APPENDIX A NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR CASE NO. 2017-003559ENV

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PLANNING DEPARTMENT

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Notice of Preparation of an Environmental Impact Report

Date:	September 19, 2018
Case No.:	**2017-003559ENV**
Project Title:	**3700 California Street**
Zoning:	RH-2 (Residential, House – Two Family) and RM-2 (Residential, Mixed – Moderate Density) Zoning Districts 80-E and 40-X Height and Bulk Districts
Block/Lot:	Block 1015, Lots 001, 052, and 053; Block 1016, Lots 001–009; and Block 1017, Lots 027 and 028
Lot Size:	213,733 square feet
Project Sponsor	Denise Pinkston, TMG Partners – 415.772.5900 dpinkston@tmgpartners.com
Lead Agency:	San Francisco Planning Department
Staff Contact:	Jeanie Poling – 415. 575.9072 jeanie.poling@sfgov.org

INTRODUCTION

This notice provides a summary description of a proposed project for which the San Francisco Planning Department will be preparing an environmental impact report (EIR). This notice also identifies environmental issues anticipated to be analyzed in the EIR and provides the time and date on which written comments on the scope of the environmental analysis are due (see p. 21 for information on submitting comments). The comments received during the public scoping process will be considered during the preparation of the EIR for this project.

PROJECT SUMMARY

The project sponsor, TMG Partners, proposes redevelopment on a portion of the current site of the California Pacific Medical Center (CPMC) campus at 3700 California Street in the Presidio Heights neighborhood of San Francisco. The project proposes demolition of five of the six existing hospital buildings on the project site, including a five-story accessory parking garage; demolition of a two-level, below-grade parking structure; renovation and adaptive re-use of a portion of the Marshal Hale hospital building at 3698 California Street to residential use; retention and renovation of the existing nine-unit residential building at 401 Cherry Street; and construction of 31 new residential buildings, including some accessory amenity spaces comprised of landscaped common areas and a resident fitness facility. With project development, the residential buildings on the project site would contain 273 dwelling units, including 14 single-family homes and 19 multi-family residential buildings with studios and one-, two-, three-, and four-bedroom units. The new development would reflect the design and scale of the existing neighborhood. The proposed project would be constructed on three blocks, with residential buildings ranging from three to seven stories (36 to 80 feet). With the exception of 12 of the 14 proposed single-family homes that would be on separate lots, all residential buildings would be situated above below-grade parking podiums on each block. A total of 416 parking spaces would be provided, consisting of 392 subterranean spaces in podiums and 24 private spaces located within the 12 single-family residences on separate lots. The proposed project would include shared onsite amenity space, comprised of a resident fitness facility, and approximately 86,200 square feet of private and common open space[1] areas for residents. The project sponsor is seeking Conditional Use Authorization and Planned Unit Development approval for height and certain planning code exceptions. The 14 existing parcels comprising the project site would be merged and subdivided into 16 parcels.

PROJECT LOCATION AND SITE CHARACTERISTICS

The approximately 214,000-square-foot, irregularly shaped project site is in the Presidio Heights neighborhood of San Francisco (see **Figure 1**, p. 4). It encompasses 14 parcels on one entire block (Block 1016, Lots 001–009) and portions of two other blocks (Block 1015, Lots 001, 052, and 053, and Block 1017, Lots 027 and 028). The project site is bounded by Sacramento Street to the north, residential uses to the east, California Street to the south, and medical office and residential uses to the west (see **Figure 2**, p. 5). Cherry Street runs north/south in between project Blocks 1015 and 1016, while Maple Street runs north/south in between project Blocks 1016 and 1017. The project site is located on a south-facing hillside that slopes relatively steeply down to the south and gradually down to the west. As measured at the sidewalk, the ground surface elevation across the project site ranges from 254 feet San Francisco City Datum[2] at the northeast corner of the project site to 210 feet at the southwest corner, a grade change of 44 feet. From west to east, the three blocks that make up the project site are referred to herein as Block A, Block B, and Block C, respectively (see **Figure 3**, p. 6).

The project site is currently occupied by approximately 734,000 square feet of development within seven buildings, including approximately 622,000 square feet of hospital/medical office facilities associated with CPMC; a nine-unit, approximately 7,000-square-foot residential building; and approximately 105,000 square feet of enclosed parking area within two parking garages. These buildings range from three to eight stories (25 to 112 feet), with the most prominent building being the six-story hospital at 3700 California Street. The project site includes a total of 333 enclosed parking spaces and 106 surface parking spaces. Existing land uses on the project site, described below, are summarized in **Table 1** and shown in **Figures 2** and **3**, pp. 5 and 6.

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[1] "Common usable open space" is defined by Planning Code section 135(a) as "an area or areas designed for use jointly by two or more dwelling units (or bedrooms in group housing)."

[2] San Francisco City Datum establishes the City's zero point for surveying purposes at approximately 8.6 feet above the mean sea level established by the 1929 U.S. Geological Survey datum.

TABLE 1. EXISTING LAND USES AT THE PROJECT SITE

Address	Assessor's Block/Lot(s)	Building Square Footage	Zoning District	Height/ Bulk District	Present Use
3905 Sacramento Street	1015/052	26,000	RH-2 [a]	40-X[b]	Medical office building
401 Cherry Street	1015/001	7,000	RH-2	40-X	Residential
460 Cherry Street	1015/053	88,000	RM-2	80-E[c]	Parking garage
3700 California Street	1016/002–009	360,000	RM-2 and RH-2[d]	80-E	Hospital
3801 Sacramento Street	1016/001 and 002	69,000	RM-2	80-E	Outpatient/research
3773 Sacramento Street	1017/028	17,000 149,000	RM-2	80-E	Parking garage Hospital (vacant)
3698 California Street (Marshal Hale building)	1017/027 and 028	18,000	RM-2	80-E	Breast Health Center, Newborn Connections, Skilled Nursing Facility, Alzheimer's Residential Care, and other support services
Total hospital square footage		622,000			
Total parking square footage		105,000			
Total residential square footage		7,000			
Total square footage		**734,000**			

Source: California Pacific Medical Center, 2008 Institutional Master Plan, pp. 98–100.
Notes:

a. RH-2: (Residential, House – Two Family).

b. 40-X: Buildings within the 40-X district cannot exceed 40 feet in height and do not have a bulk limit.

c. 80-E: Buildings within the 80-E district cannot exceed 80 feet in height. Building areas exceeding 65 feet in height have bulk limit dimensions of 110 feet (length) and 140 feet (diagonal).

d. RM-2: (Residential, Mixed – Moderate Density); Lots 004–009 are located in the RH-2 zoning district.

