ATTACHMENT A

RESOLUTION NO. 2019-__

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LOS ALTOS MAKING FINDINGS, ADOPTING AN EXEMPTION UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT, AND APPROVING THE DESIGN REVIEW, USE PERMIT AND SUBDIVISION APPLICATIONS FOR A NEW 21-UNIT MULTI-FAMILY PROJECT AT 4898 EL CAMINO REAL

WHEREAS, the City of Los Altos received a development application from Mircea Voskerician (Applicant), for a new 21-unit multiple-family residential building at 4898 El Camino Real that includes Design Review D19-0002, Use Permit CUP-19-0001 and Subdivision TM19-0002, referred to herein as the "Project"; and

WHEREAS, said Project is located in the CT District, which allows multiple-family housing as a conditional use at a maximum density of 38 dwelling units per net acre of land; and

WHEREAS, said Project has a net site area of 0.39 acres (16,919 square feet), which will allow for a base residential density of 15 dwelling units; and

WHEREAS, the Applicant is offering two moderate income and two very-low income affordable housing units for sale as part of the Project; and

WHEREAS, the Applicant's proposed unit mix would consist of 27 percent of its total units as affordable units, with 13 percent of the units affordable at the very-low income level, thereby entitling the project to qualify for two incentives, and additional concessions and waivers pursuant to Los Altos Municipal Code Section 14.28.040 and Government Code Section 65915, *et seq*.; and

WHEREAS, the Applicant is seeking two incentives under Government Code Section 65915(e) and Los Altos Municipal Code Section 14.28.040 to allow: a) a building with a primary height of 56 feet, where the Code allows for 45 feet; and b) a front yard setback of 20 feet, where the Code requires a front yard setback of 25 feet; and

WHEREAS, the Applicant is seeking a further waiver under Government Code Section 65915(e) to allow: the elevator tower to be 17.5 feet above the roof, where the Code allows such structures to be 12 feet above the roof; and

WHEREAS, the Applicant is seeking a 35 percent density bonus, and the above described incentives and waiver to allow development of the Project pursuant to Government Code 65915 and Los Altos Municipal Code Section 14.28.040; and

WHEREAS, the Project is exempt from environmental review as in-fill development in accordance with Section 15332 of the California Environmental Quality Act of 1970 as amended ("CEQA"); and

WHEREAS, said Project has been processed in accordance with the applicable provisions of the California Government Code and the Los Altos Municipal Code; and

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WHEREAS, on June 26, 2019, the Complete Streets Commission held a public meeting on the Project and at the conclusion of the meeting voted to recommend approval to the Planning Commission and City Council; and

WHEREAS, on July 10, 2019 the Applicant installed story poles on the site per the story pole plan that was approved by the Community Development Director on June 13, 2019; and

WHEREAS, on July 17, 2019 the City gave public notice of the Planning Commission's public hearing on the proposed Project by advertisement in a newspaper of general circulation and to all property owners and business tenants within a 500-foot radius; and

WHEREAS, on August 1, 2019, the Planning Commission conducted a duly-noticed public hearing at which members of the public were afforded an opportunity to comment upon the Project, and at the conclusion of the hearing, the Planning Commission recommended that the City Council ____ the Project; and

WHEREAS, on _____, 2019, the City Council held a duly noticed public meeting as prescribed by law and considered public testimony and evidence and recommendations presented by staff related to the Project; and

WHEREAS, all the requirements of the Public Resources Code, the State CEQA Guidelines, and the regulations and policies of the City of Los Altos have been satisfied or complied with by the City in connection with the Project; and

WHEREAS, the findings and conclusions made by the City Council in this Resolution are based upon the oral and written evidence presented as well as the entirety of the administrative record for the proposed Project, which is incorporated herein by this reference. The findings are not based solely on the information provided in this Resolution; and

WHEREAS, all other legal prerequisites to the adoption of this Resolution have occurred.

NOW THEREFORE, BE IT RESOLVED, that the City Council of the City of Los Altos hereby approves the Project subject to the findings and the conditions of approval attached hereto as "Exhibit A" and "Exhibit B," and incorporated by this reference.

I HEREBY CERTIFY that the foregoing is a true and correct copy of a Resolution passed and adopted by the City Council of the City of Los Altos at a meeting thereof on the __ day of _____, 2019 by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
Lynette Lee Eng, MAYOR

Attest:

_____
Jon Maginot, CMC, CITY CLERK

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FINDINGS

1. ENVIRONMENTAL REVIEW FINDINGS. With regard to environmental review, in accordance with Section 15332 of the California Environmental Quality Act Guidelines, based on the whole record before it, including, without limitation, the analysis and conclusions set forth in the staff reports, testimony provided at the proposed Project's public hearings, and the supporting technical studies, which include: 1) a Traffic Report by Hexagon Transportation Consultants (June 2019); 2) Air Quality and Greenhouse Gas Assessment by Illingworth and Rodkin, Inc. (February 2019); and 3) Noise and Vibration Assessment by Illingworth & Rodkin, Inc (February 2019), the City Council finds and determines that the following Categorical Exemption findings can be made:

    a. The Project is consistent with the applicable General Plan designation and all applicable General Plan policies as well as with the applicable zoning designation (Commercial Thoroughfare) and regulations, including density bonus, incentives and waivers, for the production of affordable housing;

    b. The Project occurs within City limits on a site of no more than five acres that is substantially surrounded by urban uses and there is no record that the site has value as habitat for endangered, rare or threatened species;

    c. Approval of the Project will not result in any significant effects relating to traffic, noise, air quality, or water quality and the completed technical studies and staff analysis contained in the agenda report support this conclusion; and

    d. The Project has been reviewed and it is found that the site can be adequately served by all required utilities and public services.

2. DESIGN REVIEW FINDINGS. With regard to Design Review Application D19-0002, the City Council finds, in accordance with Section 14.76.060 of the Los Altos Municipal Code, as follows:

    a. The Project meets the goals, policies and objectives of the General Plan with its level of intensity and residential density within the El Camino Real corridor, and all Zoning Code site standards and design criteria applicable for a project in the CT District;

    b. The Project has architectural integrity and has an appropriate relationship with other structures in the immediate area in terms of height, bulk and design because the proposal has architectural integrity and has an appropriate relationship heights, massing, and styles of the buildings in the immediate area. The building fronts directly on to El Camino Real, with an exterior side frontage on Jordan Avenue, where the larger scale is more appropriate, and the project utilizes high quality materials that support its architectural style and is appropriately articulated and scaled to relate to the larger buildings on the El Camino Real corridor;

    c. Building mass is articulated to relate to the human scale, both horizontally and vertically as evidenced in the design of the projecting overhangs, bay windows and balconies, the building elevations have variation and depth and avoid large blank wall surfaces, and the project has incorporated elements that signal habitation, such as identifiable entrances, overhangs, bay windows and balconies because the building was designed to relate to the human scale with a

landscaped entry plaza and a two-story entry lobby. These features create a human scale at the main building entry. The stone veneer at the first level creates a strong building base. The large horizontal balconies break up the vertical building mass to bring life to the streets. The horizontal building mass is broken up with the two-story stepping element at the corner and the deep recess at the secondary stair tower;

d. The Project's exterior materials and finishes convey high quality, integrity, permanence and durability, and materials are used effectively to define building elements. Materials, finishes, and colors have been used in a manner that serves to reduce the perceived appearance of height, bulk and mass, and are harmonious with other structures in the immediate area because the exterior building materials appropriately define the building elements and convey the project's quality, integrity, durability and permanence. The project color palate defines building elements and soften the overall appearance. The use of El Dorado stone veneer, Trespa siding, Equitone panels and control joints in the stucco conveys a sense of quality materials and supports the articulation to create smaller elements and reduced bulk and mass;

e. The landscaping is generous and inviting, the landscape and hardscape complements the building and is well integrated with the building architecture and surrounding streetscape, and the landscape includes substantial street tree canopy because the proposed landscape and hardscape elements are designed to complement the proposed building design by introducing raised planter walls, linear wood benches and landscaping with accent trees to respond to the Architectural façade and street frontage. The landscaping includes various levels with smaller plantings near the sidewalk with taller species and raised planters as it moves toward the face of the building. The landscaping includes substantial street tree canopy including one new street trees in the public right-of-way, one new western redbud tree in the front yard, two new specimen Brisbane box and two western redbud box trees in the exterior side yard along Jordan Avenue, and three western redbox trees in the rear yard;

f. Signage, which is limited to the building address number and other required directional signage, will be designed to complement the building architecture in terms of style, materials, colors and proportions;

g. Mechanical equipment is screened from public view by the building parapet and is designed to be consistent with the building architecture in form, material and detailing; and

h. Service, trash and utility areas are screened from public view by their locations in the building garage and behind fencing in the side yards, and consistent with the building architecture in materials and detailing.

3. USE PERMIT FINDINGS. With regard to Use Permit CUP19-0001, the City Council finds, in accordance with Section 14.80.060 of the Municipal Code, as follows:

a. The proposed location of the multiple-family residential use is desirable and essential to the public comfort, convenience, prosperity, and welfare in that there are a limited number of sites that can accommodate new housing, the CT District has anticipated and planned for new housing along the El Camino Real corridor and the project provides housing at a variety of affordability levels;

b. That the proposed location of the multiple-family residential use is in accordance with the objectives of the Zoning Code since the project provides for community growth along sound lines, it is harmonious and convenient in relation to the surrounding land uses, it does not create any significant traffic impacts, it will help the City meet its affordable housing goals, it will protect and enhance property values and it will enhance the City's distinctive character with a high-quality building design in a commercial thoroughfare context;

c. That the proposed location of the multiple-family residential use, under the circumstances of the particular case and as conditioned, will not be detrimental to the health, safety, comfort, convenience, prosperity, or welfare of persons residing or working in the vicinity or injurious to property or improvements in the vicinity; and

d. That the proposed multiple-family residential use complies with the regulations prescribed for the CT District and the general provisions contained in Chapter 14.02.

4. SUBDIVISION FINDINGS. With regard to Subdivision TM19-0002, the City Council finds, in accordance with Section 66474 of the Subdivision Map Act of the State of California, as follows:

a. The proposed condominium subdivision is consistent with the General Plan;

b. The Project site is physically suitable for this type and density of development in that the project meets all applicable Zoning requirements except where a density bonus and development incentives have been granted;

c. The design of the condominium subdivision and the proposed improvements are not likely to cause substantial environmental damage, or substantially injure fish or wildlife; and no evidence of such has been presented;

d. The design of the condominium subdivision is not likely to cause any serious public health problems because conditions have been added to address noise, air quality and life safety concerns; and

e. The design of the condominium subdivision will not conflict with any public access easements as none have been found or identified on this site.

5. AFFORDABLE HOUSING AND DENSITY BONUS FINDINGS. With regard to the offered below market rate units and requested density bonus, incentives, waivers and parking requirement alteration, the City Council finds, in accordance with Los Altos Municipal Code Section 14.28.040, as follows:

a. The applicant is offering two moderate income units and two very low income units for sale and, 27 percent of the Project's base density, which qualifies the project for a density bonus, incentives, waivers and a parking requirement alteration;

b. Per Table DB 3 in Section 14.28.040(C)(1)(b), a project that offers 11 percent or more of its total units (base density) as very-low income restricted affordable units shall be granted a density bonus of 35 percent, and per Table DB 4 in Section 14.28.040(C)(1)(b), a project that offers 10 percent or more of its total units (base density) as very-low income restricted

affordable units shall be granted two (2) incentives. Since the project is providing 13 percent of its total units as affordable at the very-low income level, the City shall grant a density bonus of at least 35 percent and two (2) incentives;

a. For its incentives, the project is requesting the City allow: a) a building with a primary height of 56 feet, where the Code allows for 45 feet; and b) a front yard setback of 20 feet, where the Code requires a front yard setback of 25 feet. The height incentive is considered an "on-menu" incentive and the rear yard setback incentive is considered one (1) "on-menu" incentives (20 percent decrease in a setback). Per Government Code Section 65915(e) and Section 14.28.040(F) Incentive Standards, the City has determined that the incentive would not have a specific adverse impact upon public health and safety or the physical environment or upon a listed historical resource. There is sufficient evidence currently in record that the incentive or concession would result in identifiable and actual cost reductions to provide for affordable housing costs and it would not be contrary to state or federal law;

b. Per Section 14.28.040(G)(2)(a), the City shall allow a minimum parking requirement, inclusive of handicapped and guest parking, of two (2) onsite parking space for each three-bedroom unit and 2.5 onsite parking spaces for each four-bedroom unit if requested by the applicant. Since the project is providing 55 onsite parking spaces, where a minimum of 45 onsite parking spaces is required, it is exceeding the minimum permitted by the Code;

c. Per Government Code Section 65915(e) and Section 14.28.040(H)(1), a project can request a waiver or reduction of development standards that have the effect of physically precluding the construction of a development in addition to the density bonus and incentives permitted by the Code. Consistent with these requirements, the Applicant is seeking waivers to allow: a) the elevator tower to be 17.5 feet above the roof, where the Code allows such structures to be 12 feet above the roof. With regard to the waiver for the elevator height to be 17.5 feet, the City has determined the waiver is supported by the fact that the implementation of the Zoning Code standards physically precludes the construction of the development and the facilities are required in order to provide the necessary amenities and accessibility for the building. Evidence has not been presented that the waiver will have a specific, adverse impact upon health, safety, or the physical environment, or an adverse impact on any listed historic resource or will be contrary to state or federal law.

d. The basis to grant the waiver is supported by the fact that they are required in order to provide the necessary amenities and accessibility for a building of this size and density, they will not have a specific, adverse impact upon health, safety, or the physical environment, they will not have an adverse impact on any listed historic resources and will not be contrary to state or federal law; and

ATTACHMENT A

EXHIBIT B

CONDITIONS

GENERAL

1. **Approved Plans**
   The project approval is based upon the plans received on July 3, 2019, except as modified by these conditions.

2. **Affordable Housing**
   The applicant shall offer the City four (4) below market rate units as follows:
   a. Two (2) three-bedroom units at the moderate-income level; and
   b. Two (2) three-bedroom units at the very low-income level.

3. **Upper Story Lighting**
   Any exterior lighting above the ground floor on the sides and rear of the building and on the rooftop deck shall be shrouded and/or directed down to minimize glare.

4. **Encroachment Permit**
   An encroachment permit and/or an excavation permit shall be obtained prior to any work done within the public right-of-way and it shall be in accordance with plans to be approved by the City Engineer. *Note: Any work within El Camino Real will require applicant to obtain an encroachment permit with Caltrans prior to commencement of work.*

5. **Public Utilities**
   The applicant shall contact electric, gas, communication and water utility companies regarding the installation of new utility services to the site.

6. **Americans with Disabilities Act**
   All improvements shall comply with Americans with Disabilities Act (ADA).

7. **Stormwater Management Plan**
   The applicant shall submit a complete Stormwater Management Plan (SWMP) and a hydrology calculation showing that 100% of the site is being treated; is in compliance with the Municipal Regional Stormwater NPDES Permit (MRP). Applicant shall provide a hydrology and hydraulic study, and an infeasible/feasible comparison analysis to the City for review and approval for the purpose to verify that MRP requirements are met.

8. **Sewer Lateral**
   Any proposed sewer lateral connection shall be approved by the City Engineer.

9. **Transportation Permit**
   A Transportation Permit, per the requirements specified in California Vehicle Code Division 15, is required before any large equipment, materials or soil is transported or hauled to or from the construction site.

10. **Indemnity and Hold Harmless**
    The applicant/owner agrees to indemnify, defend, protect, and hold the City harmless from all costs and expenses, including attorney's fees, incurred by the City or held to be the liability of the City in connection with the City's defense of its actions in any proceedings brought in any State or Federal Court, challenging any of the City's action with respect to the applicant's project.

PRIOR TO SUBMITTAL OF BUILDING PERMIT

11. **Green Building Standards**
    The applicant shall provide verification that the project will comply with the City's Green Building Standards (Section 12.26 of the Municipal Code) from a qualified green building professional.

12. **Property Address**
    The applicant shall provide an address signage plan as required by the Building Official.

13. **Water Efficient Landscape Plan**
    Provide a landscape documentation package prepared by a licensed landscape professional showing how the project complies with the City's Water Efficient Landscape Regulations.

14. **Air Quality Mitigation**
    The applicant shall implement and incorporate the air quality mitigations into the plans as required by the report prepared by Illingsworth & Rodin, Inc., dated February 8, 2019.

15. **Noise Mitigation**
    The applicant shall implement and incorporate the conditions and noise mitigation measures into the plans as required by the report by Illingsworth & Rodin,, dated February 8, 2019.

16. **Rooftop Deck**
    Provide design details for the rooftop deck sufficient enough to verify that the space can operate in compliance with the performance standards proscribed by Municipal Code Section 14.50.160.

PRIOR TO FINAL MAP RECORDATION

17. **Covenants, Conditions and Restrictions**
    The applicant shall include provisions in the Covenants, Conditions and Restrictions (CC&Rs) as follows:
    a. Storage on private patios and decks shall be restricted; and rules for other objects stored on private patios and decks shall be established with the goal of minimizing visual impacts.
    b. Long-term maintenance and upkeep of the landscaping and street trees, as approved by the City, shall be a duty and responsibility of the property owners. Specifically, the landscape buffer, including both trees and landscaping, along the rear property line shall be permanently maintained as required by the CT District per Municipal Code Section 14.50.110(C).
    c. The rooftop deck shall be permanently maintained in accordance with the performance standards for Rooftop Uses in the CT District as currently proscribed by Municipal Code Section 14.50.160.
    d. Both parking spaces in a tandem space shall be owned by the same unit and cannot be owned or used by separate units.

18. **Public Utility Dedication**
    The applicant shall dedicate public utility easements as required by the utility companies to serve the site.

PRIOR TO ISSUANCE OF BUILDING PERMIT

19. **Final Map Recordation**
    The applicant shall record the final map. Plats and legal descriptions of the final map shall be submitted for review by the City Land Surveyor. Applicant shall provide a sufficient fee retainer to cover the cost of the map review by the City.

20. **Payment of Fees**
    The applicant shall pay all applicable fees, including but not limited to sanitary sewer impact fees, parkland dedication in lieu fees, traffic impact fees, affordable housing impact fees, public art impact fee and map check fee plus deposit as required by the City of Los Altos Municipal Code.

21. **Affordable Housing Agreement**
    The Applicant shall execute and record an Affordable Housing Agreement, in a form approved and signed by the Community Development Director and the City Attorney, that offers four (4) below market rate units, for a period of at least 55-years, as defined in Condition No. 2. The below market rate units shall be constructed concurrently with the market rate units, shall be provided at the location on the approved plans, and shall not be significantly distinguishable with regard to design, construction or materials.

22. **Performance Bond**
    The applicant shall submit a cost estimate for the improvements in the public right-of-way and shall submit a 100-percent performance bond and 50-percent labor and material bond (to be held 6 months until acceptance of improvements) for the public right-of-way work.

23. **Maintenance Bond**
    A one-year, ten-percent maintenance bond shall be submitted upon acceptance of improvements in the public right-of-way.

24. **Storm Water Filtration Systems**
    The applicant shall insure the design of all storm water filtration systems and devices are without standing water to avoid mosquito/insect infestation.

25. **Grading and Drainage Plan**
    The applicant shall submit detailed plans for on-site and off-site grading and drainage plans that include drain swales, drain inlets, rough pad elevations, building envelopes, and grading elevations for review and approval by the City Engineer.

26. **Sewage Capacity Study**
    The applicant shall show sewer connection to the City sewer main and submit calculations showing that the City's existing 27-inch sewer main will not exceed two-thirds full due to the additional sewage capacity from proposed project. For any segment that is calculated to exceed two-thirds full for average daily flow or for any segment that the flow is surcharged in the main

due to peak flow, the applicant shall upgrade the sewer line or pay a fair share contribution for the sewer upgrade to be approved by the City Engineer.

27. **Construction Management Plan**
The applicant shall submit a construction management plan for review and approval by the Community Development Director and the City Engineer. The construction management plan shall address any construction activities affecting the public right-of-way, including but not limited to excavation, traffic control, truck routing, pedestrian protection, material storage, earth retention and construction vehicle parking. A Transportation Permit, per the requirements in California Vehicle Code Division 15, is required before any large equipment, materials or soil is transported or hauled to or from the site. Applicant shall pay the applicable fees before the transportation permit can be issued by the Traffic Engineer.

28. **Solid Waste Ordinance Compliance**
The applicant shall be in compliance with the City's adopted Solid Waste Collection, Remove, Disposal, Processing & Recycling Ordinance (LAMC Chapter 6.12) which includes a mandatory requirement that all commercial and multi-family dwellings provide for recycling and organics collection programs.

29. **Solid Waste and Recyclables Disposal Plan**
The applicant shall contact Mission Trail Waste Systems and submit a solid waste and recyclables disposal plan indicating the type, size and number of containers proposed, and the frequency of pick-up service subject to the approval of the Engineering Division. The applicant shall also submit evidence that Mission Trail Waste Systems has reviewed and approved the size and location of the proposed trash enclosure. The enclosure shall be designed to prevent rainwater from mixing with the enclosure's contents and shall be drained into the City's sanitary sewer system. The enclosure's pad shall be designed to not drain outward, and the grade surrounding the enclosure designed to not drain into the enclosure. In addition, applicant shall show on plans the proposed location of how the solid waste will be collected by the refusal company. Include the relevant garage clearance dimension and/or staging location with appropriate dimensioning on to plans.

30. **Sidewalk Lights**
The applicant shall maintain the existing light fixture and/or install new light fixture(s) in the El Camino Real and Jordan Ave. sidewalk as directed by the City Engineer.

31. **Tree Protection**
The applicant shall implement and incorporate the tree protection measures into the plans and on-site as required by staff and in accordance with the report by Kielty Arborist Services dated January 3, 2019.

PRIOR TO FINAL OCCUPANCY

32. **Condominium Map**
The applicant shall record the condominium map as required by the City Engineer.

32. **Landscape and Irrigation Installation**
All on- and off-site landscaping and irrigation shall be installed and approved by the Community Development Director and the City Engineer. Provide a landscape Certificate of Completion,

signed by the project's landscape professional and property owner, verifying that the trees, landscaping and irrigation were installed per the approved landscape documentation package.

33. **Signage and Lighting Installation**
The applicant shall install all required signage and on-site lighting per the approved plan. Such signage shall include the disposition of guest parking, the turn-around/loading space in the front yard and accessible parking spaces.

34. **Green Building Verification**
The applicant shall submit verification that the structure was built in compliance with the California Green Building Standards pursuant to Section 12.26 of the Municipal Code.

35. **Acoustical Report**
The applicant shall submit a report from an acoustical engineer ensuring that the rooftop mechanical equipment meets the City's noise regulations.

36. **Sidewalk in Public Right-of-Way**
The applicant shall install new sidewalk, vertical curb and gutter, and driveway approaches from property line to property line along the frontage of El Camino Real and Jordan Avenue as shown on the approved plans and as required by the City Engineer.

37. **Public Infrastructure Repairs**
The applicant shall repair any damaged right-of-way infrastructures and otherwise displaced curb, gutter and/or sidewalks and City's storm drain inlet shall be removed and replaced as directed by the City Engineer or his designee. The applicant is responsible to resurface (grind and overlay) half of the street along the frontage of El Camino Real and Jordan Ave. if determined to be damaged during construction, as directed by the City Engineer or his designee. *Note: Any work within the El Camino Real will require applicant to obtain encroachment permit with Caltrans prior to commencement of work.*

38. **Maintenance Bond**
A one-year, ten-percent maintenance bond shall be submitted upon acceptance of improvements in the public right-of-way.

39. **SWMP Certification**
The applicant shall have a final inspection and certification done and submitted by the Engineer who designed the SWMP to ensure that the treatments were installed per design. The applicant shall submit a maintenance agreement to City for review and approval for the stormwater treatment methods installed in accordance with the SWMP. Once approved, City shall record the agreement.

40. **Stop Sign**
Install a "STOP" sign and stop bar at the garage exit to advise motorists to STOP before exiting the driveway.

41. **Warning Sign**
Install a "Car Coming" warning sign should be provided on the wall next to the parking garage entrance to alert pedestrians and bicyclists of vehicles exiting the garage.

42. **Bicycle Pathway**
A pathway (painted) shall be shown on the lower level basement floor plan to delineate a pathway from the elevator to the bicycle storage lockers on the lower basement level.

43. **Red Zones**
The project plans show a red zone to the left of the driveway (when exiting). In addition, a red zone shall be painted 19 feet to the right of the driveway to provide adequate sight distance.

ATTACHMENT B

Applicant Materials

- Cover Letter
- Public Outreach Letter
- Density Bonus Report
- Climate Action Plan Checklist
- Story Pole Certification and Approved Story Pole Plan
- Office and Retail Report

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July 2, 2019

Honorable Planning Commissioners
Attn: Sean Gallegos
Los Altos City Hall
1 North San Antonio Road
Los Altos, CA 94022

Dear Mr. Gallegos,

After completing the approval of Altos I the most luxurious development in Los Altos, which offered the most BMR's in any residential development in the last 10 years, the legacy will continue with Altos II. Altos II will offer a turn-key "city-living lifestyle" in the suburban market. Altos II is a 21-unit residential condominium development with integrated services and community living spaces that embody the type of transit-supportive development envisioned through Grand Boulevard Initiative that City of Los Altos is part of. This site is a perfect example of a new infill development. Strategically located close to the largest mixed-use retail and consumer services center in the area, Altos II is expected to bring urban style and sophistication to the El Camino corridor of Los Altos.

The development has been designed to accommodate the unique mix of buyers in the area, including downsizing seniors, millennials, families, and multi-generational families. We chose specific features to meet the needs of each of these groups, such as offices in select units (for remote workers) and single-floor configurations (for seniors).

The suburban world is changing rapidly to bring elements of urban living. To accommodate this, we've chosen a location close to services, installed bike lockers and built-in many features to make this a self-contained community.

Highlights of the project include:

- Open-living floor plans generally larger than other nearby developments
- All units single-story to maximize living space while appealing to urban living
- 1,011 square foot Family Room with Kitchen and AV services and 566 square foot gym
- 5800 square foot rooftop deck with grilling stations, dining tables, bar, TV, and outdoor seating
- Storage units and bike lockers, in the underground parking designated for each unit
- Solar system will be installed that will 100% cover the 4 BMR's usage plus the common areas of the building (elevator, lighting-garage, hallways, gym, rooftop deck)
- Walking distance to Cal Train and directly on a major bus route
- Building new address will be 4900 El Camino Real which will give uniqueness and recognition among other developments

Project Rationale and Benefits

The Altos II development brings greatly needed market rate and affordable housing to Los Altos in one of few areas where high-density housing is possible, along El Camino Real. Located directly behind Altos II is a parking lot with a width of 70ft which separates it from an existing town home 2 story complex. Within a quarter mile there are two supermarkets (Whole Foods and Safeway) along with more than 20 restaurants, dozens of consumer services or retail outlets, a hotel, and theater. There is little need for commercial services in this area but a substantial demand for residential units. Project is eliminating an 8,396 SF 2 story commercial building with 21 residential condominiums. There is no need of retail and more office space and this is further detailed on our retail/office vacancy report.

Altos II benefits Los Altos in several ways:

- Providing sorely needed housing units to meet the Housing Element
- Anticipated provision of over $600,000 in property tax revenue (based on sales projections)
- Addition of 4 "below market rate" housing units
- Continuing legacy of luxury and sophistication in residential construction
- Reinforces the "urban living" trend along El Camino Real

Building Design
The building was designed with a high-end modern aesthetic and features a variety of exterior finishes including; a smooth stucco finish, Equitone siding accents and lower level railings, elegant metal railings at upper levels for contrast and privacy, architectural wood toned siding for feature elements, and stone accents at lower walls and planters. The building façade is highly articulated with multiple plane changes. The balcony elements create a strong horizontal feature that is broken up by vertical massing elements. The building features a strong corner element at the intersection of El Camino Real and Jordan Avenue. This element defines the entry and steps back from the corner as it climbs up the building façade. The lower portion of the corner features a two-story lobby while the upper floors create a light and inviting elevator lobby at each level. The building includes a gym, a family Room, a small rear yard area to provide for safe outdoor play at the ground level for children, and more adult outdoor area is provided on the roof deck above the taller portion of the building.

Vehicular Access
The project proposes using an existing driveway and parking lot to access the project from Jordan Avenue instead of El Camino Real. The driveway / ramp will access a two level sub-grade parking garage. The underground Parking Levels consists of approximately 32,000 square feet and include 55 car parking spaces, 42 bicycle lockers, 4 E-bike spaces, the trash enclosure, mechanical room, and vertical circulation. All of the parking spaces are provided are Standard spaces. The resident parking includes 46 spaces, and there are also 9 guest parking spaces including required ADA spaces. These parking spaces will include 21 EV charging stations which will allow charging of vehicles in 42 of the parking spaces.

Pedestrian Access
The project is designed to address the corner of El Camino Real and Jordan Avenue. The building entry has been located so that there is direct pedestrian access from either street. In addition the vehicular access has been located at the back of the building off of Jordan Avenue to minimize conflicts with pedestrians. The entry element also includes an increased setback from both streets to provide a nice covered entry with a larger plaza space at the corner.

Bicycle Access
The project proposes to exceed the Santa Clara Valley Transportation Agency (VTA) bicycle parking guidelines. The guidelines specify that secure long-term bicycle parking should be provided at a ratio of one space per three units, which would require 8 bicycle parking spaces. The project proposes a secure bicycle storage room with 21 individual 2 bike lockers and 4 E-Bike spaces with 110 V outlets. The VTA guidelines also specify that 4 short-term bicycle spaces should be provided. The project proposes four short-term spaces at a bicycle rack near the front door.

Building Storage
The building is designed to accommodate the storage needs of the residents to the greatest extent possible. Each unit will be provided will an approximately 5’x8’ storage closet in the basement level. The storage spaces are fully enclosed and have 3’ access doors. In addition to these storage spaces, storage areas were a primary focus of the unit designs especially for the larger units which may be occupied by families. Wherever possible large storage closets were included within the design of the units.

PROJECT DESCRIPTION

This project is a multiple-family residential project at 4898 El Camino Real. The project consists of a 23-unit, five-story building, with two levels of underground parking. The project replaces the existing building which is approximately 8,396 SF (3,480 SF retail and 4,916 SF office). The following table summarizes the project:

GENERAL PLAN DESIGNATION:	Commercial Thoroughfare
ZONING:	CT (Commercial Thoroughfare)
PARCEL SIZE:	0.434 acres (18,919 square feet) Rear Ingress/ Egress Easement of 2000 square feet 0.388 acres (16,919 square feet)
MATERIALS:	Painted plaster cement siding, Equitone siding accents and railings, architectural wood toned siding, metal balconies railings, stone base and faced planters.

	Existing	**Proposed**	**Required/Allowed**
SETBACKS:			
Front	50’	20’(20% on menu incentive)	25’
Rear Grading	N/A	20’	No Limit
Right side	5 feet	10’ to 22’	4’ Min. / 15’-0” Ave.
Left side	0 feet	4’-6” to 43’	4’ Min. / 7’-6” Ave.
Rear	42’	20’	0’
Height Limit	+/-22’	56’(11’ on menu incentive)	45’
PARKING:	n/a	55 spaces	45 spaces (with density bonus)
DENSITY:	n/a	53 du / ac	38 du / ac

AFFORDABLE HOUSING

- Lot Size: 16,919 / 43560 = .388 ac
  Allowable Density: .434 ac x 38 du/ac = 14.74 = 15 Units
- Affordable Housing per LAMC
  15 du x 15% BMR = 2.25 = 3 BMR

DENSITY BONUS

- Affordable Units: 4 units
- 2 moderate / 2 very low: (2 very low / 15 = 13.33 % = 35 % Density Bonus)
- 15 units x 35 % = 21 units
- Proposed Building Configuration:
  - (16) 3 bedroom 2 bathroom units
  - (5) 4 bedroom 3.5 bathroom units
- Proposed BMR Units:
  - (2) 3 bedroom /2 bathroom moderate income
  - (2) 3 bedroom /2 bathroom very low income

DENSITY BONUS CONCESSIONS AND WAIVERS

This project is providing 4 BMR units and is requesting a 35% Density Bonus. With 13.33 % Very Low Units the project is entitled to two incentives or concession, and applicable waivers.

Incentives (10% very low = 2 incentives)

	Standard	Requested
1. Front yard setback decrease (20% on menu incentive)	25’	20’
2. Height increase (11’ on menu incentive)	45’	56’

Waivers

1. Elevator Tower Height Increase	12’	17’-6”
2. 154 SF Roof Structure increase*	(4%) 401 SF	(5.5%) 555 SF

*Includes elevator, stairs and trash enclosure

Parking Required per 65915(p) and LAMC 14.28.040 G2a

2 spaces per 3 Bedroom Unit: 16 Units x 2 spaces	32 Spaces
2.5 spaces per 4 Bedroom Unit: 5 Units x 2.5 spaces	13 Spaces
Visitor / ADA: included	0 Spaces
Total:	45 Spaces

Parking Provided

Resident	42 Spaces (including 21 EV chargers)
Visitor / ADA:	13 Spaces
Total:	55 Spaces

ELEVATOR TOWER INCREASE

An elevator is required to access the Occupied Roof deck per the CBC ADA access requirements. Due to the required height of the elevator tower we have placed it towards the middle of the building. This location allows the taller tower to be hidden from street level views by the edges of the building. The requested elevator tower increase is based on the minimum height required to install the elevator with the 8 levels of stops. There is 14’-7” of clearance required from the floor level of the highest stop to the underside of the hoist beam. The hoist beam for the elevator sits above that required clearance and below the roof of the elevator shaft. The roof structure itself is +/- 18’. Elevator sections and manufacturer’s cut sheets have been provided in the package on sheets A14 and A15 for reference.

4898 El Camino Real, Los Altos CA 94022

Outreach Meeting with Neighbors - Summary

Page#l: Pic from the meeting. Jeff Potts, our architect was there to address any concerns.

Page#2: Sign-In Sheet, we got seven neighbors that showed up at the meeting:

Shobana, who lives right behind Amber's Restaurant, was concern about privacy re her backyard/pool, and she thought that our development may be Amber's building; as soon as she realized that she is far away from our 4898 ECR location, she was all good.

Shuag, Ronnie, Virginia, and Jeffrey are actually tenants of 4898 ECR and they were mainly interested in finding out the timing of the project.

Masako has been renting for about six years in the tall building across ECR, the Avalon MtView, and she was just asking about timing too, and her concern was re construction, mainly about the noise during construction process.

Candy, a previous tenant of 4856 ECR, was just interested in the project in general.

Page#3: Sample of the letter that was sent out to:

339 Residents within 500 feet: 93 by Certified Mail and 246 by Regular Mail (550 Ortega and Avalon MtView) on 5/28-5/31/19.

182 Businesses within 500 feet: all by Certified Mail on 5/28-5/31/19.

A complete list of addresses, and all Green Slips for the Certified Mail are available and could be provided by request to the City, Planning Commissioners, or City Council Members.

Please let us know if you have any questions.

Thanks,

Mircea Voskerician

(A)

4898 El Camino Real – Los Altos – Condominium Development

Meeting with Neighbors, June 13th, 6:00pm-8:00pm

SignIn Sheet for 4898 El Camino Real – Los Altos – Condominium Development

Meeting with Neighbors, June 13th, 6:00pm-8:00pm

Name	Address	Signature
Shobana Raghupathy	281 March way Los Altos CA 94022	Shobana Raghupathy
Shuang Ying Li	4898 EL Camino Real	Shuang Ying Li
Ronnie TANG	"	Ronnie Tang
Virginia Ng	Mgmt. Of 4898 ECR.	Virginia Ng
Jeffrey Chan	"	J. Chan
MASAKO NONAMI	2400 EL CAMINO REAL. MV	
Candy Smolik	2482 W El Camino Real MV.	

(3)

May 25, 2019

4898 El Camino Real – Los Altos – Condominium Development

Meeting with Neighbors, Thursday June 13th, 6:00pm-8:00pm

Dear Resident/Neighbor:

I am sending you this notice on behalf of 4898 ECR LLC. We are currently in the entitlement process to develop a 21 unit all residential condo development at 4898 El Camino Real Los Altos 94022.

Our goal is reaching out to neighbors in order to receive their comments, feedback on current plans. If interested in providing with your feedback, please attend the meeting as 4898 ECR LLC manager and our architect will be present at the meeting, and we would do our best to address all your questions/concerns.

Meeting location

Where: 4856 El Camino Real, Unit A, Los Altos, CA 94022. Unit A is located on the first floor and parking is available behind the building.

In the meantime, feel free to contact us with any questions at 650-996-1114.

Mircea Voskerician

Manager, 4898 ECR LLC

July 24th, 2019

Planning Department
Attn: Sean Gallegos
Los Altos City Hall
1 North San Antonio Road
Los Altos, CA 94022

4898 El Camino Real, Los Altos, CA, 94022

Density Bonus Report

The proposal for this building was a 21-unit project with four (4) for-sale BMR units offered at very-low and moderate income levels. Those BMR units are contained in 6,684 net square feet. We are asking for two On Menu incentives; a 20% front yard setback reduction and 11 ft increased height, both On-Menu incentives. The combination of the two incentives is what enables the density required to obtain the building size and BMR units.

Number of BMR units and location	**FOR SALE**	**FOR SALE**
Category (Moderate/Very Low)	Moderate	Very Low
3 Bedroom (Units 101, 201- 2956SF)		2
3 Bedroom (Units 204, 305 -3728SF)	2	
4 Units Overall at 6684 SF	2	2

The gross cost of the proposed BMR units in the building is $840 per square foot for the net living area. That adds up to approximately $5.614M for the four (4) BMR units. This includes all hard construction costs, soft costs, and land valuation. The breakdown of that cost is $478 per square foot for construction and $362 per square foot for land cost. These figures are inclusive gross costs.

All those values are in 2019 dollars and not forecast to mid-2022 which is when these units are expected to actually sell. In fact, given the rapid rise in construction costs, since this project will not start construction until 2020, it is reasonable to expect these costs to be at least 6-8% higher, potentially more.

The value of the two (2) very-low income units is estimated to be $372,000. The value of the two (2) moderate income units is estimated to be $1,692,000. The project recovers $2,064,000 overall and will see a net lost value of approximately $3,550,000.

A distinctive advantage of these units is that they are larger and offer more bedrooms than the typical BMR unit mix. While most recent projects have had a substantial number of one and two bedroom units, this project offers all three bedroom units.

Basis for Density Bonus

Under existing city BMR guidelines, the density on this site is 15 units with a 15% affordability requirement which means 3 BMR units (by calculation actually 2.25 units). By requesting the combination of very low and moderate BMR units, the project is implementing 2 options to increase the density by 35% (permitted under state density bonus law) which is how we achieve 21 units overall. With 13.33 % Very Low Units the project is entitled to two incentives or concessions, and not a limited number of applicable waivers for which the project requests one waiver (elevator housing height increase) . The result is an additional unit, which is 16.66% of the new units generated by the implementation of the density bonus. This project is providing 4 BMR units and is requesting a 35% Density Bonus, permissible under State DB law.

Because this project is providing larger living units than other projects nearby, the increase in density is necessary to offer the additional unit. The average unit size is approximately 1600 square feet, which would have been about 5,000 in three units. However, the additional unit requires another 1600 square feet which is almost exactly the gross square footage gained by 2nd incentive: 20% decrease in front setback.

The 20% decrease in front setback translates into a 5 feet gain multiplied by the width of the livable width of the building (65 feet) multiplied by five stories equals 1625 square feet. That square footage gain is almost entirely allocated to the new affordable unit.

Density Incentive Explanation

We requested that the front yard setback be reduced five feet from 25 feet to 20 feet. This is to enable a slightly larger building overall and align it's massing with other projects in the area.

The requested "on menu" 11 ft height incentive is to do one thing: ensure we achieve five floors with sufficient density to support the proposed BMR unit count and mix. The height requested is aligned with two existing projects already approved on El Camino Real/CT Zoning.

Incentives (10% very low = 2 incentives)

	Standard	Requested
1. Front yard setback decrease (20% On Menu incentive)	25'	20'
2. Height increase (11' On Menu incentive)	45'	56'

Identifiable and Actual Cost Reductions

Government Code Section 65915(d)(1) provides that a "city, county, or city and county shall grant the concession or incentive requested by the applicant unless the city, county, or city and county makes a written finding, based upon substantial evidence" that (A)the incentive does not result in identifiable and actual cost reductions; (B) the incentive would have a specific adverse impact on public health, safety, the physical environment, or historic resources; or (C) the incentive would be contrary to state or federal law.

Government Code Section 65915 (d)(4) provides that the city, county, or city and county shall bear the burden of proof for the denial of a requested concession or incentive. The requested height concession would not have a specific, adverse impact, upon health, safety, or the physical environment, nor would the requested concession be contrary to state or federal law.

Government Code Section 65915(r) provides the Density Bonus Law "shall be interpreted liberally in favor of producing the maximum number of total housing units." The City Council has previously determined that the "on-menu incentives listed in LAMC 14.28.040 would not have a specific, adverse impact." The requested concessions requested by this project: 1) 20% decrease on front yard set back and 2) 11' height increase are both "On-Menu Incentives" referenced in LAMC 14.28.040(F)(1)(d).

The City has requested that applicant provide information concerning the "identifiable and actual cost reductions" that result from the requested incentive. As noted above, it is the City's of Los Altos burden to demonstrate that a requested incentive or waiver would not result in an identifiable and actual cost reduction rather than the applicant's burden to demonstrate that it would.

11 ft increases in height and 20% front set back decreases are specifically recognized in the City's code as an incentive and therefore, it should be presumed by the City that a 11 ft height incentive and a 20% decrease on front yard set back would result in identifiable and actual cost reductions (See Gov't Code §65915(o)(1); and LAMC 14.28.040(F)(1)(d).

CONCLUSION: Shifting the burden from City of Los Altos to the applicant to justify the need of incentives & waivers "**Identifiable and Actual Cost Reductions"** would be inconsistent with the State Density Bonus Law. Applicant recommends the City of Los Altos modify their density bonus handout to make it "DB law state complaint" by eliminating those requirements to the applicant. Applicant informed City of Los Altos planning department about those mandated DB law state changes over emails for the last 1.5 years.

Nevertheless, a reasonable estimation documentation to support our application as set forth below:

Without the additional 11' height incentive (to 56') and 20% decrease on the front set back to approximate a 100% residential building, the project would lose four (4) market rate units because one floor of the four (4) residential units would not be able to fit within the 45' height limit and 20% decrease in front set back equates (appx 1600SQFT) to another residential unit that would be lost.

Assuming a gross cost of the proposed below market rate unit of $840 per square foot, including two below-ground parking spaces, the cost of providing the proposed below market rate units is $5.641Million. This includes all pro-rata hard construction costs, soft costs, parking costs and land valuation. Since the construction costs are in 2019 dollars and not forecast to 2022 when these units are expected to be completed it is reasonable to assume that the cost of providing the proposed below market rate units will exceed $5.641Million.

In conclusion, the incentive to increase the height from 45'to 56' results in "identifiable and actual cost reductions" totaling $676,190 which helps subsidize the cost of the affordable units, as shown in the chart below.

		56 FT height (21 Market rate units) (Per Unit)	45 FT height (17 Market rate units) (Per Unit)
Gross Cost of BMR	$5,614,000		
Sales Price of BMR units	$2,064,000		
NET Cost of BMR units (21 Market Rate units)	($3,550,000)	($169,047)	($208,823)
Total Cost reduction from additional 4 Market Units		($676,190)	

In the alternative, because the existing 45' height limit would physically preclude the density bonus project, the requested height increase could also be approved as a waiver of a development standard under Government Code Section 65915(e)(1)

Waiver - Elevator Housing Tower Increase
An elevator is required to access the Occupied Roof deck per the CBC Accessibility regulations.

Waivers

1. Elevator Tower Height Increase 12' 17'-6"

Government Code Section 65915 (e)(1) – Waivers of Development Standards Government Code Section 65915 (e)(1) provides, in part, that "in no case may a city, county, or city and county apply any development standard that will have the effect of physically precluding the construction of a development meeting the criteria of subdivision (b) at the densities or with the concessions or incentives permitted by this section. Further, "nothing in the [Density Bonus] statute requires the applicant to strip the project of amenities, such as a rooftop that would require a waiver of development standards. Standards may be waived that physically preclude construction of a housing development meeting the requirements for a density bonus, period. (§ 65915, subd.(e)(1).)The statute does not say that what must be precluded is a project with no amenities (i.e. Rooftop), or that amenities may not be the reason a waiver is needed." (Wollmer v. City of Berkeley (2011) 193 Cal.App.4th1329, 1346– 1347.

Applicant is requesting a waiver of a development standard to allow the height of the elevator override for the residential building to exceed the 12' height exception for elevator overrides by 5'6" to a total structure height of 73'6" (comprised of the 56' height limit, with the requested 11' incentive, plus the 12' allowed height exception for elevator overrides, plus the requested 5'6" waiver of development standard). An elevator is required to access the occupied roof deck per the CBC ADA accessible access

requirements. Due to the required height of the elevator tower to provide the ADA accessible access, we have placed it towards the front of the building. This location allows the taller tower to be hidden by the staircase tower from El Camino Real pedestrian and vehicular views by the building. The requested elevator tower increase is based on the minimum height required to install the elevator with the 8 levels of stops. There is 14'-7" of clearance required from the floor level of the highest stop to the underside of the hoist beam. The hoist beam for the elevator sits above that required clearance and below the roof of the elevator shaft. The roof structure itself is +/-18". The proposed residential building cannot be constructed without the 5'6" waiver of development standard for elevator override and the failure to grant the waiver would preclude the construction of the common open space roof deck with the required ADA accessible access.

Elevator sections and manufacturer's cut sheets have been provided in the package on sheets A14 and A15 for reference. This same elevator model and specs shown in the current plans match the elevator used and approved by city on Altos One (4856 El Camino Real, Los Altos) 52 units and 21 units for 4880 El Camino Real Los Altos development.

Project Description

GENERAL PLAN DESIGNATION:	Commercial Thoroughfare
ZONING:	CT (Commercial Thoroughfare)
PARCEL SIZE:	0.434 acres (18,919 square feet) Rear Ingress/ Egress Easement of 2000 square feet 0.388 acres (16,919 net square feet)
MATERIALS:	Painted plaster cement siding, Equitone siding accents and railings, architectural metal panels, glass balconies railings, stone faced planters.

