: Chairman and Planning Commissioners

FROM: Community Development Director, Pam Johns

SUBJECT: Overview of City of Folsom Housing Programs

Item #4

An overview of City of Folsom Housing Programs will be presented by Senior Planner, Stephanie Henry.