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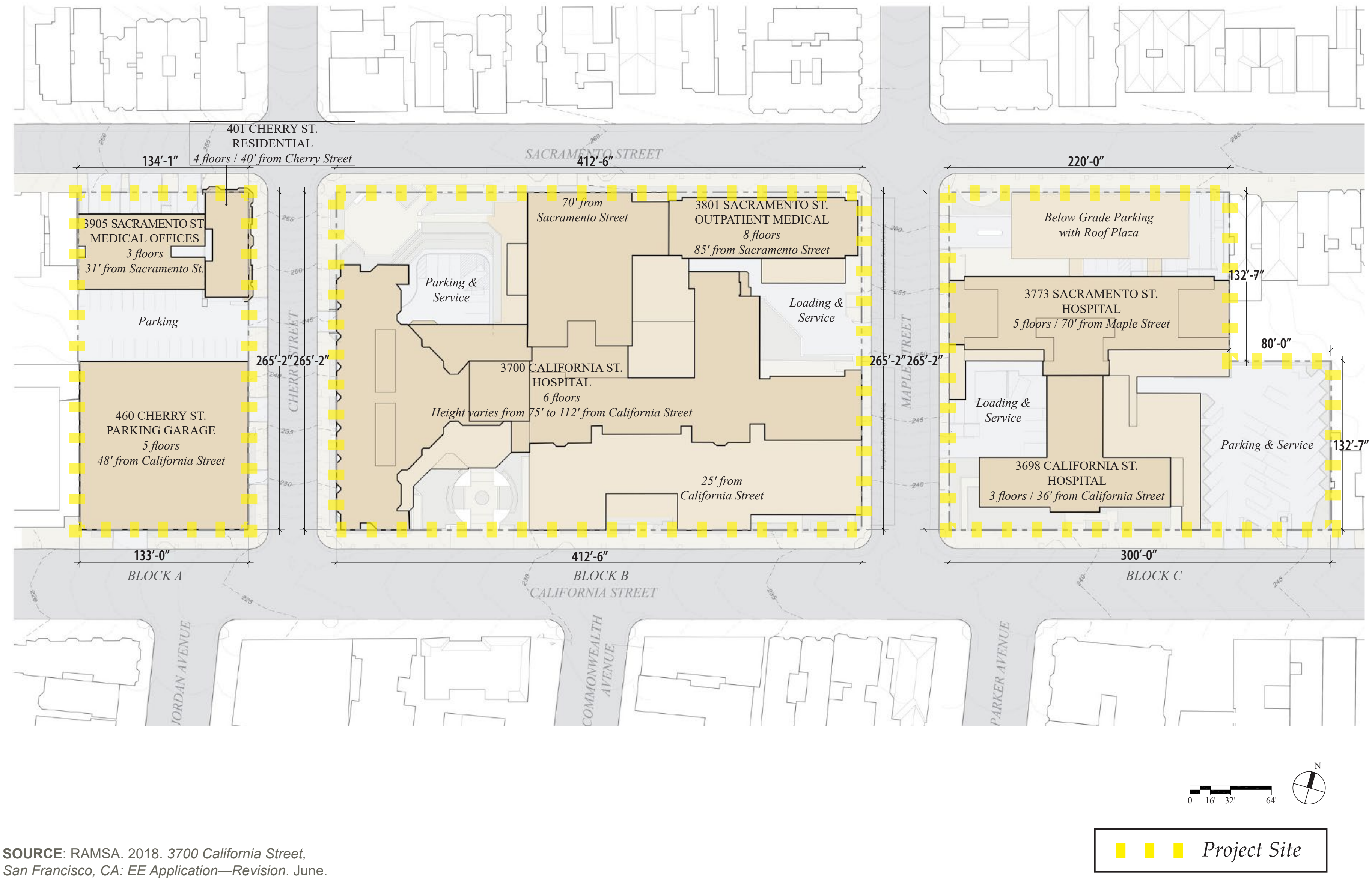
Figure 1
Project Site Location

Graphics/00140.18 3700 California Street (8/8/2018) TG

Figure 2
Existing Land Uses



Graphics/00140.18 3700 California Street (8-22-2018) TG

SOURCE: RAMSA. 2018. *3700 California Street, San Francisco, CA: EE Application—Revision*. June.

Figure 3
Existing Site Plan

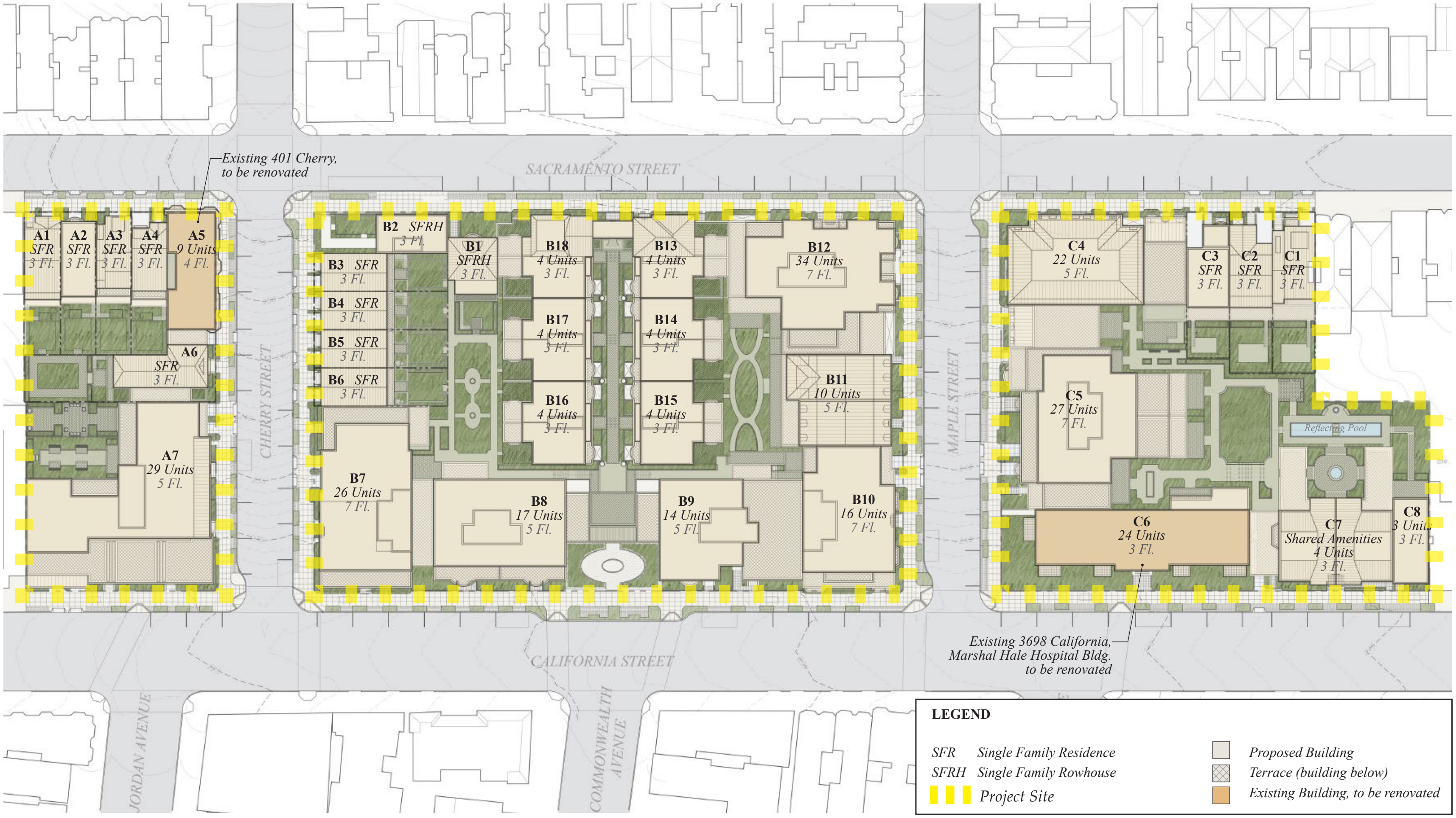
PROJECT DESCRIPTION

The proposed project would demolish five of the six existing hospital buildings on the project site, including a five-story accessory parking garage; demolish the two-level, below-grade parking structure at 3773 Sacramento Street; renovate the existing nine-unit residential building at 401 Cherry Street; convert a portion of the Marshal Hale hospital building at 3698 California Street to residential use; and construct 31 new residential buildings and add accessory amenity spaces comprised of landscaped common areas and a resident fitness facility. As part of the hospital demolition, two existing generators would be removed. In total, the proposed project would include 273 residential units, comprised of nine existing units and 264 new units. The proposed project would construct or renovate approximately 618,200 square feet of residential uses and accessory amenity space on Blocks A, B, and C and excavate up to 75 feet below street level (approximately 61,800 cubic yards) for below-grade parking podiums totaling approximately 221,000 square feet of parking area. In addition, the proposed project would include approximately 86,200 square feet of private and common open space areas. **Figure 4**, p. 9, depicts the proposed site plan, while **Table 2** summarizes project characteristics by block and building. Overall, the project proposes to reduce the approximately 629,000 square feet of existing hospital/residential uses and 439 parking spaces to approximately 618,200 square feet of residential use with 416 parking stalls. A description of the development proposed on each block is provided below. Proposed building elevations on each block are shown in **Figure 5**, p. 11.