	Existing	**Proposed**	**Required/Allowed**
SETBACKS:			
Front	50'	20'(20% on menu incentive)	25'
Rear Grading	N/A	20'	No Limit
Right side	5 feet	10' to 22'	4' Min. / 15'-0" Ave.
Left side	0 feet	4'-6" to 43'	4' Min. / 7'-6" Ave.
Rear	42'	20'	0'
Height Limit	+/-22'	56'(11' on menu incentive)	45'
PARKING:	n/a	55 spaces	47 spaces (with density bonus)
DENSITY:	n/a	53 du / ac	38 du / ac

AFFORDABLE HOUSING

- Lot Size: 16,919 / 43560 = .388 ac
  Allowable Density: .434 ac x 38 du/ac = 14.74 = 15 Units
- Affordable Housing per LAMC

15 du x 15% BMR = 2.25 = 3 BMR

DENSITY BONUS

- Affordable Units/BMR's: 4 units
- 2 moderate / 2 very low: (2 very low / 15 = 13.33 % = 35 % Density Bonus)
- 15 units x 35 % = 21 units
- Proposed Building Configuration:
    - (16) 3 bedroom 2 bathroom units
    - (5) 4 bedroom 3.5 bathroom units
- Proposed BMR Units:
    - (2) 3 bedroom /2 bathroom moderate income
    - (2) 3 bedroom /2 bathroom very low income

City of Los Altos
Planning Division
(650) 947-2750
Planning@losaltosca.gov

NEW DEVELOPMENT
CLIMATE ACTION PLAN CHECKLIST

As required in the Los Altos Climate Action Plan, which was adopted in December of 2013, new development shall demonstrate compliance with all applicable best management practices outlined in the checklist below. This list should be included in the project plans and, for all applicable best management practices, provide a description for how the project will complying.

	Best Management Practice	Applicable to	Project Compliance		
1.1	***Improve Non-Motorized Transportation***				
☐	Provide end-of-trip facilities to encourage alternative transportation, including showers, lockers, and bicycle racks.	Nonresidential projects over 10,000 square feet	Yes	No	(N/A)
☐	Connect to and include non-motorized (bicycle and pedestrian) infrastructure on-site.	Nonresidential projects over 10,000 square feet	Yes	No	(N/A)
☑	Where appropriate, require new projects to provide pedestrian access that internally links all surrounding uses. Applicable to all new commercial and multiple-family development.	Nonresidential projects over 10,000 square feet	(Yes)	No	N/A
1.2	***Expand Transit and Commute Options***				
☐	Develop a program to reduce employee vehicle miles traveled (VMT).	Nonresidential projects over 10,000 square feet *(or over 50 employees)*	Yes	No	(N/A)
1.3	***Provide Alternative-Fuel Vehicle Infrastructure***				
☑	Provide electric vehicle (EV) pre-wiring and/or charging stations.	All projects	(Yes)	No	N/A
2.2	***Increase Energy Efficiency***				
☑	Install higher-efficiency appliances.	All new construction	(Yes)	No	N/A
☑	Install high-efficiency outdoor lights.	All new construction	(Yes)	No	N/A
☐	Obtain third-party heating, ventilating and air conditioning (HVAC) commissioning.	All new nonresidential construction	Yes	No	(N/A)

	Best Management Practice	Applicable to	Project Compliance		
3.1	***Reduce and Divert Waste***				
☑	Develop and implement a Construction and Demolition (C&D) waste plan.	All new projects	(Yes)	No	N/A
3.2	***Conserve Water***				
☑	Reduce turf area and increase native plant landscaping.	All new projects	(Yes)	No	N/A
3.3	***Use Carbon-Efficient Construction Equipment***				
☑	Implement applicable Bay Area Air Quality Management District construction site and equipment best practices. *Tables 8-1 and 8-2 in the District's Air Quality Guidelines (see separate handout).*	All new projects	(Yes)	No	N/A
4.1	***Sustain a Green Infrastructure System and Sequester Carbon***				
☑	Create or restore vegetated common space.	Projects over 10,000 sq ft	(Yes)	No	N/A
☑	Establish a carbon sequestration project or similar off-site mitigation strategy.	Projects over 10,000 sq ft	(Yes)	No	N/A
☑	Plant at least one well-placed shade tree per dwelling unit.	New residential projects	(Yes)	No	N/A

4898 El Camino Real (Altos II) CAP Checklist Project Compliance

1.1 Improve Non-Motorized Transportation

- Provide end-of-trip facilities to encourage alternative transportation, including showers, lockers, and bicycle racks.
- Connect to and include non-motorized infrastructure on-site
- Where appropriate, require new projects to provide pedestrian access that internally links all surrounding uses. Applicable to all new commercial and multiple-family development.
    - Project Compliance: N/A
    - Reasoning: The Altos II project is a residential project. This BMP only applies to non-residential projects.

1.2 Expand Transit and Commute Options

- Develop a program to reduce employee VMT
    - Project Compliance: N/A
    - Reasoning: The Altos II project is a residential project. This BMP only applies to non-residential projects.

1.3 Provide Alternative-Fuel Vehicle Infrastructure

- Provide electric vehicle (EV) pre-wiring and/or charging stations
    - Project Compliance: YES
    - Description of compliance: Out of the 56 parking spots proposed for Altos II, 25% of those spaces will be capable of being EV charging spaces for future installation.

2.2 Increase Energy Efficiency

- Install higher efficiency appliances
    - Project Compliance: YES
    - Description of Compliance: The project will include high-efficiency appliances as applicable
- Install high-efficiency outdoor lights
    - Project Compliance: YES
    - Description of Compliance: The project will include high-efficiency outdoor lights
- Obtain third-party heating, ventilating and air conditioning (HVAC) commissioning.
    - Project Compliance: N/A
    - Description of Compliance: HVAC commissioning is not required for residential projects.

3.1 Reduce and Divert Waste

- Develop and implement a Construction and Demolition (C&D) waste plan
    - Project Compliance: YES
    - Description of Compliance: A Construction and Demolition (C&D) waste plan will be developed and implemented prior to commencing demolition of existing structures.

3.2 Conserve Water

- Reduce turf area and increase native plant landscaping
  - Project Compliance: YES
  - Description of compliance: The project's landscape design does not include any turf or lawns. Vegetation incorporated into the landscape will comply with the State Water Efficient Landscape Ordinance.

3.3 Use Carbon Efficient Construction Equipment

- Implement applicable Bay Area Air Quality Management District construction site and equipment best practices. Tables 8-1 and 8-2 in the District's Air Quality Guidelines (see separate handout)
  - Project Compliance: YES
  - Description of compliance: As stated within the Air Quality report for Altos II, the project must implement the Bay Area Air Quality Management District (BAAQMD) Best Management Practices during construction. Mitigation Measure 3 implements additional measures to reduce emissions from construction.

4.1 Sustain a Green Infrastructure System and Sequester Carbon

- Create or restore vegetative common space.
  - Project Compliance: YES
  - Description of compliance: The landscape design includes common social areas that include new planters, shrubbery, and tress on both the ground-level and roof deck.

- Establish a carbon sequestration project or similar off-site strategy
  - Project Compliance: YES
  - Description of compliance: The GHG emissions associated with the are less than significant because the project would have emissions below the levels that BAAQMD identified in their CEQA Air Quality Guidelines. In addition, the project is replacing an existing source of GHG emissions. As noted, the project landscaping would maintain mature vegetation and new tree and shrub planting (e.g. 12 new trees onsite) to assist with carbon sequestration.

- Plant at least one well-placed shade tree per dwelling unit.
  - Project Compliance: YES
  - Description of compliance: The project cannot plant one shade tree per dwelling unit due to the architecture of the multi-family residential building. However, the project proposes to plant at least 12 trees on the ground-level and roof deck, which is an improvement over the current vegetation planted on the current site.

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS | LAND SURVEYORS

Main Office:
2495 Industrial Pkwy. West
Hayward, CA 94545
Ph: 510.887.4086
Fx: 510.887.3019

Sacramento Region:
3017 Douglas Blvd., Ste. 300
Roseville, CA 95661
Ph: 916.966.1338
Fx: 916.797.7363

July 12, 2019

Attn: Sean Gallegos
Planning Department – City of Los Altos
1 North San Antonio Rd.
Los Altos, Ca 94022
Phn-650-947-2752
Fax-650-947-2734

Subject: **Altos II**
4898 El Camino Real
Los Altos, California
APN: 170-03-085
Job No. 2181307 SU

To the Department:

Please consider this letter my certification that on July 11, 2019 we field verified the horizontal location and elevation of the erected story poles on the subject site and found the horizontal locations and elevation of the Story Poles to agree with the story pole plan by SDG Architects, Inc.

Please call me with any questions.

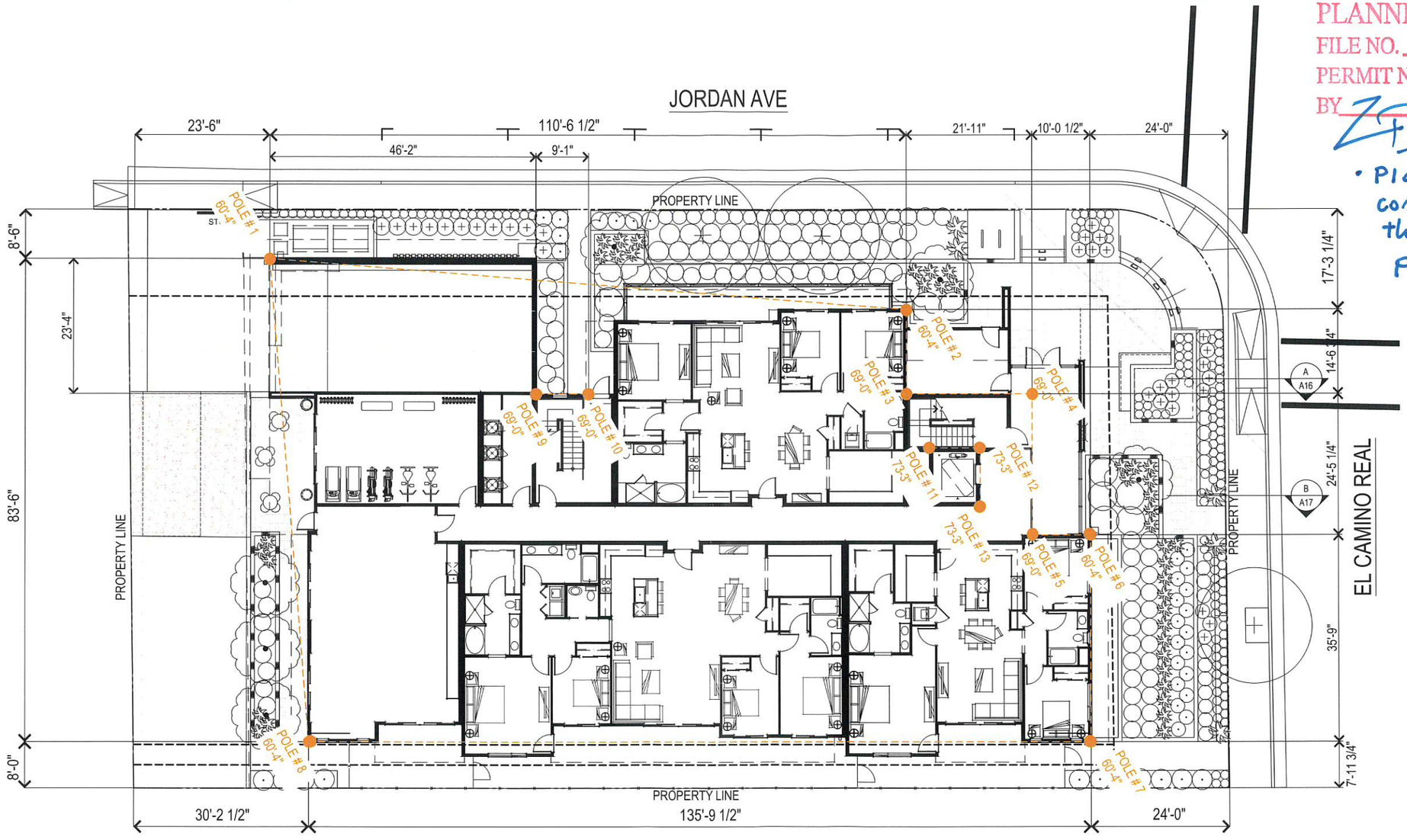
Sincerely,

Alexander Abaya
Land Surveyor

CC: Mircea
Email: mircea27v@gmail.com

APPROVED
PLANNING DIVISION
FILE NO. _____
PERMIT NO. _____
BY ZD DATE 6/13/19

- Plan confirmed for consistency with the City's Story Pole Policy.



Altos II
Los Altos, CA
June 4, 2019

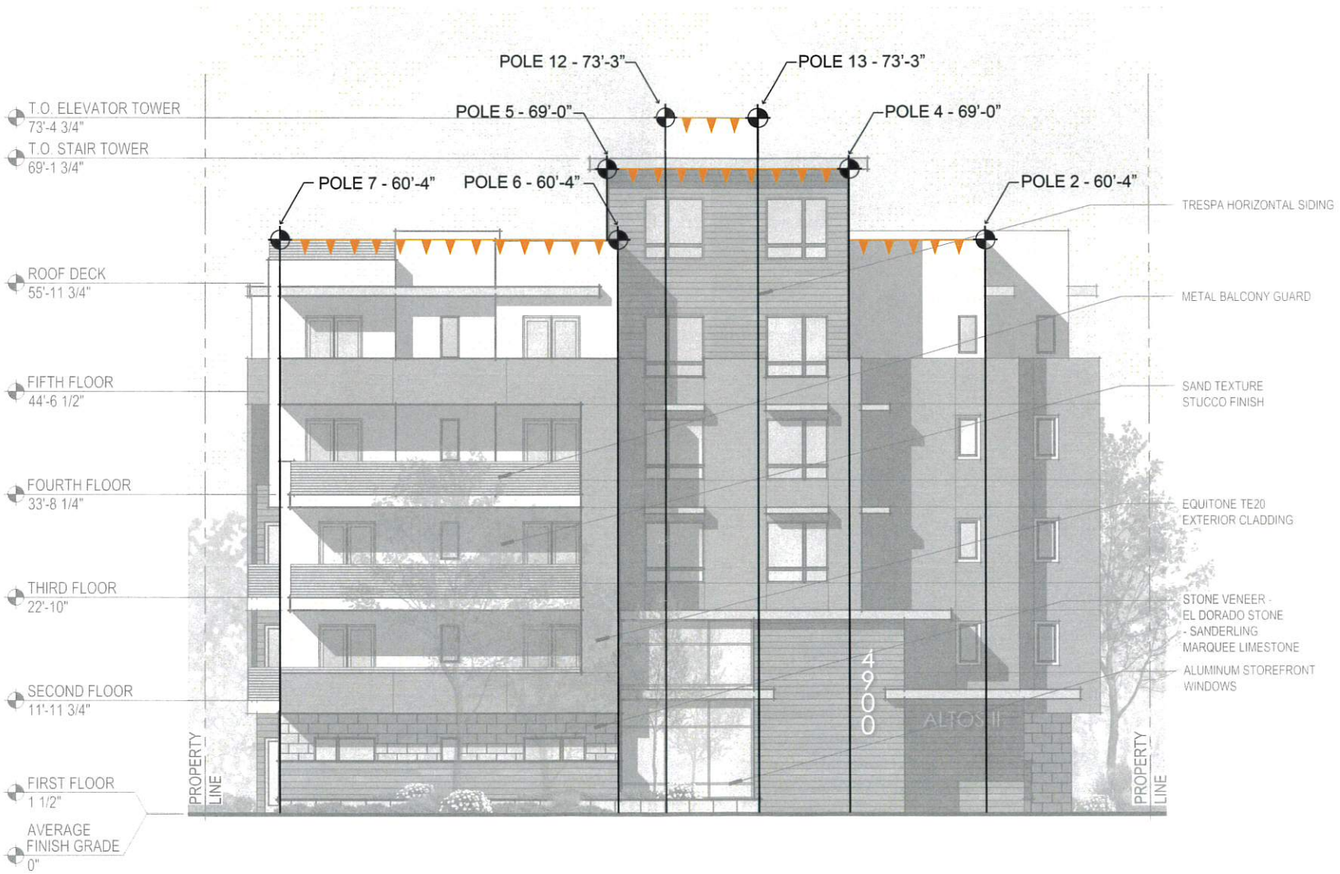
LICENSED ARCHITECT JEFFREY J. POTTER STATE OF CALIFORNIA

4898 ECR LLC
728 Addison Ave, Palo Alto, CA 94301
650.996.1114

0 2' 4' 6' 8' 10' 20'

STORY POLE SITE PLAN

SDG Architects, Inc.
3361 Walnut Blvd. Suite 120
Brentwood, CA 94513
925.634.7000 | sdgarchitectsinc.com



0 2' 4' 6' 8' 10' 20'

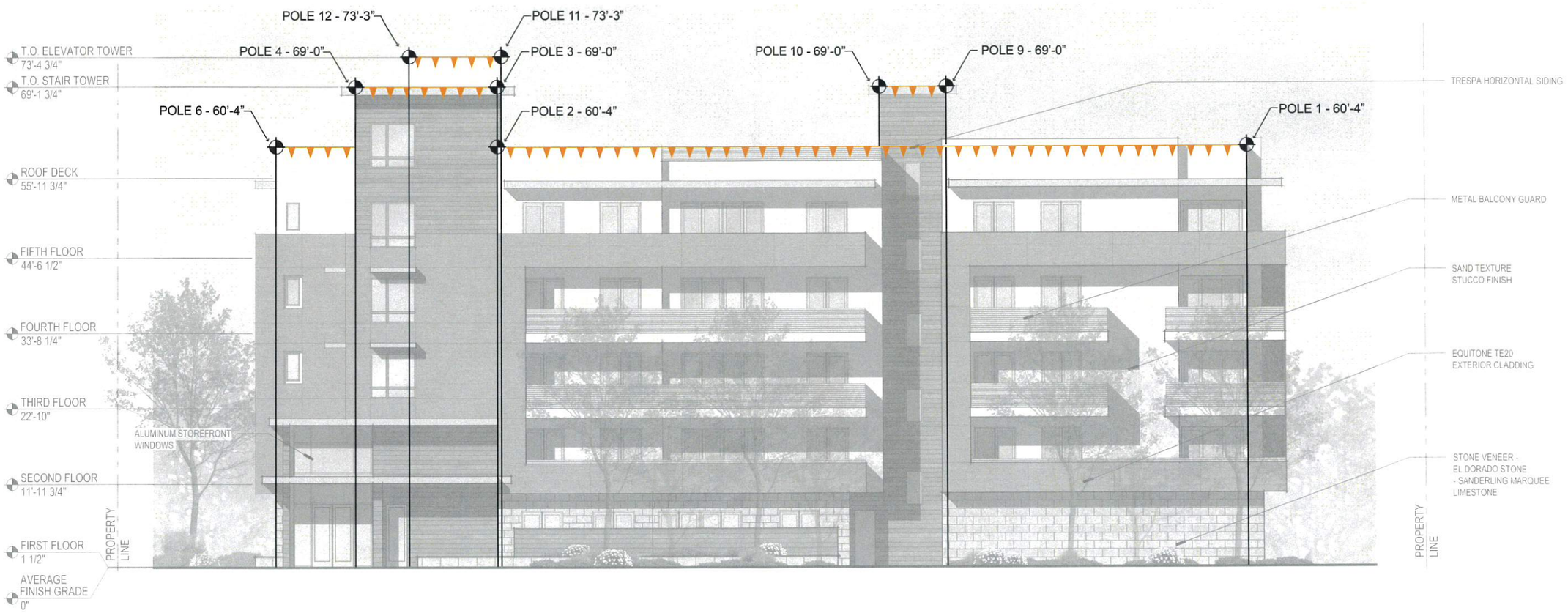
Altos II
Los Altos, CA
June 04, 2019

LICENSED ARCHITECT
JEFFREY J. POTTER
No. C-28714
Exp. 02-28-2019
STATE OF CALIFORNIA

4898 ECR LLC
728 Addison Ave, Palo Alto, CA 94301
650.996.1114

STORY POLE FRONT ELEVATION

SDG Architects, Inc.
3361 Walnut Blvd. Suite 120
Brentwood, CA 94513
925.634.7000 | sdgarchitectsinc.com



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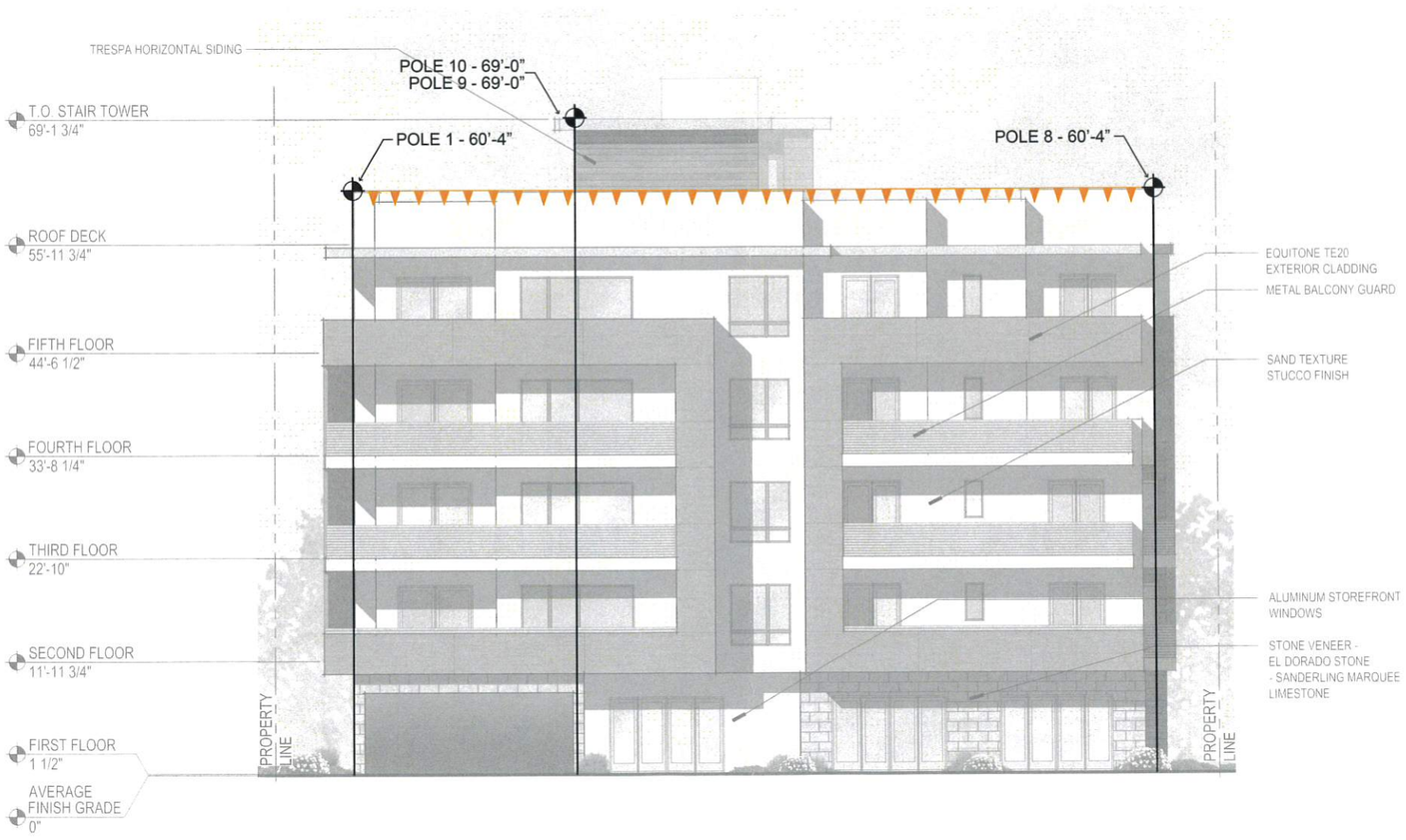
Altos II
Los Altos, CA
June 04, 2019

LICENSED ARCHITECT
JEFFREY J. POTTER
No. C-26774
Renewal 8/28/2019
STATE OF CALIFORNIA

STORY POLE RIGHT ELEVATION

4898 ECR LLC
728 Addison Ave, Palo Alto, CA 94301
650.996.1114

SDG Architects, Inc.
3361 Walnut Blvd. Suite 120
Brentwood, CA 94513
925.634.7000 | sdgarchitectsinc.com



0 2' 4' 6' 8' 10' 20'

STORY POLE REAR ELEVATION

Altos II
Los Altos, CA
June 04, 2019

LICENSED ARCHITECT
JEFFREY J. POLISKY
No. C-26714
Reg. 12/31/19
STATE OF CALIFORNIA

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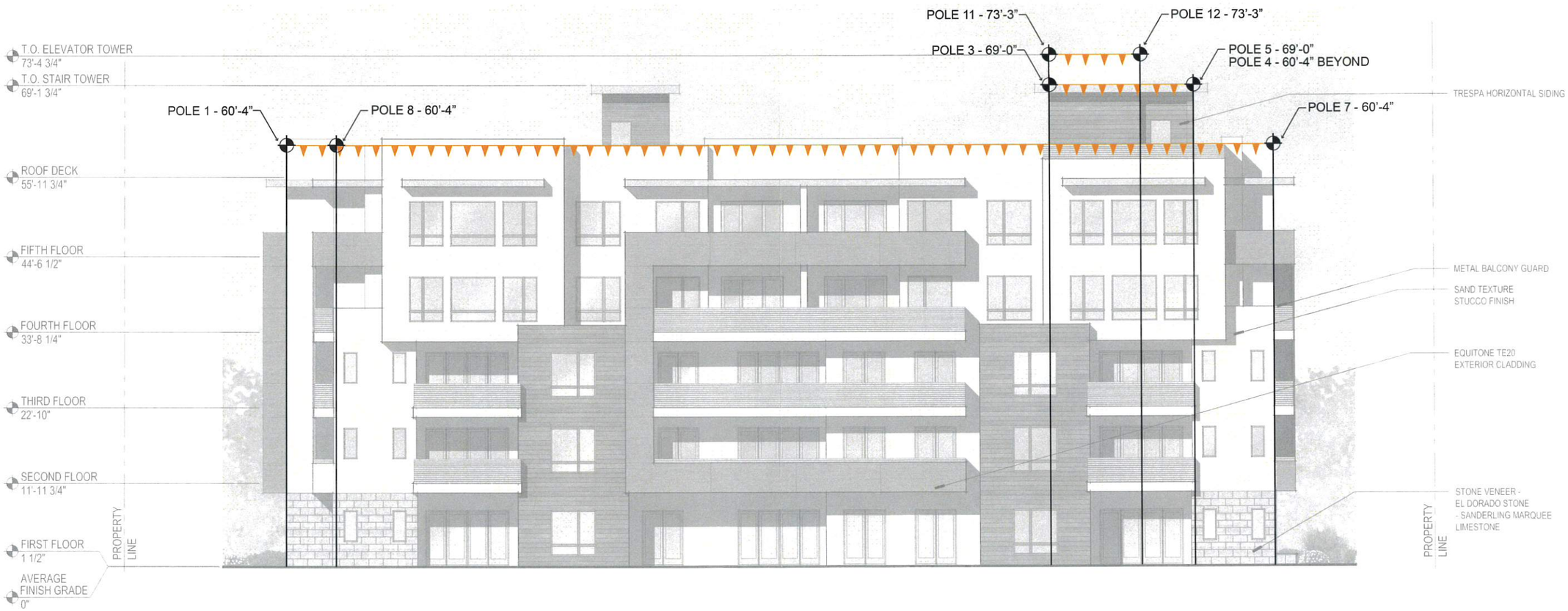

Altos II
Los Altos, CA
June 04, 2019

LICENSED ARCHITECT
JEFFREY J. POTTER
No. C-25744
Reg. 12/31/2019
STATE OF CALIFORNIA

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STORY POLE LEFT ELEVATION

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cushmanwakefield.com

July 22, 2019

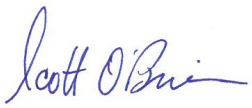
Los Altos Planning Commission
Los Altos City Council Members
1 San Antonio Road
Los Altos, CA 94022

RE: Altos Two Development at 4898 El Camino Real, Los Altos, CA 94022 – Rev I

Dear Honorable Members of the Los Altos Planning Commission and City Council,

My name is Scott O'Brien and I am a licensed commercial real estate broker with 16 years of experience in the Los Altos market. I have been asked to provide some data regarding the commercial uses of office and retail along the El Camino Corridor which borders Los Altos and Mountain View. Below you will find my analysis of the area with supporting market data. The supporting data is from Costar Group (www.costar.com) a third party commercial real estate research company.

Sincerely,



Scott O'Brien
(650) 320-0296
Lic #01339087
scott.obrien@cushwake.com

Los Altos/Mountain View El Camino Real Office Market Conditions:

There is currently a large amount of office space on the market for lease along the El Camino Real from Los Altos Avenue to Distel Circle. The current vacancy rate along the El Camino is 18.1%. The average asking rate is $4.80 per square foot. The average time to lease office space along El Camino Real approximately 6 months.

This asking rate is significantly higher than what the current Tenants are paying at 4898 El Camino Real. The office tenants at 4898 El Camino Real are currently paying an average of $2.32 per square foot. The office spaces are significantly under market and the Tenants will not find comparable rents in any of the local buildings, so will need to move further south or out toward the 101 Bayshore corridor where prices are less expensive. Creating office on the 1st floor of this development is not desirable with all the office space currently vacant and the multi-tenant office properties adjacent. In the one block adjacent to 4898 El Camino Real there is approximately 250,000 SF of office space. Housing is in demand and the addition of a 1,500 to 2,000 SF office space would not change the office landscape.

Los Altos/Mountain View El Camino Real Retail Market Conditions:

There retail vacancy rate along El Camino Real in Los Altos/Mountain View is currently 7.2%. The landscape of retail space along El Camino is changing and becoming more challenging.

The average time to lease spaces along El Camino Real is currently 5.5 months. This number is deceptive because there are spaces that have been on the market for more than 3 years at 4750 El Camino. These spaces have come on and off the market over the last two years with the ownership changing leasing brokers. They did lease one of the spaces to Coupa Café which opened about 6 weeks ago and is a great addition to the neighborhood, but there is still about 4,700 SF remaining for lease.

With the changing retail landscape many small retailers are finding it more and more difficult to compete with the "Big Box" retailers and Amazon. There is a significant amount of retail in this area at El Camino Real and San Antonio, so adding a new retail location would not be desirable. The average asking rate in that area is $3.82 per square foot on a NNN basis. This is much higher than Futon Shop is currently paying (currently paying $1.81 per square foot). The Futon Shop is struggling with the below market rent they are currently paying, so would not be able to move back into the development at market rate. The Futon Shop had an option to extend their lease for another five (5) years, but chose to cancel the option in December 2018. The Futon Shop has decided to close this location and not relocate it. They will be redistributing the inventory to their San Jose, San Mateo, and Santa Rosa locations. This was a business decision made by the Futon Shop as the Landlord did not ask them to leave.

There is approximately 15,000 SF of vacant retail space at the Village @ San Antonio. This is space that has been available for the last 4+ years. They have tried to lease this space off market during this time, but have not been successful. This is shop space that can be divided down to 1,000 SF or as large as 8,000 SF. The asking price is $4.50 - $5.75 NNN depending on the space and the size. This is retail space in a center with great parking, foot traffic, and exposure. Retail in this location will be more successful because it's close to other retail businesses with parking in front of the storefronts and foot traffic.

A retail location needs good exposure and good parking to be successful along El Camino. This property cannot provide the exposure and the parking needed because of the narrow frontage. A single retail location in this development would struggle because of limited exposure, limited foot traffic, and forcing customers to utilize an underground parking garage then accessing the space via an elevator and/or stairs. While underground parking has worked for other new retail developments along El Camino, those are much larger developments with multiple retail locations and other amenities that cannot be offered at this location. In a small development such as this the retail parking would be mixed with the residential parking. This is also not ideal for residents of the project because the public is now accessing their parking garage. Another challenge would be to provide a market ready space with 12'-14' ceiling heights that retailers require in today's market and finally the parking required for a retail use is much higher at 5 per 1,000 square feet which is onerous and burdensome on such a small footprint. A retailer would be better served by opening a location in a center nearby that has multiple tenants and parking directly in front of the premises and increased foot traffic because of the other retailers in center such as the Village @ San Antonio mentioned above.

MINUTES OF A REGULAR MEETING OF THE PLANNING COMMISSION OF THE CITY OF LOS ALTOS, HELD ON THURSDAY, FEBRUARY 21, 2019 BEGINNING AT 7:00 P.M. AT LOS ALTOS CITY HALL, ONE NORTH SAN ANTONIO ROAD, LOS ALTOS, CALIFORNIA

ESTABLISH QUORUM

PRESENT:	Commissioners Ahi, Bressack (acting Chair), Meadows and Mosley
ABSENT:	Chair Samek, Vice-Chair Lee and Commissioner Bodner
STAFF:	Planning Services Manager Dahl, Associate Planner Gallegos, and City Attorney Lee

PUBLIC COMMENT ON ITEMS NOT ON THE AGENDA

Resident Marianne Hawkes spoke about the El Camino Real corridor, noting that more parking was needed and that existing commercial office and retail uses should be maintained.

Resident Pierre Bedard spoke about the El Camino Real corridor, noting that a larger public notification area should be used for new development in the CT District, new development should provide adequate onsite parking and be mixed-use and there should be specific plan to guide future growth on the corridor.

Resident Nelson Gee spoke about the El Camino Real corridor, noting that cars per household is on the rise, 1.2 spaces per unit is not enough for new development since the use of mass transit on El Camino Real is in decline.

ITEMS FOR CONSIDERATION/ACTION

CONSENT CALENDAR

1. **Planning Commission Minutes**
   Approve the minutes of the February 7, 2019 Regular Meeting.

Action: Upon motion by Commissioner Meadows, seconded by Commissioner Mosley, the Commission approved the minutes from the February 7, 2019 Regular Meeting as amended.
The motion was approved (4-0) by the following vote:
AYES: Ahi, Bressack, Meadows and Mosley
NOES: None
ABSENT: Bodner, Lee and Samek
ABSTAIN: None

STUDY SESSION

2. **19-PPR-01 – Mircea Voskerician – 4898 El Camino Real**
   Design Review Study Session for a new multiple-family development at the corner of El Camino Real and Jordan Avenue. The proposal includes 23 residential condominium units in a five-story building with two levels of underground parking. *Project Planner: Gallegos*

Associate Planner Gallegos presented the staff report and answered questions.

Project applicant and owner Mircea Voskerician and architect Ralph Strauss presented the project design.

Public Comment

Property owner of 4906 El Camino Real Ed Lee noted that an access easement on the rear of the site must remain open for future use of 4906 El Camino Real and expressed concern about the project blocking views from his site.

Resident Phan Truong noted that mixed-use along El Camino Real should be preserved, housing only projects should include mixed-use and expressed concern about potential privacy impacts.

Resident Eric Steinle, 4388 El Camino Real HOA president, noted the need for a vision for the El Camino Real, that mixed-use should be preserved, the project should include more affordable housing and the design should be enhanced to be more of a gateway to Los Altos.

Resident Fred Haubensak noted support for an El Camino Real specific plan and that residential, multi-family is a conditional use and specific use permit findings are required before a project can be approved.

Commission Discussion

The Commission discussed the project and provided the following comments:

- Commissioner Ahi:
  - Development should include a greater mix of unit types and sizes;
  - Clarify the use and operation of the trash room and staging – rethink the location;
  - Asked if a family room needed;
  - Consider an alternative to the glass railings;
  - Use different colors to break up massing on vertical elements;
  - Consider a mixed-use component, such as office space; and
  - The overall mass/scale is okay, but consider softening the materials to make it more residential in appearance.

- Commissioner Meadows:
  - Supported previous comments;
  - Reduce amount of stucco and look at using a high-quality exterior metal and more natural materials;
  - Work on the design of the front entry at the corner of the property;
  - Consider an alternative to the glass railings;
  - BMR units well distributed, but need more variety in overall unit sizes;
  - Commercial space in mixed-use zones is hard to fill and don't want vacant spaces; and
  - Good transition to the residential behind the project.

- Commissioner Mosley:
  - Supported previous comments;
  - The architecture looks like commercial office;
  - Improve the better human scale on the corner;
  - Good relationship to the residential behind the project;
  - Explore different exterior materials to create a warmer feeling; and
  - Explore a mixed-use component to the project.

- Acting Chair Bressack:
  - Very commercial looking with a vertical emphasis;
  - Use a better color choices for accents;
  - Massing well articulated;
  - The decks appear too shallow and won't be functional;
  - Consider an alternative to the glass railings;
  - Use a better mix of unit sizes;
  - Reduce the vertical elements and use less stucco; and
  - Improve the corner element.

The Commission took a three-minute break before continuing the rest of the agenda items.

COMMISSIONERS' REPORTS AND COMMENTS

Commissioner Ahi reported on the February 12, 2019 City Council meeting.

POTENTIAL FUTURE AGENDA ITEMS

Acting Chair Bressack requested that staff group items on future Planning Commission agendas, when feasible, to avoid meetings with only one discussion topic.

ADJOURNMENT

Acting Chair Bressack adjourned the meeting at 8:15 P.M.

Zachary Dahl, AICP
Planning Services Manager

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MINUTES OF THE COMPLETE STREETS COMMISSION OF THE CITY OF LOS ALTOS, HELD ON WEDNESDAY, JUNE 26, 2019 AT 7:00 PM AT THE LOS ALTOS YOUTH CENTER, ONE NORTH SAN ANTONIO ROAD, LOS ALTOS, CALIFORNIA

PRESENT: Nadim Maluf (Chair), Suzanne Ambiel (Vice Chair), Stacy Banerjee, Randy Kriegh, Paul Van Hoorickx, Jaime O. Rodriguez (Interim Staff Liaison)

ABSENT: Herprit Mahal, One Vacancy

PUBLIC COMMENTS

None

ITEMS FOR CONSIDERATION/ACTION

1. Minutes

   Approve Minutes of regular meeting on May 22, 2019

   Upon motion by Commissioner Banerjee, seconded by Commissioner Kreigh, the Commission approved the Minutes of regular meeting on May 22nd with the following comments.

   - For the VTA BPAC representative, City Council to appoint Commissioner Banerjee to represent City of Los Altos for the remainder of the current term.
   - Comment about crossing guard was addressed for the whole City, not specific to El Monte Avenue and Covington Road.

   Approved with the following vote:
   AYES: 4. NOES: 0. ABSTAIN:1. ABSENT: 1. Passed 4-0

2. Complete Streets Master Plan

   Interim Staff Liaison Jaime Rodriguez presented the item to the Commission. Presentation included the introduction of four main elements of the project:

   - Bicycle and Pedestrian Transportation Plan
   - Suggested Routes to School – Map Updates
   - Transit Transportation Plan
   - Concept Plan Line Work for up to 12 Corridors and Intersection Hot Spots

   City Staff seeks to discuss each element of the project before the City releases request for proposal Fall 2019. City staff presented several candidates for corridors and hotspots for concept plan line work, then requested the Commission add to the list to complete it.

   Question from Commission:

   - What dated information did you use to come up with these corridors and intersections
     - Selection was not data driven, streets were chosen from the number of concerns from community and in coordination with other transportation projects.

- How do we go from choosing 4 topics into implementing the plan lines?
    - Foster City has done a similar project recently.
    - The steps will start with selection of consultant, conduct study and community engagements, plan line development and approval, then implementation of the plan.
- Shouldn't the City have the consultants select the corridors and intersections?
    - City staff would like to select the corridors and intersections first to have a better idea of project cost
- Corridor selection is based on 4-5 month of complaints, we should spend more time selecting corridors and intersections, we should take longer for study and data to select.
    - City cannot afford to do a study before hiring consultant, we expect the community and Commission to come up with the list. The list provided is a starting point, we will have 2-3 months to complete the list with community and Commission input.

Request to speak from community:

- Proposed an idea for Miramonte bike path. Bike path on convenient side streets, connect bike path and boulevards by utilizing not low volume streets.

Feedback from Commission:

- El Camino Real corridor within Los Altos should be looked at. Possibly coordinate with Mountain View projects.
- Few missing locations that should be picked up such as Egan School and Santa Rita School.
- Would like to see flashing crosswalks, truck routes, and collected traffic data.
- Ask for feedback from school community.
- Would like to take more time to prepare the selection of streets.
- Should ask each commissioner for 10 corridors and intersection ideas. May be a good idea to use County's interactive map for hotspots.

3. <u>Development Project Review, 4898 El Camino Real</u>
Associate Planner Sean Gallegos presented the item to the Commission. A new five-story multi-family development with 23 units.

Commission Question:

- Level of service were studied for intersections, what kind of study were done for residential study on Jordan?
    - Asked for focused analysis along El Camino Real, along with sidewalk installation and landscape.
- How did the traffic study conclude with 1 trip for a specific turn at Jordin Avenue?
    - Generated trips are distributed outbound, majority of trips are anticipated to use El Camino Real and less on Jordan Avenue.

- Define "stop bar" and "car coming sign"
    - Stop bar is equivalent to the striping placed at a stop sign indicating where a car should stop. Car coming sign is usually a sign that illuminates when a car is coming out of a garage, alerting the pedestrian that a vehicle is exiting around blind corner.

Commission Feedback:

- City to look for opportunity to upgrade traffic signal at Jordan Avenue and El Camino Real.
- Ground level of the site should have marked bike paths.
- Highlight safe route to school and level of service at intersection close to school.
- It would be good to have information on the demographic of people who come in to live in the new developments.
- Plan to have drop-off/pick-up location for deliveries and ridesharing.

Motion made by Vice Chair Ambiel, seconded by Commissioner Banerjee with the recommendation to add surface level paints for bikers, and red curb at Jordan Avenue driveway. The Commission approved the project to be presented to Planning Commission and City Council with the following vote:
AYES: 5. NOES: 0. ABSTAIN:0. ABSENT:1.
Passed.

4. <u>444 – 450 First Street development</u>
Senior Planner Steve Golden presented the item to the Commission. A new four-story multi-family development with 26 units.

Commission Question:

- The ramp to the entrance of the building is too narrow for bicycle.
    - Architect is prepared to adjust the width of the ramp.
- Is there an Electric Vehicle parking space?
    - No, but we are prepared to make adjustment to add EV parking spaces.
- Where is garbage pickup located?
    - It is located on-site at the garage ramp.
- Is there a loading area?
    - Currently working with the City's public works for loading zone.
- On the report page 4, additional guest parking was not required, why?
    - Housing accountability act and city muni code did not require additional guest parking.

Commission Feedback:

- Improve ingress and egress for ADA and bikers.
- Look at projected demographics of residents to foresee any issues.
- EV charging station for vehicle and bikes.
- Request to staff, most of the question and comments are repeated for many developments. Possibly make these common questions into a checklist to save time.

Motion made by Commissioner Banerjee, seconded by Vice Chair Ambiel with the recommendation to include confirmation of 6-ft side walk, red curb for northern driveway, EV charging, and bicycle parking reconfiguration. The Commission approved the project to be forwarded to the Planning Commission and the City Council with the following vote:
AYES: 5. NOES: 0. ABSTAIN:0. ABSENT:1.
Passed.

5 Cumulative Study Scenarios in Traffic Impact Analysis (TIA) Studies

Interim Staff Liaison Jaime Rodriguez presented the item to the Commission. As a continuation from previous meeting, staff presented the type of software that can be used to generate cumulative traffic model. The VTA currently operates congestion management program using PVT Vistro. This program is capable of data sharing with neighboring agencies and alter signal timings. Downside is that this is not cloud-based, we will need to coordinate with other agencies to combine the model. City can arrange a vendor presentation for the Commission to explain the use and benefits of the software. Starting July 2020, Vehicle Miles Traveled (VMT) will be used instead of Level of Service (LOS) to analyze traffic impacts. City staff will work to develop VMT policy before the implementation in 2020. Item is informational, no action requested.

Commission Question and Comments:

- Can VMT be used to determine intersection performance?
  - LOS can still be used to monitor offsite improvements at a certain intersection.
- The new software uses LOS, can we still make use of this software?
  - We can still use it to point out trigger points for offsite improvement, but not as trigger point for SEQA.
- Is there any way to convert LOS into VMT?
  - There is no conversion equation, they are completely different concept.
- Does VMT take in account of transit
  - Project with more transit accommodation will have better VMT result.
- LOS for bikes and pedestrians should be looked at, not just vehicles.
- What does Mountain View use for cumulative study?
  - Mountain View currently use Traffix, which does not have cumulative capability. They are looking into PVT Vistro as well.

6 Complete Streets Commission Work Plan

Commission and Staff discussed Commission work plan.

- Missing items from previous list
  - Semi-Annual meeting with Police Department.
- Possibly have committee develop plans, to help staff and Commission with workload.
- Need to familiarize new members with City's Masterplan.
- Follow up on Truck Route improvement
- Measure B community meeting

Request to speak from Community:

- Advocate for work plan on El Camino Real, parking study was dropped from the committee meeting. Requested further attention for 5150 development and the traffic volume and accidents at Casita Way.
- Resident from Casita Way shared concern for traffic safety from congestion and speeding.

INFORMATIONAL ITEMS

7 Monthly Staff Report
Receive information and announcements from City Staff

- Introduced Kathy Kim, new addition to the Transportation team as Assistant Civil Engineer.
- Recruitment for Transportation Services Manager is continuing.
- New Engineering Services Director, James Sandoval starts 7/1.
- Contract extended for Transportation Consultant and Interim Staff Liaison Jaime Rodriguez.

COMMISSIONERS' REPORTS AND COMMENTS

- Commissioner Banerjee attended VTA BPAC meeting. Discussed funding for Master Plan. There is no meeting in June and cannot attend July meeting.

POTENTIAL FUTURE AGENDA ITEMS

- Discuss up to 12 corridors and intersection for Complete Streets Master Plan.
- Postpone or reschedule July meeting.

ADJOURNMENT

Chair Maluf adjourned the meeting at 10:35 PM

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HEXAGON TRANSPORTATION CONSULTANTS, INC.

June 17, 2019

Mr. Sean Gallegos
City of Los Altos
1 North San Antonio Road
Los Altos, CA 94022

Subject: Traffic Report for the Proposed Residential Project at 4898 El Camino Real, Los Altos

Dear Mr. Gallegos:

Hexagon Transportation Consultants, Inc. has completed this traffic report for the proposed residential project at 4898 El Camino Real, Los Altos (see Figure 1). The project is proposing a total of 21 residential units to replace the existing building on site that includes a 3,480 s.f. furniture store, 2,606 s.f. of retail space, and 2,310 s.f. of office space.

The purpose of this analysis is to identify any potentially significant traffic impacts at the intersection of El Camino Real and Jordan Avenue and to analyze roadway improvements that may be necessary to support the proposed uses. A trip generation analysis was conducted for the purpose of identifying the change in traffic due to the proposed development of the site. This study also includes an evaluation of site access and on-site circulation. The trip generation estimates and traffic impact analysis were calculated for the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 AM, and the PM peak hour is typically between 4:00 and 6:00 PM. It is during these periods that the most congested traffic conditions occur on an average day.

Scope of Study

The impacts of the project were evaluated following the standards and methodologies set forth by the City of Los Altos. The study determined the traffic impacts of the proposed residential development on the intersection of El Camino Real and Jordan Avenue during the weekday AM and PM peak hours of traffic (7:00-9:00 AM and 4:00-6:00 PM). The project driveway would be located on Jordan Avenue.