TABLE 2. PROPOSED PROJECT CHARACTERISTICS

<table>
<tr><th>Building[a]</th><th>Lot Area</th><th>Floors</th><th>Roof Height</th><th>Building Area (square feet)</th><th>Total Number of Units</th><th>Parking Spaces</th><th>Private Open Space</th><th>Common Open Space</th></tr>
<tr><td colspan="9">Block A</td></tr>
<tr><td>A1 (SFR)</td><td>2,500</td><td>3</td><td>40</td><td>5,200</td><td>1</td><td>2</td><td>1,100</td><td>n/a</td></tr>
<tr><td>A2 (SFR)</td><td>2,500</td><td>3</td><td>40</td><td>4,800</td><td>1</td><td>2</td><td>1,100</td><td>n/a</td></tr>
<tr><td>A3 (SFR)</td><td>2,500</td><td>3</td><td>40</td><td>4,800</td><td>1</td><td>2</td><td>1,300</td><td>n/a</td></tr>
<tr><td>A4 (SFR)</td><td>2,500</td><td>3</td><td>40</td><td>4,600</td><td>1</td><td>2</td><td>1,200</td><td>n/a</td></tr>
<tr><td>A5 (MF, existing)</td><td>2,800</td><td>4</td><td>40</td><td>7,000</td><td>9</td><td>in podium</td><td>n/a[b]</td><td>0</td></tr>
<tr><td>A6 (SFR)</td><td>5,000</td><td>3</td><td>40</td><td>5,900</td><td>1</td><td>2</td><td>2,900</td><td>n/a</td></tr>
<tr><td>A7 (MF)</td><td>17,600</td><td>5</td><td>65</td><td>61,200</td><td>29</td><td>57</td><td>4,600</td><td>2,900</td></tr>
<tr><td>Block A Total</td><td>35,400</td><td></td><td></td><td>93,500</td><td>43</td><td>67</td><td>12,200</td><td>2,900</td></tr>
<tr><td colspan="9">Block B</td></tr>
<tr><td>B3 (SFR)</td><td>2,500</td><td>3</td><td>46</td><td>4,500</td><td>1</td><td>2</td><td>1,100</td><td>n/a</td></tr>
<tr><td>B4 (SFR)</td><td>2,500</td><td>3</td><td>46</td><td>4,500</td><td>1</td><td>2</td><td>1,100</td><td>n/a</td></tr>
<tr><td>B5 (SFR)</td><td>2,500</td><td>3</td><td>46</td><td>4,500</td><td>1</td><td>2</td><td>1,100</td><td>n/a</td></tr>
<tr><td>B6 (SFR)</td><td>2,500</td><td>3</td><td>46</td><td>4,500</td><td>1</td><td>2</td><td>1,100</td><td>n/a</td></tr>
<tr><td>B1 (SFRH)</td><td rowspan="14">99,400</td><td>3</td><td>40</td><td>4,900</td><td>1</td><td rowspan="14">215</td><td>1,400</td><td rowspan="14">11,500</td></tr>
<tr><td>B2 (SFRH)</td><td>3</td><td>40</td><td>5,800</td><td>1</td><td>1,300</td></tr>
<tr><td>B7 (MF)</td><td>7</td><td>80</td><td>48,200</td><td>26</td><td>2,200</td></tr>
<tr><td>B8 (MF)</td><td>5</td><td>66</td><td>35,900</td><td>17</td><td>2,700</td></tr>
<tr><td>B9 (MF)</td><td>5</td><td>66</td><td>35,000</td><td>14</td><td>3,500</td></tr>
<tr><td>B10 (MF)</td><td>7</td><td>80</td><td>44,000</td><td>16</td><td>900</td></tr>
<tr><td>B11 (MF)</td><td>5</td><td>58</td><td>21,200</td><td>10</td><td>700</td></tr>
<tr><td>B12 (MF)</td><td>7</td><td>80</td><td>66,000</td><td>34</td><td>3,000</td></tr>
<tr><td>B13 (MF)</td><td>3</td><td>40</td><td>10,400</td><td>4</td><td>1,000</td></tr>
<tr><td>B14 (MF)</td><td>3</td><td>40</td><td>11,600</td><td>4</td><td>1,000</td></tr>
<tr><td>B15 (MF)</td><td>3</td><td>40</td><td>11,600</td><td>4</td><td>1,000</td></tr>
<tr><td>B16 (MF)</td><td>3</td><td>40</td><td>11,600</td><td>4</td><td>1,000</td></tr>
<tr><td>B17 (MF)</td><td>3</td><td>40</td><td>11,600</td><td>4</td><td>1,000</td></tr>
<tr><td>B18 (MF)</td><td>3</td><td>40</td><td>10,400</td><td>4</td><td>1,000</td></tr>
<tr><td>Block B Total</td><td>109, 400</td><td></td><td></td><td>346,200</td><td>147</td><td>223</td><td>26,100</td><td>11,500</td></tr>
<tr><td colspan="9">Block C</td></tr>
<tr><td>C1 (SFR)</td><td>3,400</td><td>3</td><td>38</td><td>5,500</td><td>1</td><td>2</td><td>1,500</td><td>n/a</td></tr>
<tr><td>C2 (SFR)</td><td>3,400</td><td>3</td><td>36</td><td>5,700</td><td>1</td><td>2</td><td>1,400</td><td>n/a</td></tr>
<tr><td>C3 (SFR)</td><td>3,100</td><td>3</td><td>42</td><td>5,700</td><td>1</td><td>2</td><td>1,100</td><td>n/a</td></tr>
<tr><td>C4 (MF)</td><td rowspan="5">59,100</td><td>5</td><td>58</td><td>50,400</td><td>22</td><td rowspan="5">120</td><td>4,000</td><td rowspan="5">19,000</td></tr>
<tr><td>C5 (MF)</td><td>7</td><td>80</td><td>59,200</td><td>27</td><td>5,700</td></tr>
<tr><td>C6 (MF)</td><td>3</td><td>36</td><td>18,800</td><td>24</td><td>900</td></tr>
<tr><td>C7(Amenity/MF)</td><td>3</td><td>50</td><td>28,700</td><td>4</td><td>n/a</td></tr>
<tr><td>C8 (MF)</td><td>3</td><td>38</td><td>4,200</td><td>3</td><td>—</td></tr>
<tr><td>Block C Total</td><td>69,000</td><td></td><td></td><td>178,200</td><td>83</td><td>126</td><td>14, 500</td><td>19,000</td></tr>
<tr><td>Proposed Project Total</td><td>213,800</td><td></td><td></td><td>618,200</td><td>273</td><td>416</td><td>52,800</td><td>33,400</td></tr>
</table>

Note: Numbers may not sum due to rounding.
SFR = single family residence. MF = multi-family. SFRH = single-family rowhouse (on podium).
[a] Refer to **Figure 4** for building locations.
[b] Building A5 is an existing noncomplying structure.



SOURCE: RAMSA. 2018. *3700 California Street, San Francisco, CA: EE Application—Revision*. June.

Graphics/00140.18 3700 California Street (8-28-2018) TG

Figure 4
Proposed Site Plan

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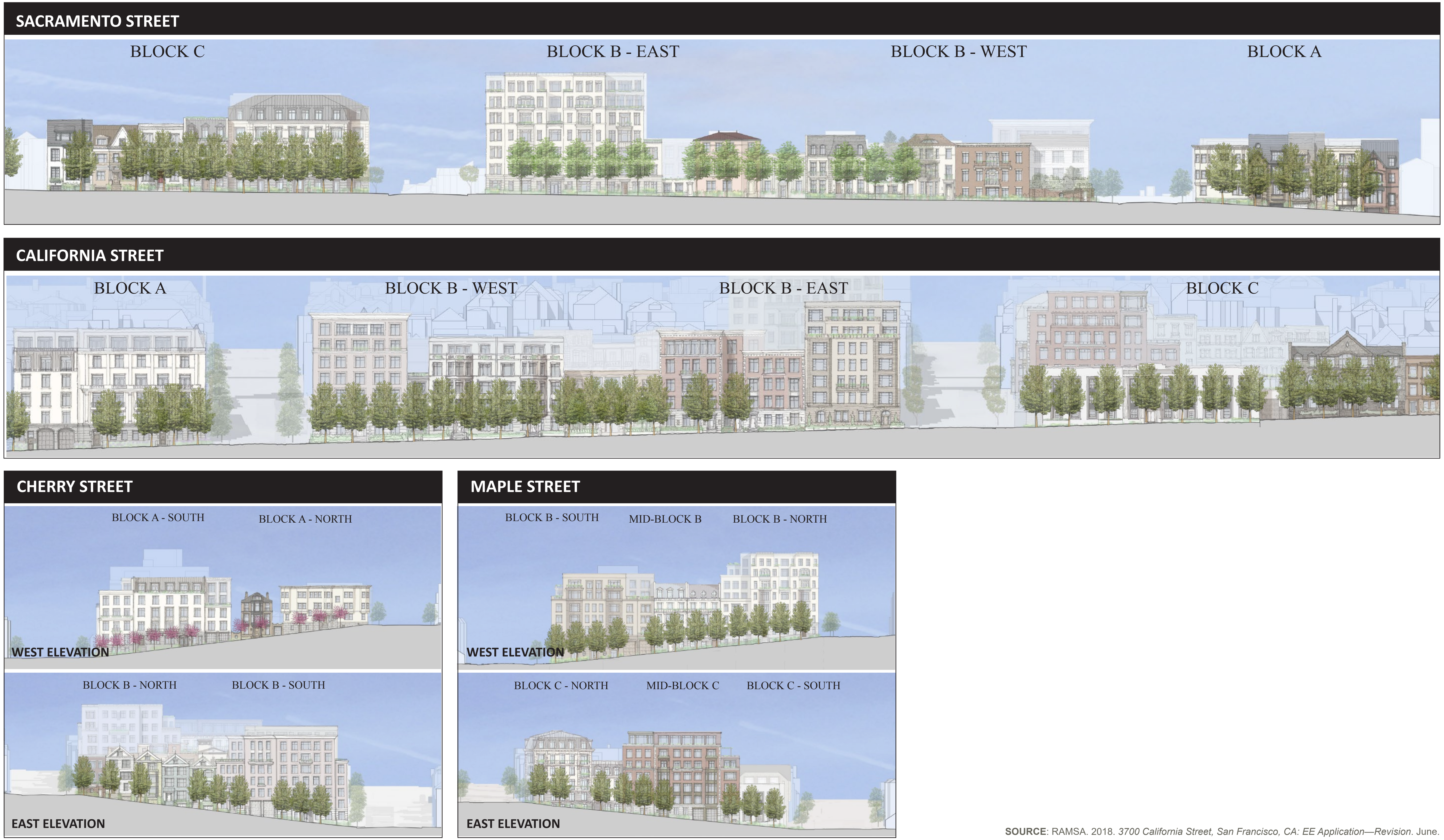

SOURCE: RAMSA. 2018. *3700 California Street, San Francisco, CA: EE Application—Revision*. June.

Graphics/00140.18 3700 California Street (8-22-2018) TG

Figure 5
Proposed Elevations

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Proposed Uses on Block A. Block A is bounded by Sacramento Street to the north, Cherry Street to the east, California Street to the south, and medical office and residential uses to the west. The project would demolish the medical office building at 3905 Sacramento Street and the parking garage at 460 Cherry Street on Block A. It would retain and renovate the nine-unit residential building at 401 Cherry Street (Building A5). Six new residential buildings would be constructed, comprised of both single-family and multi-family buildings and ranging in height from three stories (40 feet) in the northern portion of Block A to five stories (65 feet) in the southern portion of Block A. When accounting for rooftop appurtenances (e.g., stair, elevator, or mechanical penthouses), building heights would range from 42 to 75 feet. Along Sacramento Street and on Cherry Street (south of 401 Cherry Street), five three-story, single-family residences (Buildings A1, A2, A3, A4, and A6 on **Figure 4**, p. 9) with a height of 40 feet would be constructed on separate lots, with each lot providing two parking spaces and at least one Class 1[3] bicycle space. A five-story, 29-unit multi-family residential building (Building A7) would be constructed at the corner of California and Cherry streets; this building would have a height of 65 feet. Block A would be excavated up to 30 feet below ground surface to construct a two-level subterranean parking podium with 57 parking spaces and 65 Class 1 bicycles spaces. Approximately 12,200 square feet of private open space and 2,900 square feet of common open space for residents would be provided on Block A.

Proposed Uses on Block B. Block B is bounded by Sacramento Street to the north, Maple Street to the east, California Street to the south, and Cherry Street to the west. The proposed project would demolish the two existing buildings on Block B and construct 18 new residential buildings ranging in height from three stories (40 feet) to seven stories (80 feet). When accounting for rooftop appurtenances (e.g., stair, elevator, or mechanical penthouses), building heights would range from 42 to 90 feet. The northwest and central portions of Block B would be occupied by three-story buildings, including six single-family residences (Buildings B1, B2, B3, B4, B5, and B6 on **Figure 4**, p. 9) and six three-story, multi-family buildings internally oriented along a central walkway (Buildings B13, B14, B15, B16, B17, and B18). Taller multi-family buildings would be located along the California Street and Maple Street frontages, including Buildings B7, B10, and B12, which would have a height of 80 feet (seven stories), and Buildings B8, B9, and B11, which would range in height from 58 to 66 feet (five stories). A total of 141 multi-family dwelling units would be provided on Block B. Block B would be excavated up to 75 feet below ground surface to create a two-level, below-grade parking structure that would include 215 parking spaces and 221 Class 1 bicycles spaces. The four single-family buildings on separate lots (B3, B4, B5, and B6) would each contain two parking spaces and at least one Class 1 bicycle parking space. Approximately 26,100 square feet of private open space and 11,500 square feet of common open space for residents would be provided on Block B.

Proposed Uses on Block C. Block C is bounded by Sacramento Street to the north, residential uses to the east, California Street to the south, and Maple Street to the west. The proposed project would demolish all the buildings within the project site on Block C, save for renovation and adaptive reuse of the older portion of the Marshal Hale building at 3698 California Street (i.e., the portion fronting California Street). The proposed project would also demolish the two-level, below-grade parking structure at 3773 Sacramento Street. The project would construct seven new buildings ranging in height from three to seven stories (36 to 80 feet). When accounting for rooftop appurtenances (e.g., stair, elevator, or

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[3] Class 1 spaces are defined by Planning Code section 155.1(a) as "spaces in secure, weather-protected facilities intended for use as long-term, overnight, and work-day bicycle storage by dwelling unit residents, nonresidential occupants, and Employees."

mechanical penthouses), building heights would range from 38 to 90 feet. Uses fronting Sacramento Street would include three three-story, single-family residences (Buildings C1, C2, and C3 on **Figure 4**, p. 9) and a five-story, multi-family residential building (Building C4) with 22 units. Central to Block C would be a seven-story, 80-foot-tall multi-family residential building (Building C5) with 27 units. The rear wing and central connector portions of the Marshal Hale building at 3698 California Street would be demolished, and the older portion fronting California Street would be retained and renovated to provide 24 residential units across the building's three floors (Building C6). Two three-story buildings would front California Street east of Building C6: Building C7 would include four multi-family residential units as well as a shared amenities facility (i.e., fitness facility), and Building C8 would include three multi-family residential units. Block C would be excavated up to 17 feet below ground surface to create a two-level, below-grade parking structure that would include 120 parking spaces and 125 Class 1 bicycle spaces. The three single-family residences that would be located on separate lots (C1, C2, and C3) would each include two parking spaces and at least one Class 1 bicycle parking space. Approximately 14,500 square feet of private open space and 19,000 square feet of common open space would be provided for residents on Block C.