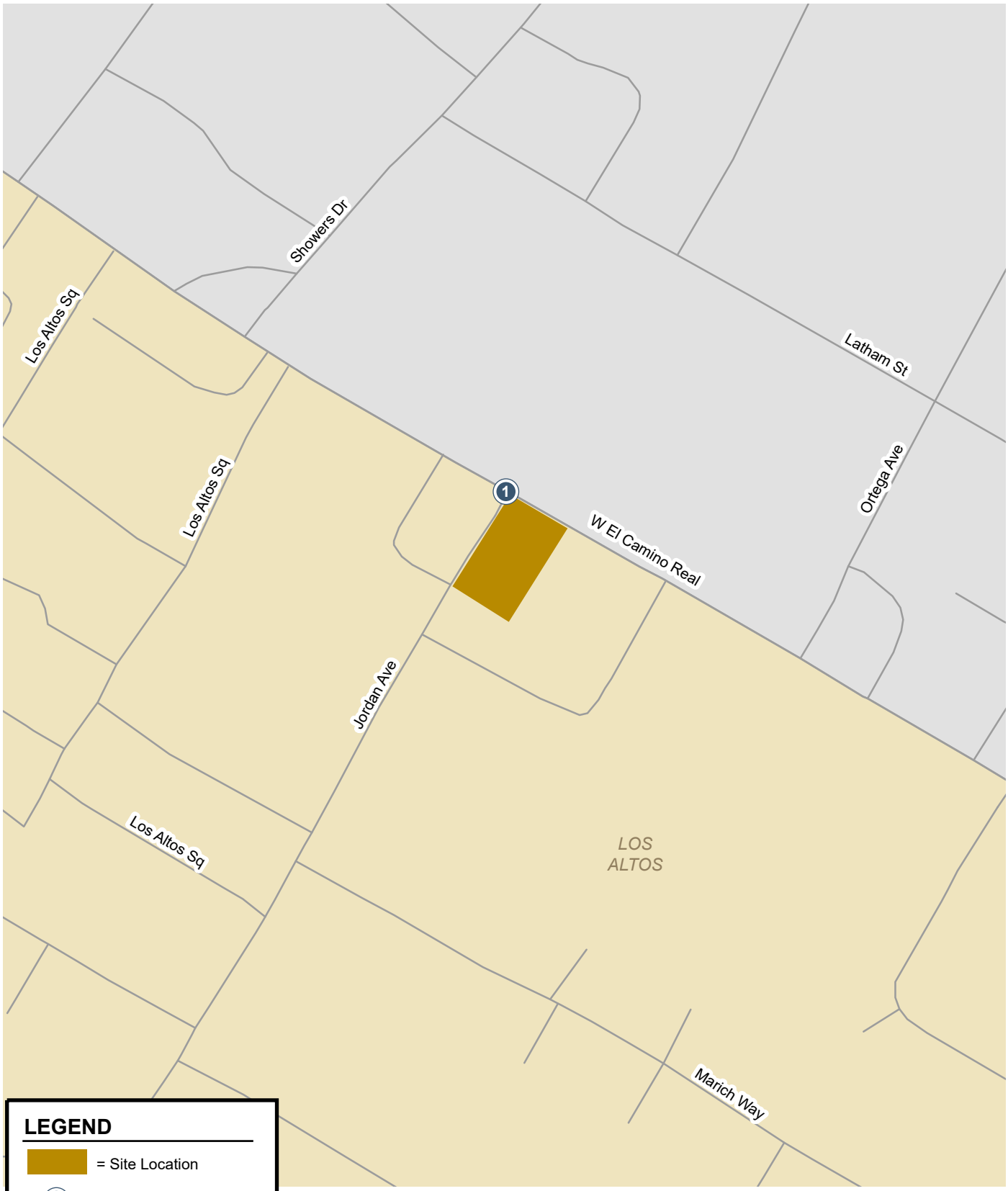


Figure 1
Site Location and Study Intersection

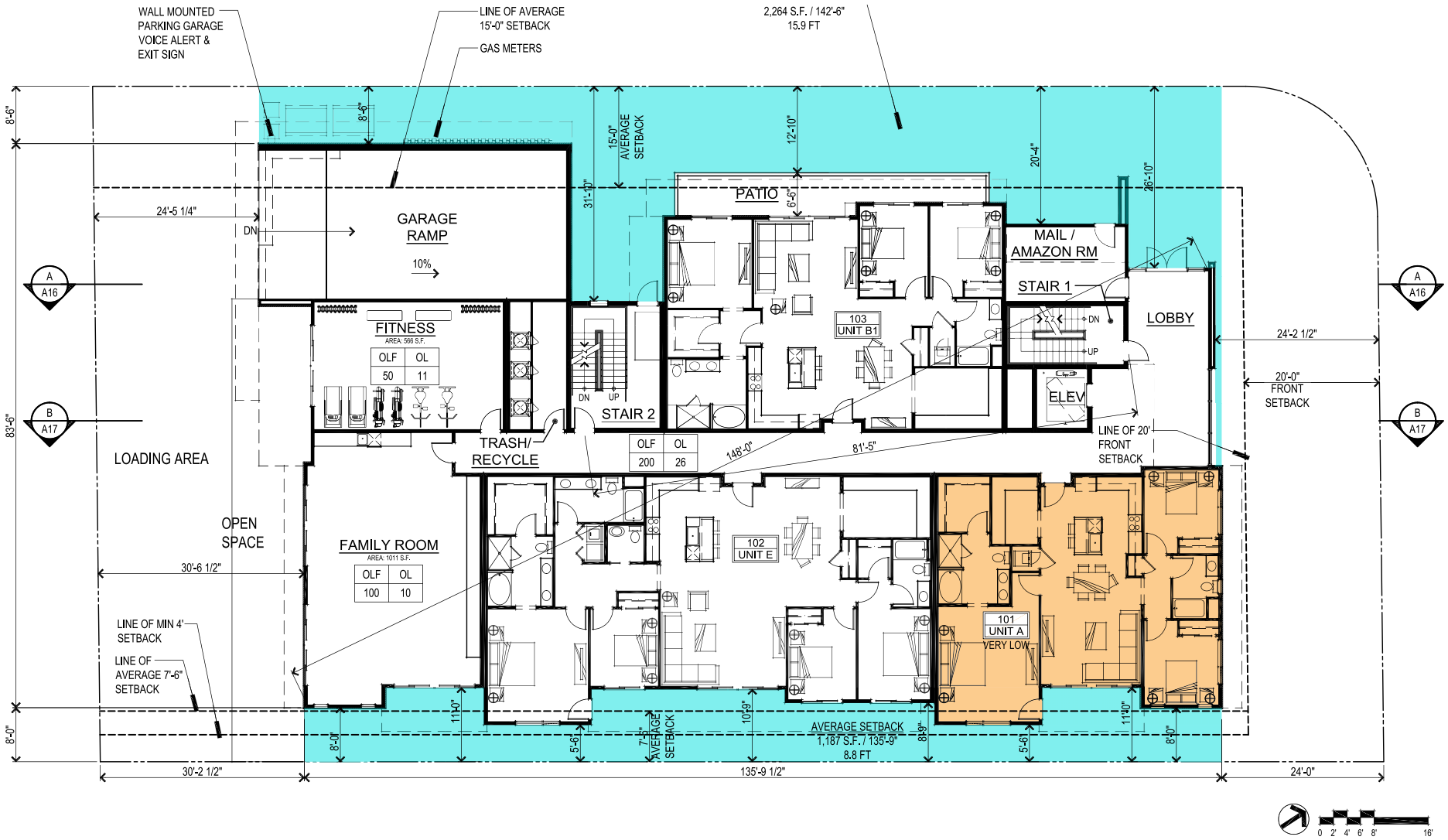


Figure 2
Proposed Site Plan

Traffic conditions at the study intersection were analyzed for the weekday AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak hours of commute traffic, which represent the peak hours of traffic for the roadway network and the peak period of trip generation for the proposed project. Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing traffic volumes were obtained from traffic counts conducted in May 2019 for this study.

Scenario 2: *Existing Plus Project Conditions.* Existing plus project traffic volumes were estimated by adding to existing traffic volumes the trips associated with the proposed development. Existing plus project conditions were evaluated relative to existing conditions in order to determine potential project impacts.

Scenario 3: *Near-Term Conditions.* Near-Term traffic volumes were estimated by applying a growth factor (2 percent per year) for two years to existing traffic volumes.

Scenario 4: *Near-Term plus Project Conditions.* Near-Term traffic volumes with the project were estimated by adding to near-term traffic volumes the additional traffic generated by the project. Near-term plus project conditions were evaluated relative to near-term conditions in order to determine potential project impacts.

Methodology

This section describes the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the analysis methodologies and the applicable level of service standards.

Level of Service Standards and Methodology

Traffic conditions at the study intersection were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The analysis methods are described below.

The City of Los Altos evaluates intersection levels of service using the TRAFFIX software, which is based on the Highway Capacity Manual (HCM) 2000 method, for signalized intersections. Since TRAFFIX is the level of service methodology for the CMP-designated intersections, the City of Los Altos employs the CMP default values for the analysis parameters. The HCM method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. This average delay can then be correlated to a level of service. Table 1 presents the current VTA level of service definitions for signalized intersections, which replaced the older standards found in the Los Altos General Plan. The City of Los Altos level of service standard for signalized intersections is LOS D or better.

Table 1
Signalized Intersection Level of Service Definitions Based on Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B+ B B-	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 12.0 12.1 to 18.0 18.1 to 20.0
C+ C C-	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though may still pass through the intersection without stopping.	20.1 to 23.0 23.1 to 32.0 32.1 to 35.0
D+ D D-	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 39.0 39.1 to 51.0 51.1 to 55.0
E+ E E-	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 60.0 60.1 to 75.0 75.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p10-16.
VTA Traffic Level of Service Analysis Guidelines (June 2003), Table 2.

Signalized Intersection Impact Criteria

According to City of Los Altos level of service standards, a development is said to create a significant adverse impact on traffic conditions at a signalized intersection if for either peak hour, either of the following conditions occurs:

1. The level of service at the intersection degrades from an acceptable level (LOS D or better for local intersections) under no-project conditions to an unacceptable level (LOS E or F for local intersections) under project conditions, or
2. The level of service at the intersection is an unacceptable level under no-project conditions and the addition of project trips causes the average critical delay to increase by four (4) or

more seconds and causes the critical-movement volume-to-capacity ratio (V/C) to increase by one percent (.01) or more.

A significant impact is said to be satisfactorily mitigated when measures are implemented that would restore intersection conditions to its level of service standard or to an average delay that is better than no-project conditions.

Existing Intersection Levels of Service

The existing lane configurations at the study intersections were obtained from field observations. Existing traffic volumes were obtained from traffic counts conducted on May 9, 2019. The existing AM and PM peak hour intersection volumes are shown graphically on Figure 3. Volumes under existing conditions are presented in Appendix A.

Intersection levels of service were evaluated against the Los Altos standards (see Tables 2). The results of the analysis show that the study intersection currently operates at acceptable levels during both AM and PM peak periods. The intersection level of service calculation sheets are included in Appendix B.

Table 2
Existing Intersection Level of Service Summary

#	Intersection	LOS Standards	Peak Hour	Count Date	Existing Avg Delay	Existing LOS
1	El Camino Real & Jordan Ave	D	AM	5/9/2019	19.7	B -
			PM	5/9/2019	14.2	B

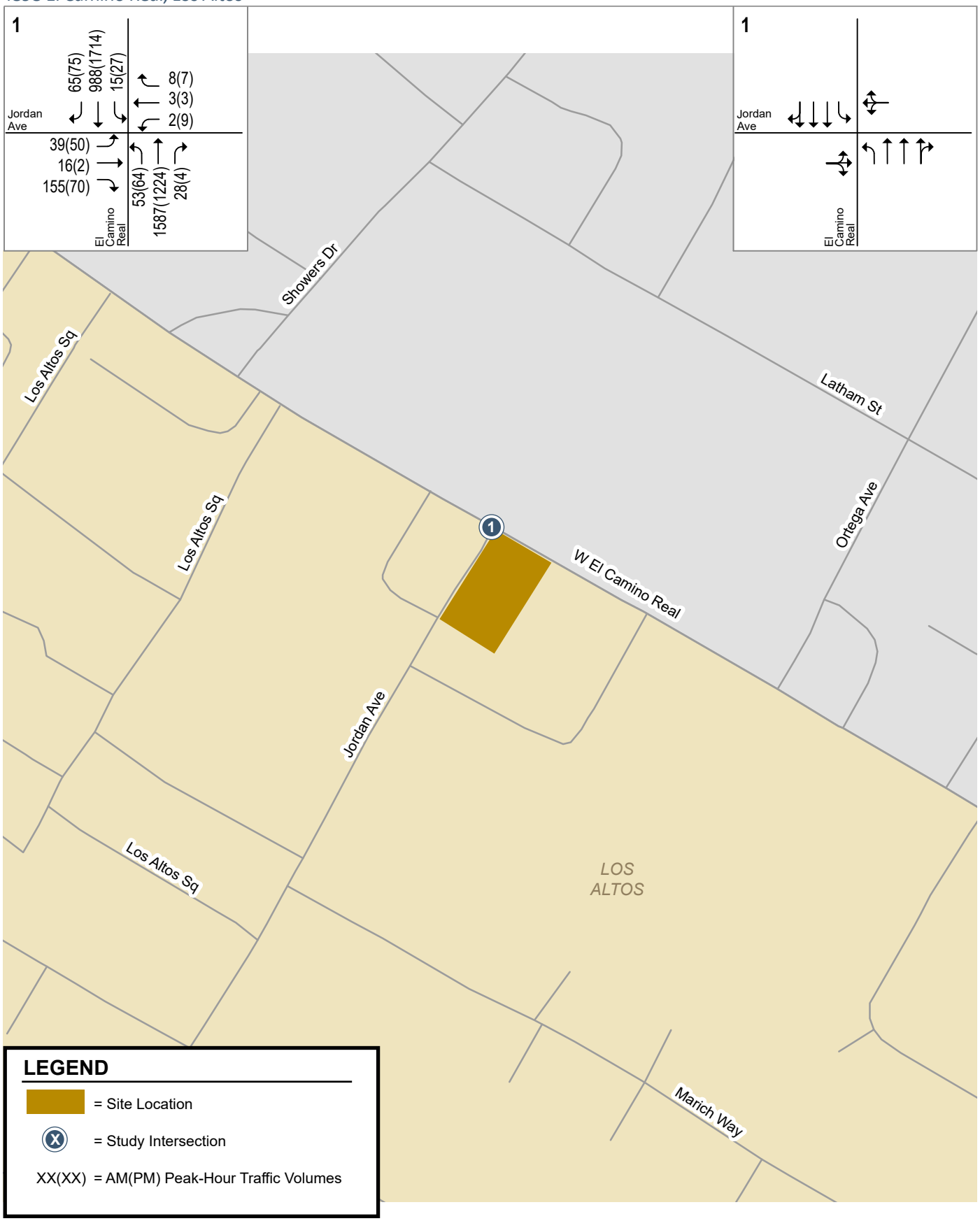


Figure 3
Exisitng Intersection Lane Configurations and Traffic Volumes

Near-Term Conditions

Near-term peak hour traffic volumes were estimated by applying a growth factor (2 percent per year) for five years to existing traffic volumes. Since there are numerous projects in the Cities of Los Altos and Mountain View that would add traffic, and El Camino Real is a major regional route, a 2 percent per year growth factor was used to represent the added traffic along El Camino Real. This is a very high growth factor and is expected to account for all known projects plus regional growth. Volumes under background conditions are presented in Appendix C. The results of the intersection level of service analysis under near-term conditions are summarized in Table 3. The results of the analysis show that the study intersection would operate at acceptable levels of service during both AM and PM peak periods under background conditions. The intersection level of service calculation sheets are included in Appendix B.

Table 3
Near-Term Condition Intersection Level of Service Summary

				Existing		Near-Term	
#	Intersection	LOS Standards	Peak Hour	Avg Delay	LOS	Avg Delay	LOS
1	El Camino Real & Jordan Ave	D	AM	19.7	B -	20.0	B -
			PM	14.2	B	14.3	B

Project Trip Generation

The magnitude of traffic generated by the project was estimated by multiplying the applicable trip generation rates by the size of the development. The Institute of Transportation Engineers (ITE) manual entitled *Trip Generation*, *10th Edition* was used for the analysis. The trip generation rates used for the proposed development are based on the rates published for “Multi-Family Housing -- Mid-Rise” (ITE Code 221). Based on these rates, the proposed project would generate 114 daily trips with 8 trips during the AM peak hour and 9 trips during the PM peak hour (see Table 1).

Traffic counts at the existing site driveways were conducted on April 30, 2019 to quantify the peak-hour trips generated by the existing uses (see Appendix A). Based on the driveway counts, the existing uses on site generate 0 trips during the AM peak hour and 16 trips during the PM peak hour. These trips were deducted from the estimated number of trips generated by the proposed new residential development, which results in a net increase of 34 daily trips with 8 more trips in the AM peak hour and 7 fewer trips in the PM peak hour. The project trip generation estimates are presented in Table 4. Since the proposed project would add fewer than 50 new daily trips, a full transportation impact analysis is not required per the Los Altos General Plan’s Circulation Element.

Table 4
Trip Generation Estimates for 4898 El Camino Real, Los Altos

			Daily Rate		AM Peak Hour				PM Peak Hour			
Land Use	**Size**	**Unit**	**Rate**	**Trips**	**Rate**	**In**	**Out**	**Trips**	**Rate**	**In**	**Out**	**Trips**
Proposed Project												
Residential [1]	21	units	5.44	114	0.36	2	6	8	0.44	5	4	9
Exsiting Uses												
Retail and Office [2]	8.396	ksf		80		0	0	0	0	8	8	16
Total Existing	8.396	ksf		**80**		**0**	**0**	**0**		**8**	**8**	**16**
Net Project				**34**		**2**	**6**	**8**		**-3**	**-4**	**-7**

Notes:

All rates are from: Institute of Transportation Engineers, *Trip Generation, 10th Edition,* 2017

1. Land Use Code 221: Multifamily Housing (Mid-Rise) (average rates, expressed in trips per unit)
2. Based on driveway counts. Daily estimated as 10 times average of AM and PM.

Project Trip Distribution and Assignment

The project trips were assigned to the surrounding roadway network based on existing travel patterns in the study area and the locations of complementary land uses (see Figure 4).

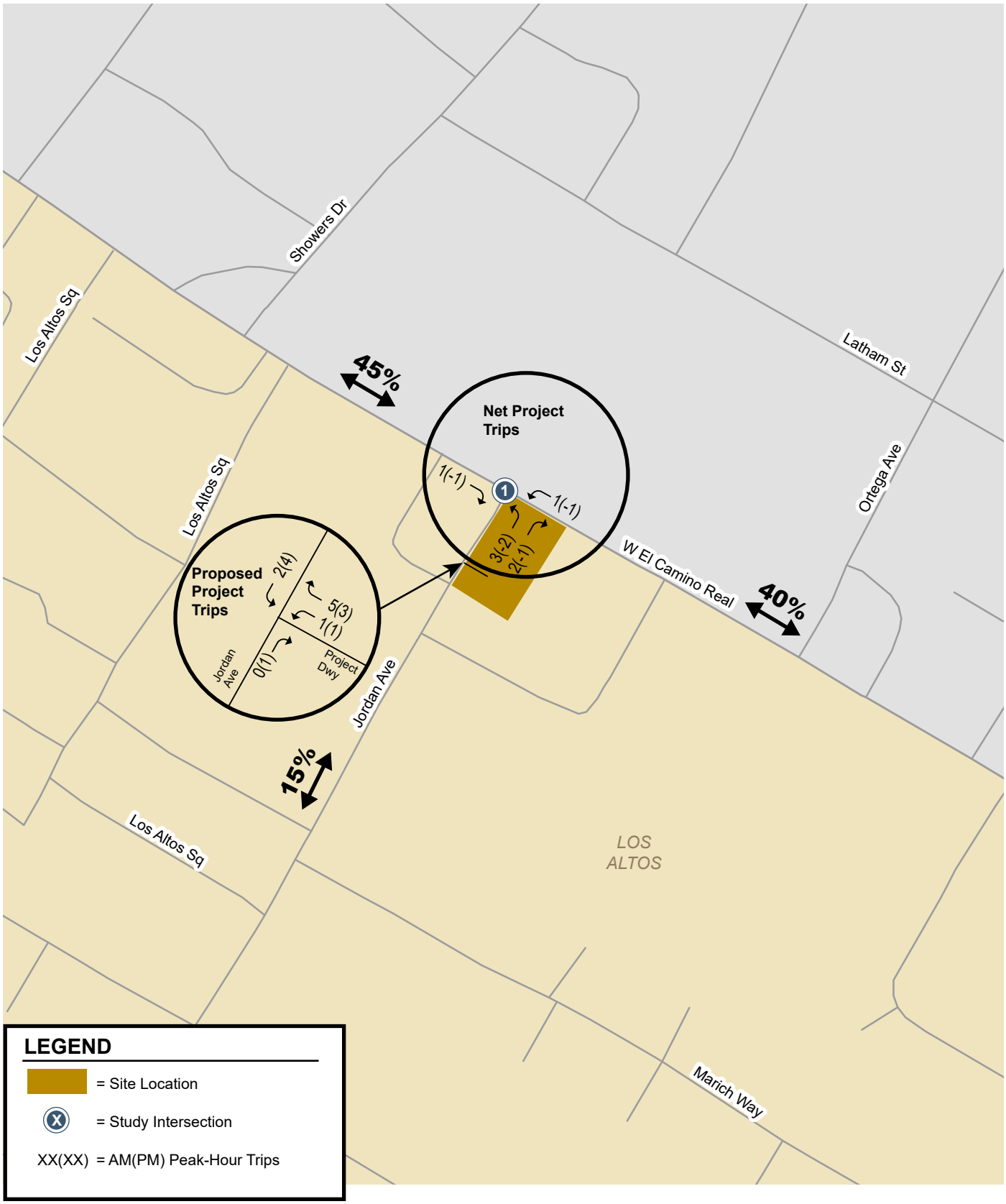


Figure 4
Project Trip Distribution Patterns and Project Trip Assignment

Project Conditions Intersection Levels of Service

Project impacts were evaluated relative to both (1) existing traffic volumes and (2) near-term traffic volumes. For the existing plus project scenario, the net new trips generated by the proposed developments were added to the existing traffic volumes to derive the existing plus project traffic volumes (see Figure 5). For the near-term plus project scenario, the net new trips generated by the proposed development were added to the near-term traffic volumes to derive the near-term plus project traffic volumes (see Figure 6).

The results of the analysis indicate that the project would not create a significant impact at the study intersection under any scenarios. Table 5 summarizes the results of the peak-hour intersection level of service analysis. The intersection of El Camino Real and Jordan Avenue would operate at LOS C during the AM peak hour and LOS B during the PM peak hour under both existing plus project conditions and near-term plus project conditions. The intersection level of service calculation sheets are included in Appendix B.

Table 5
Intersection Level of Service Summary

				Existing		Existing Plus Project				Near-Term		Near-Term Plus Project			
#	Intersection	LOS Standards	Peak Hour	Avg Delay	LOS	Avg Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C	Avg Delay	LOS	Avg Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	El Camino Real & Jordan Ave	D	AM	19.7	B -	20.0	B -	0.3	0.003	20.0	B -	20.3	C+	0.3	0.003
			PM	14.2	B	13.9	B	-0.3	-0.003	14.3	B	14.1	B	-0.3	-0.003

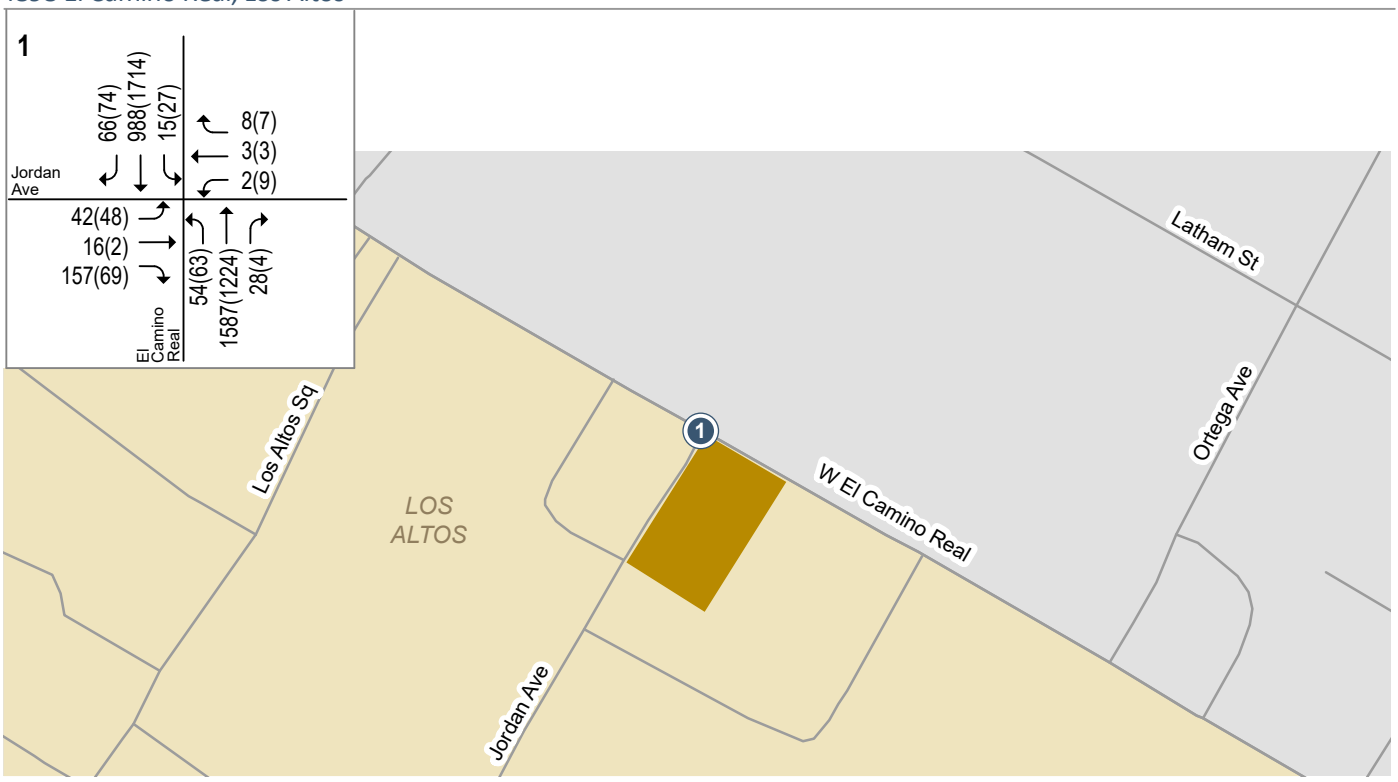


Figure 5
Existing Plus Project Traffic Volumes

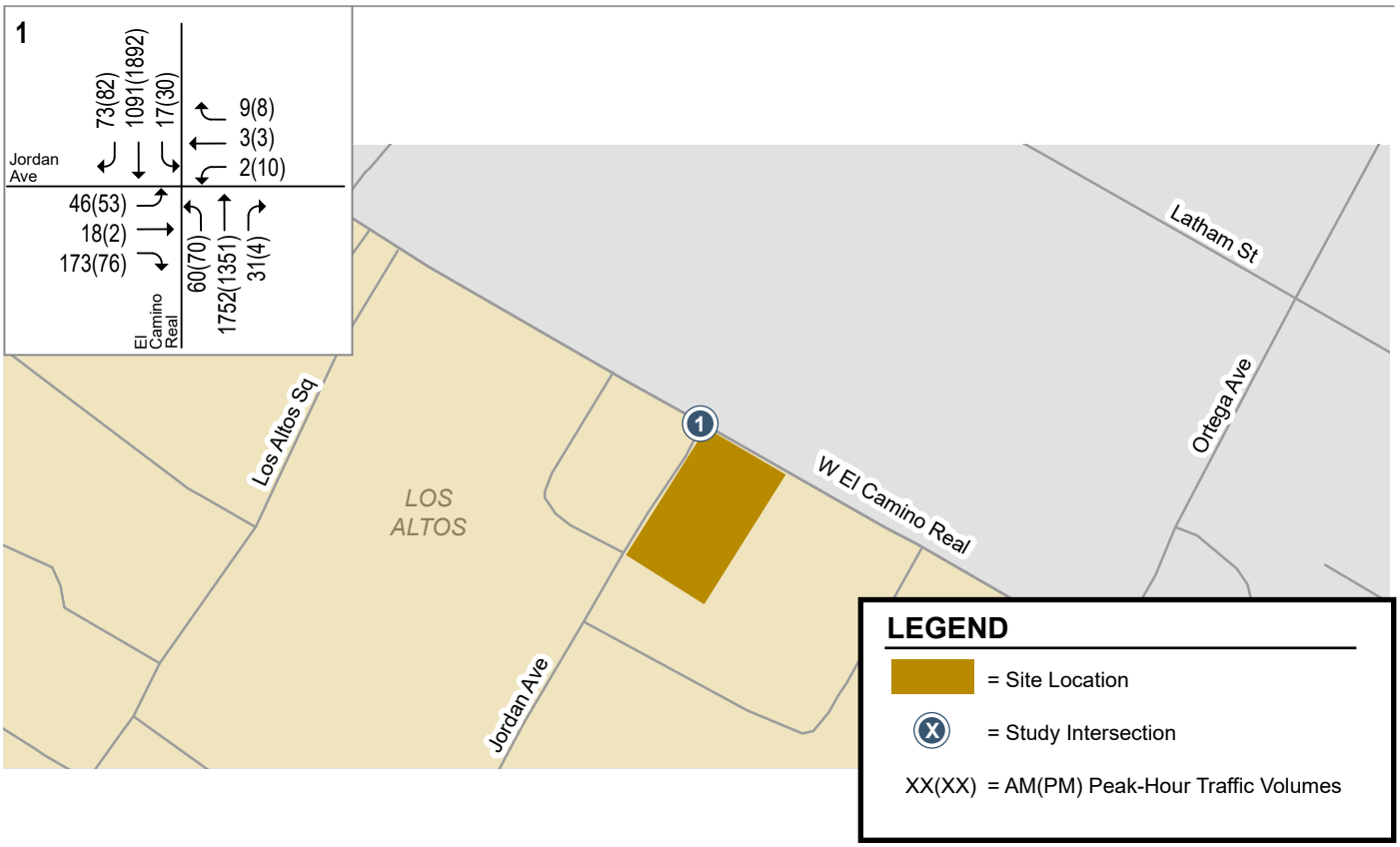


Figure 6
Near-Term Plus Project Traffic Volumes

NORTH
Not to Scale

Parking

The proposed project would provide 4 Below Market Rate (BMR) units, which is more than 10 percent of the total number of units. According to the Los Altos Municipal Code Ordinance 14.28.040 (C), the project would be eligible for a density bonus and would be qualified for a parking reduction. According to the Los Altos Municipal Code, Ordinance 14.28.040 (G), for any development eligible for a density bonus, upon the request of the developer, the city shall not impose a parking requirement, inclusive of handicapped and guest parking, of a development, that exceeds the following requirements:

i. For zero to one bedroom, one onsite parking space.
ii. For two to three bedrooms, two onsite parking spaces.
iii. For four and more bedrooms, two and one-half parking spaces.

According to the city code, the project would require a total of 45 parking spaces (32 for two- and three-bedroom units and 13 for four- and more-bedroom units). The site plan shows a two-level underground parking garage with a total of 55 parking spaces. Of the 55 parking spaces, there would be 53 regular spaces and 2 handicapped accessible spaces. The site plan also shows that 21 spaces would be installed with charging station for electric vehicles. Thus, the parking would meet the City requirement.

Project Site Circulation and Access

The project's site circulation and access were evaluated in accordance with generally accepted traffic engineering standards based on project plans dated January 15, 2019. The project would provide a single two-way driveway onto Jordan Avenue. Parking would be provided in a two-level basement garage as shown on Figures 7A and 7B. A description of the various design elements of the site circulation and access is provided below.

Driveway Design. The project driveway on Jordan Avenue would be approximately 24 feet wide leading in and out of the basement parking garage. This width is adequate for a low-volume, two-way driveway, and for truck access, as described below. The low volume of project traffic would result in only brief delays for exiting vehicles. Outbound vehicle queues would rarely exceed one or two vehicles. Sight distance at the project driveway would be adequate provided (1) the landscaping is kept at a low level within 10 feet of the curb face on Jordan Avenue and (2) sight distance is not blocked by parked vehicles. There already is a red zone to the left of the driveway (when exiting). In addition, a red zone should be painted for 19 feet to the right of the driveway to provide adequate sight distance. A stop sign and stop bar should be provided where the driveway intersects Jordan Avenue to help with the safety of pedestrians and bicycles. In addition, an audible and visible warning sign should be installed to alert pedestrians and bicycles when a vehicle is exiting the garage.

Ramp Design. The proposed garage ramps were measured to be 22 feet wide, which meets the minimum width for a two-way drive aisle set forth by the City of Los Altos Zoning Code (14.74.200). The proposed garage ramp is shown to have a maximum slope of 20% with 10% transitions on each side. These dimensions are acceptable. Commonly cited parking publications recommend grades of up to 16% on ramps where no parking is permitted, but grades of up to 20% are cited as acceptable when ramps are covered (i.e. protected from weather) and not used for pedestrian walkways. It should be noted that the vast majority of ramp users will be residents, and thus, will quickly become accustomed to steeper grades.

Garage Design. On each level of the parking garage, there would be two rows of parking to the west of the ramp. On both rows, parking would be provided at 90 degrees to the main drive aisle. The drive aisles through the parking garage are shown to be 26 feet wide, which would provide sufficient room for vehicles to enter or back out of the 90-degree parking stalls. Site access and circulation were evaluated using AutoTurn with vehicle turning movement templates for a typical AASHTO Passenger Car defined in AASHTO handbook 2011. Some examples of this type of vehicles are: 2018 Cadillac Escalade, 2018 GMC Yukon, 2018 Chevrolet Suburban, 2018 Ford Expedition, and 2018 Toyota Sequoia. The turning template check shows that passenger vehicles (18 feet in length) would be able to access, circulate, and exit the garage (see Figures 7A and 7B).

The plan specifies a total of 9 guest parking spaces within the upper level of the garage. 1 of those 9 parking spaces will be ADA accessible. The parking area has dead-end aisles, but there is 26 feet between the two rows of parking spaces, which would allow cars to make a multi-point turn to exit. Residents parking spaces would be assigned.

Truck Access. A 15' x 25' loading space is shown adjacent to the project driveway. This meets the City's minimum requirement of 10' x 25' for a loading area. Hexagon checked the turning radius with vehicle turning movement templates, and the results show that a small delivery truck (SU-30) would be able to back into and exit the loading area without any issues. Figure 8 shows a potential turning path created using AutoTurn with vehicle turning movement templates for a typical AASHTO vehicle.

Bike Parking. The Valley Transportation Authority (VTA) provides guidelines for bike parking in its publication *Bike Technical Guidelines*. Class I spaces are defined as spaces that protect the entire bike and its components from theft, such as in a secure designated room or a bike locker. Class II spaces provide an opportunity to secure at least one wheel and the frame using a lock, such as bike racks. For multi-family dwelling units, VTA recommends one Class I space per three dwelling units and one Class II space per 15 dwelling units. For the proposed project, this would equate to 7 Class I spaces and 2 Class II spaces. The project site plan shows a bicycle storage room on the lower level of the garage that would accommodate 42 bicycles and 8 bike racks with 110V electric outlets for charging electric bikes. The 20% grade of the bike ramp is too steep for bicycles, therefore cyclists would need to use the elevator to get to and from the bicycle storage room.

Pedestrian Access. The project would provide a paved walkway between the existing sidewalk on Jordan Avenue and the building entrance.

Generally, the design of the project site circulation and access is consistent with urban design practices. The presence of the garage ramp, short onsite drive aisles, and "confined" feel of the parking garage would serve to keep vehicles operating at very low speeds. In addition, the low traffic volume onsite means that the frequency of vehicle conflicts would be relatively low.

Conclusions

This analysis produced the following conclusions:

- The proposed development would not result in any significant impacts to the study intersection during the AM and PM peak hours under both existing plus project and near-term plus project conditions.

- Relative to the existing use, the project would generate 34 fewer daily trips, including 8 new trips during the AM peak hour and 7 fewer trips during the PM peak hour. The amount of additional traffic generated would be low, and there would be no impact on the greater transportation network.
- The project meets the city requirements for the number of parking spaces.
- Commonly cited parking publications recommend grades of up to 16% on ramps where no parking is permitted, but grades of up to 20% are cited as acceptable under conditions that are present here. The grade of the garage access ramp is acceptable.
- The proposed plan shows good circulation through the two levels of the garage. The drive aisle is shown to be 26 feet wide and would provide sufficient room for vehicles to back out of the 90-degree parking stalls. The vehicle turning paths would result in minimal encroachment, which is not expected to be a problem.
- The driveway is shown to be 24 feet, which will allow trucks to back into and exit the loading zone without any obstructions.
- Outbound at the project driveway on Jordan Avenue, the low volume of traffic would result in brief delays and short vehicle queues. Sight distance at the project driveway would be adequate provided (1) the landscaping is kept at a low level within 10 feet of the curb face on Jordan Avenue and (2) sight distance is not blocked by parked vehicles. Parking should be prohibited on Jordan Avenue within 15 feet west of the driveway. Currently, a 15-foot long red curb is marked on Jordan Avenue west of the project driveway. Hexagon recommends installing red curbs within 19 feet east of the driveway.
- It is recommended to install a STOP sign and stop bar at the garage exit to advise motorists to STOP before exiting the driveway. A “Car Coming” warning sign should be provided on the wall next to the parking garage entrance to alert pedestrians and bicyclists of vehicles exiting the garage.
- The project would exceed the bike parking standards recommended by VTA.

This concludes Hexagon’s transportation analysis of the proposed project at 4898 El Camino Real.

Sincerely,

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Gary K. Black
President

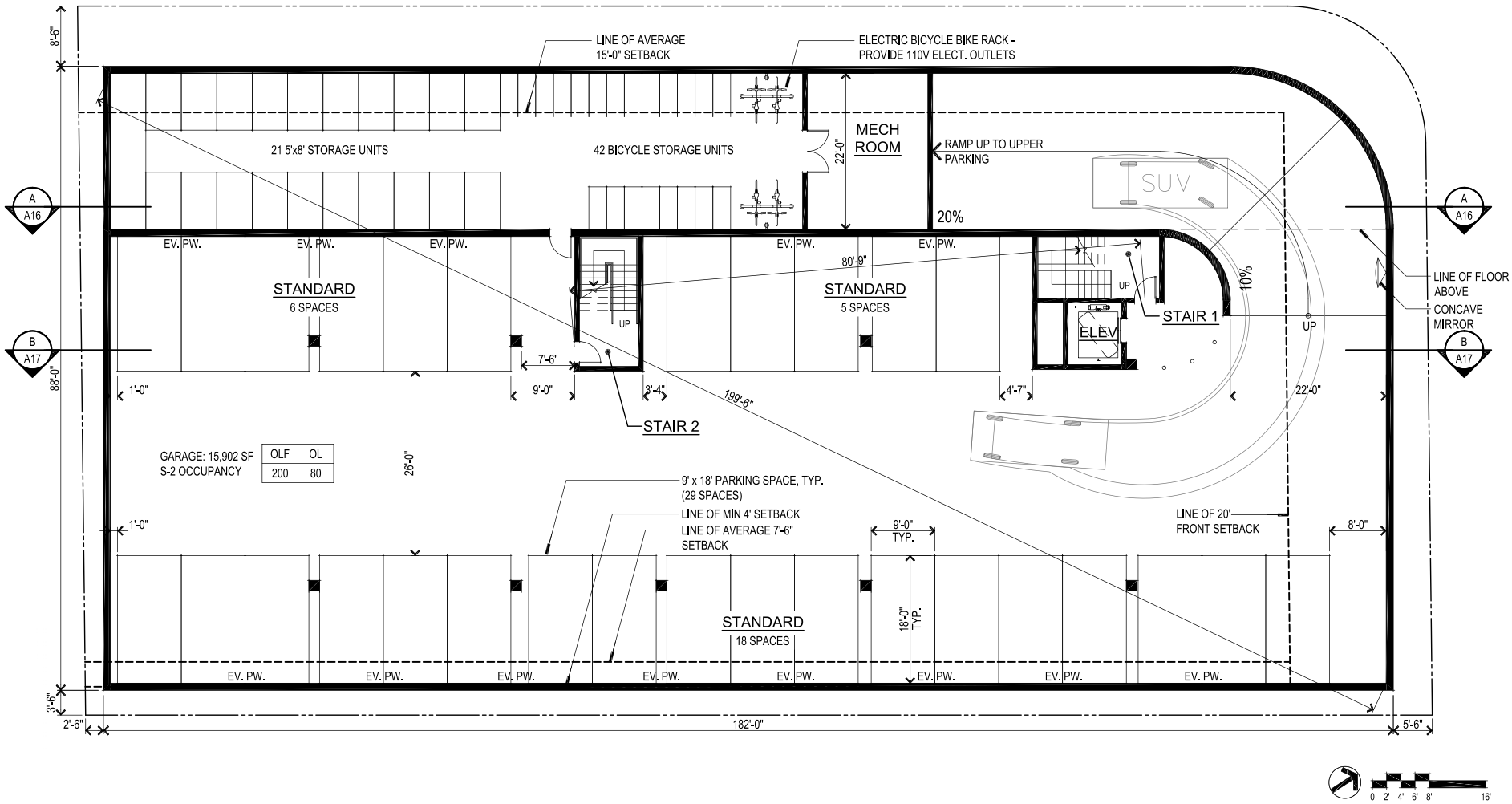


Figure 7A
Lower Level Basement Turning Movements

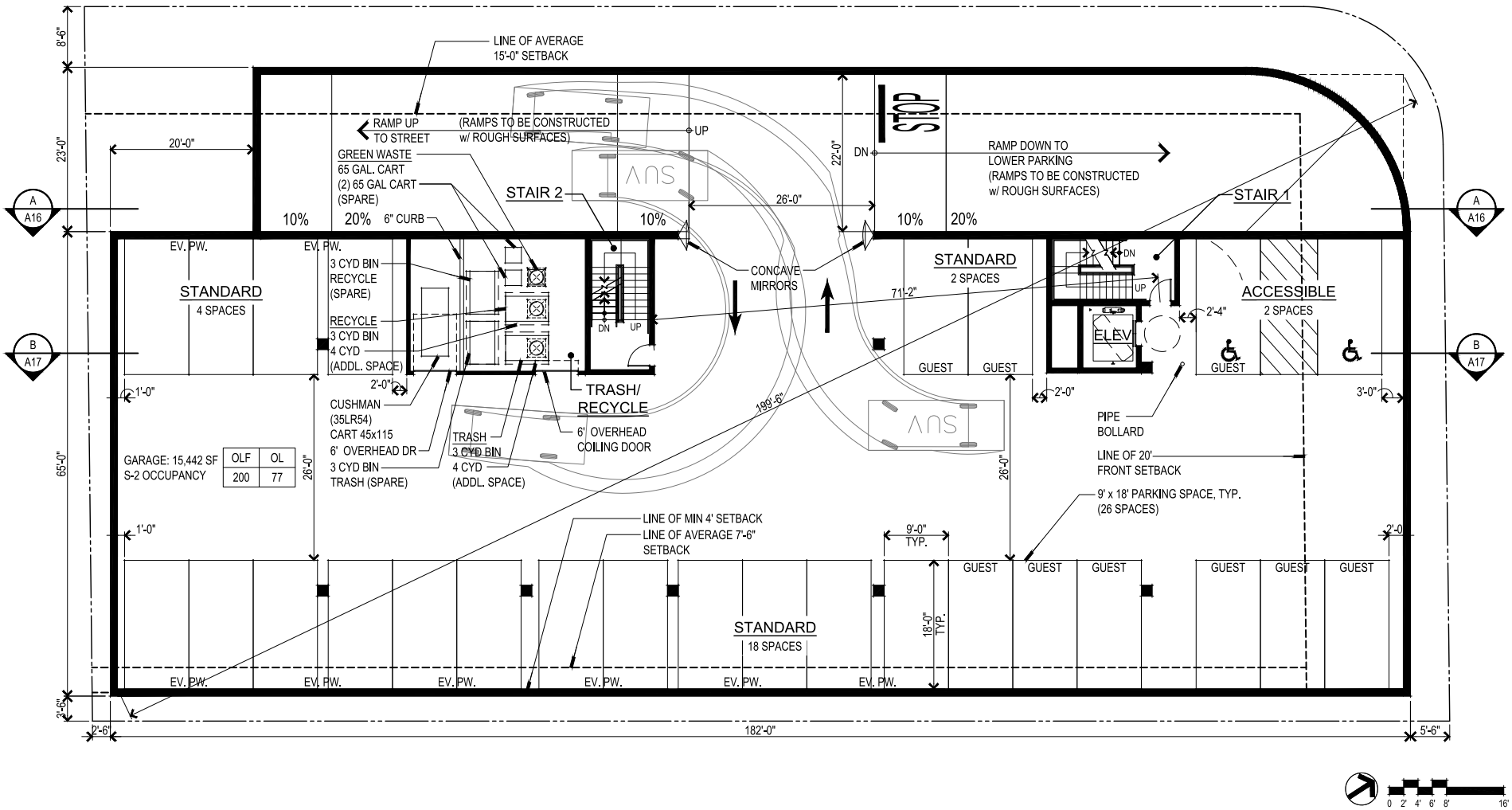


Figure 7B
Upper Level Basement Turning Movements

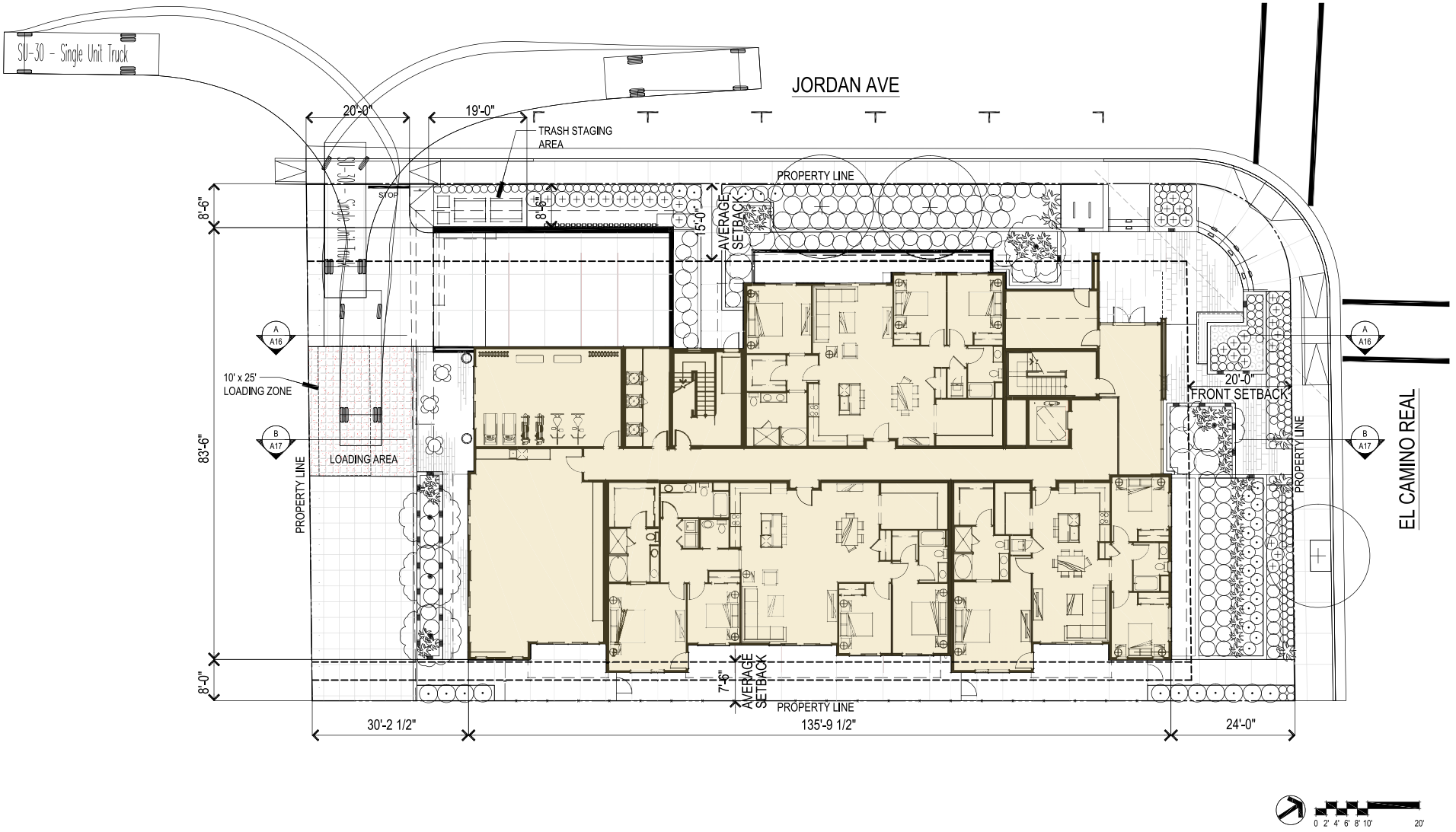


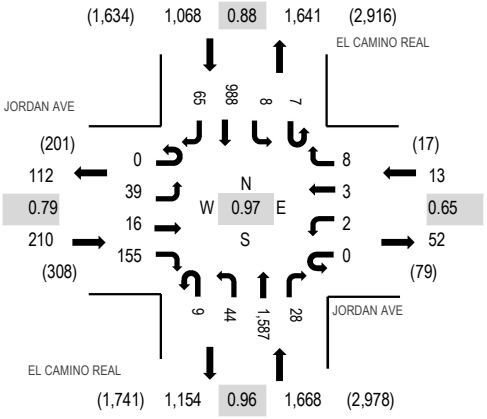
Figure 8
Loading Zone Turning Movement

Appendix A
Traffic Counts

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

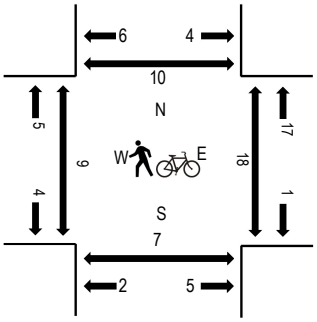
Location: 1 EL CAMINO REAL & JORDAN AVE AM
Date: Thursday, May 9, 2019
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	JORDAN AVE Eastbound				JORDAN AVE Westbound				EL CAMINO REAL Northbound				EL CAMINO REAL Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	1	0	5	0	0	0	0	1	7	265	4	1	0	83	10	377	1,978	3	3	0	0
7:15 AM	0	6	1	7	0	0	0	1	1	8	299	6	0	1	96	11	437	2,334	2	2	0	2
7:30 AM	0	3	2	15	0	1	0	1	1	9	315	3	3	1	148	8	510	2,636	0	1	2	2
7:45 AM	0	3	3	52	0	0	1	0	0	8	377	6	0	0	177	27	654	2,890	2	5	0	0
8:00 AM	0	6	1	42	0	0	1	0	3	7	417	8	1	2	224	21	733	2,959	2	1	2	0
8:15 AM	0	8	2	43	0	0	0	2	1	9	362	7	2	2	277	24	739		1	6	0	7
8:30 AM	0	18	6	50	0	2	2	1	2	18	393	5	4	1	252	10	764		1	8	0	2
8:45 AM	0	7	7	20	0	0	0	5	3	10	415	8	0	3	235	10	723		5	2	2	0