Open Space. The proposed project would include private open space areas that would be directly accessible from individual units, as well as common open space areas that would be accessible to all project residents. In total, the project would provide approximately 86,200 square feet of open space comprised of 52,800 square feet of private open space and 33,400 square feet of common open space. The project would not include publicly accessible open space.

Parking, Bicycle, and Loading Facilities. The proposed project would include vehicle and bicycle parking spaces for residents, Americans with Disabilities Act (ADA)–compliant vehicle parking spaces, and loading zones. A total of 416 parking spaces would be provided, including 392 subterranean spaces and 24 at-grade private spaces for single-family residences with two-car garages. The proposed project would provide 411 Class 1 bike storage spaces, 22 Class 2 bike storage spaces,[4] 13 spaces for cargo bikes, a bike repair station, and two to seven carshare spaces.[5] Multiple ingress and egress access points would be provided to the resident parking areas. Internal loading zones would be incorporated into the podium parking levels at Block B, accessible from Cherry Street and with an exit onto Maple Street. Block C would also have a loading space with ingress from California Street.

Streetscape and Sidewalk Improvements. The project proposes widening the existing 7.8-foot-wide sidewalks along the project's frontage on Maple Street and making appropriate sidewalk and street improvements on the perimeter of the project site. Proposed streetscape improvements would include enhanced sidewalk and entry paving, approximately 4,500 square feet of planting, light fixtures, sidewalk bulb-outs, bike racks, and new street trees. The project would remove 41 of the 77 existing street trees along the project site frontages and plant 68 new street trees, for a total of 104 street trees (27 net new street trees). The project would also include a new crosswalk with flashing lights across California Street from west of Commonwealth Avenue to east of Maple Street.

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[4] Class 2 bike storage spaces are defined by Planning Code section 155.1(a) as "spaces located in a publicly-accessible, highly visible location intended for transient or short-term use by visitors, guests, and patrons to the building or use."

[5] The project would meet or exceed Planning Code carshare requirements, subject to approval of the Transportation Management Plan.

Foundation and Excavation. Development on Blocks A and C is anticipated to be constructed on a mat-supported pile foundation, while development on Block B would be constructed on a mat foundation. To accommodate the below-grade parking levels and foundation, the project would entail excavation to maximum depths of 13 feet on Block A; 75 feet on Block B; and 17 feet on Block C. The project would excavate a total of approximately 61,800 cubic yards of soil across Blocks A, B, and C, which would be hauled off-site. The project would not require impact pile driving.

Construction. Construction activities would include demolition of existing uses, site preparation and grading, excavation and shoring, building construction, and site finishing work. The duration of construction for the entire project is estimated to be a total of 41 months, with anticipated completion in 2024. It is anticipated that project construction would be conducted in three distinct phases by block, beginning at Block C and moving west, with the potential for construction phases to overlap. The exact construction schedule would be dictated by market conditions at the time of project construction. The EIR analysis will conservatively assume that project construction would be completed within the shortest potential timeframe and that construction phases would overlap. Construction would generally occur between the hours of 7:00 a.m. and 8:00 p.m., up to seven days a week. Limited construction may occur outside of those hours to minimize traffic disruption during improvements to public right- of-way. Staging of construction equipment would occur on the project site. If sidewalks are required for construction staging, pedestrian walkways would be constructed in the curb lanes.

REQUIRED PROJECT APPROVALS

This section describes the approvals required for the proposed project.

Planning Commission

- Adoption of findings under the California Environmental Quality Act (CEQA)
- Adoption of Findings of Consistency with the San Francisco General Plan and with priority policies of Planning Code section 101.1
- Conditional Use Authorization to permit development of buildings with heights in excess of 50 feet in an RM district and in excess of 40 feet in an RH district, all within the 80-E height and bulk district, as well as Planned Unit Development approval of rear yard modifications (Planning Code section 134), building front moderations (section 144.1), minor deviation from height measurement (sections 261 and 304(d)(6)), and projections over streets (section 136)
- Approval of a Transportation Demand Management Plan (Planning Code section 169) to provide a strategy for managing the transportation demands created by the project
- Approval of a Streetscape Plan (Planning Code section 138.1)

Board of Supervisors

- Findings of consistency with the San Francisco General Plan for subdivision and changes to public streets and sidewalks
- Approval of Final Subdivision Map(s), including any dedications and easements for public improvements, and acceptance of public improvements, as necessary

Actions by other City Departments

Department of Building Inspection

- Review and approval of demolition, grading, and building permits
- Night noise permit for work performed outside the normal 7 a.m. to 8 p.m. construction hours, if necessary

San Francisco Public Works

- Approval of the merger of 14 existing parcels and the subsequent subdivision into 16 new parcels
- If sidewalk(s) are used for construction staging and pedestrian walkways are constructed in the curb lane(s), approval of a street space permit from the Bureau of Street Use and Mapping
- Approval of a permit to remove and plant street trees and partial waiver from Public Works Code section 806(d) to provide 30 fewer street trees than required
- Approval of construction within the public right-of-way (e.g., curb cuts, bulb-outs, sidewalk extensions, and new crosswalk)
- Approval of an encroachment permit or a street improvement permit for streetscape improvements
- Night noise permit for work performed in the public right-of-way outside the normal 7 a.m. to 8 p.m. construction hours, if necessary

San Francisco Municipal Transportation Agency

- Approval of modifications to on-street loading and other colored curb zones
- Approval of a special traffic permit from the Sustainable Streets Division if sidewalk(s) are used for construction staging and pedestrian walkways are constructed in the curb lane(s)
- Approval of the placement of bicycle racks in the public right-of-way

San Francisco Public Utilities Commission

- Review and approval of the following:
  - Construction permit for non-potable water system
  - Plumbing plans and documentation for non-potable water reuse system per the Non-potable Water Ordinance
  - Erosion and sediment control plan per Public Works Code article 4.1
  - Changes to sewer laterals (connections to the City sewer system)
  - Changes to existing publicly owned fire hydrants, water service laterals, water meters, and/or water mains
  - Size and location of new fire, standard, and/or irrigation water service laterals
  - Post-construction stormwater design guidelines, including a stormwater control plan, in accordance with City's 2016 Stormwater Management Requirements and Design Guidelines
  - Project's landscape and irrigation plans per the Water Efficient Irrigation Ordinance and the San Francisco Public Utility Commission Rules & Regulations Regarding Water Service to Customers
  - Groundwater dewatering wells (if they are to be used during construction), per San Francisco Health Code article 12B (Soil Boring and Well Regulation Ordinance) (joint approval with the San Francisco Department of Public Health)

San Francisco Department of Public Health

- Review and approval of a site mitigation plan, in accordance with San Francisco Health Code article 22A (Maher Ordinance)

- Review and approval of a construction dust control plan, in accordance with San Francisco Health Code article 22B (Construction Dust Control Ordinance)
- Review and approval of design and engineering plans for a non-potable water reuse system and testing prior to issuance of Permit to Operate
- Review and approval of groundwater dewatering wells (if they are to be used during construction), (joint approval with the San Francisco Public Utilities Commission)

Actions by other Government Agencies

- Approval of any necessary air quality permits for installation, operation, and testing (e.g., Authority to Construct/Permit to Operate) of individual air pollution sources, such as boilers (Bay Area Air Quality Management District)

SUMMARY OF POTENTIAL ENVIRONMENTAL ISSUES

The proposed project could result in potentially significant environmental impacts. The San Francisco Planning Department will prepare an initial study and an EIR to evaluate the physical environmental effects of the proposed project. The initial study will assess both project-specific and cumulative impacts for all topics required under CEQA and will identify which environmental topic areas may be significantly impacted by the proposed project. As required by CEQA, the EIR will further examine those issues identified in the initial study to have potentially significant impacts, identify mitigation measures, and analyze whether the proposed mitigation measures would reduce potentially significant environmental impacts to a less-than-significant level. The initial study will be published with the draft EIR, with a minimum 45-day public review period, and will be included as an appendix to the draft EIR.

Although subject to change during environmental analysis, it is anticipated that the EIR will address the following environmental topics: transportation and circulation, and air quality; it is anticipated that the initial study will address the following environmental topics: land use and planning, population and housing, cultural resources (including tribal cultural resources), noise, greenhouse gas emissions, wind and shadow, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral and energy resources, and agricultural and forestry resources. If, during environmental analysis, significant impacts are identified that cannot be mitigated to a less-than-significant level, the environmental topic will be addressed in the EIR and not in the initial study.

All topics are described briefly below. For all topics, whether included in the initial study or the EIR, the analysis will consider the impacts of the proposed project individually as well as cumulative impacts resulting from the project in combination with other past, present, or reasonably foreseeable future projects.

The project meets all of the requirements of a transit-oriented infill development project under Public Resources Code section 21099 (Senate Bill 743); therefore, aesthetics and parking will not be considered in determining if the project has the potential to result in significant environmental effects.

Land Use and Planning

The land use and planning analysis will describe existing land uses on the project site and in the vicinity and analyze whether the proposed project would physically divide an established community or result in conflicts with San Francisco General Plan policies or other land use plans or policies that are adopted for the purpose of mitigating an environmental impact.

Population and Housing

The population and housing analysis will include analysis of the potential impact of the proposed project related to population, employment, and housing.

Cultural Resources

To assess historical resources considered under CEQA, a historic resources evaluation (HRE) has been prepared by a qualified consultant and independently evaluated by the San Francisco Planning Department's Preservation staff, who will prepare a historic resources evaluation response (HRER). The cultural resources analysis will summarize applicable portions of the HRE and HRER. If historic resources are identified on the project site, the cultural resources analysis will evaluate potential impacts on those resources and prescribe mitigation measures where feasible. In addition, the cultural resources analysis will address potential effects on tribal cultural resources, archeological resources, and human remains.

Transportation and Circulation

The proposed residential uses would generate fewer vehicle trips and reduce vehicle miles traveled (VMT) compared to the existing hospital use. Transportation and circulation issues will be analyzed in accordance with the San Francisco Planning Department's Transportation Impact Analysis Guidelines for Environmental Review (October 2002), Planning Commission Resolution 19579 establishing VMT as the appropriate transportation review standard, and other planning department guidelines. The EIR will include an analysis of specific transportation impacts associated with the proposed project's trip generation characteristics and circulation plan. The EIR will also analyze transit conditions, traffic hazards, pedestrian and bicycle conditions, commercial/passenger loading, emergency vehicle access, and construction impacts.

Noise

The noise analysis will evaluate the long-term impacts of noise that could result from the proposed project. Short-term construction-related noise and vibration impacts on nearby sensitive land uses will also be evaluated.

Air Quality

The air quality analysis will address consistency of the proposed project with applicable air quality plans, the potential for the proposed project to result in emissions of criteria air pollutants and other toxic air contaminants that may affect sensitive populations, as well as the potential for the proposed project to result in sources of odor. The air quality analysis will include quantification of both construction-related and operational criteria air pollutant emissions. The analysis will also summarize the results of a health risk assessment prepared to evaluate potential health effects of emissions from project construction.

Greenhouse Gas Emissions

The greenhouse gas emissions analysis will address the consistency of the proposed project with the San Francisco Greenhouse Gas Reduction Strategy. The analysis will determine if the proposed project could result in greenhouse gas emissions that would result in a significant impact on the environment.

Wind and Shadow

The wind analysis will evaluate the potential for the proposed project to alter pedestrian-level wind conditions in a manner that would substantially affect public areas. Based on a preliminary shadow fan analysis prepared by the San Francisco Planning Department, the project would not cast shadows on any City parks or publically accessible open space.

Recreation

The recreation analysis will consider whether the proposed project would increase the use of existing parks or require the construction or expansion of parks and recreational facilities, which could have a physical effect on the environment.

Utilities and Service Systems

The utilities and service systems analysis will consider potable water and wastewater treatment capacity and will discuss disposal of solid waste that may be generated by the proposed project. This topic will also include an assessment of whether the proposed project would require the construction of new water supply, wastewater treatment, and/or stormwater drainage facilities, and if so, whether that construction could result in adverse environmental effects.

Public Services

The public services analysis will address whether existing public service providers (e.g., police and fire protection, schools, parks, or other public facilities) would be adversely affected by the proposed project so as to require new or physically altered facilities, the construction of which could result in adverse environmental effects.

Biological Resources

The biological resources analysis will discuss existing biological resources or habitats that could be affected by the proposed project, such as trees or native resident or migratory bird species, and the potential for the proposed project to result in a substantial adverse effect on these biological resources or their habitats.

Geology and Soils

The geology and soils analysis will evaluate whether the proposed project would exacerbate risks related to seismic activity, liquefaction, landslides, erosion, soil stability, and risks to life or property. The analysis will also determine if the proposed project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Hydrology and Water Quality

The hydrology and water quality analysis will evaluate the potential of the proposed project to violate water quality standards or exceed waste discharge requirements or result in adverse effects on groundwater supplies. The analysis will also consider the degree to which the proposed project could affect drainage patterns or create water runoff that could affect stormwater drainage systems. The analysis will also consider the potential of the proposed project to exacerbate risks associated with the placement of housing within an identified flood hazard area.

Hazards and Hazardous Materials

The hazards and hazardous materials analysis will evaluate the potential for the proposed project to create a significant hazard to the public or the environment related to hazardous materials through the routine transport, use, or disposal of hazardous materials; the emission or release of hazardous material into soils or groundwater; or interference with an emergency response plan.

Mineral and Energy Resources

The mineral and energy resources analysis will evaluate potential impacts of the proposed project related to existing mineral and energy resources.

Agricultural and Forestry Resources

The agricultural and forestry resources analysis will evaluate the potential impacts of the proposed project on existing agricultural and forestry resources.

Other CEQA Issues

The initial study and EIR analyses will identify feasible mitigation measures to lessen or reduce significant environmental impacts of the proposed project.

The EIR will also address other topics required by CEQA, including growth-inducing impacts; significant unavoidable impacts; significant irreversible impacts; any known controversy associated with environmental effects, mitigation measures, or alternatives; and issues to be resolved by the decision makers.

ALTERNATIVES

Alternatives to be evaluated in the EIR for the proposed project will include, but not be limited to, a No Project Alternative, which assumes what would reasonably be expected to occur in the foreseeable future if the proposed project were not approved, considering CPMC's plans to relocate to a new Van Ness Campus in 2020; the analysis will also include one or more additional alternatives to address other significant impacts of the proposed project identified in the EIR. The alternatives considered and the analysis thereof will be based on the criteria of the State CEQA Guidelines, section 15126.6 (Consideration and Discussion of Alternatives to the Proposed Project).