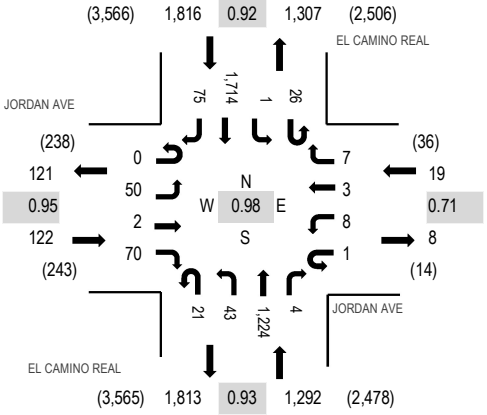
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	7	0	0	0	5	0	12
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	39	16	155	0	2	3	7	9	43	1,550	28	7	7	950	63	2,879
Mediums	0	0	0	0	0	0	0	1	0	1	30	0	0	1	33	2	68
Total	0	39	16	155	0	2	3	8	9	44	1,587	28	7	8	988	65	2,959

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

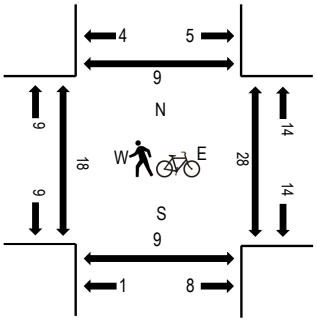
Location: 1 EL CAMINO REAL & JORDAN AVE PM
Date: Thursday, May 9, 2019
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	JORDAN AVE Eastbound				JORDAN AVE Westbound				EL CAMINO REAL Northbound				EL CAMINO REAL Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	13	0	22	0	0	2	2	6	11	294	1	8	1	369	16	745	3,074	4	2	2	2
4:15 PM	0	12	0	23	0	0	2	2	7	15	256	1	6	0	477	13	814	3,143	8	3	0	2
4:30 PM	0	11	0	10	0	1	1	3	4	8	259	0	8	1	423	16	745	3,143	6	5	0	0
4:45 PM	0	15	0	15	0	0	1	3	5	15	302	2	5	0	390	17	770	3,191	4	3	3	4
5:00 PM	0	14	0	18	0	3	0	1	0	10	288	1	5	0	455	19	814	3,249	8	7	3	3
5:15 PM	0	11	0	20	0	2	2	1	5	8	334	1	9	0	401	20	814		4	6	0	1
5:30 PM	0	11	1	16	0	3	0	4	6	11	311	1	7	0	401	21	793		3	3	1	1
5:45 PM	0	14	1	16	1	0	1	1	10	14	291	1	5	1	457	15	828		2	8	0	3

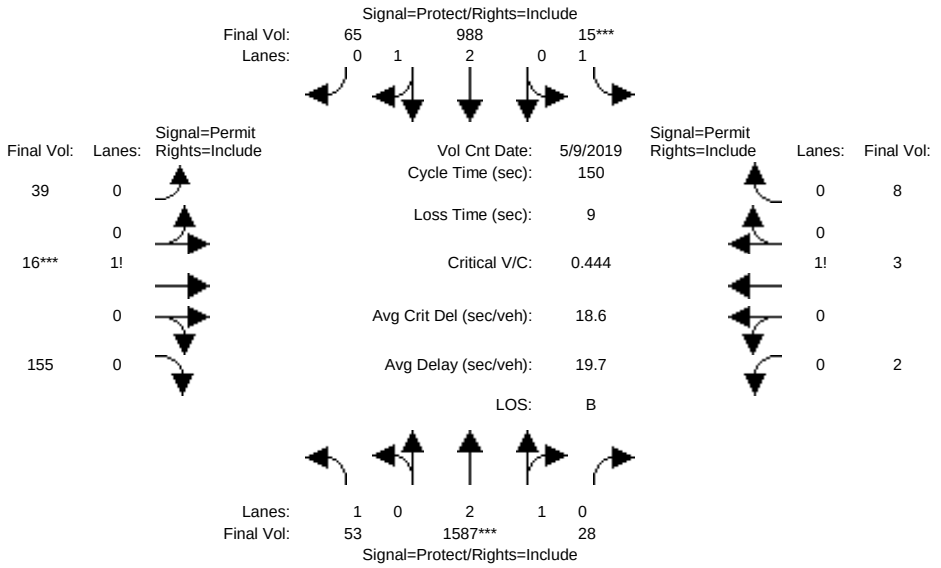
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	50	2	69	1	8	3	6	21	43	1,206	4	26	1	1,691	74	3,205
Mediums	0	0	0	1	0	0	0	1	0	0	16	0	0	0	22	1	41
Total	0	50	2	70	1	8	3	7	21	43	1,224	4	26	1	1,714	75	3,249

Appendix B
Level of Service Calculations

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1: El Camino Real & Jordan Ave

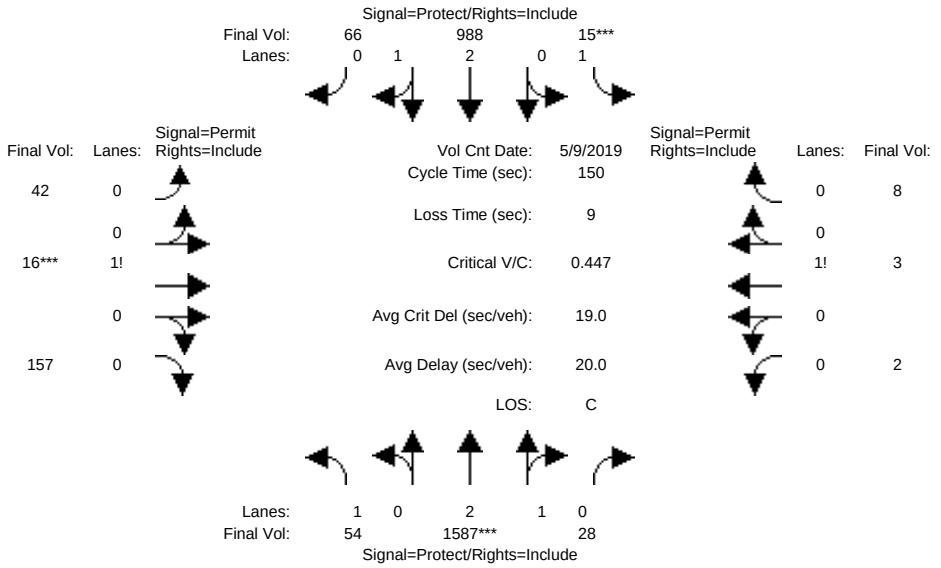


Street Name:	El Camino Real						Jordan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2019 <<												
Base Vol:	53	1587	28	15	988	65	39	16	155	2	3	8
Growth 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
Initial Bse:	53	1587	28	15	988	65	39	16	155	2	3	8
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	1587	28	15	988	65	39	16	155	2	3	8
User 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
PHF 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
PHF Volume:	53	1587	28	15	988	65	39	16	155	2	3	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	1587	28	15	988	65	39	16	155	2	3	8
PCE 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
MLF 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
FinalVolume:	53	1587	28	15	988	65	39	16	155	2	3	8
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	2.95	0.05	1.00	2.81	0.19	0.18	0.08	0.74	0.15	0.23	0.62
Final Sat.:	1750	5503	97	1750	5254	346	325	133	1292	269	404	1077
Capacity Analysis Module:												
Vol/Sat:	0.03	0.29	0.29	0.01	0.19	0.19	0.12	0.12	0.12	0.01	0.01	0.01
Crit Moves:		****		****				****				
Green Time:	20.2	94.6	94.6	7.0	81.4	81.4	39.4	39.4	39.4	39.4	39.4	39.4
Volume/Cap:	0.22	0.46	0.46	0.18	0.35	0.35	0.46	0.46	0.46	0.03	0.03	0.03
Uniform Del:	57.9	14.4	14.4	68.8	19.3	19.3	46.4	46.4	46.4	41.1	41.1	41.1
IncremntDel:	0.5	0.1	0.1	1.1	0.1	0.1	0.7	0.7	0.7	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	58.4	14.5	14.5	69.8	19.4	19.4	47.1	47.1	47.1	41.1	41.1	41.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.4	14.5	14.5	69.8	19.4	19.4	47.1	47.1	47.1	41.1	41.1	41.1
LOS by Move:	E	B	B	E	B	B	D	D	D	D	D	D
HCM2k95thQ:	5	23	23	2	17	17	16	16	16	1	1	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+Project AM

Intersection #1: El Camino Real & Jordan Ave

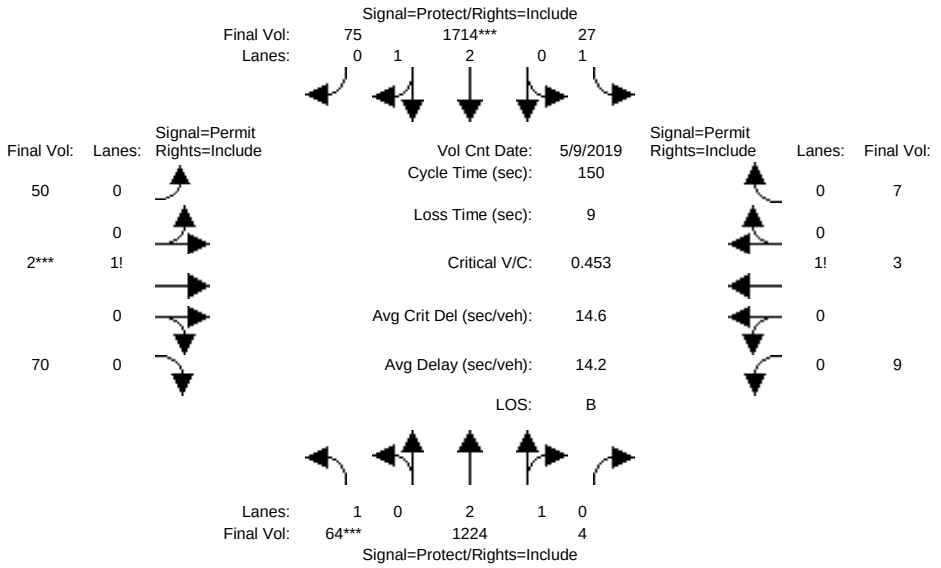


Street Name:	El Camino Real						Jordan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2019 <<												
Base Vol:	53	1587	28	15	988	65	39	16	155	2	3	8
Growth 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
Initial Bse:	53	1587	28	15	988	65	39	16	155	2	3	8
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Proj Trips:	1	0	0	0	0	1	3	0	2	0	0	0
Initial Fut:	54	1587	28	15	988	66	42	16	157	2	3	8
User 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
PHF 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
PHF Volume:	54	1587	28	15	988	66	42	16	157	2	3	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	1587	28	15	988	66	42	16	157	2	3	8
PCE 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
MLF 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
FinalVolume:	54	1587	28	15	988	66	42	16	157	2	3	8
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	2.95	0.05	1.00	2.81	0.19	0.20	0.07	0.73	0.15	0.23	0.62
Final Sat.:	1750	5503	97	1750	5249	351	342	130	1278	269	404	1077
Capacity Analysis Module:												
Vol/Sat:	0.03	0.29	0.29	0.01	0.19	0.19	0.12	0.12	0.12	0.01	0.01	0.01
Crit Moves:		****		****				****				
Green Time:	20.1	94.0	94.0	7.0	80.9	80.9	40.0	40.0	40.0	40.0	40.0	40.0
Volume/Cap:	0.23	0.46	0.46	0.18	0.35	0.35	0.46	0.46	0.46	0.03	0.03	0.03
Uniform Del:	58.1	14.7	14.7	68.8	19.6	19.6	46.0	46.0	46.0	40.6	40.6	40.6
IncremntDel:	0.5	0.1	0.1	1.1	0.1	0.1	0.7	0.7	0.7	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	58.6	14.8	14.8	69.8	19.7	19.7	46.7	46.7	46.7	40.6	40.6	40.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.6	14.8	14.8	69.8	19.7	19.7	46.7	46.7	46.7	40.6	40.6	40.6
LOS by Move:	E	B	B	E	B	B	D	D	D	D	D	D
HCM2k95thQ:	5	23	23	2	17	17	17	17	17	1	1	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1: El Camino Real & Jordan Ave

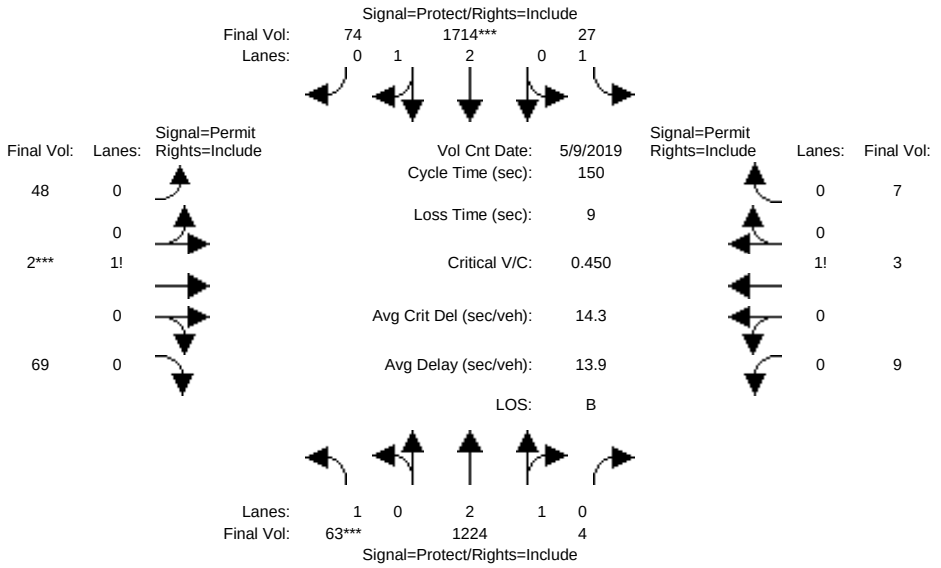


Street Name:	El Camino Real						Jordan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2019 <<												
Base Vol:	64	1224	4	27	1714	75	50	2	70	9	3	7
Growth 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
Initial Bse:	64	1224	4	27	1714	75	50	2	70	9	3	7
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	1224	4	27	1714	75	50	2	70	9	3	7
User 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
PHF 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
PHF Volume:	64	1224	4	27	1714	75	50	2	70	9	3	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	1224	4	27	1714	75	50	2	70	9	3	7
PCE 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
MLF 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
FinalVolume:	64	1224	4	27	1714	75	50	2	70	9	3	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	2.99	0.01	1.00	2.87	0.13	0.41	0.02	0.57	0.47	0.16	0.37
Final Sat.:	1750	5582	18	1750	5365	235	717	29	1004	829	276	645
Capacity Analysis Module:												
Vol/Sat:	0.04	0.22	0.22	0.02	0.32	0.32	0.07	0.07	0.07	0.01	0.01	0.01
Crit Moves:	****				****			****				
Green Time:	12.1	97.2	97.2	20.7	106	105.8	23.1	23.1	23.1	23.1	23.1	23.1
Volume/Cap:	0.45	0.34	0.34	0.11	0.45	0.45	0.45	0.45	0.45	0.07	0.07	0.07
Uniform Del:	65.8	11.9	11.9	56.6	9.6	9.6	57.7	57.7	57.7	54.3	54.3	54.3
IncremntDel:	2.3	0.1	0.1	0.2	0.1	0.1	1.2	1.2	1.2	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	68.1	11.9	11.9	56.8	9.7	9.7	58.9	58.9	58.9	54.4	54.4	54.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.1	11.9	11.9	56.8	9.7	9.7	58.9	58.9	58.9	54.4	54.4	54.4
LOS by Move:	E	B	B	E	A	A	E	E	E	D	D	D
HCM2k95thQ:	7	16	16	2	21	21	11	11	11	2	2	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Ex+Project PM

Intersection #1: El Camino Real & Jordan Ave

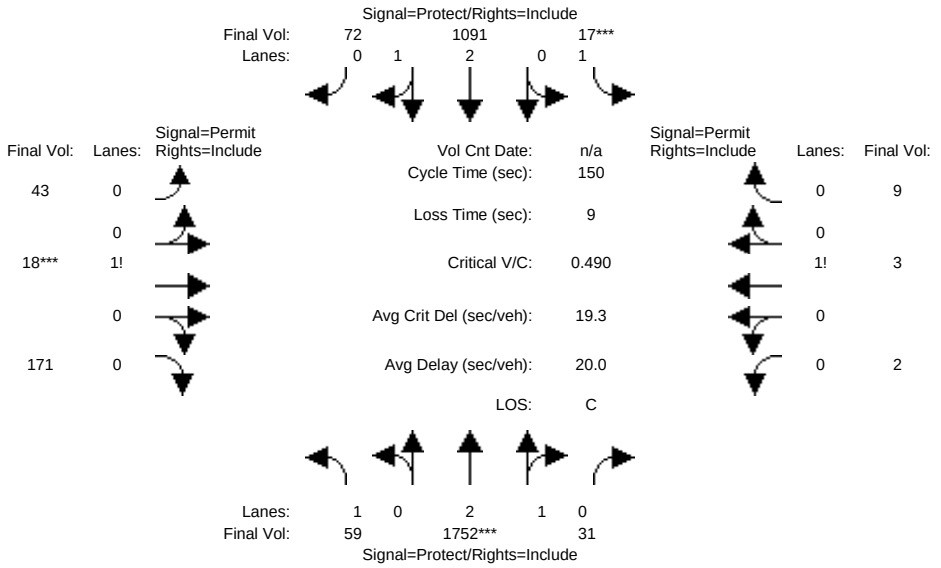


Street Name:	El Camino Real						Jordan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 9 May 2019 <<												
Base Vol:	64	1224	4	27	1714	75	50	2	70	9	3	7
Growth 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
Initial Bse:	64	1224	4	27	1714	75	50	2	70	9	3	7
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Proj Trips:	-1	0	0	0	0	-1	-2	0	-1	0	0	0
Initial Fut:	63	1224	4	27	1714	74	48	2	69	9	3	7
User 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
PHF 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
PHF Volume:	63	1224	4	27	1714	74	48	2	69	9	3	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	1224	4	27	1714	74	48	2	69	9	3	7
PCE 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
MLF 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
FinalVolume:	63	1224	4	27	1714	74	48	2	69	9	3	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	2.99	0.01	1.00	2.87	0.13	0.40	0.02	0.58	0.47	0.16	0.37
Final Sat.:	1750	5582	18	1750	5368	232	706	29	1015	829	276	645
Capacity Analysis Module:												
Vol/Sat:	0.04	0.22	0.22	0.02	0.32	0.32	0.07	0.07	0.07	0.01	0.01	0.01
Crit Moves:	****				****			****				
Green Time:	12.0	97.6	97.6	20.8	106	106.4	22.7	22.7	22.7	22.7	22.7	22.7
Volume/Cap:	0.45	0.34	0.34	0.11	0.45	0.45	0.45	0.45	0.45	0.07	0.07	0.07
Uniform Del:	65.9	11.7	11.7	56.5	9.3	9.3	58.0	58.0	58.0	54.7	54.7	54.7
IncremntDel:	2.3	0.1	0.1	0.2	0.1	0.1	1.2	1.2	1.2	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	68.2	11.8	11.8	56.7	9.4	9.4	59.2	59.2	59.2	54.8	54.8	54.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.2	11.8	11.8	56.7	9.4	9.4	59.2	59.2	59.2	54.8	54.8	54.8
LOS by Move:	E	B	B	E	A	A	E	E	E	D	D	D
HCM2k95thQ:	7	16	16	2	21	21	11	11	11	2	2	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Near-Term AM

Intersection #1: El Camino Real & Jordan Ave

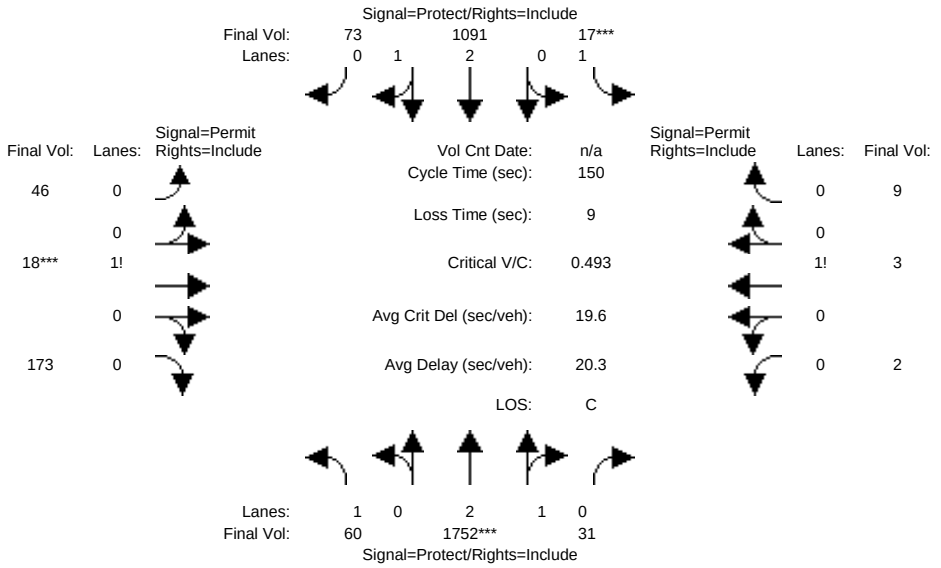


Street Name:	El Camino Real						Jordan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	59	1752	31	17	1091	72	43	18	171	2	3	9
Growth 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
Initial Bse:	59	1752	31	17	1091	72	43	18	171	2	3	9
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	59	1752	31	17	1091	72	43	18	171	2	3	9
User 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
PHF 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
PHF Volume:	59	1752	31	17	1091	72	43	18	171	2	3	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	1752	31	17	1091	72	43	18	171	2	3	9
PCE 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
MLF 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
FinalVolume:	59	1752	31	17	1091	72	43	18	171	2	3	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	2.95	0.05	1.00	2.81	0.19	0.18	0.08	0.74	0.14	0.21	0.65
Final Sat.:	1750	5503	97	1750	5253	347	324	136	1290	250	375	1125
Capacity Analysis Module:												
Vol/Sat:	0.03	0.32	0.32	0.01	0.21	0.21	0.13	0.13	0.13	0.01	0.01	0.01
Crit Moves:		****		****				****				
Green Time:	18.6	94.6	94.6	7.0	83.0	83.0	39.4	39.4	39.4	39.4	39.4	39.4
Volume/Cap:	0.27	0.50	0.50	0.21	0.38	0.38	0.50	0.50	0.50	0.03	0.03	0.03
Uniform Del:	59.5	15.0	15.0	68.8	18.9	18.9	47.0	47.0	47.0	41.1	41.1	41.1
IncremntDel:	0.7	0.1	0.1	1.3	0.1	0.1	0.9	0.9	0.9	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	60.2	15.1	15.1	70.1	19.0	19.0	47.9	47.9	47.9	41.1	41.1	41.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.2	15.1	15.1	70.1	19.0	19.0	47.9	47.9	47.9	41.1	41.1	41.1
LOS by Move:	E	B	B	E	B	B	D	D	D	D	D	D
HCM2k95thQ:	6	26	26	2	18	18	18	18	18	1	1	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Near-Term +Proj AM

Intersection #1: El Camino Real & Jordan Ave

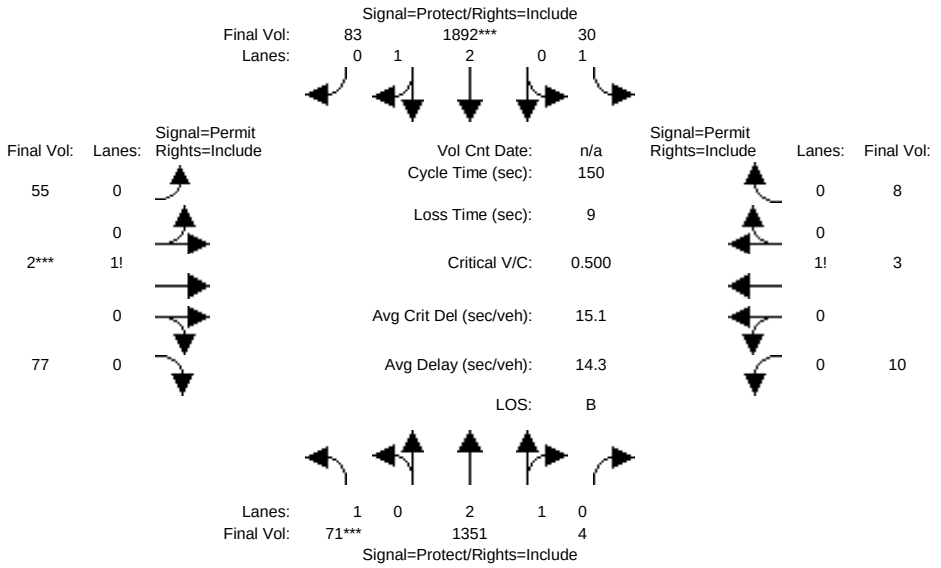


Street Name:	El Camino Real						Jordan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	59	1752	31	17	1091	72	43	18	171	2	3	9
Growth 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
Initial Bse:	59	1752	31	17	1091	72	43	18	171	2	3	9
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Proj Trips:	1	0	0	0	0	1	3	0	2	0	0	0
Initial Fut:	60	1752	31	17	1091	73	46	18	173	2	3	9
User 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
PHF 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
PHF Volume:	60	1752	31	17	1091	73	46	18	173	2	3	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	1752	31	17	1091	73	46	18	173	2	3	9
PCE 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
MLF 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
FinalVolume:	60	1752	31	17	1091	73	46	18	173	2	3	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	2.95	0.05	1.00	2.80	0.20	0.19	0.08	0.73	0.14	0.21	0.65
Final Sat.:	1750	5503	97	1750	5248	351	340	133	1277	250	375	1125
Capacity Analysis Module:												
Vol/Sat:	0.03	0.32	0.32	0.01	0.21	0.21	0.14	0.14	0.14	0.01	0.01	0.01
Crit Moves:		****		****				****				
Green Time:	18.5	94.0	94.0	7.0	82.5	82.5	40.0	40.0	40.0	40.0	40.0	40.0
Volume/Cap:	0.28	0.51	0.51	0.21	0.38	0.38	0.51	0.51	0.51	0.03	0.03	0.03
Uniform Del:	59.7	15.3	15.3	68.8	19.2	19.2	46.7	46.7	46.7	40.7	40.7	40.7
IncremntDel:	0.7	0.1	0.1	1.3	0.1	0.1	0.9	0.9	0.9	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	60.4	15.5	15.5	70.1	19.3	19.3	47.6	47.6	47.6	40.7	40.7	40.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.4	15.5	15.5	70.1	19.3	19.3	47.6	47.6	47.6	40.7	40.7	40.7
LOS by Move:	E	B	B	E	B	B	D	D	D	D	D	D
HCM2k95thQ:	6	26	26	2	18	18	19	19	19	1	1	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Near-Term PM

Intersection #1: El Camino Real & Jordan Ave

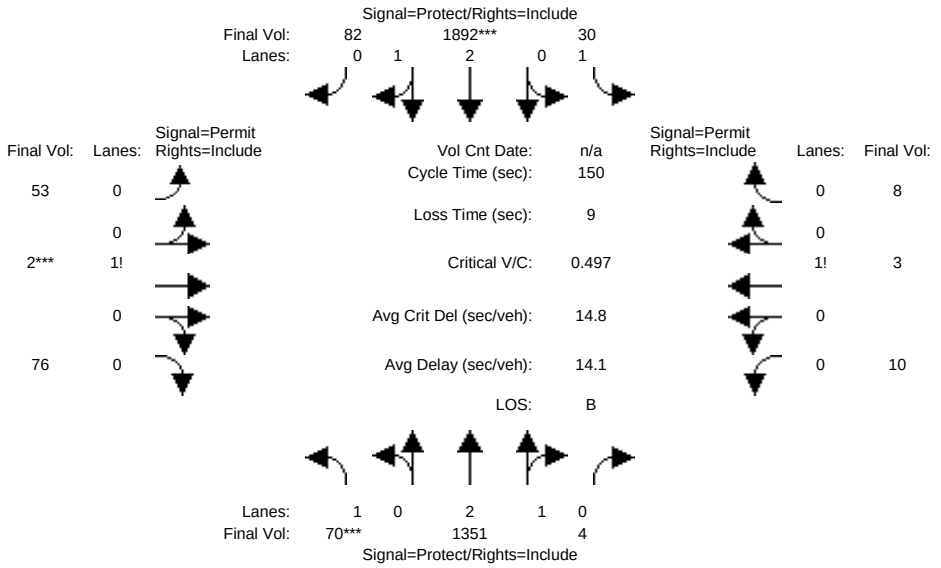


Street Name:	El Camino Real						Jordan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	71	1351	4	30	1892	83	55	2	77	10	3	8
Growth 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
Initial Bse:	71	1351	4	30	1892	83	55	2	77	10	3	8
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	1351	4	30	1892	83	55	2	77	10	3	8
User 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
PHF 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
PHF Volume:	71	1351	4	30	1892	83	55	2	77	10	3	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	1351	4	30	1892	83	55	2	77	10	3	8
PCE 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
MLF 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
FinalVolume:	71	1351	4	30	1892	83	55	2	77	10	3	8
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	2.99	0.01	1.00	2.87	0.13	0.41	0.01	0.58	0.48	0.14	0.38
Final Sat.:	1750	5583	17	1750	5364	235	718	26	1006	833	250	667
Capacity Analysis Module:												
Vol/Sat:	0.04	0.24	0.24	0.02	0.35	0.35	0.08	0.08	0.08	0.01	0.01	0.01
Crit Moves:	****				****			****				
Green Time:	12.2	98.9	98.9	19.1	106	105.8	23.0	23.0	23.0	23.0	23.0	23.0
Volume/Cap:	0.50	0.37	0.37	0.13	0.50	0.50	0.50	0.50	0.50	0.08	0.08	0.08
Uniform Del:	66.0	11.5	11.5	58.1	10.0	10.0	58.2	58.2	58.2	54.4	54.4	54.4
IncremntDel:	2.8	0.1	0.1	0.3	0.1	0.1	1.5	1.5	1.5	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	68.7	11.5	11.5	58.4	10.1	10.1	59.7	59.7	59.7	54.6	54.6	54.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.7	11.5	11.5	58.4	10.1	10.1	59.7	59.7	59.7	54.6	54.6	54.6
LOS by Move:	E	B	B	E	B	B	E	E	E	D	D	D
HCM2k95thQ:	8	17	17	3	24	24	12	12	12	2	2	2

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Near-Term +Proj PM

Intersection #1: El Camino Real & Jordan Ave



Street Name:	El Camino Real						Jordan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	71	1351	4	30	1892	83	55	2	77	10	3	8
Growth 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
Initial Bse:	71	1351	4	30	1892	83	55	2	77	10	3	8
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Proj Trips:	-1	0	0	0	0	-1	-2	0	-1	0	0	0
Initial Fut:	70	1351	4	30	1892	82	53	2	76	10	3	8
User 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
PHF 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
PHF Volume:	70	1351	4	30	1892	82	53	2	76	10	3	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	1351	4	30	1892	82	53	2	76	10	3	8
PCE 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
MLF 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
FinalVolume:	70	1351	4	30	1892	82	53	2	76	10	3	8
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Lanes:	1.00	2.99	0.01	1.00	2.87	0.13	0.40	0.02	0.58	0.48	0.14	0.38
Final Sat.:	1750	5583	17	1750	5367	233	708	27	1015	833	250	667
Capacity Analysis Module:												
Vol/Sat:	0.04	0.24	0.24	0.02	0.35	0.35	0.07	0.07	0.07	0.01	0.01	0.01
Crit Moves:	****				****			****				
Green Time:	12.1	99.3	99.3	19.1	106	106.3	22.6	22.6	22.6	22.6	22.6	22.6
Volume/Cap:	0.50	0.37	0.37	0.13	0.50	0.50	0.50	0.50	0.50	0.08	0.08	0.08
Uniform Del:	66.1	11.3	11.3	58.1	9.8	9.8	58.5	58.5	58.5	54.8	54.8	54.8
IncremntDel:	2.7	0.1	0.1	0.3	0.1	0.1	1.5	1.5	1.5	0.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay 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
Delay/Veh:	68.8	11.4	11.4	58.3	9.9	9.9	60.0	60.0	60.0	54.9	54.9	54.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.8	11.4	11.4	58.3	9.9	9.9	60.0	60.0	60.0	54.9	54.9	54.9
LOS by Move:	E	B	B	E	A	A	E	E	E	D	D	D
HCM2k95thQ:	8	17	17	3	24	24	12	12	12	2	2	2

Note: Queue reported is the number of cars per lane.

Appendix C
Volume Spreadsheet

Intersection Number: 1
Traffix Node Number: 1
Intersection Name: ECR & Jordan Ave
Peak Hour: AM
Count Date: 05/09/19
Scenario:
Growth Factor Per Year: 2%

Date of Analysis: 05/16/19
Near Term Buildout: 5

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	65	988	15	8	3	2	28	1587	53	155	16	39	2959
Background Conditions	72	1091	17	9	3	2	31	1752	59	171	18	43	3267
Project Trips	1	0	0	0	0	0	0	0	1	2	0	3	7
Existing + Project	66	988	15	8	3	2	28	1587	54	157	16	42	2966
Background + Project	73	1091	17	9	3	2	31	1752	60	173	18	46	3274

Intersection Number: 1
Traffix Node Number: 1
Intersection Name: ECR & Jordan Ave
Peak Hour: PM
Count Date: 05/09/19
Scenario:
Growth Factor Per Year: 2%

Date of Analysis: 05/16/19
Near Term Buildout: 5

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	75	1714	27	7	3	9	4	1224	64	70	2	50	3249
Background Conditions	83	1892	30	8	3	10	4	1351	71	77	2	55	3587
Project Trips	-1	0	0	0	0	0	0	0	-1	-1	0	-2	-5
Existing + Project	74	1714	27	7	3	9	4	1224	63	69	2	48	3244
Background + Project	82	1892	30	8	3	10	4	1351	70	76	2	53	3582

ATTACHMENT F

ALTOS II, 4898 EL CAMINO REAL, AIR QUALITY & GREENHOUSE GAS ASSESSMENT

Los Altos, CA

February 8, 2019

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I&R Project: #19-010

Introduction

The purpose of this report is to address the air quality impacts, estimate the health risk impacts, and compute the greenhouse gas (GHG) emissions associated with the proposed residential project located at 4898 El Camino Real in Los Altos, California. The air quality impacts and GHG emissions would be associated with demolition of the existing uses at the site, construction of the new buildings and infrastructure, and operation of the project. Additionally, the project's construction would be the primary source of toxic air contaminant (TAC) and fine particulate matter ($PM_{2.5}$) emissions. This could increase health risks at sensitive receptors and lead to community risk impacts. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The project would demolish the existing retail and office buildings and construct a 23-unit, five-story multi-family housing building with two levels of underground parking. There would be 56 parking spaces provided in the underground parking garage. Additionally, four of the housing units would be below market rate. The entire building plus parking garage would total 82,433 square feet (sf).

Setting

The project is located in Santa Clara County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

[1] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

Odors

Odor impacts are subjective in nature and are generally regarded as an annoyance rather than a health hazard. The ability to detect and react to odors varies considerably among people. A strong or unfamiliar odor is more easily detected and are more likely to cause complaints. BAAQMD responds to odor complaints from the public and considers a source to have a substantial number of odor complaints if the complaint history includes five or more confirmed complaints per year averaged over a 3-year period. Facilities that are regulated by CalRecycle (e.g. landfill, composting, etc.) are required to have *Odor Impact Minimization Plans* in place.

Regulatory Agencies

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.[2] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD

[2] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: November 21, 2014.

has published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.[3] The detailed community risk modeling methodology used in this assessment is contained in *Attachment 1*.

City of Los Altos General Plan

The City of Los Altos General Plan includes goals, policies, and strategies to improve air quality and meet the State and National ambient air quality standards. The following goals, policies, and actions are applicable to the proposed project:

Goal 8: Maintain or improve air quality in Los Altos

Policy 8.1: Support the principles of reducing air pollutants through land use, transportation, and energy use planning.

Policy 8.3: Interpret and implement the General Plan to be consistent with the regional Bay Area Air Quality Management Plan, as periodically updated.

Policy 8.4: Ensure location and design of development projects so as to conserve air quality and minimize direct and indirect emissions of air contaminants.

Implementation Program

NEH 29: *Minimize Impacts of New Development*

Review development proposals for potential impacts pursuant to CEQA and the BAAQMD Air Quality Handbook. Reduce impacts of new development using available land use and transportation planning techniques such as:

1) Incorporation of public transit stops;
2) Pedestrian and bicycle linkage to commercial centers, employment centers, schools, and parks;
3) Preferential parking for car pools;
4) Traffic flow improvements; and
5) Employer trip reduction programs.

NEH 30: *Participation in Regional Air Quality Programs*

Work with the BAAQMD and ABAG and to meet federal and State air quality standards for all pollutants. To ensure that new measures can be practically enforced in the region, participate in future amendments and updates of the BAAQMP.

[3] Bay Area Air Quality Management District. 2017. *BAAQMD CEQA Air Quality Guidelines*. May.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. The closest sensitive receptors to the project site are residences of townhomes south of the southern project boundary. There are additional residences at farther distances from the project site.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 *CEQA Air Quality Guidelines*. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the *CEQA Air Quality Guidelines* in 2017 to include the latest significance thresholds that were used in this analysis are summarized in Table 1.

Table 1. Air Quality Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	**Average Daily Emissions (lbs./day)**	**Annual Average Emissions (tons/year)**
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1,000-foot zone of influence)**	
Excess Cancer Risk	>10.0 per one million	>100 per one million	
Hazard Index	>1.0	>10.0	
Incremental annual $PM_{2.5}$	>0.3 µg/m^3	>0.8 µg/m^3	
Odors			
Odor		5 confirmed complaints per year averaged over 3 years	
Greenhouse Gas Emissions			
Land Use Projects – direct and indirect emissions		Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons annually or 4.6 metric tons per capita (for 2020) and adjusted to 2.6 metric tons per capita (for 2030)*	

Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases. *BAAQMD does not have a recommended post-2020 GHG threshold.

Impact 1: Conflict with or obstruct implementation of the applicable air quality plan?

BAAQMD is the regional agency responsible for overseeing compliance with State and Federal laws, regulations, and programs within the San Francisco Bay Area Air Basin (SFBAAB). BAAQMD, with assistance from the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), has prepared and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan*.[4] The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local

[4] Bay Area Air Quality Management District (BAAQMD), 2017. *Final 2017 Clean Air Plan.*

general plans. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHGs.

The BAAQMD, with assistance from ABAG and MTC, has prepared and implemented the Clean Air Plan to meet the applicable laws, regulations, and programs. The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHG. The project proposed land use is consistent with the City of Campbell General Plan designation for this site.

The 2017 Clean Air Plan includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. The most recent clean air plan is the *2017 Clean Air Plan* that was adopted by BAAQMD in April 2017. The proposed project would not conflict with the latest Clean Air planning efforts since 1) the project would have emissions below the BAAQMD thresholds (see Impact 2), 2) the project would be considered urban infill, 3) the project would be located near employment centers, and 4) the project would be located near transit with regional connections.

Impact 2: 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?

The Bay Area is considered a non-attainment area for ground-level ozone and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} under the California Clean Air Act, but not the federal act. The area has attained both State and federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NO_X), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction and operation of the site assuming full build-out of the project. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The model output from CalEEMod is included as *Attachment 2*.

Construction Period Emissions

CalEEMod provides annual emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction schedule, equipment quantities, and equipment usage were based on CalEEMod defaults for a project of

this type and size. The project applicant provided earthwork volumes and this information was used within the model.

The following proposed project land uses were inputted into CalEEMod: 23 dwelling units and 50,497-sf entered as "Apartment Mid Rise" and 56 parking spaces entered as "Enclosed Parking with Elevator" on a 0.43-acre site. In addition, the following volumes were entered into the model:

- 4,550-sf of building demolition,
- 13,094-sf of pavement demolished and hauled,
- 13,300 cubic yards (cy) of soil exported during grading/excavation phase, and
- 227-cy of asphalt hauled during paving phase.

The construction schedule assumed that the project would be built out over a period of approximately five months, beginning in June 2019. There were an estimated 133 construction workdays. Average daily emissions were computed by dividing the total construction emissions by the number of construction days. Table 2 shows average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 2, predicted construction period emissions would not exceed the BAAQMD significance thresholds.

Table 2. Construction Period Emissions

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total construction emissions (tons)	0.4 tons	0.9 tons	0.04 tons	0.04 tons
Average daily emissions (pounds)[1]	**6.6 lbs./day**	**14 lbs./day**	**0.6 lbs./day**	**0.5 lbs./day**
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	**No**	**No**	**No**	**No**
Notes: [1]Assumes 133 workdays.				

Additionally, construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. *Mitigation Measure AQ-1 would implement BAAQMD-recommended best management practices*.

Mitigation Measure AQ-1: **Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated

with grading and new construction to a less-than-significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Mitigation Measure AQ-1

The measures included above would be consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

<u>Operational Period Emissions</u>

Operational air emissions from the project would be generated primarily from automobiles driven by future residents. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod was used to estimate emissions from operation of the proposed project assuming full build-out.

Land Uses

The project land uses were input to CalEEMod, as described above for the construction period modeling.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest the project could possibly be constructed and begin operating would be 2020. Emissions associated with build-out later than 2020 would be lower.

Trip Generation Rates

CalEEMod allows the user to enter specific vehicle trip generation rates, which were input to the model using the daily trip generation rate provided in the project trip generation table. Usually, the Saturday and Sunday trip rates were assumed to be the weekday rate adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips.

The project applicant provided project trip generation values for the proposed residential project.[5] The weekday trip rate used for the project was 5.44 trips per day. This changed the Saturday trip rate to 5.23 and the Sunday rate to 4.79 trips per day.