FINDING

This project may have a significant effect on the environment and an EIR is required. This determination is based on the criteria of the State CEQA Guidelines, sections 15063 (Initial Study), 15064

(Determining Significant Effect), and 15065 (Mandatory Findings of Significance). The purpose of the EIR is to provide information about potential significant physical environmental impacts of the proposed project and identify possible ways to minimize the significant impacts. The EIR will also describe and analyze possible alternatives to the proposed project. Preparation of an NOP or EIR does not indicate a decision by the City to approve or to disapprove a proposed project. However, prior to making any such decision, the decision makers must review and consider the information contained in the EIR.

PUBLIC SCOPING PROCESS

Written comments will be accepted until 5:00 p.m. on **October 19, 2018**. Written comments should be sent to **Jeanie Poling**, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103, or jeanie.poling@sfgov.org, and should reference the project title and case number provided on the front of this notice.

State Agencies: If you work for a responsible state agency, we need to know the views of your agency regarding the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering a permit or other approval for this project. Please include the name of a contact person in your agency.

Members of the public are not required to provide personal identifying information when they communicate with the planning commission or the planning department. All written or oral communications, including submitted personal contact information, may be made available to the public for inspection and copying upon request and may appear on the Department's website or in other public documents.

September 19, 2018
Date

for
Lisa Gibson
Environmental Review Officer

APPENDIX B INITIAL STUDY

TABLE OF CONTENTS

A. PROJECT DESCRIPTION **1**

B. PROJECT SETTING **5**

Cumulative Setting 7

C. COMPATIBILITY WITH EXISTING ZONING AND PLANS **7**

D. SUMMARY OF ENVIRONMENTAL EFFECTS **7**

CEQA Section 21099(b)(1) (Senate Bill 743) 8

Approach to Analysis 9

E. EVALUATION OF ENVIRONMENTAL EFFECTS **13**

1. Land Use and Planning 13
2. Population and Housing. 16
3. Cultural Resources 24
4. Tribal Cultural Resources 41
5. Transportation and Circulation 43
6. Noise 43
7. Air Quality 44
8. Greenhouse Gas Emissions 45
9. Wind 50
10. Shadow 54
11. Recreation 56
12. Utilities and Service Systems 64
13. Public Services 77
14. Biological Resources 85
15. Geology and Soils 94
16. Hydrology and Water Quality 108
17. Hazards and Hazardous Materials 117
18. Mineral Resources 135
19. Energy 137
20. Agriculture and Forestry Resources 142
22. Mandatory Findings of Significance 145

F. MITIGATION MEASURES AND IMPROVEMENT MEASURES **146**

G. PUBLIC NOTICE AND COMMENT **156**

H. DETERMINATION 157

I. INITIAL STUDY PREPARERS 158

LIST OF TABLES

Table 1. Onsite Residents under the Proposed Project 18
Table 2. City and Bay Area Population Projections, 2020–2030 19
Table 3. Open Spaces within 0.5 Mile of Project Site 58
Table 4. Proposed Project Water Demand Relative to Total Retail Water Demand (mgd) 71
Table 5. Enrollment in San Francisco Unified School District Schools 81
Table 6. Students Generated by the Proposed Project 82

LIST OF FIGURES

Figure 1 Regional Faults 98

ACRONYMS AND ABBREVIATIONS

ABAG	Association of Bay Area Governments
ADA	Americans with Disabilities Act
ADRP	archaeological data recovery plan
ALS	advanced life support
AMP	Archaeological Monitoring Program
APN	Assessor's Parcel Number
Assembly Bill 939	California Integrated Waste Management Act of 1989
BMPs	best management practices
BTU	British thermal units
Cal/OSHA	California Occupational Safety and Health Administration
California Register	California Register of Historical Resources
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City and County of San Francisco
CPMC	California Pacific Medical Center
DBI	Department of Building Inspection
EIR	environmental impact report
ERO	Environmental Review Officer
FARR	final archaeological resources report
GHG	greenhouse gas
HRER	CPMC California Hospital Historic Resource Evaluation Response
kWh	kilowatt-hours
LID	low-impact development
LRDP	Long-Range Development Plan
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MLD	most likely descendant
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center
OPR	Office of Planning and Research
PCB	polychlorinated biphenyl

planning department	San Francisco Planning Department
PG&E	Pacific Gas and Electric Company
RCRA	Resource Conservation and Recovery Act
San Francisco Ordinance No. 27-06	San Francisco's Construction and Demolition Debris Recovery Ordinance
SFPUC	San Francisco Public Utilities Commission
SFUSD	San Francisco Unified School District
USCS	United States Coast Survey
UST	underground storage tank
VMT	vehicle miles traveled
VOCs	volatile organic compounds

Initial Study
3700 California Street
Planning Department Case No. 2017-003559ENV

A. PROJECT DESCRIPTION

The following discussion summarizes the key components of the project description. A full project description is provided in Chapter 2, *Project Description*, of the environmental impact report (EIR) to which this initial study is attached.

The project site occupies approximately 214,000 square feet (4.9 acres) in the Presidio Heights neighborhood of San Francisco (see Figure 2-1 in Chapter 2, *Project Description*, p. 2-3, of the EIR). The project site encompasses 14 parcels on one full city block (Block 1016, Lots 001–009) and portions of two other blocks (Block 1015, Lots 001, 052, and 053, and Block 1017, Lots 027 and 028). The project site is bounded by Sacramento Street to the north, residential uses to the east, California Street to the south, and medical office and residential uses to the west (see Figure 2-2 in Chapter 2, *Project Description*, p. 2-4, of the EIR). Cherry Street runs north–south between project Blocks 1015 and 1016, while Maple Street runs north–south between project Blocks 1016 and 1017. From west to east, the three blocks that make up the project site are referred to herein as Block A, Block B, and Block C, respectively (see Figure 2-3 in Chapter 2, *Project Description*, p. 2-6, of the EIR).

The project site is currently occupied by approximately 734,000 square feet of improvements within seven buildings, including approximately 622,000 square feet of hospital/medical office facilities associated with the California Pacific Medical Center (CPMC); a nine-unit, approximately 7,000-square-foot residential building; and approximately 105,000 square feet of enclosed parking within two parking garages. These buildings range from three to eight stories (25 to 112 feet), with the most prominent building being the six-story hospital at 3700 California Street.

The project site includes a total of 333 enclosed parking spaces and 106 surface parking spaces. Existing land uses on the project site are summarized in Table 2-1 in Chapter 2, *Project Description*, p. 2-7, of the EIR. As shown in Table 2-1, existing land uses include:

- A 26,000-square-foot medical office building at 3905 Sacramento Street
- A 7,000-square-foot residential building at 401 Cherry Street
- An 88,000-square-foot parking garage at 460 Cherry Street
- A 360,000-square-foot hospital at 3700 California Street

- A 69,000-square-foot building for outpatients and research at 3801 Sacramento Street
- A 17,000-square-foot parking garage and a vacant 149,000-square-foot hospital at 3773 Sacramento Street
- An 18,000-square-foot medical building at 3698 California Street (Marshal Hale building)

The proposed project would demolish five of the six existing hospital buildings on the project site, including an accessory off-street parking garage; demolish the two-story, below-grade parking structure at 3773 Sacramento Street; renovate the existing nine-unit residential building at 401 Cherry Street; convert a portion of the Marshal Hale hospital building at 3698 California Street to residential use; and construct 31 new residential buildings and add accessory amenity spaces, comprising landscaped common areas and a fitness facility. As part of hospital demolition, three existing generators would be removed (two at 3700 California Street and one at 3698 California Street). In total, the proposed project would include 273 residential units, comprising nine existing units and 264 new units. The project's 273 residential units would include 14 single-family homes and 19 multi-family residential buildings with 69 studios and one-bedroom units, 88 two-bedroom units, 96 three-bedroom units, and 20 four-bedroom units. The proposed project would construct or renovate approximately 618,200 square feet of residential uses and accessory amenity spaces on Blocks A, B, and C and excavate approximately 61,800 cubic yards of land for below-grade parking podiums, creating a total parking area of approximately 221,000 square feet. Figure 2-5 in Chapter 2, *Project Description*, p. 2-13, of the EIR depicts the proposed site plan, while Table 2-2, p. 2-14, in the EIR summarizes project characteristics by block and building. Overall, the project proposes to reduce the approximately 629,000 square feet of existing hospital/residential uses and 439 parking spaces to approximately 618,200 square feet of residential use and 416 parking spaces.