Energy

CalEEMod defaults for energy use were used, which include the 2016 Title 24 Building Standards. Indirect emissions from electricity were computed in CalEEMod. The model has a default rate of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. The rate was adjusted to account for PG&E's projected 2020 CO_2 intensity rate. This 2020 rate is based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. The derived 2020 rate for PG&E was estimated at 290 pounds of CO_2 per megawatt of electricity delivered.[6]

Other Inputs

Default model assumptions for emissions associated with solid waste generation and water/wastewater use were applied to the project. Water/wastewater use were changed to 100% aerobic conditions to represent wastewater treatment plant conditions. All hearths were assumed to be powered by gas.

[5] Correspondence with Alex Comsa, Comsa Group. 22 January 2019.
[6] Pacific Gas & Electric, 2015. *Greenhouse Gas Emission Factors: Guidance for PG&E Customers*. November.

Existing Uses

A CalEEMod model for the existing land use was run for year 2020. The existing land use on the project site included 2,310-sf entered as "General Office Space" and 6,086-sf entered as "Strip Mall". Note that CalEEMod does not have a separate category for furniture store; therefore, the futon shop and retail space trips were combined to find a new daily trip rate for the retail space land use.

As shown in Table 3, operational emissions would not exceed the BAAQMD significance thresholds. This would be considered a *less-than-significant* impact.

Table 3. Operational Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2020 Project Operational Emissions (*tons/year*)	0.28 tons	0.15 tons	0.11 tons	0.03 tons
2020 Existing Operational Emissions (*tons/years*)	0.07 tons	0.14 tons	0.09 tons	0.02 tons
Net Emissions	**0.20 tons**	**0.01 tons**	**0.02 tons**	**0.01 tons**
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	***No***	***No***	***No***	***No***
2020 Project Operational Emissions (*lbs/day*)[1]	1.11 lbs.	0.08 lbs.	0.10 lbs.	0.03 lbs.
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	***No***	***No***	***No***	***No***
Notes: [1] Assumes 365-day operation.				

Impact 3: Expose sensitive receptors to substantial pollutant concentrations?

Project impacts related to increased community risk can occur either by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs or by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity. In addition, temporary project construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors. Community risk impacts were addressed by increased predicting lifetime cancer risk, the increase in annual $PM_{2.5}$ concentrations, and computing the Hazard Index (HI) for non-cancer health risks. The methodology for computing community risks impacts is contained in *Attachment 1*.

<u>Construction Community Health Risk Impacts</u>

Project Construction Activity

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust are known as a TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may still pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issues associated with construction emissions are cancer risk and

exposure to $PM_{2.5}$. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects of sensitive receptors at these nearby residences from construction emissions of DPM and $PM_{2.5}$.[7] Dispersion modeling was conducted to predict the off-site concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction Emissions

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages as 0.0366 tons (73 pounds). The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.00252 tons (5 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[8] The modeling utilized two area sources to represent the on-site construction emissions, one for exhaust emissions and one for fugitive dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 6 meters (19.7 feet) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 2 meters (6.6 feet) was used for the area source. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 7 a.m. to 4 p.m.

The modeling used a five-year data set (2009 - 2013) of hourly meteorological data from Moffett Federal Airfield prepared for use with the AERMOD model by the CARB. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2019 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 1.5 meters (5 feet) and 4.5 meters (15 feet) were used to represent the breathing heights of residents on the first and second floors in nearby single-family residences, apartments, and condominiums.

[7] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.
[8] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

Community Risk Impacts

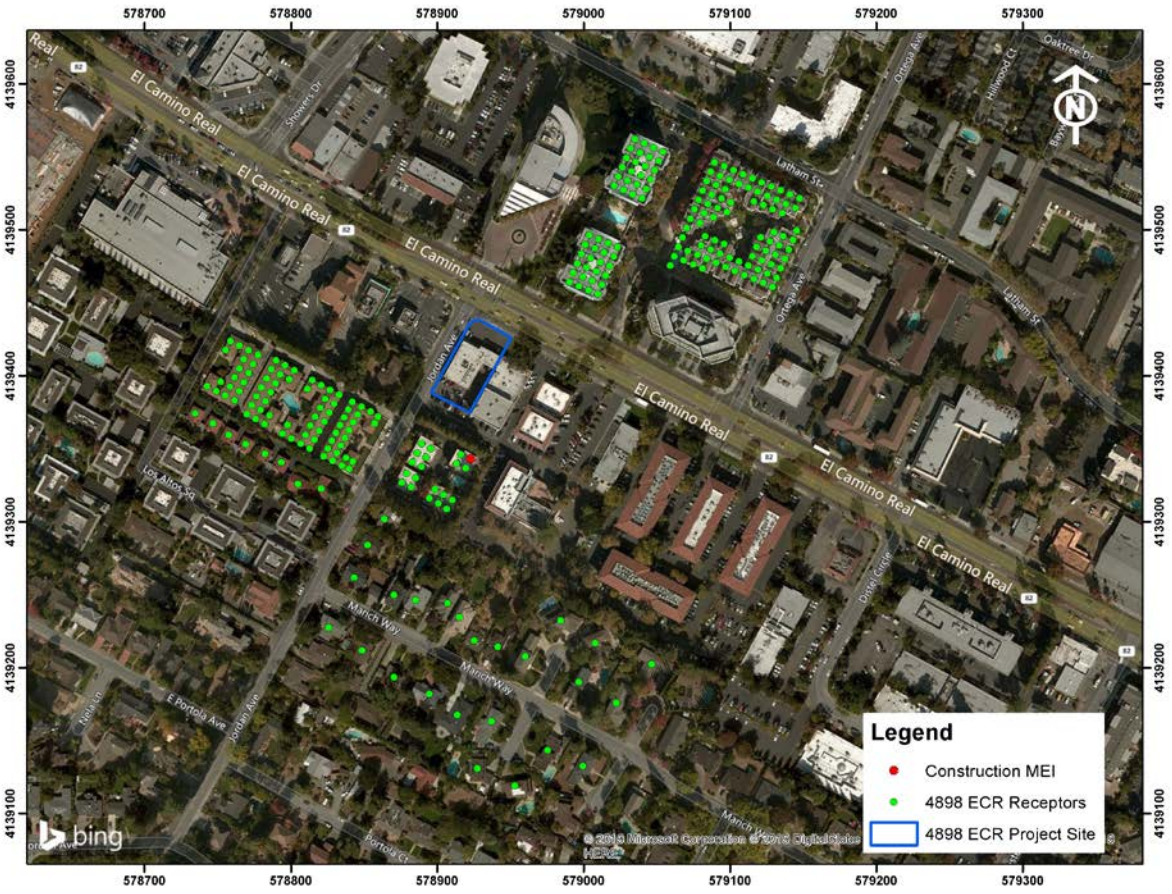
Figure 1 shows the locations where the maximum-modeled DPM and $PM_{2.5}$ concentrations occurred. The maximum concentrations occurred on the first-floor (i.e. 1.5 meters receptor breathing height) of a condominium residence located immediately south of the project site. The maximum increased cancer risk at the location of the maximally exposed individual (MEI) was calculated using the BAAQMD recommended methods and the maximum annual modeled DPM concentration. The cancer risk calculations are based on applying the BAAQMD recommended age sensitivity factors to the TAC concentrations. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. BAAQMD-recommended exposure parameters were used for the cancer risk calculations, as described in *Attachment 1*. Infant and adult exposures were assumed to occur at all residences through the entire construction period. Note that since the project construction is predicted to occur in less than two years, only infant exposure parameters were used in calculating the maximum cancer risk at the residential receptors due to their higher breathing rate. A higher breathing rate results in a higher cancer risk because the infant would inhale more construction emissions than someone with a lower breathing rate (i.e., 3rd trimester babies, children, and adults). Therefore, using infant exposure parameters results in a higher, more conservative cancer risk prediction. *Attachment 3* includes the construction emission calculations and source information used in the modeling and the cancer risk calculations.

Results of this assessment indicated that the maximum excess residential cancer risks would exceed the BAAQMD significance threshold of 10 in one million and the maximum $PM_{2.5}$ concentrations would exceed the BAAQMD significance threshold of 0.3 $\mu g/m^3$. *Implementation of Mitigation Measures AQ-2 would reduce this impact to a level of less-than-significant* as seen in Table 4, which summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities affecting the residential MEI. Note that *Mitigation Measure AQ-2* is presented after the "Cumulative Impact on the Cumulative MEI" section.

Table 4. Construction Risk Impact to Offsite Residential MEI

Source	Maximum Cancer Risk (per million)	$PM_{2.5}$ concentration ($\mu g/m^3$)	Hazard Index
Project Construction			
Unmitigated	**46.8 (infant)**	**0.31**	0.06
Mitigated	4.9 (infant)	0.04	<0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Significant?			
Unmitigated	***Yes***	***Yes***	*No*
Mitigated	*No*	*No*	*No*

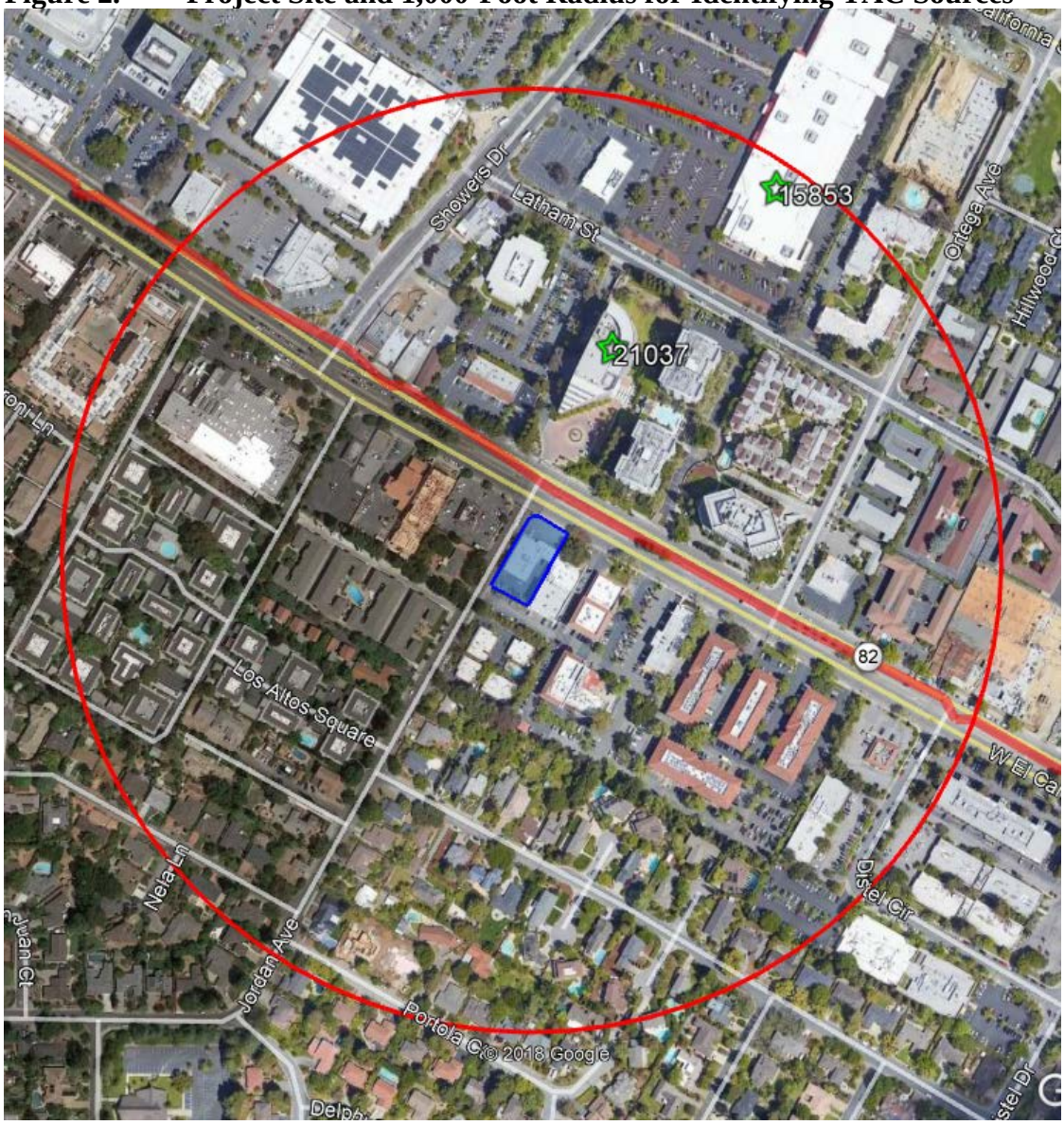
Figure 1. Project Construction Site and Locations of Off-Site Sensitive Receptors and TAC Impacts



Operational Community Health Risk Impacts

Community health risk assessments typically look at all substantial sources of TACs located within 1,000 feet of project sites. These sources include highways, busy surface streets, and stationary sources identified by BAAQMD. A review of the project area indicates that traffic on Highway 82 (i.e. El Camino Real) is a busy roadway with an average daily traffic (ADT) of over 10,000 vehicles, which makes it a significant source of TACs. All other roadways within the area are assumed to have an ADT that is less than 10,000 vehicles. A review of BAAQMD's stationary source Google Earth map tool identified two sources with the potential to affect the project site. Figure 2 shows the sources affecting the project site. Details of the modeling and community risk calculations are included in *Attachment 3.*

Figure 2. Project Site and 1,000-Foot Radius for Identifying TAC Sources



Highways – El Camino Real

Illingworth & Rodkin, Inc. conducted refined analysis involved predicting community risk impacts El Camino Real traffic for the 4880 El Camino Real Project in 2016.[9] This past project is approximately 200 feet west of the current project. Both projects have similar setbacks from El Camino Real. Emissions were entered into the CAL3QHCR dispersion model to predict exposure to TACs. The associated cancer risk was computed based on the modeled exposures. Results of modeling indicated that while increased cancer risk would have a less-than-significant impact on project residences, annual $PM_{2.5}$ concentrations could exceed the BAAQMD threshold of 0.3 $\mu g/m^3$ within 50 feet of the roadway. *Mitigation Measure AQ-3* would reduce the potential

[9] Illingworth & Rodkin, Inc., 2016. 4880 El Camino Real Project Draft Air Quality 7 Greenhouse gas Emissions Assessment. March 18.

$PM_{2.5}$ impact to a level of less-than-significant. This mitigation measure is discussed after the "Cumulative Impact on the Cumulative MEI" section.

Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*. This mapping tool uses Google Earth and identified the location of two stationary sources and their estimated risk and hazard impacts. A Stationary Source Information Form (SSIF) containing the identified sources was prepared and submitted to BAAQMD. They provided updated risk levels, emissions and adjustments to account for new OEHHA guidance.[10] The risk values were then adjusted with the appropriate distance multiplier values provided by BAAQMD or the emissions information was used in refined modeling.

Two stationary sources were identified (Target Corporation and BP West El Camino LLC) with both sources being generators. The screening risk levels for these stationary sources were provided by BAAQMD and adjusted for distance based on BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. Concentrations and community risk impacts from these sources upon the project are reported in Table 4.

Cumulative Community Health Risk at Project Site

Community risk impacts from combined sources upon the project site are reported in Table 5. As shown, the annual cancer risks, annual $PM_{2.5}$ concentrations, and Hazard Indexes are all below their respective single-source and cumulative significance thresholds and would be considered a *less-than significant* impact.

Table 5. Community Risk Impact to New Project Residences

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
El Camino Real at 50 feet (2nd-floor Receptors)			
Unmitigated	3.2	**0.4**	<0.01
Mitigated	<3.2	0.2	<0.01
Plant #21037 (Generator) at 450 feet	0.9	<0.01	<0.01
Plant #15853 (Generator) at 800 feet	<0.1	<0.01	<0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>0.1***
Significant?			
Unmitigated	*No*	***Yes***	*No*
Mitigated	*No*	*No*	*No*
Cumulative Total			
Unmitigated	4.2	0.42	<0.03
Mitigated	<4.2	0.22	<0.03
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Significant?	*No*	*No*	*No*

[10] Correspondence with Areana Flores, BAAQMD, 1 February 2019.

Cumulative Impact on Construction MEI

Table 5 reports both the project and cumulative community risk impacts at the construction MEI. The same TAC sources described and analyzed in the Operational Community Health Risk Assessment section above were also included in the Cumulative Community Health Risk assessment with the construction MEI being the analyzed receptor.

Without mitigation, the project would have a *significant* impact with respect to community risk caused by project construction activities, since the maximum cancer risk and $PM_{2.5}$ concentration exceed the single-source thresholds of 10.0 per million for cancer risk and 0.3 $\mu g/m^3$ for $PM_{2.5}$, respectively. As shown in Table 5, the combined annual cancer risk, $PM_{2.5}$ concentration and Hazard risk values, which includes unmitigated and mitigated, would not exceed the cumulative threshold.

Table 5. Impacts from Combined Sources at Construction MEI

Source	Maximum Cancer Risk (per million)	$PM_{2.5}$ concentration ($\mu g/m^3$)	Hazard Index
Project Construction			
Unmitigated	**46.8 (infant)**	**0.31**	0.06
Mitigated	4.9 (infant)	0.04	<0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Significant?			
Unmitigated	***Yes***	***Yes***	*No*
Mitigated	*No*	*No*	*No*
El Camino Real (Link 245, 6ft) at 300 feet south	13.8	0.14	0.01
Plant #21037 (Generator) at 610 feet	0.58	<0.01	<0.01
Plant #15853 (Generator) at 1,000 feet	0.02	<0.01	<0.01
Combined Sources			
Unmitigated	61.2 (infant)	0.47	<0.09
Mitigated	19.3 (infant)	0.20	<0.04
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Significant?			
Unmitigated	*No*	*No*	*No*
Mitigated	*No*	*No*	*No*

Mitigation Measure AQ-2: **Selection of equipment during construction to minimize emissions. Such equipment selection would include the following:**

The project shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average 79-percent reduction in DPM exhaust emissions or greater. One feasible plan to achieve this reduction would include the following:

1. All diesel-powered off-road equipment, larger than 25 horsepower, operating on the site for more than two days continuously shall, at a minimum, meet U.S. EPA particulate matter emissions standards for Tier 2 engines and this equipment shall include CARB-

certified Level 3 Diesel Particulate Filters[11] or equivalent. Equipment that meets U.S. EPA Tier 4 interim standards or use of equipment that is electrically powered or uses non-diesel fuels would meet this requirement.

Effectiveness of Mitigation AQ-2

With mitigation, the computed maximum increased lifetime residential cancer risk from construction, assuming infant exposure, would be 4.9 in one million or less, the maximum annual $PM_{2.5}$ concentration would be 0.04 µg/m^3, and the Hazard Index would be <0.01. As a result, impacts would be reduced to *less than significant* with respect to community risk caused by construction activities.

Mitigation Measure AQ-3: **The project shall include the following measures to minimize long-term TAC and annual $PM_{2.5}$ exposure for new project occupants:**

The project should install air filtration at residential units within 50 feet of El Camino Real. To ensure adequate health protection to sensitive receptors, a ventilation system is proposed to meet the following minimal design standards:

- Air filtration devices shall be rated MERV13 or higher rating;
- At least one air exchange(s) per hour of fresh outside filtered air; and
- At least four air exchange(s) per hour recirculation.

As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system will be developed. Recognizing that emissions from air pollution sources are decreasing, the maintenance period will last as long as significant annual $PM_{2.5}$ exposures are predicted. Subsequent studies could be conducted by an air quality expert approved by the City to identify the ongoing need for the filtered ventilation systems as future information becomes available.

In addition, it is important to ensure that the lease agreement and other property documents (1) require cleaning, maintenance, and monitoring of the affected units for air flow leaks; (2) include assurance that new tenants or owners are provided information on the ventilation system; and (3) include provisions that fees associated with owning or leasing a unit(s) in the building include funds for cleaning, maintenance, monitoring, and replacements of the filters, as needed.

Effectiveness of Mitigation AQ-3

The U.S. Environmental Protection Agency (EPA) reports particle size removal efficiency for filters rated MERV 13 of 90 percent for particles in the size range of 1 to 3 µm and less than 75 percent for particles 0.3 to 1 µm.[12] Studies by the South Coast AQMD indicate that MERV 13

[11] See http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

[12] U.S. EPA 2009. *Residential Air Cleaners Second Edition. A Summary of Available Information. Indoor Air Quality (IAQ).* EPA 402-F-09-002 | Revised August 2009 | www.epa.gov/iaq

filters could achieve reductions of about 60 percent for ultra-fine particles and about 35 percent for black carbon.[13]

A properly installed and operated ventilation system with MERV 13 air filters may reduce $PM_{2.5}$ concentrations from DPM mobile and stationary sources by approximately 60 to 70 percent indoors when compared to outdoors. The U.S. EPA reports that people, on average, spend 90 percent of their time indoors.[14] The overall effectiveness calculations take into effect time spent outdoors and away from home. Assuming 60-percent effectiveness for this filtration, with 21 hours per day of exposure to filtered air and three hours per day to unfiltered air (uncontrolled or 0-percent effectiveness), the overall effectiveness of filtration systems would be about 53 percent. The MERV 13 air filters would reduce maximum annual $PM_{2.5}$ concentrations to 0.2 $\mu g/m^3$. Therefore, with implementation of Mitigation Measure 2, this impact would be reduced to a level of less than significant.

Impact 4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Emissions of air pollutants or TACs are addressed under Impacts 2 and 3. Emission of greenhouse gases are addressed separately. In terms of odor emissions, the proposed project would construct multi-family residences that is categorized as a residential land use. The proposed project does not fall under any of the land uses BAAQMD identified within their odor screening table of the *CEQA Air Quality Guidelines*.[15] Therefore, odors that could cause complaints from the general public and affect a substantial number of people are not expected.

[13] South Coast AQMD. 2009. *Pilot Study of High Performance Air Filtration for Classrooms Applications*. Draft – October.

[14] Klepeis, N.E., Nelsen, WC., Ott, WR., Robinson, JP., Tsang, AM., Switzer, P., Behar, JV., Hern, SC., and Engelmann, WH. 2001. *The National Human Activity Pattern Survey (NHAPS): a resource for assessing exposure to environmental pollutants*. J. Expo Anal Environ Epidemial. 2001 May-Jun;11(3):231-52.

[15] Bay Area Air Quality Management District. 2017. "Table 3-3 Odor Screening Distances", BAAQMD CEQA Air Quality Guidelines. May.

Greenhouse Gases

Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2 and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Recent Regulatory Actions

Assembly Bill 32 (AB 32), California Global Warming Solutions Act (2006)

AB 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building

Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

Senate Bill 375, California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g. Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC]) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

SB 350 Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

Executive Order EO-B-30-15 (2015) and SB 32 GHG Reduction Targets

In April 2015, Governor Brown signed Executive Order which extended the goals of AB 32, setting a greenhouse gas emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed SB 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*. While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

The new Scoping Plan establishes a strategy that will reduce GHG emissions in California to meet the 2030 target (note that the AB 32 Scoping Plan only addressed 2020 targets and a long-

term goal). Key features of this plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings;
- Develop fuels with an 18-percent reduction in carbon intensity;
- Develop more high-density, transit-oriented housing;
- Develop walkable and bikeable communities
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce "super pollutants" by reducing methane and hydrofluorocarbons or HFCs by 40 percent.

In the updated Scoping Plan, CARB recommends statewide targets of no more than 6 metric tons CO_2e per capita (statewide) by 2030 and no more than 2 metric tons CO_2e per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.

Significance Thresholds

The BAAQMD's CEQA Air Quality Guidelines recommended a GHG threshold of 1,100 metric tons or 4.6 metric tons (MT) per capita. These thresholds were developed based on meeting the 2020 GHG targets set in the scoping plan that addressed AB 32. Development of the project would occur in 2020.

Although BAAQMD has not published a quantified threshold for 2030 yet, this assessment uses a bright-line threshold of 660 MT CO_{2e}/year based on the GHG reduction goals of EO B-30-15. The 2030 bright-line threshold is a 40 percent reduction of the 2020 1,100 MT CO_{2e}/year threshold.

Impact 1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

CalEEMod Modeling

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above in the operational period emissions section. CalEEMod outputs are included in *Attachment 2*.

Service Population Emissions

The project service population efficiency rate is based on the number of future residents and future employees. For this project, the number of future residents was estimated by multiplying the total number of units (e.g. 23 dwelling units) by the persons per household rate for Los Altos found in the California Department of Finance Population and Housing Estimate report.[16] Using the 2.77 persons per household 2018 estimate for Los Altos, the number of future residents is estimated to be 64.

Construction Emissions

GHG emissions associated with construction were computed to be 156 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable.

Operational Emissions

The CalEEMod model, along with the project vehicle trip generation rates, was used to estimate daily emissions associated with operation of the fully-developed site under the proposed project. As shown in Table 6, annual net emissions resulting from operation of the proposed project are predicted to be 49 MT of CO_2e for the year 2020 and 22 MT of CO_{2e} for the year 2030. The Therefore, the project would have a *less-than-significant* impact regarding GHG emissions.

[16] State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011-2018*. Sacramento, California, May 2018.

Table 6. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Existing Land Use in 2021	Proposed Project in 2020	Proposed Project in 2030
Area	<1	1	1
Energy Consumption	16	48	48
Mobile	95	111	84
Solid Waste Generation	4	5	5
Water Usage	2	2	2
Total (MT CO_{2e}/year)	118	167	140
Net Emissions		49 MT CO_{2e}/year	22 MT CO_{2e}/year
Significance Threshold		***1,100 MT CO_2e/year***	***660 MT CO_2e/year***
Service Population Emissions (MT CO2e/year/service population)		2.6	2.1
Significance Threshold		***4.6 in 2020***	***2.6 in 2030***
Significant (Exceeds both thresholds)?		***No***	***No***

Impact 2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, codifies the State of California's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, CARB, California Energy Commission (CEC), the California Public Utilities Commission (CPUC), and the Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State of California's main strategies to reduce GHGs from business-as-usual (BAU) emissions projected in 2020 back down to 1990 levels. BAU is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. It required CARB and other state agencies to develop and adopt regulations and other initiatives reducing GHGs by 2012.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 million metric tons (MMT) of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 MMT of CO_2e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB is currently working on a second update to the Scoping Plan to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The proposed Scoping Plan Update was published on January 20, 2017 as directed by SB 32 companion legislation AB 197. The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and obtain the statewide goals.

The proposed project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan. For example, proposed buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures and water-efficient irrigation systems.

City of Los Altos Climate Action Plan

The City of Los Altos Climate Action Plan (CAP), adopted December 2013, is a document that the City has designed in order to identify activities that contribute to GHG emissions and to create strategies that will help the City achieve its GHG reduction goals. The City adopted an GHG emissions reduction target of 15% below the 2005 baseline level by 2020. Additionally, to implement and monitor the success of the CAP, the City of Los Altos requires all new projects to comply with their CAP checklist. This document helps city planners ensure that the new project would be consistent with the City's GHG reduction goals. A project must incorporate all the Best management Practices (BMPs) identified in the checklist.

An evaluation of the project data was done to determine if this proposed project does comply with the CAP. After reviewing the project data within the plans, the project will comply with the City of Los Altos' CAP Checklist. The checklist with the project compliance descriptions is in *Attachment 5*.

Supporting Documentation

Attachment 1 is the methodology used to compute community risk impacts, including the methods to compute lifetime cancer risk from exposure to project emissions.

Attachment 2 includes the CalEEMod output for project construction TAC emissions and GHG emissions. Also included are any modeling assumptions, like the Trojan Weighted Average Distance Table.

Attachment 3 is the construction health risk assessment. AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 4 includes the screening community risk calculations from sources affecting the construction MEI.

Attachment 5 includes the completed Los Altos CAP Checklist and the project's compliance with it.

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[17] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[18] This HRA used the recent 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[19] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs are calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the BAAQMD, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways).

[17] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[18] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[19] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity that would have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

	Exposure Type →	**Infant**		**Child**		**Adult**
Parameter	***Age Range*** →	**3rd Trimester**	**0<2**	**2 < 9**	**2 < 16**	**16 - 30**
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day)*		361	1,090	631	572	261
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

* 95th percentile breathing rates for 3rd trimester and infants and 80th percentile for children and adults.

Non-Cancer Hazards

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 2: CalEEMod Modeling Output

4898 ECR Default AQ

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	56.00	Space	0.50	31,936.00	0
Apartments Mid Rise	23.00	Dwelling Unit	0.43	50,497.00	66

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 290 rate

Land Use - Land Use: 23 Apts, 56 parking spaces

Construction Phase - CalEEMod Default Schedule

Off-road Equipment -

Off-road Equipment - CalEEMod Default Equipment for all Phases

Grading - 13,300 cubic yards of soil hauling export

Demolition - Existing building: 4,550 and existing hardscape: 13,094

Trips and VMT - Demo Hauling:13,094-sf, Asphalt Hauling: 227-cy --> 54 trips

Vehicle Trips - Weekday: 5.44, 5.23, 4.79

Woodstoves - all gas, no wood

Energy Use -

Water And Wastewater - 100% aerobic

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	3.45	7.36
tblFireplaces	NumberWood	3.91	0.00
tblGrading	MaterialExported	0.00	13,300.00
tblLandUse	LandUseSquareFeet	22,400.00	31,936.00
tblLandUse	LandUseSquareFeet	23,000.00	50,497.00
tblLandUse	LotAcreage	0.61	0.43
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripNumber	1,663.00	1,662.00
tblTripsAndVMT	HaulingTripNumber	0.00	54.00
tblVehicleTrips	ST_TR	6.39	5.23
tblVehicleTrips	SU_TR	5.86	4.79
tblVehicleTrips	WD_TR	6.65	5.44
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.4371	0.9278	0.5870	1.6700e-003	0.0414	0.0379	0.0793	0.0103	0.0350	0.0453	0.0000	155.4736	155.4736	0.0234	0.0000	156.0579
Maximum	**0.4371**	**0.9278**	**0.5870**	**1.6700e-003**	**0.0414**	**0.0379**	**0.0793**	**0.0103**	**0.0350**	**0.0453**	**0.0000**	**155.4736**	**155.4736**	**0.0234**	**0.0000**	**156.0579**

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	0.4371	0.9278	0.5870	1.6700e-003	0.0414	0.0379	0.0793	0.0103	0.0350	0.0453	0.0000	155.4736	155.4736	0.0234	0.0000	156.0578
Maximum	**0.4371**	**0.9278**	**0.5870**	**1.6700e-003**	**0.0414**	**0.0379**	**0.0793**	**0.0103**	**0.0350**	**0.0453**	**0.0000**	**155.4736**	**155.4736**	**0.0234**	**0.0000**	**156.0578**

	ROG	NOx	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	**6-1-2019**	**8-31-2019**	0.6013	0.6013
2	**9-1-2019**	**9-30-2019**	0.1286	0.1286
		Highest	0.6013	0.6013

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	0.2409	2.7800e-003	0.1722	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2111
Energy	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	47.7113	47.7113	3.9100e-003	9.6000e-004	48.0959
Mobile	0.0333	0.1384	0.3888	1.2100e-003	0.1050	1.2100e-003	0.1063	0.0281	1.1400e-003	0.0293	0.0000	110.5669	110.5669	4.0100e-003	0.0000	110.6673
Waste						0.0000	0.0000		0.0000	0.0000	2.1476	0.0000	2.1476	0.1269	0.0000	5.3207
Water						0.0000	0.0000		0.0000	0.0000	0.5302	1.5016	2.0318	1.9800e-003	1.1800e-003	2.4340
Total	**0.2752**	**0.1503**	**0.5649**	**1.2800e-003**	**0.1050**	**2.9600e-003**	**0.1080**	**0.0281**	**2.8900e-003**	**0.0310**	**2.6778**	**160.9786**	**163.6564**	**0.1371**	**2.1600e-003**	**167.7290**

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	0.2409	2.7800e-003	0.1722	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2111
Energy	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	47.7113	47.7113	3.9100e-003	9.6000e-004	48.0959
Mobile	0.0333	0.1384	0.3888	1.2100e-003	0.1050	1.2100e-003	0.1063	0.0281	1.1400e-003	0.0293	0.0000	110.5669	110.5669	4.0100e-003	0.0000	110.6673
Waste						0.0000	0.0000		0.0000	0.0000	2.1476	0.0000	2.1476	0.1269	0.0000	5.3207
Water						0.0000	0.0000		0.0000	0.0000	0.5302	1.5016	2.0318	1.9800e-003	1.1800e-003	2.4340
Total	**0.2752**	**0.1503**	**0.5649**	**1.2800e-003**	**0.1050**	**2.9600e-003**	**0.1080**	**0.0281**	**2.8900e-003**	**0.0310**	**2.6778**	**160.9786**	**163.6564**	**0.1371**	**2.1600e-003**	**167.7290**

	ROG	NOx	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	Demolition	6/1/2019	6/14/2019	5	10	
2	Site Preparation	Site Preparation	6/15/2019	6/17/2019	5	1	
3	Grading	Grading	6/18/2019	6/19/2019	5	2	
4	Trenching/Foundation	Trenching	6/18/2019	7/1/2019	5	10	
5	Building Construction	Building Construction	6/20/2019	11/6/2019	5	100	
6	Paving	Paving	11/7/2019	11/13/2019	5	5	
7	Architectural Coating	Architectural Coating	11/14/2019	11/20/2019	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.5

Residential Indoor: 102,256; Residential Outdoor: 34,085; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40

Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Trenching/Foundation	Excavators	1	7.00	158	0.38
Trenching/Foundation	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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	4	10.00	0.00	80.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,662.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	30.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	54.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching/Foundation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 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					8.6800e-003	0.0000	8.6800e-003	1.3100e-003	0.0000	1.3100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7700e-003	0.0430	0.0385	6.0000e-005		2.6900e-003	2.6900e-003		2.5600e-003	2.5600e-003	0.0000	5.2601	5.2601	1.0000e-003	0.0000	5.2852
Total	**4.7700e-003**	**0.0430**	**0.0385**	**6.0000e-005**	**8.6800e-003**	**2.6900e-003**	**0.0114**	**1.3100e-003**	**2.5600e-003**	**3.8700e-003**	**0.0000**	**5.2601**	**5.2601**	**1.0000e-003**	**0.0000**	**5.2852**

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	3.6000e-004	0.0125	2.4600e-003	3.0000e-005	6.8000e-004	5.0000e-005	7.3000e-004	1.9000e-004	5.0000e-005	2.3000e-004	0.0000	3.0826	3.0826	1.4000e-004	0.0000	3.0862
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	1.8000e-004	1.4000e-004	1.4000e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3510	0.3510	1.0000e-005	0.0000	0.3513
Total	**5.4000e-004**	**0.0126**	**3.8600e-003**	**3.0000e-005**	**1.0800e-003**	**5.0000e-005**	**1.1300e-003**	**3.0000e-004**	**5.0000e-005**	**3.4000e-004**	**0.0000**	**3.4336**	**3.4336**	**1.5000e-004**	**0.0000**	**3.4375**

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					8.6800e-003	0.0000	8.6800e-003	1.3100e-003	0.0000	1.3100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7700e-003	0.0430	0.0385	6.0000e-005		2.6900e-003	2.6900e-003		2.5600e-003	2.5600e-003	0.0000	5.2601	5.2601	1.0000e-003	0.0000	5.2852

Total	**4.7700e-003**	**0.0430**	**0.0385**	**6.0000e-005**	**8.6800e-003**	**2.6900e-003**	**0.0114**	**1.3100e-003**	**2.5600e-003**	**3.8700e-003**	**0.0000**	**5.2601**	**5.2601**	**1.0000e-003**	**0.0000**	**5.2852**

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	3.6000e-004	0.0125	2.4600e-003	3.0000e-005	6.8000e-004	5.0000e-005	7.3000e-004	1.9000e-004	5.0000e-005	2.3000e-004	0.0000	3.0826	3.0826	1.4000e-004	0.0000	3.0862
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	1.8000e-004	1.4000e-004	1.4000e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3510	0.3510	1.0000e-005	0.0000	0.3513
Total	**5.4000e-004**	**0.0126**	**3.8600e-003**	**3.0000e-005**	**1.0800e-003**	**5.0000e-005**	**1.1300e-003**	**3.0000e-004**	**5.0000e-005**	**3.4000e-004**	**0.0000**	**3.4336**	**3.4336**	**1.5000e-004**	**0.0000**	**3.4375**

3.3 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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**2.7000e-004**	**1.8000e-004**	**4.5000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**0.0000**	**0.0176**

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**2.7000e-004**	**1.8000e-004**	**4.5000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**0.0000**	**0.0176**

3.4 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					1.5000e-003	0.0000	1.5000e-003	5.3000e-004	0.0000	5.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	8.6000e-003	7.6900e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.1000e-004	5.1000e-004	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**9.5000e-004**	**8.6000e-003**	**7.6900e-003**	**1.0000e-005**	**1.5000e-003**	**5.4000e-004**	**2.0400e-003**	**5.3000e-004**	**5.1000e-004**	**1.0400e-003**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

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	7.5500e-003	0.2587	0.0511	6.6000e-004	0.0141	9.9000e-004	0.0151	3.8700e-003	9.5000e-004	4.8200e-003	0.0000	64.0406	64.0406	3.0000e-003	0.0000	64.1156
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0702	0.0702	0.0000	0.0000	0.0703
Total	**7.5900e-003**	**0.2588**	**0.0514**	**6.6000e-004**	**0.0142**	**9.9000e-004**	**0.0152**	**3.8900e-003**	**9.5000e-004**	**4.8400e-003**	**0.0000**	**64.1108**	**64.1108**	**3.0000e-003**	**0.0000**	**64.1859**

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					1.5000e-003	0.0000	1.5000e-003	5.3000e-004	0.0000	5.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	8.6000e-003	7.6900e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.1000e-004	5.1000e-004	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**9.5000e-004**	**8.6000e-003**	**7.6900e-003**	**1.0000e-005**	**1.5000e-003**	**5.4000e-004**	**2.0400e-003**	**5.3000e-004**	**5.1000e-004**	**1.0400e-003**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

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	7.5500e-003	0.2587	0.0511	6.6000e-004	0.0141	9.9000e-004	0.0151	3.8700e-003	9.5000e-004	4.8200e-003	0.0000	64.0406	64.0406	3.0000e-003	0.0000	64.1156
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0702	0.0702	0.0000	0.0000	0.0703
Total	**7.5900e-003**	**0.2588**	**0.0514**	**6.6000e-004**	**0.0142**	**9.9000e-004**	**0.0152**	**3.8900e-003**	**9.5000e-004**	**4.8400e-003**	**0.0000**	**64.1108**	**64.1108**	**3.0000e-003**	**0.0000**	**64.1859**

3.5 Trenching/Foundation - 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	2.1600e-003	0.0220	0.0244	4.0000e-005		1.2500e-003	1.2500e-003		1.1500e-003	1.1500e-003	0.0000	3.2492	3.2492	1.0300e-003	0.0000	3.2749
Total	**2.1600e-003**	**0.0220**	**0.0244**	**4.0000e-005**		**1.2500e-003**	**1.2500e-003**		**1.1500e-003**	**1.1500e-003**	**0.0000**	**3.2492**	**3.2492**	**1.0300e-003**	**0.0000**	**3.2749**

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	9.0000e-005	7.0000e-005	7.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1755	0.1755	0.0000	0.0000	0.1756
Total	**9.0000e-005**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1755**	**0.1755**	**0.0000**	**0.0000**	**0.1756**

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	2.1600e-003	0.0220	0.0244	4.0000e-005		1.2500e-003	1.2500e-003		1.1500e-003	1.1500e-003	0.0000	3.2492	3.2492	1.0300e-003	0.0000	3.2749

Total	**2.1600e-003**	**0.0220**	**0.0244**	**4.0000e-005**		**1.2500e-003**	**1.2500e-003**		**1.1500e-003**	**1.1500e-003**	**0.0000**	**3.2492**	**3.2492**	**1.0300e-003**	**0.0000**	**3.2749**

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	9.0000e-005	7.0000e-005	7.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1755	0.1755	0.0000	0.0000	0.1756
Total	**9.0000e-005**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1755**	**0.1755**	**0.0000**	**0.0000**	**0.1756**

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	0.0479	0.4910	0.3772	5.7000e-004		0.0303	0.0303		0.0279	0.0279	0.0000	51.1502	51.1502	0.0162	0.0000	51.5548
Total	**0.0479**	**0.4910**	**0.3772**	**5.7000e-004**		**0.0303**	**0.0303**		**0.0279**	**0.0279**	**0.0000**	**51.1502**	**51.1502**	**0.0162**	**0.0000**	**51.5548**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9600e-003	0.0505	0.0136	1.1000e-004	2.6300e-003	3.6000e-004	2.9900e-003	7.6000e-004	3.5000e-004	1.1100e-003	0.0000	10.5221	10.5221	5.2000e-004	0.0000	10.5351
Worker	5.4500e-003	4.0600e-003	0.0419	1.2000e-004	0.0119	8.0000e-005	0.0120	3.1600e-003	7.0000e-005	3.2400e-003	0.0000	10.5313	10.5313	2.9000e-004	0.0000	10.5384
Total	**7.4100e-003**	**0.0546**	**0.0555**	**2.3000e-004**	**0.0145**	**4.4000e-004**	**0.0150**	**3.9200e-003**	**4.2000e-004**	**4.3500e-003**	**0.0000**	**21.0533**	**21.0533**	**8.1000e-004**	**0.0000**	**21.0735**

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	0.0479	0.4910	0.3772	5.7000e-004		0.0303	0.0303		0.0279	0.0279	0.0000	51.1502	51.1502	0.0162	0.0000	51.5548
Total	**0.0479**	**0.4910**	**0.3772**	**5.7000e-004**		**0.0303**	**0.0303**		**0.0279**	**0.0279**	**0.0000**	**51.1502**	**51.1502**	**0.0162**	**0.0000**	**51.5548**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9600e-003	0.0505	0.0136	1.1000e-004	2.6300e-003	3.6000e-004	2.9900e-003	7.6000e-004	3.5000e-004	1.1100e-003	0.0000	10.5221	10.5221	5.2000e-004	0.0000	10.5351
Worker	5.4500e-003	4.0600e-003	0.0419	1.2000e-004	0.0119	8.0000e-005	0.0120	3.1600e-003	7.0000e-005	3.2400e-003	0.0000	10.5313	10.5313	2.9000e-004	0.0000	10.5384
Total	**7.4100e-003**	**0.0546**	**0.0555**	**2.3000e-004**	**0.0145**	**4.4000e-004**	**0.0150**	**3.9200e-003**	**4.2000e-004**	**4.3500e-003**	**0.0000**	**21.0533**	**21.0533**	**8.1000e-004**	**0.0000**	**21.0735**

3.7 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.0700e-003	0.0196	0.0179	3.0000e-005		1.1100e-003	1.1100e-003		1.0300e-003	1.0300e-003	0.0000	2.3931	2.3931	6.8000e-004	0.0000	2.4102
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0700e-003**	**0.0196**	**0.0179**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**2.3931**	**2.3931**	**6.8000e-004**	**0.0000**	**2.4102**

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	1.6000e-004	1.2000e-004	1.2600e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3159	0.3159	1.0000e-005	0.0000	0.3162
Total	**1.6000e-004**	**1.2000e-004**	**1.2600e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3159**	**0.3159**	**1.0000e-005**	**0.0000**	**0.3162**

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	2.0700e-003	0.0196	0.0179	3.0000e-005		1.1100e-003	1.1100e-003		1.0300e-003	1.0300e-003	0.0000	2.3931	2.3931	6.8000e-004	0.0000	2.4102
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0700e-003**	**0.0196**	**0.0179**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**2.3931**	**2.3931**	**6.8000e-004**	**0.0000**	**2.4102**

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	1.6000e-004	1.2000e-004	1.2600e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3159	0.3159	1.0000e-005	0.0000	0.3162
Total	**1.6000e-004**	**1.2000e-004**	**1.2600e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3159**	**0.3159**	**1.0000e-005**	**0.0000**	**0.3162**

3.8 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3621					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**0.3628**	**4.5900e-003**	**4.6000e-003**	**1.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5000e-004	8.4100e-003	1.6600e-003	2.0000e-005	4.6000e-004	3.0000e-005	4.9000e-004	1.3000e-004	3.0000e-005	1.6000e-004	0.0000	2.0807	2.0807	1.0000e-004	0.0000	2.0832
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	5.0000e-005	4.0000e-005	4.2000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1053	0.1053	0.0000	0.0000	0.1054
Total	**3.0000e-004**	**8.4500e-003**	**2.0800e-003**	**2.0000e-005**	**5.8000e-004**	**3.0000e-005**	**6.1000e-004**	**1.6000e-004**	**3.0000e-005**	**1.9000e-004**	**0.0000**	**2.1861**	**2.1861**	**1.0000e-004**	**0.0000**	**2.1886**

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	0.3621					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**0.3628**	**4.5900e-003**	**4.6000e-003**	**1.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5000e-004	8.4100e-003	1.6600e-003	2.0000e-005	4.6000e-004	3.0000e-005	4.9000e-004	1.3000e-004	3.0000e-005	1.6000e-004	0.0000	2.0807	2.0807	1.0000e-004	0.0000	2.0832
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	5.0000e-005	4.0000e-005	4.2000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1053	0.1053	0.0000	0.0000	0.1054
Total	**3.0000e-004**	**8.4500e-003**	**2.0800e-003**	**2.0000e-005**	**5.8000e-004**	**3.0000e-005**	**6.1000e-004**	**1.6000e-004**	**3.0000e-005**	**1.9000e-004**	**0.0000**	**2.1861**	**2.1861**	**1.0000e-004**	**0.0000**	**2.1886**

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	0.0333	0.1384	0.3888	1.2100e-003	0.1050	1.2100e-003	0.1063	0.0281	1.1400e-003	0.0293	0.0000	110.5669	110.5669	4.0100e-003	0.0000	110.6673
Unmitigated	0.0333	0.1384	0.3888	1.2100e-003	0.1050	1.2100e-003	0.1063	0.0281	1.1400e-003	0.0293	0.0000	110.5669	110.5669	4.0100e-003	0.0000	110.6673

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	125.12	120.29	110.17	282,452	282,452
Enclosed Parking with Elevator	0.00	0.00	0.00		
Total	125.12	120.29	110.17	282,452	282,452

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.604810	0.038204	0.185149	0.108513	0.015498	0.004981	0.012268	0.020156	0.002083	0.001571	0.005363	0.000620	0.000785
Enclosed Parking with Elevator	0.604810	0.038204	0.185149	0.108513	0.015498	0.004981	0.012268	0.020156	0.002083	0.001571	0.005363	0.000620	0.000785

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	37.1075	37.1075	3.7100e-003	7.7000e-004	37.4291
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	37.1075	37.1075	3.7100e-003	7.7000e-004	37.4291
NaturalGas Mitigated	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668
NaturalGas Unmitigated	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668

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 Mid Rise	198707	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.0700e-003**	**9.1600e-003**	**3.9000e-003**	**6.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**10.6038**	**10.6038**	**2.0000e-004**	**1.9000e-004**	**10.6668**

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 Mid Rise	198707	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.0700e-003**	**9.1600e-003**	**3.9000e-003**	**6.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**10.6038**	**10.6038**	**2.0000e-004**	**1.9000e-004**	**10.6668**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	94952.1	12.4902	1.2500e-003	2.6000e-004	12.5984
Enclosed Parking with Elevator	187145	24.6174	2.4600e-003	5.1000e-004	24.8307
Total		**37.1075**	**3.7100e-003**	**7.7000e-004**	**37.4291**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	94952.1	12.4902	1.2500e-003	2.6000e-004	12.5984
Enclosed Parking with Elevator	187145	24.6174	2.4600e-003	5.1000e-004	24.8307
Total		**37.1075**	**3.7100e-003**	**7.7000e-004**	**37.4291**

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	0.2409	2.7800e-003	0.1722	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2111
Unmitigated	0.2409	2.7800e-003	0.1722	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2111

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	0.0362					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.0000e-005	7.9000e-004	3.4000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9188	0.9188	2.0000e-005	2.0000e-005	0.9243
Landscaping	5.2700e-003	1.9900e-003	0.1719	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2800	0.2800	2.7000e-004	0.0000	0.2868
Total	**0.2409**	**2.7800e-003**	**0.1722**	**2.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**1.1988**	**1.1988**	**2.9000e-004**	**2.0000e-005**	**1.2111**

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	0.0362					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	0.1993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.0000e-005	7.9000e-004	3.4000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9188	0.9188	2.0000e-005	2.0000e-005	0.9243
Landscaping	5.2700e-003	1.9900e-003	0.1719	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2800	0.2800	2.7000e-004	0.0000	0.2868
Total	**0.2409**	**2.7800e-003**	**0.1722**	**2.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**1.1988**	**1.1988**	**2.9000e-004**	**2.0000e-005**	**1.2111**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.0318	1.9800e-003	1.1800e-003	2.4340
Unmitigated	2.0318	1.9800e-003	1.1800e-003	2.4340

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.49854 / 0.944733	2.0318	1.9800e-003	1.1800e-003	2.4340
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000

Total		**2.0318**	**1.9800e-003**	**1.1800e-003**	**2.4340**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.49854 / 0.944733	2.0318	1.9800e-003	1.1800e-003	2.4340
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.0318**	**1.9800e-003**	**1.1800e-003**	**2.4340**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.1476	0.1269	0.0000	5.3207
Unmitigated	2.1476	0.1269	0.0000	5.3207

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	10.58	2.1476	0.1269	0.0000	5.3207
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**2.1476**	**0.1269**	**0.0000**	**5.3207**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	10.58	2.1476	0.1269	0.0000	5.3207
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**2.1476**	**0.1269**	**0.0000**	**5.3207**

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

4898 ECR Default TAC - Santa Clara County, Annual

4898 ECR Default TAC

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	56.00	Space	0.50	31,936.00	0
Apartments Mid Rise	23.00	Dwelling Unit	0.43	50,497.00	66

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 290 rate

Land Use - Land Use: 23 Apts, 56 parking spaces

Construction Phase - CalEEMod Default Schedule

Off-road Equipment -

Off-road Equipment - CalEEMod Default Equipment for all Phases

Grading - 13,300 cubic yards of soil hauling export

Demolition - Existing building: 4,550 and existing hardscape: 13,094

Trips and VMT - Demo Hauling:13,094-sf, Asphalt Hauling: 227-cy --> 54 trips, TAC Trip Length of 1 mile

Vehicle Trips - Weekday: 5.44, 5.23, 4.79

Woodstoves - all gas, no wood

Energy Use -

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - BMPs, Tier 2 DPF 3

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	3.45	7.36
tblFireplaces	NumberWood	3.91	0.00
tblGrading	MaterialExported	0.00	13,300.00
tblLandUse	LandUseSquareFeet	22,400.00	31,936.00
tblLandUse	LandUseSquareFeet	23,000.00	50,497.00
tblLandUse	LotAcreage	0.61	0.43
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripNumber	1,663.00	1,662.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00

tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblVehicleTrips	ST_TR	6.39	5.23
tblVehicleTrips	SU_TR	5.86	4.79
tblVehicleTrips	WD_TR	6.65	5.44
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					

2019	0.4260	0.7157	0.5081	8.8000e-004	0.0128	0.0366	0.0494	2.5200e-003	0.0338	0.0363	0.0000	80.0548	80.0548	0.0210	0.0000	80.5803
Maximum	**0.4260**	**0.7157**	**0.5081**	**8.8000e-004**	**0.0128**	**0.0366**	**0.0494**	**2.5200e-003**	**0.0338**	**0.0363**	**0.0000**	**80.0548**	**80.0548**	**0.0210**	**0.0000**	**80.5803**

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	0.3965	0.7833	0.5338	8.8000e-004	7.0500e-003	3.7900e-003	0.0109	1.0700e-003	3.7800e-003	4.8500e-003	0.0000	80.0547	80.0547	0.0210	0.0000	80.5802
Maximum	**0.3965**	**0.7833**	**0.5338**	**8.8000e-004**	**7.0500e-003**	**3.7900e-003**	**0.0109**	**1.0700e-003**	**3.7800e-003**	**4.8500e-003**	**0.0000**	**80.0547**	**80.0547**	**0.0210**	**0.0000**	**80.5802**

	ROG	NOx	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	**6.92**	**-9.45**	**-5.06**	**0.00**	**44.92**	**89.63**	**78.02**	**57.54**	**88.81**	**86.64**	**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	**6-1-2019**	**8-31-2019**	0.4571	0.4839
2	**9-1-2019**	**9-30-2019**	0.1224	0.1266
		Highest	0.4571	0.4839

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	0.2409	2.7800e-003	0.1722	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2111
Energy	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	47.7113	47.7113	3.9100e-003	9.6000e-004	48.0959
Mobile	0.0333	0.1384	0.3888	1.2100e-003	0.1050	1.2100e-003	0.1063	0.0281	1.1400e-003	0.0293	0.0000	110.5669	110.5669	4.0100e-003	0.0000	110.6673
Waste						0.0000	0.0000		0.0000	0.0000	2.1476	0.0000	2.1476	0.1269	0.0000	5.3207
Water						0.0000	0.0000		0.0000	0.0000	0.5302	1.5016	2.0318	1.9800e-003	1.1800e-003	2.4340
Total	**0.2752**	**0.1503**	**0.5649**	**1.2800e-003**	**0.1050**	**2.9600e-003**	**0.1080**	**0.0281**	**2.8900e-003**	**0.0310**	**2.6778**	**160.9786**	**163.6564**	**0.1371**	**2.1600e-003**	**167.7290**

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	0.2409	2.7800e-003	0.1722	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2111
Energy	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	47.7113	47.7113	3.9100e-003	9.6000e-004	48.0959
Mobile	0.0333	0.1384	0.3888	1.2100e-003	0.1050	1.2100e-003	0.1063	0.0281	1.1400e-003	0.0293	0.0000	110.5669	110.5669	4.0100e-003	0.0000	110.6673
Waste						0.0000	0.0000		0.0000	0.0000	2.1476	0.0000	2.1476	0.1269	0.0000	5.3207
Water						0.0000	0.0000		0.0000	0.0000	0.5302	1.5016	2.0318	1.9800e-003	1.1800e-003	2.4340
Total	**0.2752**	**0.1503**	**0.5649**	**1.2800e-003**	**0.1050**	**2.9600e-003**	**0.1080**	**0.0281**	**2.8900e-003**	**0.0310**	**2.6778**	**160.9786**	**163.6564**	**0.1371**	**2.1600e-003**	**167.7290**

	ROG	NOx	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	Demolition	6/1/2019	6/14/2019	5	10	
2	Site Preparation	Site Preparation	6/15/2019	6/17/2019	5	1	
3	Grading	Grading	6/18/2019	6/19/2019	5	2	
4	Trenching/Foundation	Trenching	6/18/2019	7/1/2019	5	10	
5	Building Construction	Building Construction	6/20/2019	11/6/2019	5	100	
6	Paving	Paving	11/7/2019	11/13/2019	5	5	
7	Architectural Coating	Architectural Coating	11/14/2019	11/20/2019	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.5

Residential Indoor: 102,256; Residential Outdoor: 34,085; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56

Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Trenching/Foundation	Excavators	1	7.00	158	0.38
Trenching/Foundation	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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	4	10.00	0.00	80.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,662.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	30.00	8.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Trenching/Foundation	2	5.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					8.6800e-003	0.0000	8.6800e-003	1.3100e-003	0.0000	1.3100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7700e-003	0.0430	0.0385	6.0000e-005		2.6900e-003	2.6900e-003		2.5600e-003	2.5600e-003	0.0000	5.2601	5.2601	1.0000e-003	0.0000	5.2852
Total	**4.7700e-003**	**0.0430**	**0.0385**	**6.0000e-005**	**8.6800e-003**	**2.6900e-003**	**0.0114**	**1.3100e-003**	**2.5600e-003**	**3.8700e-003**	**0.0000**	**5.2601**	**5.2601**	**1.0000e-003**	**0.0000**	**5.2852**

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	1.0000e-004	4.2800e-003	7.1000e-004	1.0000e-005	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.5182	0.5182	6.0000e-005	0.0000	0.5197
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	6.0000e-005	3.0000e-005	3.7000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0419	0.0419	0.0000	0.0000	0.0420
Total	**1.6000e-004**	**4.3100e-003**	**1.0800e-003**	**1.0000e-005**	**7.0000e-005**	**1.0000e-005**	**8.0000e-005**	**2.0000e-005**	**1.0000e-005**	**2.0000e-005**	**0.0000**	**0.5602**	**0.5602**	**6.0000e-005**	**0.0000**	**0.5617**

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					3.9100e-003	0.0000	3.9100e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	2.4200e-003	0.0518	0.0397	6.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	5.2601	5.2601	1.0000e-003	0.0000	5.2852
Total	**2.4200e-003**	**0.0518**	**0.0397**	**6.0000e-005**	**3.9100e-003**	**3.0000e-004**	**4.2100e-003**	**3.0000e-004**	**3.0000e-004**	**6.0000e-004**	**0.0000**	**5.2601**	**5.2601**	**1.0000e-003**	**0.0000**	**5.2852**

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	1.0000e-004	4.2800e-003	7.1000e-004	1.0000e-005	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.5182	0.5182	6.0000e-005	0.0000	0.5197
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	6.0000e-005	3.0000e-005	3.7000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0419	0.0419	0.0000	0.0000	0.0420
Total	**1.6000e-004**	**4.3100e-003**	**1.0800e-003**	**1.0000e-005**	**7.0000e-005**	**1.0000e-005**	**8.0000e-005**	**2.0000e-005**	**1.0000e-005**	**2.0000e-005**	**0.0000**	**0.5602**	**0.5602**	**6.0000e-005**	**0.0000**	**0.5617**

3.3 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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**2.7000e-004**	**1.8000e-004**	**4.5000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

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	0.0000	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.1000e-003	2.1000e-003	0.0000	0.0000	2.1000e-003
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.1000e-003**	**2.1000e-003**	**0.0000**	**0.0000**	**2.1000e-003**

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					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	4.3100e-003	2.9300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**1.5000e-004**	**4.3100e-003**	**2.9300e-003**	**0.0000**	**1.2000e-004**	**2.0000e-005**	**1.4000e-004**	**1.0000e-005**	**2.0000e-005**	**3.0000e-005**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

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	0.0000	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.1000e-003	2.1000e-003	0.0000	0.0000	2.1000e-003
Total	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.1000e-003**	**2.1000e-003**	**0.0000**	**0.0000**	**2.1000e-003**

3.4 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					1.5000e-003	0.0000	1.5000e-003	5.3000e-004	0.0000	5.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	8.6000e-003	7.6900e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.1000e-004	5.1000e-004	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**9.5000e-004**	**8.6000e-003**	**7.6900e-003**	**1.0000e-005**	**1.5000e-003**	**5.4000e-004**	**2.0400e-003**	**5.3000e-004**	**5.1000e-004**	**1.0400e-003**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0200e-003	0.0890	0.0149	1.1000e-004	7.2000e-004	1.1000e-004	8.3000e-004	2.0000e-004	1.1000e-004	3.1000e-004	0.0000	10.7658	10.7658	1.2600e-003	0.0000	10.7973
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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	8.3900e-003	8.3900e-003	0.0000	0.0000	8.4000e-003
Total	**2.0300e-003**	**0.0890**	**0.0149**	**1.1000e-004**	**7.3000e-004**	**1.1000e-004**	**8.4000e-004**	**2.0000e-004**	**1.1000e-004**	**3.1000e-004**	**0.0000**	**10.7742**	**10.7742**	**1.2600e-003**	**0.0000**	**10.8057**

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					6.8000e-004	0.0000	6.8000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	0.0104	7.9400e-003	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**4.8000e-004**	**0.0104**	**7.9400e-003**	**1.0000e-005**	**6.8000e-004**	**6.0000e-005**	**7.4000e-004**	**1.2000e-004**	**6.0000e-005**	**1.8000e-004**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0200e-003	0.0890	0.0149	1.1000e-004	7.2000e-004	1.1000e-004	8.3000e-004	2.0000e-004	1.1000e-004	3.1000e-004	0.0000	10.7658	10.7658	1.2600e-003	0.0000	10.7973
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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	8.3900e-003	8.3900e-003	0.0000	0.0000	8.4000e-003
Total	**2.0300e-003**	**0.0890**	**0.0149**	**1.1000e-004**	**7.3000e-004**	**1.1000e-004**	**8.4000e-004**	**2.0000e-004**	**1.1000e-004**	**3.1000e-004**	**0.0000**	**10.7742**	**10.7742**	**1.2600e-003**	**0.0000**	**10.8057**

3.5 Trenching/Foundation - 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	2.1600e-003	0.0220	0.0244	4.0000e-005		1.2500e-003	1.2500e-003		1.1500e-003	1.1500e-003	0.0000	3.2492	3.2492	1.0300e-003	0.0000	3.2749
Total	**2.1600e-003**	**0.0220**	**0.0244**	**4.0000e-005**		**1.2500e-003**	**1.2500e-003**		**1.1500e-003**	**1.1500e-003**	**0.0000**	**3.2492**	**3.2492**	**1.0300e-003**	**0.0000**	**3.2749**

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	3.0000e-005	1.0000e-005	1.8000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0210	0.0210	0.0000	0.0000	0.0210
Total	**3.0000e-005**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0210**	**0.0210**	**0.0000**	**0.0000**	**0.0210**

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	1.5200e-003	0.0325	0.0274	4.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	3.2492	3.2492	1.0300e-003	0.0000	3.2749

Total	**1.5200e-003**	**0.0325**	**0.0274**	**4.0000e-005**		**1.7000e-004**	**1.7000e-004**		**1.7000e-004**	**1.7000e-004**	**0.0000**	**3.2492**	**3.2492**	**1.0300e-003**	**0.0000**	**3.2749**

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	3.0000e-005	1.0000e-005	1.8000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0210	0.0210	0.0000	0.0000	0.0210
Total	**3.0000e-005**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0210**	**0.0210**	**0.0000**	**0.0000**	**0.0210**

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	0.0479	0.4910	0.3772	5.7000e-004		0.0303	0.0303		0.0279	0.0279	0.0000	51.1502	51.1502	0.0162	0.0000	51.5548
Total	**0.0479**	**0.4910**	**0.3772**	**5.7000e-004**		**0.0303**	**0.0303**		**0.0279**	**0.0279**	**0.0000**	**51.1502**	**51.1502**	**0.0162**	**0.0000**	**51.5548**

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	8.7000e-004	0.0282	8.1100e-003	3.0000e-005	3.7000e-004	7.0000e-005	4.4000e-004	1.1000e-004	7.0000e-005	1.7000e-004	0.0000	3.2079	3.2079	3.4000e-004	0.0000	3.2166
Worker	1.8400e-003	8.7000e-004	0.0111	1.0000e-005	1.1100e-003	2.0000e-005	1.1300e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.2582	1.2582	6.0000e-005	0.0000	1.2598
Total	**2.7100e-003**	**0.0290**	**0.0192**	**4.0000e-005**	**1.4800e-003**	**9.0000e-005**	**1.5700e-003**	**4.1000e-004**	**8.0000e-005**	**4.8000e-004**	**0.0000**	**4.4662**	**4.4662**	**4.0000e-004**	**0.0000**	**4.4763**

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	0.0235	0.5351	0.3981	5.7000e-004		2.8900e-003	2.8900e-003		2.8900e-003	2.8900e-003	0.0000	51.1502	51.1502	0.0162	0.0000	51.5548
Total	**0.0235**	**0.5351**	**0.3981**	**5.7000e-004**		**2.8900e-003**	**2.8900e-003**		**2.8900e-003**	**2.8900e-003**	**0.0000**	**51.1502**	**51.1502**	**0.0162**	**0.0000**	**51.5548**

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	8.7000e-004	0.0282	8.1100e-003	3.0000e-005	3.7000e-004	7.0000e-005	4.4000e-004	1.1000e-004	7.0000e-005	1.7000e-004	0.0000	3.2079	3.2079	3.4000e-004	0.0000	3.2166
Worker	1.8400e-003	8.7000e-004	0.0111	1.0000e-005	1.1100e-003	2.0000e-005	1.1300e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.2582	1.2582	6.0000e-005	0.0000	1.2598
Total	**2.7100e-003**	**0.0290**	**0.0192**	**4.0000e-005**	**1.4800e-003**	**9.0000e-005**	**1.5700e-003**	**4.1000e-004**	**8.0000e-005**	**4.8000e-004**	**0.0000**	**4.4662**	**4.4662**	**4.0000e-004**	**0.0000**	**4.4763**

3.7 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.0700e-003	0.0196	0.0179	3.0000e-005		1.1100e-003	1.1100e-003		1.0300e-003	1.0300e-003	0.0000	2.3931	2.3931	6.8000e-004	0.0000	2.4102
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0700e-003**	**0.0196**	**0.0179**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**2.3931**	**2.3931**	**6.8000e-004**	**0.0000**	**2.4102**

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	6.0000e-005	3.0000e-005	3.3000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0378	0.0378	0.0000	0.0000	0.0378
Total	**6.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0378**	**0.0378**	**0.0000**	**0.0000**	**0.0378**

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	9.9000e-004	0.0209	0.0173	3.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	2.3931	2.3931	6.8000e-004	0.0000	2.4102
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.9000e-004**	**0.0209**	**0.0173**	**3.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**2.3931**	**2.3931**	**6.8000e-004**	**0.0000**	**2.4102**

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	6.0000e-005	3.0000e-005	3.3000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0378	0.0378	0.0000	0.0000	0.0378
Total	**6.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0378**	**0.0378**	**0.0000**	**0.0000**	**0.0378**

3.8 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3621					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**0.3628**	**4.5900e-003**	**4.6000e-003**	**1.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.1000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0126	0.0126	0.0000	0.0000	0.0126
Total	**2.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0126**	**0.0126**	**0.0000**	**0.0000**	**0.0126**

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	0.3621					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	2.8000e-004	5.8800e-003	4.5800e-003	1.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**0.3624**	**5.8800e-003**	**4.5800e-003**	**1.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.1000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0126	0.0126	0.0000	0.0000	0.0126
Total	**2.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0126**	**0.0126**	**0.0000**	**0.0000**	**0.0126**

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	0.0333	0.1384	0.3888	1.2100e-003	0.1050	1.2100e-003	0.1063	0.0281	1.1400e-003	0.0293	0.0000	110.5669	110.5669	4.0100e-003	0.0000	110.6673
Unmitigated	0.0333	0.1384	0.3888	1.2100e-003	0.1050	1.2100e-003	0.1063	0.0281	1.1400e-003	0.0293	0.0000	110.5669	110.5669	4.0100e-003	0.0000	110.6673

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	125.12	120.29	110.17	282,452	282,452
Enclosed Parking with Elevator	0.00	0.00	0.00		
Total	125.12	120.29	110.17	282,452	282,452

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.604810	0.038204	0.185149	0.108513	0.015498	0.004981	0.012268	0.020156	0.002083	0.001571	0.005363	0.000620	0.000785
Enclosed Parking with Elevator	0.604810	0.038204	0.185149	0.108513	0.015498	0.004981	0.012268	0.020156	0.002083	0.001571	0.005363	0.000620	0.000785

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	37.1075	37.1075	3.7100e-003	7.7000e-004	37.4291
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	37.1075	37.1075	3.7100e-003	7.7000e-004	37.4291
NaturalGas Mitigated	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668
NaturalGas Unmitigated	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668

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 Mid Rise	198707	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.0700e-003**	**9.1600e-003**	**3.9000e-003**	**6.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**10.6038**	**10.6038**	**2.0000e-004**	**1.9000e-004**	**10.6668**

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 Mid Rise	198707	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.0700e-003**	**9.1600e-003**	**3.9000e-003**	**6.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**10.6038**	**10.6038**	**2.0000e-004**	**1.9000e-004**	**10.6668**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	94952.1	12.4902	1.2500e-003	2.6000e-004	12.5984
Enclosed Parking with Elevator	187145	24.6174	2.4600e-003	5.1000e-004	24.8307
Total		**37.1075**	**3.7100e-003**	**7.7000e-004**	**37.4291**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	94952.1	12.4902	1.2500e-003	2.6000e-004	12.5984
Enclosed Parking with Elevator	187145	24.6174	2.4600e-003	5.1000e-004	24.8307
Total		**37.1075**	**3.7100e-003**	**7.7000e-004**	**37.4291**

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	0.2409	2.7800e-003	0.1722	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2111
Unmitigated	0.2409	2.7800e-003	0.1722	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2111

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	0.0362					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.0000e-005	7.9000e-004	3.4000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9188	0.9188	2.0000e-005	2.0000e-005	0.9243
Landscaping	5.2700e-003	1.9900e-003	0.1719	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2800	0.2800	2.7000e-004	0.0000	0.2868
Total	**0.2409**	**2.7800e-003**	**0.1722**	**2.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**1.1988**	**1.1988**	**2.9000e-004**	**2.0000e-005**	**1.2111**

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	0.0362					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	0.1993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.0000e-005	7.9000e-004	3.4000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9188	0.9188	2.0000e-005	2.0000e-005	0.9243
Landscaping	5.2700e-003	1.9900e-003	0.1719	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2800	0.2800	2.7000e-004	0.0000	0.2868
Total	**0.2409**	**2.7800e-003**	**0.1722**	**2.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**1.1988**	**1.1988**	**2.9000e-004**	**2.0000e-005**	**1.2111**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.0318	1.9800e-003	1.1800e-003	2.4340
Unmitigated	2.0318	1.9800e-003	1.1800e-003	2.4340

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.49854 / 0.944733	2.0318	1.9800e-003	1.1800e-003	2.4340
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000

Total		**2.0318**	**1.9800e-003**	**1.1800e-003**	**2.4340**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.49854 / 0.944733	2.0318	1.9800e-003	1.1800e-003	2.4340
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.0318**	**1.9800e-003**	**1.1800e-003**	**2.4340**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.1476	0.1269	0.0000	5.3207
Unmitigated	2.1476	0.1269	0.0000	5.3207

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	10.58	2.1476	0.1269	0.0000	5.3207
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**2.1476**	**0.1269**	**0.0000**	**5.3207**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	10.58	2.1476	0.1269	0.0000	5.3207
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**2.1476**	**0.1269**	**0.0000**	**5.3207**

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

4898 ECR Default AQ 2030 - Santa Clara County, Annual

4898 ECR Default AQ 2030

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	56.00	Space	0.50	31,936.00	0
Apartments Mid Rise	23.00	Dwelling Unit	0.43	50,497.00	66

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 290 rate

Land Use - Land Use: 23 Apts, 56 parking spaces

Construction Phase - CalEEMod Default Schedule

Off-road Equipment - CalEEMod Default Equipment for all Phases

Off-road Equipment -

Trips and VMT - Demo Hauling:13,094-sf, Asphalt Hauling: 227-cy --> 54 trips

Demolition - Existing building: 4,550 and existing hardscape: 13,094

Grading - 13,300 cubic yards of soil hauling export

Vehicle Trips - Weekday: 5.44, 5.23, 4.79

Woodstoves - all gas, no wood

Energy Use -

Water And Wastewater - 100% aerobic

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	3.45	7.36
tblFireplaces	NumberWood	3.91	0.00
tblGrading	MaterialExported	0.00	13,300.00
tblLandUse	LandUseSquareFeet	22,400.00	31,936.00
tblLandUse	LandUseSquareFeet	23,000.00	50,497.00
tblLandUse	LotAcreage	0.61	0.43
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	HaulingTripNumber	1,663.00	1,662.00
tblTripsAndVMT	HaulingTripNumber	0.00	54.00
tblVehicleTrips	ST_TR	6.39	5.23
tblVehicleTrips	SU_TR	5.86	4.79
tblVehicleTrips	WD_TR	6.65	5.44
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.4371	0.9278	0.5870	1.6700e-003	0.0414	0.0379	0.0793	0.0103	0.0350	0.0453	0.0000	155.4736	155.4736	0.0234	0.0000	156.0579
Maximum	**0.4371**	**0.9278**	**0.5870**	**1.6700e-003**	**0.0414**	**0.0379**	**0.0793**	**0.0103**	**0.0350**	**0.0453**	**0.0000**	**155.4736**	**155.4736**	**0.0234**	**0.0000**	**156.0579**

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	0.4371	0.9278	0.5870	1.6700e-003	0.0414	0.0379	0.0793	0.0103	0.0350	0.0453	0.0000	155.4736	155.4736	0.0234	0.0000	156.0578
Maximum	**0.4371**	**0.9278**	**0.5870**	**1.6700e-003**	**0.0414**	**0.0379**	**0.0793**	**0.0103**	**0.0350**	**0.0453**	**0.0000**	**155.4736**	**155.4736**	**0.0234**	**0.0000**	**156.0578**

	ROG	NOx	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	**6-1-2019**	**8-31-2019**	0.6013	0.6013
2	**9-1-2019**	**9-30-2019**	0.1286	0.1286
		Highest	0.6013	0.6013

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	0.2407	2.7600e-003	0.1712	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2110
Energy	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	47.7113	47.7113	3.9100e-003	9.6000e-004	48.0959
Mobile	0.0183	0.0790	0.2106	9.1000e-004	0.1050	6.1000e-004	0.1056	0.0281	5.7000e-004	0.0287	0.0000	83.5117	83.5117	2.4000e-003	0.0000	83.5717
Waste						0.0000	0.0000		0.0000	0.0000	2.1476	0.0000	2.1476	0.1269	0.0000	5.3207
Water						0.0000	0.0000		0.0000	0.0000	0.5302	1.5016	2.0318	1.9800e-003	1.1800e-003	2.4340
Total	**0.2601**	**0.0909**	**0.3857**	**9.8000e-004**	**0.1050**	**2.3600e-003**	**0.1074**	**0.0281**	**2.3200e-003**	**0.0304**	**2.6778**	**133.9233**	**136.6012**	**0.1355**	**2.1600e-003**	**140.6332**

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	0.2407	2.7600e-003	0.1712	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2110
Energy	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	47.7113	47.7113	3.9100e-003	9.6000e-004	48.0959
Mobile	0.0183	0.0790	0.2106	9.1000e-004	0.1050	6.1000e-004	0.1056	0.0281	5.7000e-004	0.0287	0.0000	83.5117	83.5117	2.4000e-003	0.0000	83.5717
Waste						0.0000	0.0000		0.0000	0.0000	2.1476	0.0000	2.1476	0.1269	0.0000	5.3207
Water						0.0000	0.0000		0.0000	0.0000	0.5302	1.5016	2.0318	1.9800e-003	1.1800e-003	2.4340
Total	**0.2601**	**0.0909**	**0.3857**	**9.8000e-004**	**0.1050**	**2.3600e-003**	**0.1074**	**0.0281**	**2.3200e-003**	**0.0304**	**2.6778**	**133.9233**	**136.6012**	**0.1355**	**2.1600e-003**	**140.6332**

	ROG	NOx	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	Demolition	6/1/2019	6/14/2019	5	10	
2	Site Preparation	Site Preparation	6/15/2019	6/17/2019	5	1	
3	Grading	Grading	6/18/2019	6/19/2019	5	2	
4	Trenching/Foundation	Trenching	6/18/2019	7/1/2019	5	10	
5	Building Construction	Building Construction	6/20/2019	11/6/2019	5	100	
6	Paving	Paving	11/7/2019	11/13/2019	5	5	
7	Architectural Coating	Architectural Coating	11/14/2019	11/20/2019	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.5

Residential Indoor: 102,256; Residential Outdoor: 34,085; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40

Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Trenching/Foundation	Excavators	1	7.00	158	0.38
Trenching/Foundation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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	4	10.00	0.00	80.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	1,662.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching/Foundation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	30.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	54.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 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					8.6800e-003	0.0000	8.6800e-003	1.3100e-003	0.0000	1.3100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7700e-003	0.0430	0.0385	6.0000e-005		2.6900e-003	2.6900e-003		2.5600e-003	2.5600e-003	0.0000	5.2601	5.2601	1.0000e-003	0.0000	5.2852
Total	**4.7700e-003**	**0.0430**	**0.0385**	**6.0000e-005**	**8.6800e-003**	**2.6900e-003**	**0.0114**	**1.3100e-003**	**2.5600e-003**	**3.8700e-003**	**0.0000**	**5.2601**	**5.2601**	**1.0000e-003**	**0.0000**	**5.2852**

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	3.6000e-004	0.0125	2.4600e-003	3.0000e-005	6.8000e-004	5.0000e-005	7.3000e-004	1.9000e-004	5.0000e-005	2.3000e-004	0.0000	3.0826	3.0826	1.4000e-004	0.0000	3.0862
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	1.8000e-004	1.4000e-004	1.4000e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3510	0.3510	1.0000e-005	0.0000	0.3513
Total	**5.4000e-004**	**0.0126**	**3.8600e-003**	**3.0000e-005**	**1.0800e-003**	**5.0000e-005**	**1.1300e-003**	**3.0000e-004**	**5.0000e-005**	**3.4000e-004**	**0.0000**	**3.4336**	**3.4336**	**1.5000e-004**	**0.0000**	**3.4375**

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					8.6800e-003	0.0000	8.6800e-003	1.3100e-003	0.0000	1.3100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7700e-003	0.0430	0.0385	6.0000e-005		2.6900e-003	2.6900e-003		2.5600e-003	2.5600e-003	0.0000	5.2601	5.2601	1.0000e-003	0.0000	5.2852

Total	**4.7700e-003**	**0.0430**	**0.0385**	**6.0000e-005**	**8.6800e-003**	**2.6900e-003**	**0.0114**	**1.3100e-003**	**2.5600e-003**	**3.8700e-003**	**0.0000**	**5.2601**	**5.2601**	**1.0000e-003**	**0.0000**	**5.2852**

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	3.6000e-004	0.0125	2.4600e-003	3.0000e-005	6.8000e-004	5.0000e-005	7.3000e-004	1.9000e-004	5.0000e-005	2.3000e-004	0.0000	3.0826	3.0826	1.4000e-004	0.0000	3.0862
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	1.8000e-004	1.4000e-004	1.4000e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3510	0.3510	1.0000e-005	0.0000	0.3513
Total	**5.4000e-004**	**0.0126**	**3.8600e-003**	**3.0000e-005**	**1.0800e-003**	**5.0000e-005**	**1.1300e-003**	**3.0000e-004**	**5.0000e-005**	**3.4000e-004**	**0.0000**	**3.4336**	**3.4336**	**1.5000e-004**	**0.0000**	**3.4375**

3.3 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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**2.7000e-004**	**1.8000e-004**	**4.5000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**0.0000**	**0.0176**

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**2.7000e-004**	**1.8000e-004**	**4.5000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**0.0000**	**0.0176**

3.4 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					1.5000e-003	0.0000	1.5000e-003	5.3000e-004	0.0000	5.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	8.6000e-003	7.6900e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.1000e-004	5.1000e-004	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**9.5000e-004**	**8.6000e-003**	**7.6900e-003**	**1.0000e-005**	**1.5000e-003**	**5.4000e-004**	**2.0400e-003**	**5.3000e-004**	**5.1000e-004**	**1.0400e-003**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

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	7.5500e-003	0.2587	0.0511	6.6000e-004	0.0141	9.9000e-004	0.0151	3.8700e-003	9.5000e-004	4.8200e-003	0.0000	64.0406	64.0406	3.0000e-003	0.0000	64.1156
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0702	0.0702	0.0000	0.0000	0.0703
Total	**7.5900e-003**	**0.2588**	**0.0514**	**6.6000e-004**	**0.0142**	**9.9000e-004**	**0.0152**	**3.8900e-003**	**9.5000e-004**	**4.8400e-003**	**0.0000**	**64.1108**	**64.1108**	**3.0000e-003**	**0.0000**	**64.1859**

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					1.5000e-003	0.0000	1.5000e-003	5.3000e-004	0.0000	5.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	8.6000e-003	7.6900e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.1000e-004	5.1000e-004	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**9.5000e-004**	**8.6000e-003**	**7.6900e-003**	**1.0000e-005**	**1.5000e-003**	**5.4000e-004**	**2.0400e-003**	**5.3000e-004**	**5.1000e-004**	**1.0400e-003**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

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	7.5500e-003	0.2587	0.0511	6.6000e-004	0.0141	9.9000e-004	0.0151	3.8700e-003	9.5000e-004	4.8200e-003	0.0000	64.0406	64.0406	3.0000e-003	0.0000	64.1156
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0702	0.0702	0.0000	0.0000	0.0703
Total	**7.5900e-003**	**0.2588**	**0.0514**	**6.6000e-004**	**0.0142**	**9.9000e-004**	**0.0152**	**3.8900e-003**	**9.5000e-004**	**4.8400e-003**	**0.0000**	**64.1108**	**64.1108**	**3.0000e-003**	**0.0000**	**64.1859**

3.5 Trenching/Foundation - 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	2.1600e-003	0.0220	0.0244	4.0000e-005		1.2500e-003	1.2500e-003		1.1500e-003	1.1500e-003	0.0000	3.2492	3.2492	1.0300e-003	0.0000	3.2749
Total	**2.1600e-003**	**0.0220**	**0.0244**	**4.0000e-005**		**1.2500e-003**	**1.2500e-003**		**1.1500e-003**	**1.1500e-003**	**0.0000**	**3.2492**	**3.2492**	**1.0300e-003**	**0.0000**	**3.2749**

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	9.0000e-005	7.0000e-005	7.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1755	0.1755	0.0000	0.0000	0.1756
Total	**9.0000e-005**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1755**	**0.1755**	**0.0000**	**0.0000**	**0.1756**

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	2.1600e-003	0.0220	0.0244	4.0000e-005		1.2500e-003	1.2500e-003		1.1500e-003	1.1500e-003	0.0000	3.2492	3.2492	1.0300e-003	0.0000	3.2749

Total	**2.1600e-003**	**0.0220**	**0.0244**	**4.0000e-005**		**1.2500e-003**	**1.2500e-003**		**1.1500e-003**	**1.1500e-003**	**0.0000**	**3.2492**	**3.2492**	**1.0300e-003**	**0.0000**	**3.2749**

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	9.0000e-005	7.0000e-005	7.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1755	0.1755	0.0000	0.0000	0.1756
Total	**9.0000e-005**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1755**	**0.1755**	**0.0000**	**0.0000**	**0.1756**

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	0.0479	0.4910	0.3772	5.7000e-004		0.0303	0.0303		0.0279	0.0279	0.0000	51.1502	51.1502	0.0162	0.0000	51.5548
Total	**0.0479**	**0.4910**	**0.3772**	**5.7000e-004**		**0.0303**	**0.0303**		**0.0279**	**0.0279**	**0.0000**	**51.1502**	**51.1502**	**0.0162**	**0.0000**	**51.5548**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9600e-003	0.0505	0.0136	1.1000e-004	2.6300e-003	3.6000e-004	2.9900e-003	7.6000e-004	3.5000e-004	1.1100e-003	0.0000	10.5221	10.5221	5.2000e-004	0.0000	10.5351
Worker	5.4500e-003	4.0600e-003	0.0419	1.2000e-004	0.0119	8.0000e-005	0.0120	3.1600e-003	7.0000e-005	3.2400e-003	0.0000	10.5313	10.5313	2.9000e-004	0.0000	10.5384
Total	**7.4100e-003**	**0.0546**	**0.0555**	**2.3000e-004**	**0.0145**	**4.4000e-004**	**0.0150**	**3.9200e-003**	**4.2000e-004**	**4.3500e-003**	**0.0000**	**21.0533**	**21.0533**	**8.1000e-004**	**0.0000**	**21.0735**

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	0.0479	0.4910	0.3772	5.7000e-004		0.0303	0.0303		0.0279	0.0279	0.0000	51.1502	51.1502	0.0162	0.0000	51.5548
Total	**0.0479**	**0.4910**	**0.3772**	**5.7000e-004**		**0.0303**	**0.0303**		**0.0279**	**0.0279**	**0.0000**	**51.1502**	**51.1502**	**0.0162**	**0.0000**	**51.5548**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9600e-003	0.0505	0.0136	1.1000e-004	2.6300e-003	3.6000e-004	2.9900e-003	7.6000e-004	3.5000e-004	1.1100e-003	0.0000	10.5221	10.5221	5.2000e-004	0.0000	10.5351
Worker	5.4500e-003	4.0600e-003	0.0419	1.2000e-004	0.0119	8.0000e-005	0.0120	3.1600e-003	7.0000e-005	3.2400e-003	0.0000	10.5313	10.5313	2.9000e-004	0.0000	10.5384
Total	**7.4100e-003**	**0.0546**	**0.0555**	**2.3000e-004**	**0.0145**	**4.4000e-004**	**0.0150**	**3.9200e-003**	**4.2000e-004**	**4.3500e-003**	**0.0000**	**21.0533**	**21.0533**	**8.1000e-004**	**0.0000**	**21.0735**

3.7 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.0700e-003	0.0196	0.0179	3.0000e-005		1.1100e-003	1.1100e-003		1.0300e-003	1.0300e-003	0.0000	2.3931	2.3931	6.8000e-004	0.0000	2.4102
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0700e-003**	**0.0196**	**0.0179**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**2.3931**	**2.3931**	**6.8000e-004**	**0.0000**	**2.4102**

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	1.6000e-004	1.2000e-004	1.2600e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3159	0.3159	1.0000e-005	0.0000	0.3162
Total	**1.6000e-004**	**1.2000e-004**	**1.2600e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3159**	**0.3159**	**1.0000e-005**	**0.0000**	**0.3162**

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	2.0700e-003	0.0196	0.0179	3.0000e-005		1.1100e-003	1.1100e-003		1.0300e-003	1.0300e-003	0.0000	2.3931	2.3931	6.8000e-004	0.0000	2.4102
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0700e-003**	**0.0196**	**0.0179**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**2.3931**	**2.3931**	**6.8000e-004**	**0.0000**	**2.4102**

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	1.6000e-004	1.2000e-004	1.2600e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3159	0.3159	1.0000e-005	0.0000	0.3162
Total	**1.6000e-004**	**1.2000e-004**	**1.2600e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3159**	**0.3159**	**1.0000e-005**	**0.0000**	**0.3162**

3.8 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3621					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**0.3628**	**4.5900e-003**	**4.6000e-003**	**1.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5000e-004	8.4100e-003	1.6600e-003	2.0000e-005	4.6000e-004	3.0000e-005	4.9000e-004	1.3000e-004	3.0000e-005	1.6000e-004	0.0000	2.0807	2.0807	1.0000e-004	0.0000	2.0832
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	5.0000e-005	4.0000e-005	4.2000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1053	0.1053	0.0000	0.0000	0.1054
Total	**3.0000e-004**	**8.4500e-003**	**2.0800e-003**	**2.0000e-005**	**5.8000e-004**	**3.0000e-005**	**6.1000e-004**	**1.6000e-004**	**3.0000e-005**	**1.9000e-004**	**0.0000**	**2.1861**	**2.1861**	**1.0000e-004**	**0.0000**	**2.1886**

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	0.3621					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**0.3628**	**4.5900e-003**	**4.6000e-003**	**1.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5000e-004	8.4100e-003	1.6600e-003	2.0000e-005	4.6000e-004	3.0000e-005	4.9000e-004	1.3000e-004	3.0000e-005	1.6000e-004	0.0000	2.0807	2.0807	1.0000e-004	0.0000	2.0832
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	5.0000e-005	4.0000e-005	4.2000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1053	0.1053	0.0000	0.0000	0.1054
Total	**3.0000e-004**	**8.4500e-003**	**2.0800e-003**	**2.0000e-005**	**5.8000e-004**	**3.0000e-005**	**6.1000e-004**	**1.6000e-004**	**3.0000e-005**	**1.9000e-004**	**0.0000**	**2.1861**	**2.1861**	**1.0000e-004**	**0.0000**	**2.1886**

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	0.0183	0.0790	0.2106	9.1000e-004	0.1050	6.1000e-004	0.1056	0.0281	5.7000e-004	0.0287	0.0000	83.5117	83.5117	2.4000e-003	0.0000	83.5717
Unmitigated	0.0183	0.0790	0.2106	9.1000e-004	0.1050	6.1000e-004	0.1056	0.0281	5.7000e-004	0.0287	0.0000	83.5117	83.5117	2.4000e-003	0.0000	83.5717

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	125.12	120.29	110.17	282,452	282,452
Enclosed Parking with Elevator	0.00	0.00	0.00		
Total	125.12	120.29	110.17	282,452	282,452

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Enclosed Parking with Elevator	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651

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	37.1075	37.1075	3.7100e-003	7.7000e-004	37.4291
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	37.1075	37.1075	3.7100e-003	7.7000e-004	37.4291
NaturalGas Mitigated	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668
NaturalGas Unmitigated	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668

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 Mid Rise	198707	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.0700e-003**	**9.1600e-003**	**3.9000e-003**	**6.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**10.6038**	**10.6038**	**2.0000e-004**	**1.9000e-004**	**10.6668**

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 Mid Rise	198707	1.0700e-003	9.1600e-003	3.9000e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	10.6038	10.6038	2.0000e-004	1.9000e-004	10.6668
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.0700e-003**	**9.1600e-003**	**3.9000e-003**	**6.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**10.6038**	**10.6038**	**2.0000e-004**	**1.9000e-004**	**10.6668**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	94952.1	12.4902	1.2500e-003	2.6000e-004	12.5984
Enclosed Parking with Elevator	187145	24.6174	2.4600e-003	5.1000e-004	24.8307
Total		**37.1075**	**3.7100e-003**	**7.7000e-004**	**37.4291**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	94952.1	12.4902	1.2500e-003	2.6000e-004	12.5984
Enclosed Parking with Elevator	187145	24.6174	2.4600e-003	5.1000e-004	24.8307
Total		**37.1075**	**3.7100e-003**	**7.7000e-004**	**37.4291**

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	0.2407	2.7600e-003	0.1712	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2110
Unmitigated	0.2407	2.7600e-003	0.1712	1.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	1.1988	1.1988	2.9000e-004	2.0000e-005	1.2110

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	0.0362					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.0000e-005	7.9000e-004	3.4000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9188	0.9188	2.0000e-005	2.0000e-005	0.9243
Landscaping	5.1400e-003	1.9700e-003	0.1708	1.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	0.2800	0.2800	2.7000e-004	0.0000	0.2867
Total	**0.2407**	**2.7600e-003**	**0.1712**	**2.0000e-005**		**1.0100e-003**	**1.0100e-003**		**1.0100e-003**	**1.0100e-003**	**0.0000**	**1.1988**	**1.1988**	**2.9000e-004**	**2.0000e-005**	**1.2110**

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	0.0362					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	0.1993					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.0000e-005	7.9000e-004	3.4000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9188	0.9188	2.0000e-005	2.0000e-005	0.9243
Landscaping	5.1400e-003	1.9700e-003	0.1708	1.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	0.2800	0.2800	2.7000e-004	0.0000	0.2867
Total	**0.2407**	**2.7600e-003**	**0.1712**	**2.0000e-005**		**1.0100e-003**	**1.0100e-003**		**1.0100e-003**	**1.0100e-003**	**0.0000**	**1.1988**	**1.1988**	**2.9000e-004**	**2.0000e-005**	**1.2110**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.0318	1.9800e-003	1.1800e-003	2.4340
Unmitigated	2.0318	1.9800e-003	1.1800e-003	2.4340

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.49854 / 0.944733	2.0318	1.9800e-003	1.1800e-003	2.4340
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000

Total		**2.0318**	**1.9800e-003**	**1.1800e-003**	**2.4340**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.49854 / 0.944733	2.0318	1.9800e-003	1.1800e-003	2.4340
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.0318**	**1.9800e-003**	**1.1800e-003**	**2.4340**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.1476	0.1269	0.0000	5.3207
Unmitigated	2.1476	0.1269	0.0000	5.3207

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	10.58	2.1476	0.1269	0.0000	5.3207
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**2.1476**	**0.1269**	**0.0000**	**5.3207**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	10.58	2.1476	0.1269	0.0000	5.3207
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**2.1476**	**0.1269**	**0.0000**	**5.3207**

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

4898 ECR AQ Existing Site

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.31	1000sqft	0.00	2,310.00	0
Strip Mall	6.09	1000sqft	0.43	6,086.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 290 rate

Land Use - Retail Space = 2 spas, 2 guitar teaching, 1 auto broker, Office Space = insurance office, tax service office, and office for nursing education

Construction Phase - No construction, existing site

Off-road Equipment - no construction equipment

Vehicle Trips - Office: 16.19, 3.61, 1.54; Retail: 19.72, 18.71, 9.09

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	0.00	0.50
tblLandUse	LotAcreage	0.05	0.00

tblLandUse	LotAcreage	0.14	0.43
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	WorkerTripNumber	0.00	5.00
tblVehicleTrips	ST_TR	2.46	3.61
tblVehicleTrips	ST_TR	42.04	18.71
tblVehicleTrips	SU_TR	1.05	1.54
tblVehicleTrips	SU_TR	20.43	9.09
tblVehicleTrips	WD_TR	11.03	16.19
tblVehicleTrips	WD_TR	44.32	19.72

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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.8000e-004	0.0000	2.9000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Maximum	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.8000e-004**	**0.0000**	**2.9000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**0.0000**	**0.0176**

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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.8000e-004	0.0000	2.9000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Maximum	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.8000e-004**	**0.0000**	**2.9000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**0.0000**	**0.0176**

	ROG	NOx	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	**6-1-2019**	**8-31-2019**	0.0000	0.0000
		Highest	0.0000	0.0000

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	0.0372	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004
Energy	2.8000e-004	2.5600e-003	2.1500e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	16.7635	16.7635	1.4500e-003	3.4000e-004	16.9012
Mobile	0.0344	0.1331	0.3573	1.0400e-003	0.0882	1.0600e-003	0.0892	0.0236	9.9000e-004	0.0246	0.0000	94.9891	94.9891	3.6900e-003	0.0000	95.0815
Waste						0.0000	0.0000		0.0000	0.0000	1.7335	0.0000	1.7335	0.1025	0.0000	4.2948
Water						0.0000	0.0000		0.0000	0.0000	0.2734	0.8565	1.1298	0.0282	6.8000e-004	2.0367
Total	**0.0718**	**0.1357**	**0.3595**	**1.0600e-003**	**0.0882**	**1.2500e-003**	**0.0894**	**0.0236**	**1.1800e-003**	**0.0248**	**2.0069**	**112.6093**	**114.6162**	**0.1358**	**1.0200e-003**	**118.3143**

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	0.0372	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004
Energy	2.8000e-004	2.5600e-003	2.1500e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	16.7635	16.7635	1.4500e-003	3.4000e-004	16.9012
Mobile	0.0344	0.1331	0.3573	1.0400e-003	0.0882	1.0600e-003	0.0892	0.0236	9.9000e-004	0.0246	0.0000	94.9891	94.9891	3.6900e-003	0.0000	95.0815
Waste						0.0000	0.0000		0.0000	0.0000	1.7335	0.0000	1.7335	0.1025	0.0000	4.2948
Water						0.0000	0.0000		0.0000	0.0000	0.2734	0.8565	1.1298	0.0282	6.8000e-004	2.0367
Total	**0.0718**	**0.1357**	**0.3595**	**1.0600e-003**	**0.0882**	**1.2500e-003**	**0.0894**	**0.0236**	**1.1800e-003**	**0.0248**	**2.0069**	**112.6093**	**114.6162**	**0.1358**	**1.0200e-003**	**118.3143**

	ROG	NOx	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	Site Preparation	Site Preparation	6/15/2019	6/17/2019	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**0.0000**	**0.0176**

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0176	0.0176	0.0000	0.0000	0.0176

Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**0.0000**	**0.0176**

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	0.0344	0.1331	0.3573	1.0400e-003	0.0882	1.0600e-003	0.0892	0.0236	9.9000e-004	0.0246	0.0000	94.9891	94.9891	3.6900e-003	0.0000	95.0815
Unmitigated	0.0344	0.1331	0.3573	1.0400e-003	0.0882	1.0600e-003	0.0892	0.0236	9.9000e-004	0.0246	0.0000	94.9891	94.9891	3.6900e-003	0.0000	95.0815

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	37.40	8.34	3.56	67,900	67,900
Strip Mall	120.02	113.87	55.32	169,243	169,243
Total	157.41	122.21	58.88	237,143	237,143

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.604810	0.038204	0.185149	0.108513	0.015498	0.004981	0.012268	0.020156	0.002083	0.001571	0.005363	0.000620	0.000785
Strip Mall	0.604810	0.038204	0.185149	0.108513	0.015498	0.004981	0.012268	0.020156	0.002083	0.001571	0.005363	0.000620	0.000785

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	13.9759	13.9759	1.4000e-003	2.9000e-004	14.0970
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	13.9759	13.9759	1.4000e-003	2.9000e-004	14.0970
NaturalGas Mitigated	2.8000e-004	2.5600e-003	2.1500e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7877	2.7877	5.0000e-005	5.0000e-005	2.8042
NaturalGas Unmitigated	2.8000e-004	2.5600e-003	2.1500e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7877	2.7877	5.0000e-005	5.0000e-005	2.8042

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	37814.7	2.0000e-004	1.8500e-003	1.5600e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	2.0179	2.0179	4.0000e-005	4.0000e-005	2.0299

Strip Mall	14423.8	8.0000e-005	7.1000e-004	5.9000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7697	0.7697	1.0000e-005	1.0000e-005	0.7743
Total		**2.8000e-004**	**2.5600e-003**	**2.1500e-003**	**1.0000e-005**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**2.7877**	**2.7877**	**5.0000e-005**	**5.0000e-005**	**2.8042**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	37814.7	2.0000e-004	1.8500e-003	1.5600e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	2.0179	2.0179	4.0000e-005	4.0000e-005	2.0299
Strip Mall	14423.8	8.0000e-005	7.1000e-004	5.9000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7697	0.7697	1.0000e-005	1.0000e-005	0.7743
Total		**2.8000e-004**	**2.5600e-003**	**2.1500e-003**	**1.0000e-005**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**2.7877**	**2.7877**	**5.0000e-005**	**5.0000e-005**	**2.8042**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	41187.3	5.4179	5.4000e-004	1.1000e-004	5.4648
Strip Mall	65059.3	8.5580	8.6000e-004	1.8000e-004	8.6322
Total		**13.9759**	**1.4000e-003**	**2.9000e-004**	**14.0970**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	41187.3	5.4179	5.4000e-004	1.1000e-004	5.4648
Strip Mall	65059.3	8.5580	8.6000e-004	1.8000e-004	8.6322
Total		**13.9759**	**1.4000e-003**	**2.9000e-004**	**14.0970**

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	0.0372	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004
Unmitigated	0.0372	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004

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	4.3800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0328					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004
Total	**0.0372**	**0.0000**	**8.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5000e-004**	**1.5000e-004**	**0.0000**	**0.0000**	**1.6000e-004**

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	4.3800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0328					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004
Total	**0.0372**	**0.0000**	**8.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5000e-004**	**1.5000e-004**	**0.0000**	**0.0000**	**1.6000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			

Mitigated	1.1298	0.0282	6.8000e-004	2.0367
Unmitigated	1.1298	0.0282	6.8000e-004	2.0367

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.410565 / 0.251637	0.5383	0.0134	3.2000e-004	0.9705
Strip Mall	0.451102 / 0.276482	0.5915	0.0147	3.6000e-004	1.0663
Total		**1.1298**	**0.0282**	**6.8000e-004**	**2.0367**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.410565 / 0.251637	0.5383	0.0134	3.2000e-004	0.9705
Strip Mall	0.451102 / 0.276482	0.5915	0.0147	3.6000e-004	1.0663
Total		**1.1298**	**0.0282**	**6.8000e-004**	**2.0367**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.7335	0.1025	0.0000	4.2948
Unmitigated	1.7335	0.1025	0.0000	4.2948

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	2.15	0.4364	0.0258	0.0000	1.0812
Strip Mall	6.39	1.2971	0.0767	0.0000	3.2135
Total		**1.7335**	**0.1025**	**0.0000**	**4.2948**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
General Office Building	2.15	0.4364	0.0258	0.0000	1.0812
Strip Mall	6.39	1.2971	0.0767	0.0000	3.2135
Total		**1.7335**	**0.1025**	**0.0000**	**4.2948**

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

Attachment 3: Construction Health Risk Calculations

4898 El Camino Real, Los Altos, CA

DPM Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2019-2020	Construction	0.0366	CON_DPM	73.2	0.02228	2.81E-03	1,750	1.60E-06

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

PM2.5 Fugitive Dust Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2019-2020	Construction	CON_FUG	0.00252	5.0	0.00153	1.93E-04	1,750	1.10E-07

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2019-2020	Construction	0.0038	CON_DPM	7.6	0.00230	2.90E-04	1,750	1.66E-07

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

PM2.5 Fugitive Dust Construction Emissions for Modeling - With Mitigation

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2019-2020	Construction	CON_FUG	0.00107	2.1	0.00065	8.21E-05	1,750	4.69E-08

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

4898 El Camino Real, Los Altos, CA - Construction Health Impact Summary

Maximum Impacts at MEI Location - Unmitigated

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2019-2020	0.2852	0.0246	**46.8**	**0.8**	**0.057**	**0.31**

Maximum Impacts at MEI Location - With Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2019-2020	0.0296	0.0105	**4.9**	**0.1**	**0.006**	**0.04**

4898 El Camino Real, Los Altos, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child				Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult	Maximum	
				DPM Conc (ug/m3)	Age	Cancer	Modeled	DPM Conc (ug/m3)	Age	Cancer		
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Risk (per million)	Year	Annual	Sensitivity Factor	Risk (per million)	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2019	0.2852	10	46.84	2019	0.2852	1	0.82	0.0246	0.3098
2	1	1 - 2			10	0.00			1	0.00		
3	1	2 - 3			3	0.00			1	0.00		
4	1	3 - 4			3	0.00			1	0.00		
5	1	4 - 5			3	0.00			1	0.00		
6	1	5 - 6			3	0.00			1	0.00		
7	1	6 - 7			3	0.00			1	0.00		
8	1	7 - 8			3	0.00			1	0.00		
9	1	8 - 9			3	0.00			1	0.00		
10	1	9 - 10			3	0.00			1	0.00		
11	1	10 - 11			3	0.00			1	0.00		
12	1	11 - 12			3	0.00			1	0.00		
13	1	12 - 13			3	0.00			1	0.00		
14	1	13 - 14			3	0.00			1	0.00		
15	1	14 - 15			3	0.00			1	0.00		
16	1	15 - 16			3	0.00			1	0.00		
17	1	16-17			1	0.00			1	0.00		
18	1	17-18			1	0.00			1	0.00		
19	1	18-19			1	0.00			1	0.00		
20	1	19-20			1	0.00			1	0.00		
21	1	20-21			1	0.00			1	0.00		
22	1	21-22			1	0.00			1	0.00		
23	1	22-23			1	0.00			1	0.00		
24	1	23-24			1	0.00			1	0.00		
25	1	24-25			1	0.00			1	0.00		
26	1	25-26			1	0.00			1	0.00		
27	1	26-27			1	0.00			1	0.00		
28	1	27-28			1	0.00			1	0.00		
29	1	28-29			1	0.00			1	0.00		
30	1	29-30			1	0.00			1	0.00		
Total Increased Cancer Risk						**46.8**				**0.82**		

* Third trimester of pregnancy

4898 El Camino Real, Los Altos, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child				Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult	Maximum	
							Modeled					
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Cancer Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2019	0.0296	10	4.86	2019	0.0296	1	0.08	0.0105	0.0401
2	1	1 - 2			10	0.00			1	0.00		
3	1	2 - 3			3	0.00			1	0.00		
4	1	3 - 4			3	0.00			1	0.00		
5	1	4 - 5			3	0.00			1	0.00		
6	1	5 - 6			3	0.00			1	0.00		
7	1	6 - 7			3	0.00			1	0.00		
8	1	7 - 8			3	0.00			1	0.00		
9	1	8 - 9			3	0.00			1	0.00		
10	1	9 - 10			3	0.00			1	0.00		
11	1	10 - 11			3	0.00			1	0.00		
12	1	11 - 12			3	0.00			1	0.00		
13	1	12 - 13			3	0.00			1	0.00		
14	1	13 - 14			3	0.00			1	0.00		
15	1	14 - 15			3	0.00			1	0.00		
16	1	15 - 16			3	0.00			1	0.00		
17	1	16-17			1	0.00			1	0.00		
18	1	17-18			1	0.00			1	0.00		
19	1	18-19			1	0.00			1	0.00		
20	1	19-20			1	0.00			1	0.00		
21	1	20-21			1	0.00			1	0.00		
22	1	21-22			1	0.00			1	0.00		
23	1	22-23			1	0.00			1	0.00		
24	1	23-24			1	0.00			1	0.00		
25	1	24-25			1	0.00			1	0.00		
26	1	25-26			1	0.00			1	0.00		
27	1	26-27			1	0.00			1	0.00		
28	1	27-28			1	0.00			1	0.00		
29	1	28-29			1	0.00			1	0.00		
30	1	29-30			1	0.00			1	0.00		
Total Increased Cancer Risk						**4.9**				**0.08**		

* Third trimester of pregnancy

4898 El Camino Real, Los Altos, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child				Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

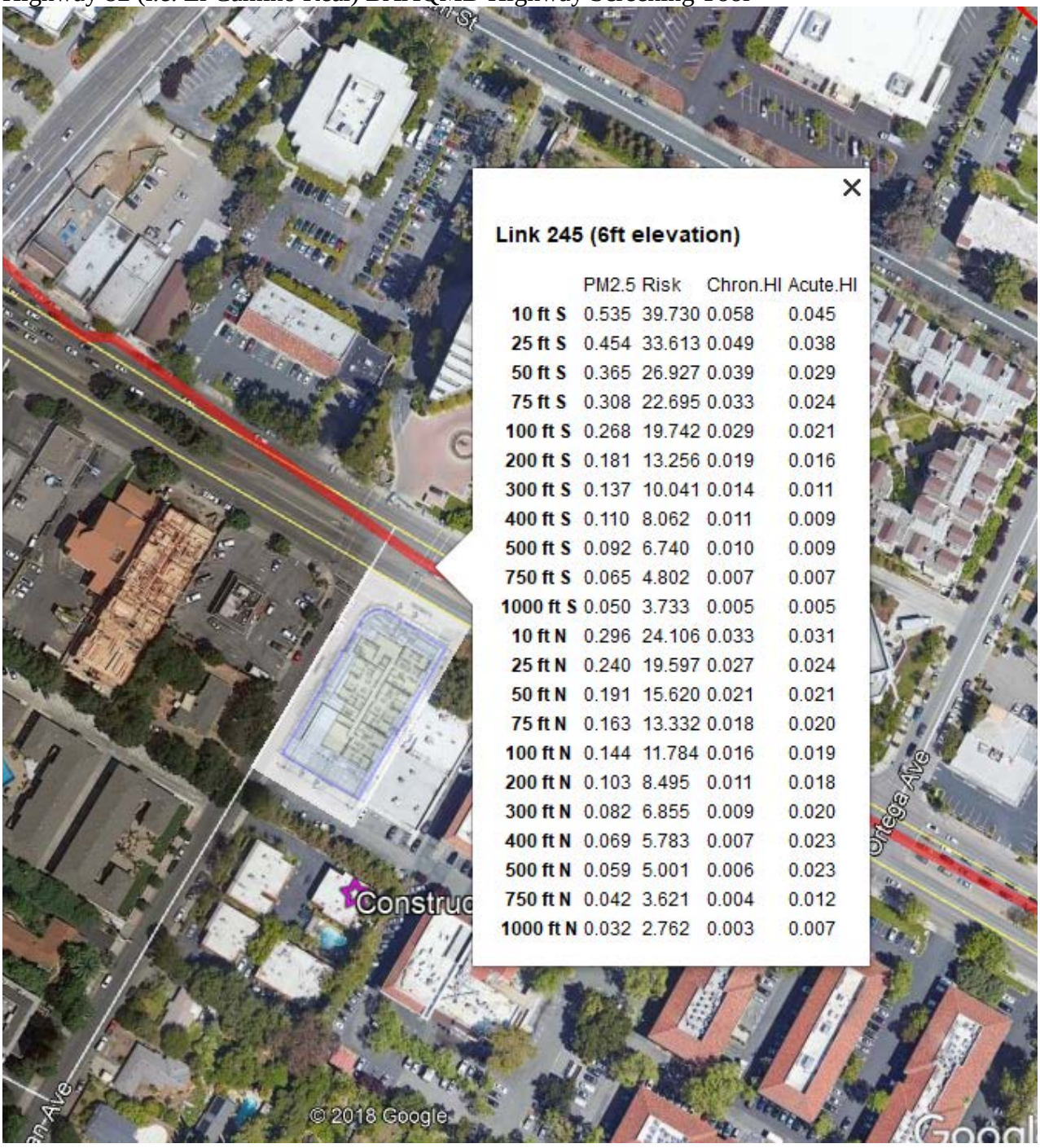
Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult	Maximum	
				DPM Conc (ug/m3)	Age	Cancer	Modeled		Age	Cancer		
Exposure	Exposure Duration				Sensitivity	Risk	DPM Conc (ug/m3)		Sensitivity	Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2019	0.2489	10	40.88	2019	0.2489	1	0.71	0.0217	0.2706
2	1	1 - 2			10	0.00			1	0.00		
3	1	2 - 3			3	0.00			1	0.00		
4	1	3 - 4			3	0.00			1	0.00		
5	1	4 - 5			3	0.00			1	0.00		
6	1	5 - 6			3	0.00			1	0.00		
7	1	6 - 7			3	0.00			1	0.00		
8	1	7 - 8			3	0.00			1	0.00		
9	1	8 - 9			3	0.00			1	0.00		
10	1	9 - 10			3	0.00			1	0.00		
11	1	10 - 11			3	0.00			1	0.00		
12	1	11 - 12			3	0.00			1	0.00		
13	1	12 - 13			3	0.00			1	0.00		
14	1	13 - 14			3	0.00			1	0.00		
15	1	14 - 15			3	0.00			1	0.00		
16	1	15 - 16			3	0.00			1	0.00		
17	1	16-17			1	0.00			1	0.00		
18	1	17-18			1	0.00			1	0.00		
19	1	18-19			1	0.00			1	0.00		
20	1	19-20			1	0.00			1	0.00		
21	1	20-21			1	0.00			1	0.00		
22	1	21-22			1	0.00			1	0.00		
23	1	22-23			1	0.00			1	0.00		
24	1	23-24			1	0.00			1	0.00		
25	1	24-25			1	0.00			1	0.00		
26	1	25-26			1	0.00			1	0.00		
27	1	26-27			1	0.00			1	0.00		
28	1	27-28			1	0.00			1	0.00		
29	1	28-29			1	0.00			1	0.00		
30	1	29-30			1	0.00			1	0.00		
Total Increased Cancer Risk						**40.9**				**0.71**		

* Third trimester of pregnancy

Attachment 4: Screening Community Risk Calculations

Highway 82 (i.e. El Camino Real) BAAQMD Highway Screening Tool



Bay Area Air Quality Management District

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

Click here for guidance on coducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requester Contact Information

Date of Request	**1/22/2019**
Contact Name	Mimi McNamara
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-040 X111
Email	mmcnamara@illingworthrodkin.com
Project Name	4898 ECR
Address	4898 El Camino Real
City	Los Altos
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	23 units
Comments:	

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.

2. Download and install the free program Google Earth, **http://www.google.com/earth/download/ge/,** and then download the county specific Google Earth stationary source application files from the District's website, **http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.** The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.

3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in Table B section only.

6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.

7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Areana Flores at 415-749-4616, or aflores@baaqmd.gov

Table B: Google Earth data

Distance from Receptor (feet) or MEI[1]	Facility Name	Address	Plant No.	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments
450	BP West El Camino LLC, c/o Boston Properties	2440 W El Camino Real	21037	6.4718865	0.00336117	0.008433	S1	Generator		Use Diesel Multiplier
800	Target Corporation- Store T-322	555 Showers Drive	15853	0.5700059	0.0009	0.000723	S1	Generator		Use Diesel Multiplier

Footnotes:
1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
7. The date that the HRSA was completed.
8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

Date last updated:
03/13/2018

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

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Table A: Requester Contact Information

Date of Request	**1/22/2019**
Contact Name	Mimi McNamara
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-040 X111
Email	mmcnamara@illingworthrodkin.com
Project Name	4898 ECR
Address	4898 El Camino Real
City	Los Altos
County	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	23 units
Comments:	

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A ncomplete forms will not be processed. Please include a project site map.

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3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in Table B section only.

6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.

7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Areana Flores at 415-749-4616, or aflores@baaqmd.gov

Table B: Google Earth data

											Project Site				Construction MEI				
Distance from Receptor (feet) or MEI[1]	Facility Name	Address	Plant No.	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5	Distance from Receptor (feet) or MEI[1]	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
450	BP West El Camino LLC, c/o Boston Properties	2440 W El Camino Real	21037	6.4718865	0.00336117	0.008433		Generator		Use Diesel Multiplier	0.14	0.91	0.00047	0.0012	610	0.09	0.58	0.00030	0.00076
800	Target Corporation- Store T-322	555 Showers Drive	15853	0.5700059	0.0009	0.000723		Generator		Use Diesel Multiplier	0.06	0.03	0.00005	0.00004	1000	0.04	0.02	0.00004	0.00003

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
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    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period,
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

Date last updated:
03/13/2018

Attachment 5: City of Los Altos Climate Action Plan Compliance Checklist

City of Los Altos
Planning Division
(650) 947-2750
Planning@losaltosca.gov

NEW DEVELOPMENT
CLIMATE ACTION PLAN CHECKLIST

As required in the Los Altos Climate Action Plan, which was adopted in December of 2013, new development shall demonstrate compliance with all applicable best management practices outlined in the checklist below. This list should be included in the project plans and, for all applicable best management practices, provide a description for how the project will complying.

	Best Management Practice	Applicable to	Project Compliance		
1.1	***Improve Non-Motorized Transportation***				
☐	Provide end-of-trip facilities to encourage alternative transportation, including showers, lockers, and bicycle racks.	Nonresidential projects over 10,000 square feet	Yes	No	(N/A)
☐	Connect to and include non-motorized (bicycle and pedestrian) infrastructure on-site.	Nonresidential projects over 10,000 square feet	Yes	No	(N/A)
☑	Where appropriate, require new projects to provide pedestrian access that internally links all surrounding uses. Applicable to all new commercial and multiple-family development.	Nonresidential projects over 10,000 square feet	(Yes)	No	N/A
1.2	***Expand Transit and Commute Options***				
☐	Develop a program to reduce employee vehicle miles traveled (VMT).	Nonresidential projects over 10,000 square feet *(or over 50 employees)*	Yes	No	(N/A)
1.3	***Provide Alternative-Fuel Vehicle Infrastructure***				
☑	Provide electric vehicle (EV) pre-wiring and/or charging stations.	All projects	(Yes)	No	N/A
2.2	***Increase Energy Efficiency***				
☑	Install higher-efficiency appliances.	All new construction	(Yes)	No	N/A
☑	Install high-efficiency outdoor lights.	All new construction	(Yes)	No	N/A
☐	Obtain third-party heating, ventilating and air conditioning (HVAC) commissioning.	All new nonresidential construction	Yes	No	(N/A)

	Best Management Practice	Applicable to	Project Compliance		
3.1	***Reduce and Divert Waste***				
☑	Develop and implement a Construction and Demolition (C&D) waste plan.	All new projects	(Yes)	No	N/A
3.2	***Conserve Water***				
☑	Reduce turf area and increase native plant landscaping.	All new projects	(Yes)	No	N/A
3.3	***Use Carbon-Efficient Construction Equipment***				
☑	Implement applicable Bay Area Air Quality Management District construction site and equipment best practices. *Tables 8-1 and 8-2 in the District's Air Quality Guidelines (see separate handout).*	All new projects	(Yes)	No	N/A
4.1	***Sustain a Green Infrastructure System and Sequester Carbon***				
☑	Create or restore vegetated common space.	Projects over 10,000 sq ft	(Yes)	No	N/A
☑	Establish a carbon sequestration project or similar off-site mitigation strategy.	Projects over 10,000 sq ft	(Yes)	No	N/A
☑	Plant at least one well-placed shade tree per dwelling unit.	New residential projects	(Yes)	No	N/A

4898 El Camino Real (Altos II) CAP Checklist Project Compliance

1.1 Improve Non-Motorized Transportation

- Provide end-of-trip facilities to encourage alternative transportation, including showers, lockers, and bicycle racks.
- Connect to and include non-motorized infrastructure on-site
- Where appropriate, require new projects to provide pedestrian access that internally links all surrounding uses. Applicable to all new commercial and multiple-family development.
    - Project Compliance: N/A
    - Reasoning: The Altos II project is a residential project. This BMP only applies to non-residential projects.

1.2 Expand Transit and Commute Options

- Develop a program to reduce employee VMT
    - Project Compliance: N/A
    - Reasoning: The Altos II project is a residential project. This BMP only applies to non-residential projects.

1.3 Provide Alternative-Fuel Vehicle Infrastructure

- Provide electric vehicle (EV) pre-wiring and/or charging stations
    - Project Compliance: YES
    - Description of compliance: Out of the 56 parking spots proposed for Altos II, 25% of those spaces will be capable of being EV charging spaces for future installation.

2.2 Increase Energy Efficiency

- Install higher efficiency appliances
    - Project Compliance: YES
    - Description of Compliance: The project will include high-efficiency appliances as applicable
- Install high-efficiency outdoor lights
    - Project Compliance: YES
    - Description of Compliance: The project will include high-efficiency outdoor lights
- Obtain third-party heating, ventilating and air conditioning (HVAC) commissioning.
    - Project Compliance: N/A
    - Description of Compliance: HVAC commissioning is not required for residential projects.

3.1 Reduce and Divert Waste

- Develop and implement a Construction and Demolition (C&D) waste plan
    - Project Compliance: YES
    - Description of Compliance: A Construction and Demolition (C&D) waste plan will be developed and implemented prior to commencing demolition of existing structures.

3.2 Conserve Water

- Reduce turf area and increase native plant landscaping
  - Project Compliance: YES
  - Description of compliance: The project's landscape design does not include any turf or lawns. Vegetation incorporated into the landscape will comply with the State Water Efficient Landscape Ordinance.

3.3 Use Carbon Efficient Construction Equipment

- Implement applicable Bay Area Air Quality Management District construction site and equipment best practices. Tables 8-1 and 8-2 in the District's Air Quality Guidelines (see separate handout)
  - Project Compliance: YES
  - Description of compliance: As stated within the Air Quality report for Altos II, the project must implement the Bay Area Air Quality Management District (BAAQMD) Best Management Practices during construction. Mitigation Measure 3 implements additional measures to reduce emissions from construction.

4.1 Sustain a Green Infrastructure System and Sequester Carbon

- Create or restore vegetative common space.
  - Project Compliance: YES
  - Description of compliance: The landscape design includes common social areas that include new planters, shrubbery, and tress on both the ground-level and roof deck.

- Establish a carbon sequestration project or similar off-site strategy
  - Project Compliance: YES
  - Description of compliance: The GHG emissions associated with the are less than significant because the project would have emissions below the levels that BAAQMD identified in their CEQA Air Quality Guidelines. In addition, the project is replacing an existing source of GHG emissions. As noted, the project landscaping would maintain mature vegetation and new tree and shrub planting (e.g. 12 new trees onsite) to assist with carbon sequestration.

- Plant at least one well-placed shade tree per dwelling unit.
  - Project Compliance: YES
  - Description of compliance: The project cannot plant one shade tree per dwelling unit due to the architecture of the multi-family residential building. However, the project proposes to plant at least 12 trees on the ground-level and roof deck, which is an improvement over the current vegetation planted on the current site.

ATTACHMENT G

ALTOS II RESIDENTIAL PROJECT
4898 EL CAMINO REAL
NOISE AND VIBRATION ASSESSMENT

Los Altos, California

February 8, 2019

Prepared for:

4898 ECR LLC
ATTN: Alex Comsa
728 Addison Ave
Palo Alto, CA 94301

Prepared by:

Cameron Heyvaert
Michael S. Thill

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 E. Cotati Avenue
Cotati, CA 94931
(707) 794-0400

I&R Job No.: 19-010

INTRODUCTION

The Altos II residential project proposes to construct a residential complex at 4898 El Camino Real, in the city of Los Altos, California. The project would consist of 23 condominiums within a five-story complex located on .434 acres. Existing development includes one two-story building that hosts commercial offices with parking lots in the front and rear of the building. The project is bordered by commercial offices to the east, a parking lot and apartment complexes to the south, Jordan Avenue to the west, and El Camino Real to the north. Beyond Jordan Avenue to the west, there is one single-family residential unit and a Jack in the Box drive-through.

This report evaluates the project's potential to result in significant noise and vibration impacts with respect to applicable California Environmental Quality Act (CEQA) guidelines. The report is divided into three sections: 1) the Setting Section provides a brief description of the fundamentals of environmental noise, summarizes applicable regulatory criteria, and discusses the results of the ambient noise monitoring survey completed to document existing noise conditions; 2) the General Plan Consistency Section discusses noise and land use compatibility utilizing policies in the City's General Plan; and, 3) the Impacts and Mitigation Measures Section describes the significance criteria used to evaluate project impacts, provides a discussion of each project impact, and presents mitigation measures, where necessary, to provide a compatible project in relation to adjacent noise sources and land uses.

SETTING

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (*frequency*) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA

are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The *Day/Night Average Sound Level* (*DNL* or L_{dn}) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Effects of Noise

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noises of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn}. Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dB lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12 to 17 dB with open windows. With standard construction and closed windows in good condition, the noise attenuation factor is around 20 dB for an older structure and 25 dB for a newer dwelling. Sleep and speech interference is therefore of concern when exterior noise levels are about 57 to 62 dBA L_{dn} with open windows and 65 to 70 dBA L_{dn} if the windows are closed. Levels of 55 to 60 dBA are common along collector streets and secondary arterials, while 65 to 70 dBA is a typical value for a primary/major arterial. Levels of 75 to 80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, those facing major roadways and freeways typically need special glass windows.

TABLE 1 Definition of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, DNL or L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels measured in the night between 10:00 pm and 7:00 am.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous or frequent intermittent vibration levels produce. The guidelines in Table 3 represent syntheses of vibration criteria for human response and potential damage to buildings resulting from construction vibration.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to cause damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as paint flaking or minimal extension of cracks in building surfaces; minor, including limited surface cracking; or major, that may threaten the structural integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher. The damage criteria presented in Table 3 include several categories for ancient, fragile, and historic structures, the types of structures most at risk to damage. Most buildings are included within the categories ranging from “Historic and some old buildings” to “Modern industrial/commercial buildings”. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

TABLE 3 Reaction of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Threshold at which there is a risk of damage to fragile buildings with no risk of damage to most buildings
0.25	Strongly perceptible to severe	Threshold at which there is a risk of damage to historic and some old buildings.
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential structures
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to new residential and modern commercial/industrial structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, September 2013.

Regulatory Background

The State of California and the City of Los Altos have established regulatory criteria that are applicable in this assessment. The State CEQA Guidelines, Appendix G, are used to assess the potential significance of impacts pursuant to local General Plan policies, Municipal Code standards, or the applicable standards of other agencies. A summary of the applicable regulatory criteria is provided below.

State CEQA Guidelines. The California Environmental Quality Act (CEQA) contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. Under CEQA, noise impacts would be considered significant if the project would result in:

(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, if the project would expose people residing or working in the project area to excessive noise levels.

Checklist items (a) and (b) are applicable to the proposed project. The project is not located within two miles of a public airport or in the vicinity of a private airstrip and would not expose people

residing or working in the project area to excessive aircraft noise levels; therefore, item (c) is not carried further in this analysis.

2016 California Building Code, Title 24, Part 2. The current version of the California Building Code (CBC) requires interior noise levels attributable to exterior environmental noise sources to be limited to a level not exceeding 45 dBA L_{dn}/CNEL in any habitable room.

City of Los Altos General Plan. The Natural Environment & Hazards Element of the City of Los Altos' General Plan contains Noise and Land Use Compatibility Standards policies that are applicable to the Project. Residential land uses are considered "normally acceptable" when sites are exposed to noise levels below 60 dBA L_{dn}, "conditionally acceptable" when exposed to noise levels between 60 and 70 dBA L_{dn}, "normally unacceptable" when exposed to noise levels of between 70 and 75 dBA L_{dn} and "clearly unacceptable" when exposed to noise levels above 75 dBA L_{dn}.

City of Los Altos Municipal Code. Chapter 6.16 Noise Control of the City's Municipal Code establishes noise level limits applicable to the project as follows:

6.16.050 Exterior noise limits.
A. Maximum permissible sound levels by receiving land use.

1. The noise standards for the various categories of land use identified by the noise control office as presented in Table 4 of this section, unless otherwise specifically indicated, shall apply to all such property within a designated zone.
2. No person shall operate, or cause to be operated, any source of sound at any location within the city, or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level, when measured on any other property, either incorporated or unincorporated, to exceed:
    a. The noise standard for that land use as specified in Table 4 for a cumulative period of more than thirty (30) minutes in any hour (L_{50}); or
    b. The noise standard plus five dB for a cumulative period of more than fifteen (15) minutes in any hour(L_{25}); or
    c. The noise standard plus ten (10) dB for a cumulative period of more than five (5) minutes in any hour(L_{08}); or
    d. The noise standard plus fifteen (15) dB for a cumulative period of more than one minute in any hour (L_{02}); or
    e. The noise standard plus twenty (20) dB or the maximum measured ambient for any period of time (L_{max});.
3. If the measured ambient level exceeds that permissible within any of the first four noise limit categories above, the allowable noise exposure standard shall be increased in five dB increments in each category as appropriate to encompass or reflect such ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.
4. If the noise measurement occurs on a property adjacent to a zone boundary, the noise level limit applicable to the lower noise zone, plus five dB, shall apply.

5. If possible, the ambient noise shall be measured at a consistent location on the property with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, the ambient noise shall be estimated by performing a measurement in the same general source at least ten (10) dB below the ambient in order that only the ambient level be measured. If the difference between the ambient and the noise source is five to ten (10) dB, then the level of the ambient itself can be reasonably determined by subtracting a one decibel correction to account for the contribution of the source.

B. Corrections for character of sound. In the event the alleged offensive noise contains a steady, audible tone, such as a whine, screech, or hum, or contains music or speech conveying informational content, the standard limits set forth in Table 4 shall be reduced by five dB.

TABLE 4: Exterior Noise Limits, L_{50}

Receiving Land Use Category	Time Period	L_{50} Noise Level (dBA)*
All R1 Zoning Districts	10:00 p.m. -- 7:00 a.m.	45
	7:00 a.m. -- 10:00 p.m.	55
All R3 and PCF Zoning Districts	10:00 p.m. -- 7:00 a.m.	50
	7:00 a.m. -- 10:00 p.m.	55
All OA Zoning Districts	10:00 p.m. -- 7:00 a.m.	55
	7:00 a.m. -- 10:00 p.m.	60
All C Zoning Districts	10:00 p.m. -- 7:00 a.m.	60
	7:00 a.m.--10:00 p.m.	65

* Levels not to be exceeded more than 30 minutes in any hour, L_{50}

6.16.060 - Interior noise standards.

A. Maximum permissible dwelling interior sound levels.
   1. The interior noise standards for multi-family residential dwellings as presented in Table 5 of this section shall apply, unless otherwise specifically indicated, within all such dwellings with windows in their normal seasonal configuration.
   2. No person shall operate, or cause to be operated, within a dwelling unit any source of sound or allow the creation of any noise which causes the noise level when measured inside a neighboring receiving dwelling unit to exceed:
      a. The noise standard as specified in Table 5 for a cumulative period of more than five minutes in any hour; or
      b. The noise standard plus five dB for a cumulative period of more than one minute in any hour; or
      c. The noise standard plus ten (10) dB or the maximum measured ambient for any period of time.
   3. If the measured ambient level exceeds that permissible within any of the noise limit categories above, the allowable noise exposure standard shall be increased in five dB increments in each category as appropriate to reflect such ambient noise level.

B. Corrections for character of sound. In the event the alleged offensive noise contains a steady, audible tone, such as a whine, screech, or hum, or contains music or speech conveying informational content, the standard limits set forth in Table 5 shall be reduced by five dB.

TABLE 5: Interior Noise Standards

Noise Zone	Land Use	Time Interval	Allowable Interior Noise Level, dBA
All R3 Zoning Districts	Multi-Family Residential	10:00 p.m. -- 7:00 a.m.	35
		7:00 a.m.--10:00 p.m.	45

6.16.070 Prohibited acts.

A. Noise disturbances prohibited. No person shall unnecessarily make or continue, or cause to be made or continued, any noise disturbance.

B. Specific prohibitions. The following acts, and the causing or permitting thereof, are declared to be in violation of this chapter:

6. Construction and demolition.

a. i. Single-family zoning districts. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work on weekdays before 7:00 a.m. and after 5:30 p.m. and on Saturdays before 9:00 a.m. or after 3:00 p.m. or any time on Sundays or the city observed holidays of New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day and Christmas Day, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work of public utilities or by special exception. This section shall apply to operations on residentially zoned property only. This section shall not apply to the use of lawn or garden tools;

ii. All other zoning districts (excluding single-family districts). Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work on weekdays before 7:00 a.m. and after 7:00 p.m. and Saturdays before 9:00 a.m. or after 6:00 p.m. or any time on Sundays or the city observed holidays of New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day and Christmas Day, such that the sound there from creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by special exception. This section shall apply to operations on properties other than residentially zoned property. This section shall not apply to the use of lawn or garden tools;

b. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in the following schedules:

i. Mobile equipment. Maximum noise levels for the nonscheduled, intermittent, short-term operation (less than ten (10) days) of mobile equipment:

TABLE 6: Maximum Noise Levels for the nonscheduled, Intermittent, and Short–Term Operations (Less than ten (10) days) for Mobile Equipment

	All R1 Zoning Districts	All PCF and R3 Zoning Districts	All OA and C Zoning Districts
Daily, except Sundays and legal holidays 7:00 a.m. & 7:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 7:00 p.m. & 7:00 a.m. and all day Sundays and legal holidays	50 dBA	55 dBA	60 dBA

ii. Stationary equipment. Maximum noise levels for the respectively scheduled and relatively long-term operation (periods of ten (10) days or more) of stationary equipment:

TABLE 7: Maximum Noise Levels for the nonscheduled, Intermittent, and Short–Term Operations (Less than ten (10) days) for Stationary Equipment

	All R1 Zoning Districts	All PCF and R3 Zoning Districts	All OA and C Zoning Districts
Daily, except Sundays and legal holidays 7:00 a.m. & 7:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 7:00 p.m. & 7:00 a.m. and all day Sundays and legal holidays	50 dBA	55 dBA	60 dBA

c. Deliveries, start-up and closing down. The construction times above shall apply to deliveries of materials and equipment, and arrival of workers, start-up and closing down and departure activities on a job site.

12. Air-conditioning or air-handling equipment. Operating or permitting the operation of any air-conditioning or air-handling equipment in such a manner as to exceed any of the following sound levels without a variance:

TABLE 8: Air-Conditioning or Air-Handling Equipment Operational Sound Levels

Measurement Location	Residentially zoned properties, dB(A)
Any point on a neighboring property line, five feet above grade level, no closer than three feet from any wall	50
Center of a neighboring patio, five feet above grade level, no closer than three feet from any wall	45
Outside the neighboring living area window nearest the equipment location, not more than three feet from the window opening, but at least three feet from any other surface	45

Existing Noise Environment

Figure 1 shows the project site, vicinity, and noise measurement locations. As shown on this figure, the project site is surrounded by commercial land uses along El Camino Real. Further to the south, there are multi-family residences as well as one single-family residence to the southwest. A noise monitoring survey was performed to quantify and characterize ambient noise levels at the site and in the project vicinity between Tuesday, January 22, 2019 and Friday, January 25, 2019. The monitoring survey included one long-term noise measurement (LT-1) and three short-term noise measurements (ST-1, ST-2, and ST-3). The noise environment at the site results primarily from vehicle traffic along El Camino Real and Jordan Avenue.

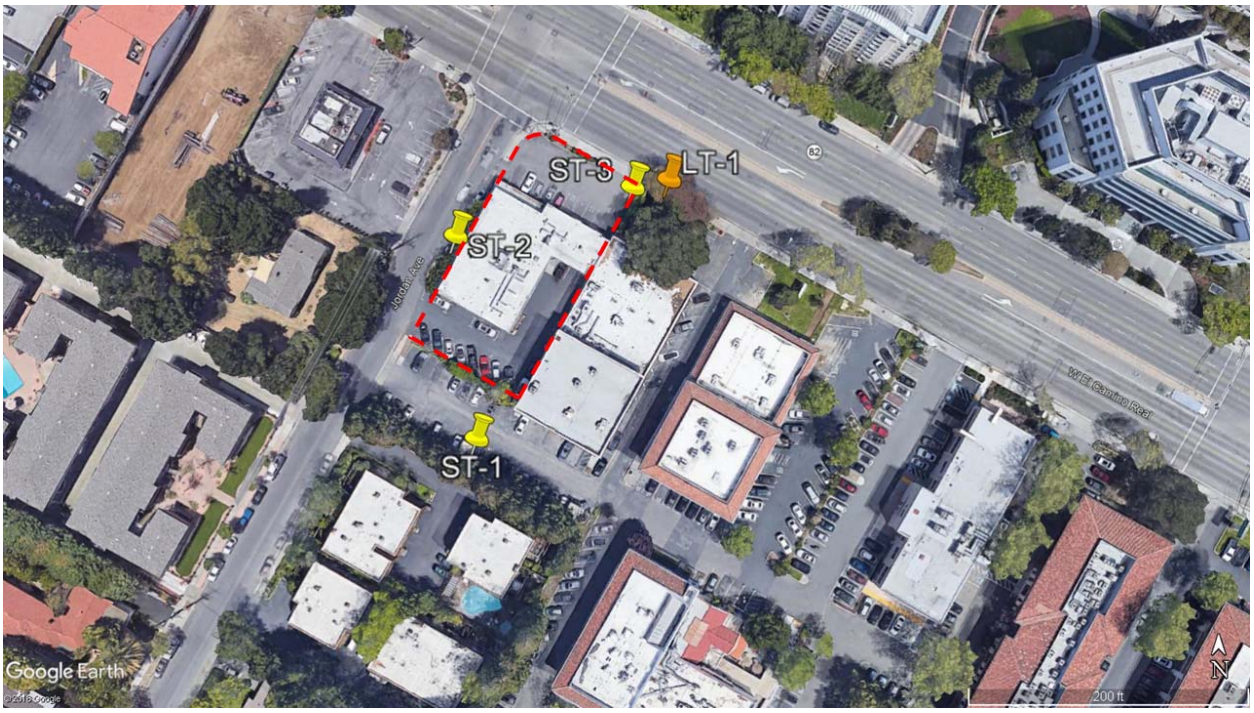
Long-term noise measurement LT-1 was made in front of 4906 El Camino Real, 18 feet southeast of the property line bordering 4898 El Camino Real, and 50 feet from the center median of El Camino Real. This location was selected to quantify noise levels generated by traffic along El Camino Real. The noise levels measured at 4906 El Camino Real were considered acoustically equivalent to the noise levels expected along the frontage of the project site. Hourly average noise levels at this location ranged from 71 to 75 dBA L_{eq} during the day and from 61 to 72 dBA L_{eq} at night. The day-night average noise level between Tuesday and Friday averaged 75 dBA L_{dn}. The daily trends in noise levels at LT-1 for all measured days are shown in Figures 2-5.

Short-term noise measurement ST-1 was made on Tuesday, January 22, 2019 over a ten-minute interval starting at 12:40 p.m. and concluding at 12:50 p.m. ST-1 was made at the rear of 4898 El Camino Real, near the wall adjacent to the multi-family residential apartment complex. This location was selected to quantify the ambient noise levels at the nearest sensitive receptors. The 10-minute average noise level measured at this location was 52 dBA L_{eq}.

Short-term noise measurement ST-2 was made between 1:00 p.m. and 1:10 p.m. on the western boundary of the project site, across from the drive-through lane at the neighboring Jack in the Box. This location was selected to quantify noise levels resulting from the drive-through at Jack in the Box and to quantify traffic noise along Jordan Avenue.

Short-term noise measurement ST-3 was made between 1:20 p.m. and 1:30 p.m. in the parking lot in front of 4898 El Camino Real, 25 feet back from LT-1. This location was selected to quantify ambient noise levels at the setback distance of the proposed project. The 10-minute average noise level measured at this location was 71 dBA L_{eq}. Table 9 summarizes the results of the short-term measurements.

FIGURE 1 Noise Measurement Locations



Source: Google Earth

TABLE 9 Summary of Short-Term Noise Measurement Data (dBA)

Noise Measurement Location	L_{max}	$L_{(1)}$	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	L_{eq}
ST-1: Parking lot behind 4898 El Camino Real. (01/22/2019, 12:40 p.m. - 12:50 p.m.)	65	61	56	50	45	52
ST-2: Western property line of 4898 El Camino Real. (01/22/2019, 1:00 p.m. - 1:10 p.m.)	83	80	68	62	57	67
ST-3: Parking lot in front of 4898 El Camino Real. (01/22/2019, 1:20 p.m. - 1:30 p.m.)	80	79	75	70	57	71

FIGURES 2-5 Daily Trends in Noise Levels at LT-1

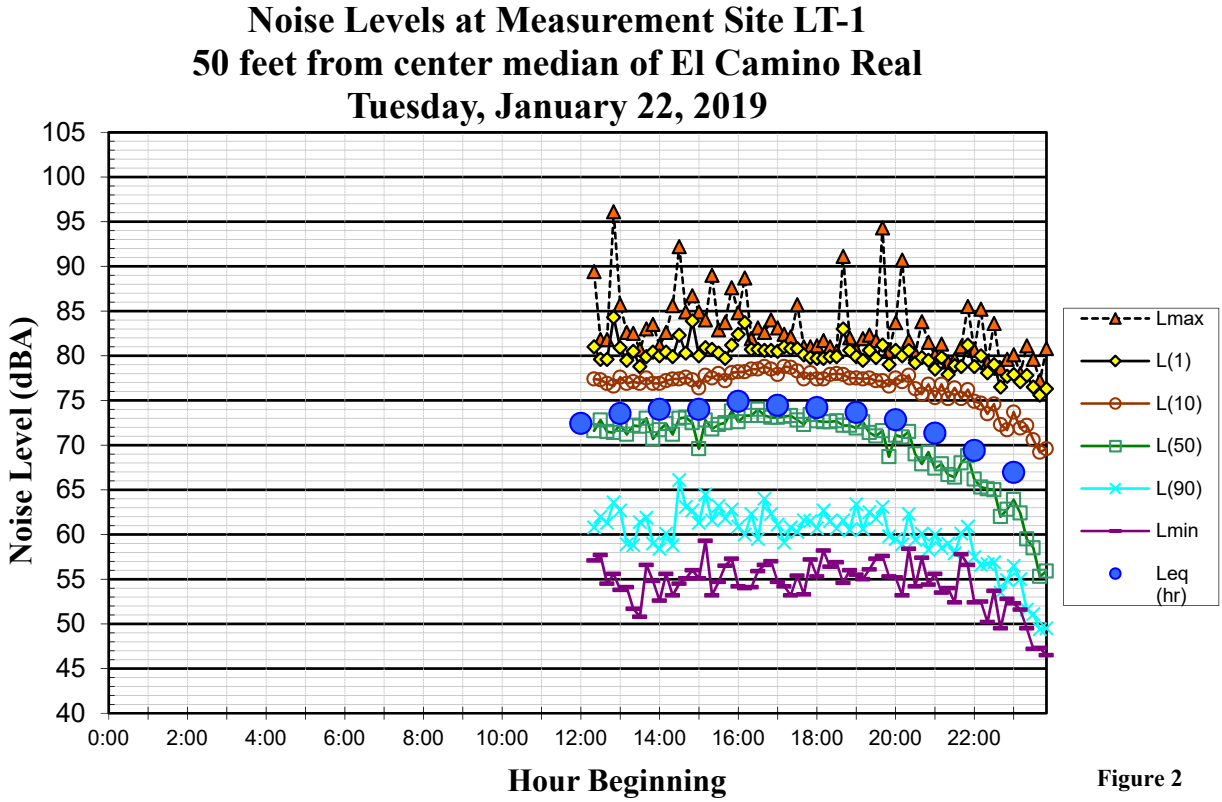
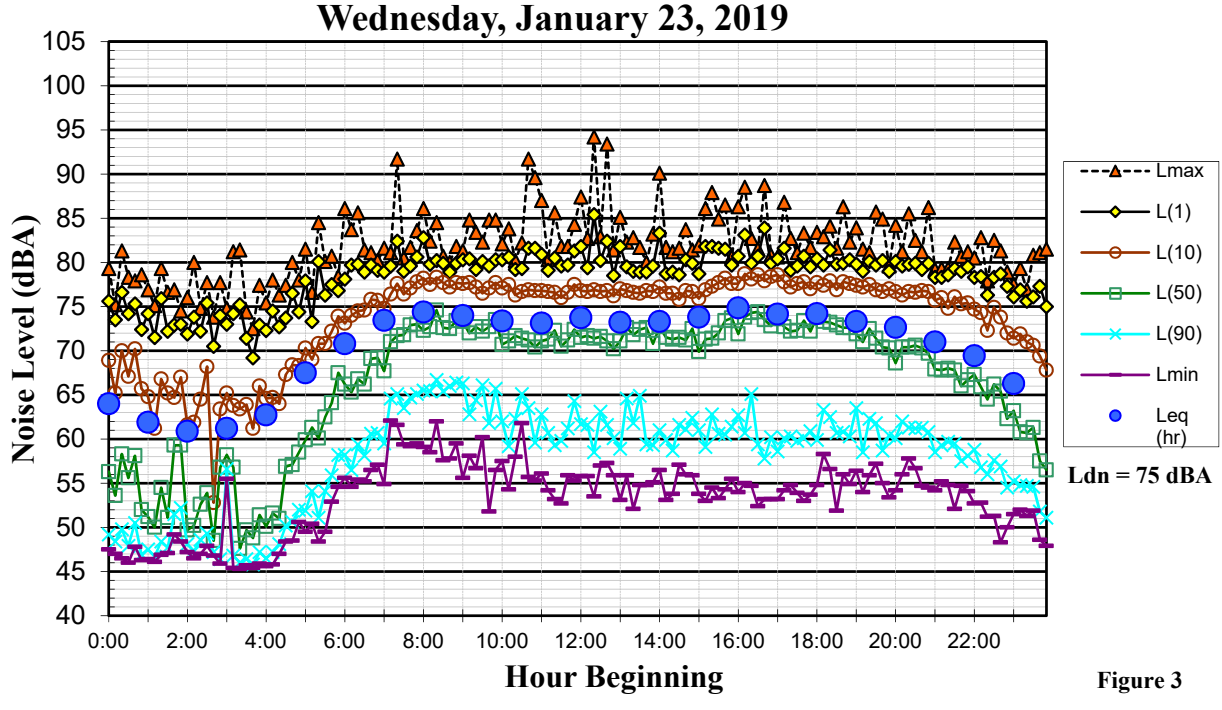
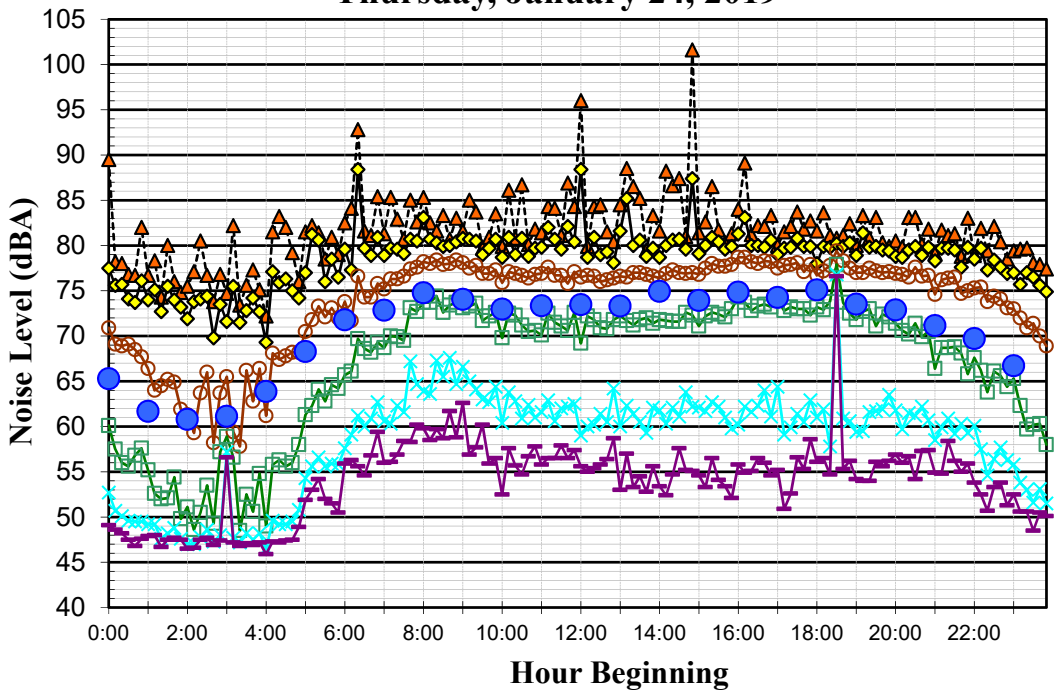


Figure 2



Ldn = 75 dBA

Figure 3



Ldn = 75

Figure 4

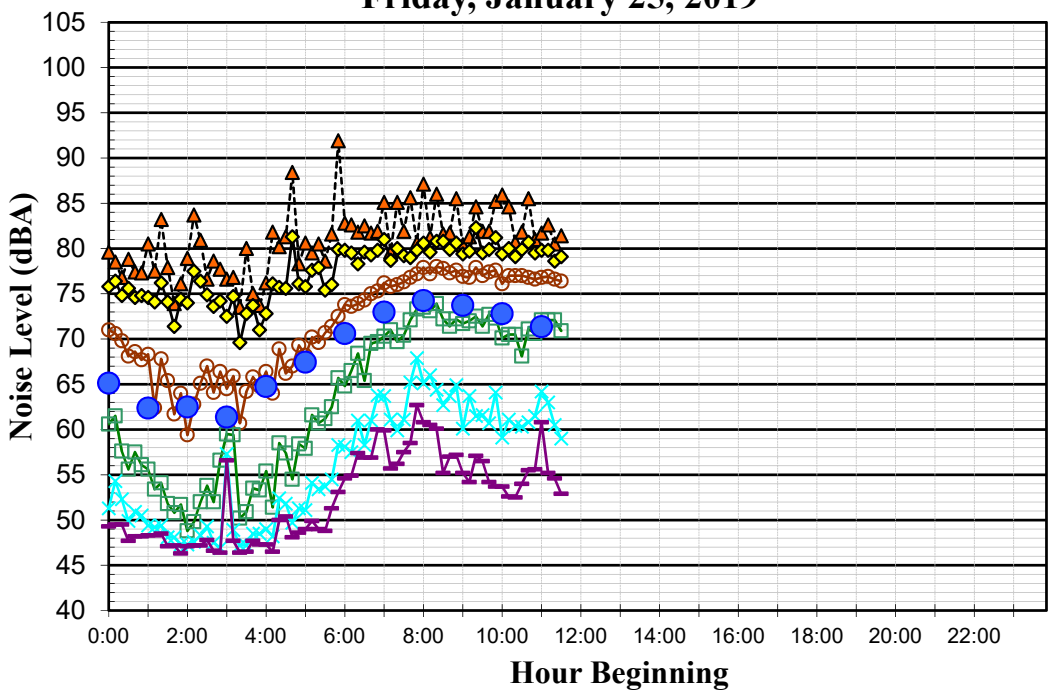


Figure 5

GENERAL PLAN CONSISTENCY ANALYSIS

The impacts of site constraints such as exposure of the proposed project to excessive levels of noise and vibration are not considered under CEQA. This section addresses Noise and Land Use Compatibility for consistency with the policies set forth in the City's General Plan.

Noise and Land Use Compatibility

The applicable Los Altos General Plan policies were presented in detail in the Regulatory Background section and are summarized below for the proposed project:

- The City's acceptable exterior noise level objective is 60 dBA L_{dn} or less for residences.
- The City's standard for interior noise levels in residences is 45 dBA L_{dn}.

Future Exterior Noise Environment

The future noise environment at the project site would continue to result from transportation related noise sources along El Camino Real and Jordan Avenue. A review of the transportation study provided by the project applicant indicates that there will be a reduction in the number of daily trips generated by the proposed project in comparison to existing conditions.

Traffic noise increases along El Camino Real are estimated to result in a future noise increase of 1 dBA L_{dn} above existing conditions, assuming a 1% to 2% increase in traffic volumes per year over the next 20 years. Therefore, future exterior noise levels are calculated to be 75 dBA L_{dn} along the side of the building that borders El Camino Real and up to 72 dBA L_{dn} along the northwest and southeast façades.

Outdoor use areas include a rooftop deck. At the center of the deck, where it is anticipated that residents will spend most of their time, exterior noise levels are calculated to be 57 dBA L_{dn}. This would be below 60 dBA L_{dn} and would be considered "normally acceptable" by the City of Los Altos.

Built-in bench seating areas provided at the buildings' frontages on El Camino Real would be exposed to noise levels as high as 75 dBA L_{dn}. It is not acoustically feasible to reduce exterior noise levels in these seating areas to meet the City's 60 dBA L_{dn} exterior noise level objective. Alternate noise reduction strategies that would reduce day-night average noise levels to 60 dBA L_{dn} or less include fully enclosing the outdoor use areas or redesigning the site plan to locate the outdoor use areas within the interior of the project building. This strategy allows the building itself to provide acoustical shielding from traffic noise to the outdoor areas.

Future Interior Noise Environment

The City of Los Altos requires that interior noise levels be maintained at 45 dBA L_{dn} or less for residences. Site plans indicate that residential units on the northeast side of the building could be as close as 26 feet from the edge of El Camino Real. At this distance, exterior traffic noise exposure

would be 75 dBA L_{dn}. Residential units along the northwest and southeast façades of the building would experience exterior noise exposures of up to 70 dBA L_{dn}.

Interior noise levels would vary depending upon the design of the buildings (relative window area to wall area) and the selected construction materials and methods. Standard residential construction provides approximately 15 dBA of exterior-to-interior noise reduction, assuming the windows are partially open for ventilation. Standard construction with the windows closed provides approximately 20 to 25 dBA of noise reduction in interior spaces. Where exterior noise levels range from 60 to 65 dBA L_{dn}, the inclusion of adequate forced-air mechanical ventilation is often the method selected to reduce interior noise levels to acceptable levels by closing the windows to control noise. In noise environments of 70 dBA L_{dn} or greater, a combination of forced-air mechanical ventilation and sound-rated construction methods is often required to meet the interior noise level limit. Such methods or materials may include a combination of smaller window and door sizes as a percentage of the total building façade facing the noise source, sound-rated windows and doors, sound-rated exterior wall assemblies, and mechanical ventilation so windows may be kept closed at the occupant's discretion.

Based on the project description, dated January 18, 2019, the exterior walls of the building façade would be constructed with three-coat (7/8" thick) stucco (STC [1] 46 or greater). Based on preliminary calculations, all residential units would require the inclusion of forced-air mechanical ventilation to achieve the 45 dBA L_{dn} interior threshold. Residential units fronting El Camino Real would achieve the 45 dBA L_{dn} interior standard with windows and exterior doors with minimum STC ratings of 33 to 34. For residential units along the northwest and southeast façades of the building, windows and doors with STC ratings of 28 to 29 or higher would achieve the 45 dBA L_{dn} interior standard (see Figure 6). The analysis assumes that the façade area is made up of 40% windows or less. These recommendations are applicable to all floors in the proposed complex. Where STC rated windows are recommended, windows are assumed to be in the closed position, requiring forced-air ventilation to allow occupants the option of keeping windows closed.

For consistency with the General Plan, the following Conditions of Approval are recommended for consideration by the City:

- When refining the project's site plan, locate outdoor use areas away from El Camino Real and continue to shield noise-sensitive outdoor spaces with buildings or noise barriers where feasible.

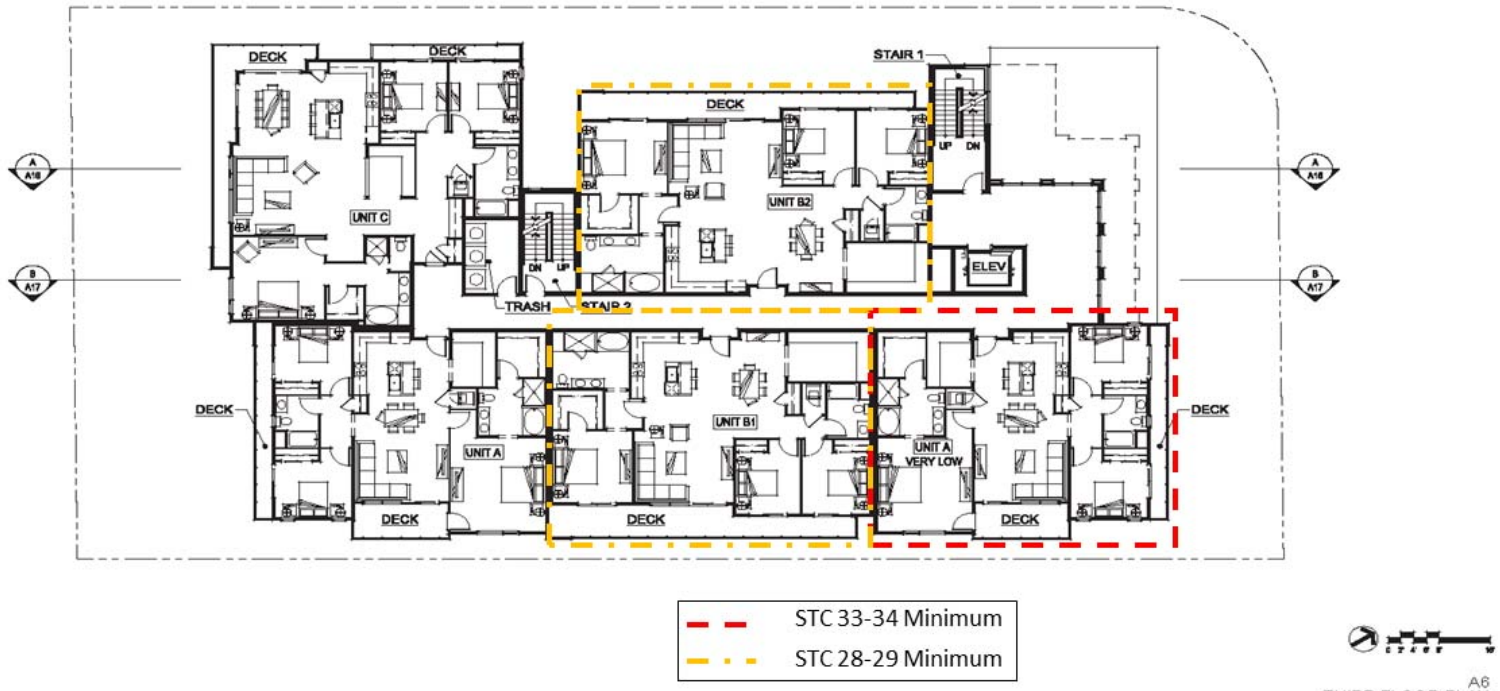
- Provide a suitable form of forced-air mechanical ventilation, as determined by the local building official, for all residential buildings, so that windows can be kept closed to control noise.

- Provide sound rated windows to maintain interior noise levels at acceptable levels. Preliminary calculations show that sound-rated windows with minimum STC Rating of 33

[1] **Sound Transmission Class (STC)** A single figure rating designed to give an estimate of the sound insulation properties of a partition. Numerically, STC represents the number of decibels of speech sound reduction from one side of the partition to the other. The STC is intended for use when speech and office noise constitute the principal noise problem.

to 34 would be satisfactory for units fronting El Camino Real and windows with minimum STC Rating of 28 to 29 would be satisfactory for northwest and southeast facing units to achieve acceptable interior noise levels, assuming a wall construction with STC 46 or greater and 40% windows or less. The specific determination of what noise insulation treatments are necessary shall be conducted on a unit-by-unit basis during final design of the project once final building plans and elevations are available.

FIGURE 6 Preliminary Recommendations to Reduce Interior Noise to Acceptable Levels



NOISE IMPACTS AND MITIGATION MEASURES

This section describes the significance criteria used to evaluate project impacts under CEQA, provides a discussion of each project impact, and presents mitigation measures, where necessary, to provide a compatible project in relation to adjacent noise sources and land uses.

Significance Criteria

The following criteria were used to evaluate the significance of environmental noise and vibration resulting from the project:

1. **Temporary or Permanent Noise Increases in Excess of Established Standards.** A significant impact would be identified if project construction or operations would result in a substantial temporary or permanent increase in ambient noise levels at sensitive receivers in excess of the local noise standards contained in the Los Altos General Plan or Municipal Code, as follows:

    - Operational Noise in Excess of Standards. A significant noise impact would be identified if the project would expose persons to or generate noise levels that would exceed applicable noise standards presented in the General Plan or Municipal Code. The City of Los Altos limits sound levels generated by air-conditioning or air-handling equipment to 50 dBA at residential property lines and 45 dBA at residential patios and building façades. Other operational noise sources are limits to the levels specified in Table 4.

    - Permanent Noise Increase. A significant impact would be identified if traffic or school activity noise generated by the project would substantially increase noise levels at sensitive receivers in the vicinity. A substantial increase would occur if: a) the noise level increase is 5 dBA L_{dn} or greater, with a future noise level of less than 60 dBA L_{dn}, or b) the noise level increase is 3 dBA L_{dn} or greater, with a future noise level of 60 dBA L_{dn} or greater.

    - Temporary Noise Increase. A significant temporary noise impact would be identified if construction would occur outside of the hours specified in the Municipal Code or if construction noise levels were to exceed the City's construction noise limits at adjacent noise sensitive land uses. Construction occurring during allowable hours is limited to 75 dBA in single-family residential areas, 80 dBA in multi-family residential areas, and 85 dBA in commercial areas.

2. **Generation of Excessive Groundborne Vibration.** A significant impact would be identified if the construction of the project would generate excessive vibration levels. Groundborne vibration levels exceeding 0.3 in/sec PPV would be considered excessive as such levels would have the potential to result in cosmetic damage to buildings.

Impact 1: **Temporary or Permanent Noise Increases in Excess of Established Standards.** Project traffic would not result in a substantial permanent noise level increase at existing noise-sensitive land uses in the project vicinity. However, existing noise-sensitive land uses could be exposed to operational and construction noise levels in excess of the applicable noise thresholds. **This is a potentially significant impact.**

Permanent Noise Increases from On-Site Operational Noise

The City of Los Altos limits sound levels generated by air-conditioning or air-handling equipment to 50 dBA at residential property lines and 45 dBA at residential patios and building façades. The descriptor for the noise limit is not specified. For consistency with the provisions of the code, a reasonable interpretation of this standard would identify the criteria as an hourly average L_{eq}. Other operational noise sources are limits to the levels specified in Table 4.

Parking

The majority of parking would be provided in the underground garage. Parking activities occurring in the underground garage would not be anticipated to be audible outside of the parking structure. Noise associated with on-site circulation and parking for the townhomes would be similar to levels generated by use of the current parking lot and below noise levels generated by vehicular traffic traveling along El Camino Real and those specified in Table 4. This is a **less-than-significant** impact.

Mechanical Equipment

The proposed project would include mechanical equipment such as heating, ventilation, and air conditioning systems (HVAC). Based on the project plans, dated January 30, 2019, solar panels and mechanical equipment would be located on the southwestern side of the rooftop, as close as about 120 feet from the nearest residential land use to the southwest. Typical residential rooftop mechanical equipment is anticipated to generate noise levels of 50 to 60 dBA at 50 feet from the equipment, depending on the equipment selected. Shielding from equipment enclosures and surrounding structures would provide 10 to 15 dBA of reduction.

Existing residences are located as close as about 120 feet from the edge of the rooftop mechanical equipment area. Assuming a credible worst-case scenario with unshielded equipment located as close as 10 feet from the edge of the rooftop, mechanical equipment would be anticipated to generate a noise level of 42 to 52 dBA L_{eq} at these closest residences. Mechanical equipment located 150 feet or further from residential property lines or in shielded areas would be anticipated to meet the 50 dBA L_{eq} limit. This is a **potentially significant** impact.

Mitigation Measure 1a: The following mitigation measures would reduce this impact to a less-than-significant level.

Prior to the issuance of building permits, mechanical equipment shall be selected and designed to reduce impacts on surrounding uses to meet the City's requirements. A qualified acoustical consultant shall be retained by the project applicant to review mechanical noise as the equipment systems are selected in order to determine specific noise reduction measures necessary to reduce noise to comply with the City's 50 dBA L_{eq} residential noise limit at the shared property lines.

Noise reduction measures could include, but are not limited to, selection of equipment that emits low noise levels and/or installation of noise barriers such as enclosures and parapet walls to block the line of sight between the noise source and the nearest receptors.

Permanent Noise Increases from Project Traffic

Neither the City of Los Altos nor the State of California define the traffic noise level increase that is considered substantial. A significant impact would typically be identified if project generated traffic were to result in a permanent noise level increase of 3 dBA L_{dn} or greater in a residential area where the resulting noise environment would exceed or continue to exceed 60 dBA L_{dn} or result in a permanent noise increase of 5 dBA L_{dn} or greater in a residential area where the resulting in a noise environment would continue to be 60 dBA L_{dn} or less. For reference, a 3 dBA L_{dn} noise increase would be expected if the project would double existing traffic volumes along a roadway.

A review of the project's trip generation information indicates that there will be a reduction in the number of daily trips generated by the proposed project in comparison to existing conditions. Traffic noise increases resulting from the proposed project would not result in noise increases of 3 dBA L_{dn} or more on the surrounding roadway network. This is a **less-than-significant** impact.

Temporary Noise Increases from Project Construction

Chapter 6.16.070 of the City's Municipal Code establishes allowable hours of construction within residentially zoned properties between 7:00 a.m. and 5:30 p.m. Monday through Friday and between 9:00 a.m. and 3:00 p.m. on Saturdays. Construction in all other zoning districts (excluding single-family districts) is permissible between 7:00 a.m. and 7:00 p.m. Monday through Friday and 9:00 a.m. and 6:00 p.m. on Saturdays. Construction activities are not permitted on Sundays or the City observed holidays of New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day and Christmas Day. In addition, where technically and economically feasible, maximum noise levels from construction activities should not exceed those listed in Tables 3 and 4 in Chapter 6.16.070 of the City's Municipal Code.

The City also provides recommended maximum noise level limits for construction activities occurring over a period of less than 10 days but does not provide limits for longer duration construction. This analysis applies the noise limits to project construction, given that construction would occur for a period greater than 10 days. Construction occurring during allowable hours is limited to 75 dBA in single-family residential areas, 80 dBA in multi-family residential areas, and 85 dBA in commercial areas. This code is not explicit in terms of the acoustical descriptor associated with the noise level limit. A reasonable interpretation of this standard would identify the criteria as an hourly average L_{eq}.

Noise impacts resulting from construction depend upon 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. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), if the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time.

Construction activities would include demolition, excavation, site preparation, grading, building construction, paving, and architectural coating. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by stage and vary within stages, based on the amount of equipment in operation and the location at which the equipment is operating. The hauling of excavated materials and construction materials would generate truck trips on local roadways as well.

Typical construction noise levels at a distance of 50 feet are shown in Tables 10 and 11. Table 10 shows the average noise level ranges, by construction phase and Table 11 shows the maximum noise level ranges for different construction equipment. As shown in Tables 10 and 11, construction activities generate considerable amounts of noise, especially during demolition and earth-moving activities when heavy equipment is used. The typical range of maximum instantaneous noise levels for construction equipment used at this site would be 77 to 90 dBA L_{max} at a distance of 50 feet, as shown in Table 11. Project construction would occur within 5 feet of adjoining commercial property to the southeast and 85 feet of adjoining residential property to the south and west. Additional commercial uses are located about 110 feet to the northwest across Jordan Avenue and 215 feet to the northeast, across El Camino Real. Construction noise levels would be anticipated to exceed the single family residential limit of 75 dBA when heavy construction is located within about 150 feet of the residential property across Jordan Avenue to the west, to exceed the multi-family residential limit of 80 dBA when heavy construction is located within about 90 feet of the residential property to the south, and to exceed the commercial limit of 85 dBA when heavy construction is located within about 50 feet of the shared southeastern property line. Construction noise is not anticipated to exceed 85 dBA L_{eq} at commercial property to the northeast.

Construction would be in compliance with City of Los Altos' Municipal Code specified hours of construction, but would be anticipated to exceed the construction noise limits during some periods of construction when heavy construction is located adjacent to shared property lines. This is a **potentially significant** temporary impact.

Mitigation Measure 1b: Modification, placement, and operation of construction equipment are possible means for minimizing the impact of construction noise on existing sensitive receptors. Construction equipment should be well-maintained and used judiciously to be as quiet as possible. Additionally, construction activities for the proposed project should include the following best management practices to reduce noise from construction activities near sensitive land uses:

- Construction activities shall be limited to the hours between 7:00 a.m. and 5:30 p.m., Monday through Friday, and on Saturdays between 9:00 a.m. and 3:00 p.m., in accordance with the City's Municipal Code. Construction is prohibited on Sundays and holidays, unless permission is granted with a development permit or other planning approval.

- Use of the concrete saw within 50 feet of shared property lines shall be limited, as feasible.

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

- Unnecessary idling of internal combustion engines should be strictly prohibited.

- Locate stationary noise-generating equipment, such as air compressors or portable power generators, as far as possible from sensitive receptors. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used reduce noise levels at the adjacent sensitive receptors. Any enclosure openings or venting shall face away from sensitive receptors.

- Utilize "quiet" air compressors and other stationary noise sources where technology exists.

- A temporary noise control blanket barrier could be erected, if necessary, along building facades facing construction sites. This mitigation would only be necessary if conflicts occurred which were irresolvable by proper scheduling. Noise control blanket barriers can be rented and quickly erected.

- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.

- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with adjacent residential land uses so that construction activities can be scheduled to minimize noise disturbance.

- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule.

Implementation of the above best management practices would reduce construction noise levels emanating from the site, limit construction hours, and minimize disruption and annoyance. With the implementation of these measures and recognizing that noise generated by construction activities would occur over a temporary period, the impact would be **less-than-significant**.

TABLE 10 Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.
II - Minimum required equipment present at site.

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

TABLE 11 Construction Equipment 50-Foot Noise Emission Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes:

[1] Measured at 50 feet from the construction equipment, with a "slow" (1 sec.) time constant.

[2] Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.

[3] Portable Air Compressor rated at 75 cfm or greater and that operates at greater than 50 psi.

Impact 2 **Exposure to Excessive Groundborne Vibration due to Construction.** Construction-related vibration levels could exceed 0.3 in/sec PPV at the nearest structures. **This is a potentially significant impact.**

The City of Los Altos does not specify a construction vibration limit. For structural damage, the California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.25 in/sec PPV for historic and some old buildings (see Table 3). The 0.3 in/sec PPV vibration limit would be applicable to properties in the vicinity of the project site.

The construction of the project may generate perceptible vibration when heavy equipment or impact tools (e.g. jackhammers, hoe rams) are used. Construction activities would include demolition, site preparation, grading and excavation, trenching and foundation, building (exterior), interior/ architectural coating and paving. Pile driving is not anticipated for construction of the building foundation.

Table 12 presents typical vibration levels from construction equipment at 25 feet. Jackhammers typically generate vibration levels of 0.035 in/sec PPV and drilling typically generates vibration levels of 0.09 in/sec PPV at 25 feet. Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Table 12 also presents construction vibration levels at various distances from the construction equipment. Calculations were made to estimate vibration levels at distances of 5 feet from construction, as well as distances of 85 feet from the site to represent other nearby buildings. Vibration levels are highest close to the source, and then attenuate with increasing distance at the rate $(D_{ref}/D)^{1.1}$, where D is the distance from the source in feet and D_{ref} is the reference distance of 25 feet.

TABLE 12 Vibration Levels for Construction Equipment at Various Distances

Equipment		PPV at 5 ft. (in/sec)	PPV at 25 ft. (in/sec)	PPV at 85 ft. (in/sec)
Clam shovel drop		**1.186**	0.202	0.053
Hydromill (slurry wall)	in soil	0.003	0.002	0.008
	in rock	0.006	0.004	0.017
Vibratory Roller		**1.233**	0.210	0.055
Hoe Ram		**0.523**	0.089	0.023
Large bulldozer		**0.523**	0.089	0.023
Caisson drilling		**0.523**	0.089	0.023
Loaded trucks		**0.446**	0.076	0.020
Jackhammer		0.206	0.035	0.009
Small bulldozer		0.018	0.003	0.001

Source: Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Office of Planning and Environment, Federal Transit Administration, May 2006, as modified by Illingworth & Rodkin, Inc., January 2019.

Project construction activities, such as drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may generate substantial vibration in the immediate vicinity of construction activities. The closest

structures to the project site include a commercial building adjoining the site to the southeast, and residential buildings located approximately 90 feet to the southwest and northwest. Commercial structures are also located about 200 feet to the northeast, across El Camino Real.

As indicated in Table 12, heavy vibration generating construction equipment, such as vibratory rollers or clam shovel drops, would have the potential to produce vibration levels of 0.3 in/sec PPV or more within 20 feet of construction. One structure is located within 20 feet of the project site, a commercial building that is adjacent to the southeastern property line. Heavy construction located within 5 feet of the shared property line would have the potential to exceed the 0.3 in/sec PPV threshold for buildings that are found to be structurally sound but not where structural damage is a major concern. Vibration levels at all other buildings in the vicinity are calculated to be below the 0.3 in/sec PPV threshold and would not be anticipated to be impacted by project construction generated vibration.

The US Bureau of Mines has analyzed the effects of blast-induced vibration on buildings in USBM RI 8507[2], and these findings have been applied to vibrations emanating from construction equipment on buildings[3]. Figure 7 presents the damage probability as reported in USBM RI 8507 and reproduced by Dowding assuming a maximum vibration level of 1.2 in/sec PPV, the maximum vibration level that would be anticipated when construction is located 5 feet from structures. As shown on Figure 7, these studies indicate an approximate 20% probability of "threshold damage" (referred to as cosmetic damage elsewhere in this report) at vibration levels of 1.2 in/sec PPV or less and no observations of "minor damage" or "major damage" at vibration levels of 1.2 in/sec PPV or less. Based on these data, cosmetic or threshold damage would be manifested in the form of hairline cracking in plaster, the opening of old cracks, the loosening of paint or the dislodging of loose objects. However, minor damage (e.g., hairline cracking in masonry or the loosening of plaster) or major structural damage (e.g., wide cracking or shifting of foundation or bearing walls) would not occur assuming a maximum vibration level of 1.2 in/sec PPV.

In summary, the construction of the project would generate vibration levels exceeding the threshold of 0.3 in/sec PPV at the adjoining commercial structure to the southeast when construction is located within 20 feet of structures and such vibration levels would be capable of cosmetically damaging these buildings. Project-generated vibration levels would fall below the 0.3 in/sec PPV threshold at structures located 20 feet or further from construction. This is a **potentially significant** impact.

Mitigation Measure 2: Implementation of the following measures would reduce the vibration impact to a less-than-significant level at the adjoining commercial structure to the southeast of the project:

- A construction vibration-monitoring plan shall be implemented to document conditions at all structures located within 20 feet of proposed construction prior to, during, and after vibration generating construction activities. All plan tasks shall be undertaken under the

2 Siskind, D.E., M.S. Stagg, J.W. Kopp, and C.H. Dowding, Structure Response and Damage Produced by Ground Vibration form Surface Mine Blasting, RI 8507, Bureau of Mines Report of Investigations, U.S. Department of the Interior Bureau of Mines, Washington, D.C., 1980.

3 Dowding, C.H., Construction Vibrations, Prentice Hall, Upper Saddle River, 1996.

direction of a licensed Professional Structural Engineer in the State of California and be in accordance with industry accepted standard methods. The construction vibration monitoring plan should be implemented to include the following tasks:

- Identification of sensitivity to groundborne vibration of all structures located within 20 feet of construction.

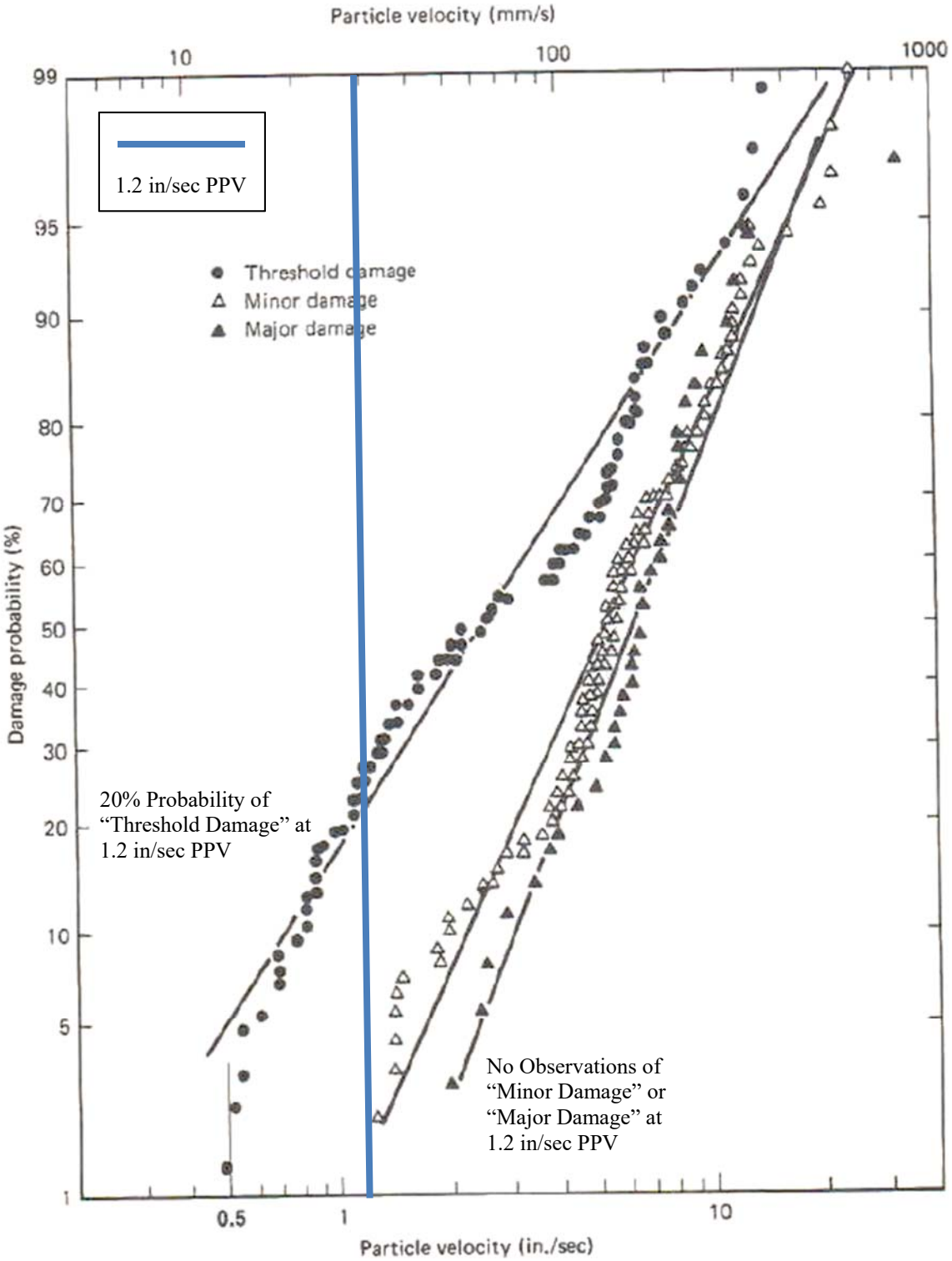
- Performance of a photo survey, elevation survey, and crack monitoring survey for all structures located within 20 feet of construction. Surveys shall be performed prior to, in regular intervals during, and after completion of vibration generating construction activities and shall include internal and external crack monitoring in the structure, settlement, and distress and shall document the condition of the foundation, walls and other structural elements in the interior and exterior of said structure.

- Conduct a post-survey on the structure where either monitoring has indicated high levels or complaints of damage. Make appropriate repairs or provide compensation where damage has occurred as a result of construction activities.

- Designate a person responsible for registering and investigating claims of excessive vibration. The contact information of such person shall be clearly posted on the construction site.

Implementation of the above measures would reduce this impact to a **less-than-significant** level.

FIGURE 7 Probability of Cracking and Fatigue from Repetitive Loading



Source: Dowding, C.H., Construction Vibrations, Prentice Hall, Upper Saddle River, 1996 as modified by Illingworth & Rodkin, Inc., January 2019.

Kielty Arborist Services

Certified Arborist WE#0476A
P.O. Box 6187
San Mateo, CA 94403
650-515-9783

January 3, 2019

4898 ECR LLC
Attn: Mircea Voskerician
728 Addison Ave
Palo Alto, CA, 94301

To: City of Los Altos, Planning Department
Attn: Sean Gallegos
1 N San Antonio Rd
Los Altos, CA 94022

Site: 4898 El Camino Real, Los Altos CA

Dear Mircea Voskerician,

As requested on Wednesday, December 19, 2018, I visited the above site for the purpose of inspecting and commenting on the trees. Construction is planned for this site, and your concern as to the future health and safety of existing trees has prompted this visit.

Method:
All inspections were made from the ground; the trees were not climbed for this inspection. The trees in question were located on an existing topography map provided by you. The trees were then measured for diameter at 48 inches above ground level (DBH or diameter at breast height). The trees were given a condition rating for form and vitality. Each tree was put into a health class using the following rating system:

F- Very Poor
D- Poor
C- Fair
B- Good
A- Excellent

The height of the trees was measured using a Nikon Forestry 550 Hypsometer. The spread was paced off. Comments and recommendations for future maintenance are provided.

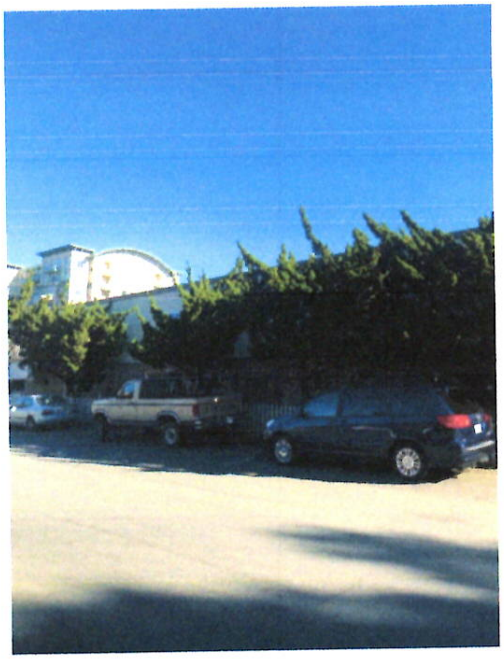
Survey:

Tree#	Species	DBH	CON	HT/SP	Comments
1R	Hollywood juniper *(Juniperus chinensis)*	11.6-9.9	B	20/15	Good vigor, fair form, 1 foot from existing foundation, codominant at grade.
2R	Hollywood juniper *(Juniperus chinensis)*	10.5	B	20/12	Good vigor, fair form, against foundation.
3R	Hollywood juniper *(Juniperus chinensis)*	10.0	C	20/12	Fair vigor, fair form, 6" from existing foundation, suppressed, dead wood in canopy.
4R	Hollywood juniper *(Juniperus chinensis)*	13.5	B	20/15	Good vigor, fair form, 4" from existing foundation.
5*	London plane *(Platanus x hispanica)*	11.0	B	45/20	Good vigor, good form, root zone covered by parking lots.
6*P	Chinese pistache *(Pistachia chinensis)*	13.2	B	30/15	Good vigor, fair form, **street tree**.
7*	Redwood *(Sequoia sempervirens)*	32.0	B	70/20	Fair vigor, fair form, 70 feet from property line, surrounded by hardscape.
8*	Redwood *(Sequoia sempervirens)*	19.0	B	65/15	Fair vigor, fair form, 70 feet from property line, surrounded by hardscape.
9*	Redwood *(Sequoia sempervirens)*	20.0	B	60/15	Fair vigor, fair form, 70 feet from property line, surrounded by hardscape.
10*	Redwood *(Sequoia sempervirens)*	8.0	C	35/12	Fair vigor, fair form, suppressed by larger redwoods, 70 feet from property line.
11*	Redwood *(Sequoia sempervirens)*	13.0	B	45/15	Fair vigor, fair form, 70 feet from property line, surrounded by hardscape.
12*	Redwood *(Sequoia sempervirens)*	12.0	B	45/15	Fair vigor, fair form, 70 feet from property line, surrounded by hardscape.
13*	Redwood *(Sequoia sempervirens)*	7.0	C	30/10	Fair vigor, fair form, suppressed, 70 feet from property line.
14*	Redwood *(Sequoia sempervirens)*	11.0	B	35/15	Fair vigor, fair form, 70 feet from property line, surrounded by hardscape.

Survey:

Tree#	Species	DBH	CON	HT/SP	Comments
15*	Redwood *(Sequoia sempervirens)*	7.0	C	25/12	Fair vigor, fair form, suppressed, 70 feet from property line.
16*	Redwood *(Sequoia sempervirens)*	15.0	B	50/15	Fair vigor, fair form, 70 feet from property line, surrounded by hardscape.
17*	Redwood *(Sequoia sempervirens)*	12.0	B	50/15	Fair vigor, fair form, 70 feet from property line, surrounded by hardscape.
18*	Redwood *(Sequoia sempervirens)*	7.0	C	50/15	Fair vigor, fair form, suppressed, 70 feet from property line.
19*	Redwood *(Sequoia sempervirens)*	17.0	B	50/20	Fair vigor, fair form, 70 feet from property line, surrounded by hardscape.

P-*Indicates protected tree by city ordinance* **R-***Indicates proposed tree removal*
*****-*Indicates neighbors tree*



Site observations:
The landscape at 4898 El Camino only has 4 Hollywood juniper trees located on the property. All other surveyed trees were located on the surrounding neighboring properties. The 4 juniper trees are in fair to good condition, but are poorly located in close proximity to the existing building foundation.

Showing Hollywood juniper trees on site

Summary:
The four Hollywood juniper trees located on site are proposed for removal. These trees are not of a protected size. The proposed demolition of the existing building will require the removal of these trees, as impacts from the demolition to the trees is expected to be high.

Showing London plane tree #5

The two surveyed neighboring trees in close proximity to the property line are trees #5 and #6. The neighboring London plane tree #5 is located on the property to the south. This tree is in good condition despite its root zone completely being covered by parking lots on the property side and neighboring property side. Any site improvements within 10 feet of this tree will need to be reviewed by the Project Arborist. The setbacks of the property restrict a building from being located within 10 feet of the tree. This area will likely be a parking lot or paved area similar to the existing conditions on site for the tree. Impacts to this tree are expected to be minor to nonexistent. It is recommended to retain the asphalt area within 10 feet of this tree for the majority of the construction process as this material is protecting roots that have grown underneath it. A fence at the property line shall be placed at a distance of 10 feet from this tree where possible as tree protection fencing, and can consist of the required site fencing at the property line.

Showing Chinese pistache tree #6

The neighboring property to the south has a line of 13 redwood trees at the property line. These trees are 70 feet from the property line and are not expected to be impacted by any proposed construction on this site. These trees are in fair to good condition and act as a screen from the proposed construction for adjacent buildings. The following tree protection plan will help insure the health of the existing trees to be retained.

Showing neighboring redwood trees

Tree Protection Plan:

Tree Protection Zones

The natural landscape will be preserved insofar as practicable by minimizing tree and soil removal; grade changes shall be minimized and will be in keeping with the general appearance of neighboring developed areas. Tree protection zones should be installed and maintained throughout the entire length of the project. Fencing for tree protection zones should be 6' tall, metal chain link material supported by metal 2" diameter poles, pounded into the ground to a depth of no less than 2'. Because of the nature of this site, tree protection zones will need to be modified. Tree protection fencing for the neighboring Chinese pistache street tree #6 will consist of the construction site fencing at the property line, as this tree is far from the property line. The location for the protective fencing for London plane sycamore tree #5 will also be placed at the property line and can consist of the construction site fencing at the property line. The existing asphalt near this tree out to a distance of 10 feet is recommended to be retained for the majority of the project as a tree protection measure. The location of the tree protection fencing may be modified by the planning director. When it is not possible to place tree protection fencing at the dripline because of the proposed work or existing hardscapes, the tree protection fencing shall be placed at the edge of the proposed work or hardscapes. No equipment or materials shall be stored or cleaned inside the protection zones. Areas where tree protection fencing needs to be reduced for access, should be mulched with 6" of coarse wood chips with ½ inch plywood on top. The plywood boards should be attached together in order to minimize movement. The spreading of chips will help to reduce compaction and improve soil structure. All tree protection measures must be installed prior to any demolition or construction activity at the site. No signs, wires, or any other object shall be attached to the trees. If impacts are expected to any of the trees on site, proper mitigation measures will need to be put into action to reduce overall impacts to the trees.

Landscape Buffer
Where tree protection does not cover the entire root zone of the trees, or when a smaller tree protection zone is needed for access, a landscape buffer consisting of wood chips spread to a depth of six inches with plywood or steel plates placed on top will be placed where foot traffic is expected to be heavy. The landscape buffer will help to reduce compaction to the unprotected root zone.

Root Cutting
Any roots to be cut shall be monitored and documented. Large roots (over 2" diameter) or large masses of roots to be cut must be inspected by the site arborist. The site arborist, at this time, may recommend irrigation or fertilization of the root zone. All roots needing to be cut should be cut clean with a saw or lopper. Roots to be left exposed for a period of time should be covered with layers of burlap and kept moist.

Grading
The existing grade level around the trees shall be maintained out to the dripline of the trees when possible. Anytime existing grades are to be changed underneath the dripline of a protected tree more than 3" special mitigation measures will need to be put into action to reduce impacts to the trees. Aeration will need to be provided to root zones of trees that are to experience fill soil being placed within the tree root zones. Grades shall not be lowered when within 3 times the diameter of a protected tree on site. Lowering grades will result in roots needing to be cut and is highly discouraged.

Trenching and Excavation
Trenching for irrigation, drainage, electrical or any other reason shall be done by hand when inside the dripline of a protected tree. Hand digging and the careful placement of pipes below or besides protected roots will significantly reduce root loss, thus reducing trauma to the tree. All trenches shall be backfilled with native materials and compacted to near its original level, as soon as possible. Trenches to be left open for a period of time, will require the covering of all exposed roots with burlap and be kept moist. The trenches will also need to be covered with plywood to help protect the exposed roots.

Irrigation
Imported trees- On a construction site, I recommend irrigation during winter months, 1 time per month. Seasonal rainfall may reduce the need for additional irrigation. During the warm season, April – November, my recommendation is to use heavy irrigation, 2 times per month. This type of irrigation should be started prior to any excavation. The irrigation will improve the vigor and water content of the trees. The on-site arborist may make adjustments to the irrigation recommendations as needed. The foliage of the trees may need cleaning if dust levels are extreme. Removing dust from the foliage will help to reduce mite and insect infestation.

Inspections
It is the contractor's responsibility to contact the site arborist when work is to take place underneath the canopy or dripline of a protected tree on site. Kielty Arborist Services can be reached by email at kkarbor0476@yahoo.com or by phone at (650) 515-9783 (Kevin).

The information included in this report is believed to be true and based on sound arboricultural principles and practices.
Sincerely,
Kevin Kielty Certified Arborist WE#0476A