On Block A, the project would demolish the medical office building at 3905 Sacramento Street and the parking garage at 460 Cherry Street. It would retain and renovate the nine-unit residential building at 401 Cherry Street. Six new residential buildings would be constructed, comprising both single-family and multi-family buildings that would range in height from three stories (40 feet) in the northern portion of Block A to five stories (65 feet) in the southern portion of Block A. When accounting for rooftop appurtenances (e.g., stairs, elevators, mechanical penthouses), building heights would range from 42 to 75 feet. Along Sacramento Street and Cherry Street (south of 401 Cherry Street), five three-story, single-family residences (Buildings A1, A2, A3, A4, and A6 in Figure 2-5 of Chapter 2, *Project Description*, p. 2-13, of the EIR) with a height of 40 feet would be constructed on separate lots. A five-story, 29-unit multi-family residential building (Building A7) would be constructed at the corner of California and Cherry streets; this building would have a height of 65 feet. Block A would be excavated to 13 feet below the ground surface to construct a two-level subterranean parking podium. Upon completion, the proposed buildings' lot coverage would total approximately 24,000 square feet, or approximately 68 percent.

The proposed project would demolish all existing buildings on Block B and construct 18 new residential buildings, ranging in height from three stories (40 feet) to seven stories (80 feet). When accounting for rooftop appurtenances (e.g., stairs, elevators, mechanical penthouses), building heights would range from 42 to 90 feet. The northwest and central portions of Block B would be occupied by three-story buildings, including six single-family residences (Buildings B1, B2, B3, B4, B5, and B6 in Figure 2-5 of Chapter 2, *Project Description*, p. 2-13, of the EIR), and six multi-family buildings that would be internally oriented along a central walkway (Buildings B13, B14, B15, B16, B17, and B18 in Figure 2-5 of Chapter 2, *Project Description*, p. 2-13, of the EIR). Taller multi-family buildings would be along the California Street and Maple Street frontages, including Buildings B7, B10, and B12, which would have a height of 80 feet; Buildings B8, B9, and B11 would range in height from 58 to 66 feet. A total of 141 multi-family dwelling units would be provided on Block B. Block B would be excavated up to 75 feet below the ground surface to create a two-level, below-grade parking structure. Upon completion, the proposed buildings' lot coverage would total approximately 73,000 square feet, or approximately 66 percent.

The proposed project would demolish all buildings within the project site on Block C, save for renovation and adaptive reuse of the older portion of the Marshal Hale building at 3698 California Street. The proposed project would also demolish the two-story, below-grade parking structure at 3773 Sacramento Street. The project would construct seven new buildings, ranging in height from three to seven stories (36 to 80 feet). When accounting for rooftop appurtenances (e.g., stairs, elevator, mechanical penthouses), building heights would range from 38 to 90 feet. Uses fronting Sacramento Street would include three three-story single-family residences (Buildings C1, C2, and C3 in Figure 2-5 of Chapter 2, *Project Description*, p. 2-13, of the EIR) and a five-story, multi-family residential building (Building C4) with 22 units. Central to Block C would be a seven-story, 80-foot-tall multi-family residential building (Building C5) with 27 units. The rear wing and central connector portions of the Marshal Hale building at 3698 California Street would be demolished; the older portion fronting California Street would be retained and renovated to provide 24 residential units across three floors (Building C6). Two three-story buildings would front California Street east of Building C6. Building C7 would include four multi-family residential units as well as shared amenities (e.g., fitness facility).

Building C8 would include three multi-family residential units. Block C would be excavated up to 17 feet below the ground surface to create a two-level below-grade parking structure. Upon completion, the proposed buildings' lot coverage would total approximately 40,000 square feet, or approximately 59 percent.

The proposed project would include private open space areas that would be directly accessible from individual units as well as common open space areas that would be accessible to all project residents. In total, the project would provide approximately 86,200 square feet of open space, comprising 52,800 square feet of private open space and 33,400 square feet of common open space. In addition, common roof deck open space may be included in some of the buildings. The project would not include publicly accessible open space.

A total of 416 parking spaces would be provided across the project site, including 392 subterranean spaces and 24 at-grade private spaces for single-family residences with two-car garages. The subterranean spaces would serve all of the multi-family units as well as two of the single-family residences on Block B (Buildings B1 and B2). These uses would have 1.5 spaces per unit. The 12 detached single-family residences located on 12 separate lots with private garages, would have two spaces per unit. Block A would have 57 parking spaces in two below-grade parking levels, which would include three Americans with Disabilities Act– (ADA-) compliant spaces (on the ground level). Ingress and egress would be provided at California Street. Block B would have 215 parking spaces across two levels and include nine ground-level ADA-compliant spaces, seven car-share spaces (of which two would be required and five optional), and four off-street loading spaces. Ingress and egress would be provided at Cherry Street and Maple Street. Block C would include 120 parking spaces across two levels, five ground-level ADA-compliant spaces, and one off-street loading space. Ingress and egress would be provided at Maple Street. Internal loading zones would be incorporated into the podium parking levels on Blocks B and C, which for Block B would be accessible from Cherry Street, with an exit onto Maple Street. Block C would also have a loading space, with ingress from California Street.

Development on Blocks A and C is anticipated to be constructed on a mat-supported pile foundation, while development on Block B would be constructed on a mat foundation. Drilled auger piles would be used on Blocks A and C; the project would not require impact pile driving. To accommodate the below-grade parking levels and foundation, the project would entail excavation to a maximum depth of 13 feet on Block A, 75 feet on Block B, and 17 feet on Block C. The project would excavate a total of approximately 61,800 cubic yards of soil across Blocks A, B, and C, which would be hauled off the site.

It is anticipated that project construction would be conducted in three distinct phases by block, beginning at Block C and moving west, with the potential for construction phases to overlap. The duration of construction for the entire project is estimated to be approximately 40 months. Construction on Block C would begin first and occur over 29 months. Construction on Block B would begin two months after the start of construction on Block C and occur over 35 months. Construction on Block A would begin 15 months after the start of construction on Block B and occur over 23 months. Construction would generally occur between the hours of 7:00 a.m. and 8:00 p.m. up to seven days a week. The project does not propose nighttime construction work. However, the City and County of San Francisco (the City) may determine that it is necessary to conduct nighttime construction work for activities within the public right-of-way. In the event that nighttime construction work is necessary, it would be for only minimal short-term activities, such as utility installation or roadway repaving.

The project sponsor is seeking approvals to develop the project. These include conditional use authorization for development of buildings with heights in excess of 50 feet in an RM district and in excess of 40 feet in an RH district for buildings that are within an 80-E height and bulk district. The project would seek approval for a planned unit development, with exceptions for the following planning code requirements: rear yard (section 134), moderation of building fronts (section 144.1), minor deviation from height measurement (section 261), and projections over streets (section 136). Some units in the project may also require an exception from the dwelling unit exposure requirement (section 140). The requested approvals are further detailed in Chapter 2, *Project Description*, of the EIR.

B. PROJECT SETTING

The 4.9-acre project site is located primarily within an RM-2 (Residential, Mixed – Moderate Density) zoning district, with portions also in an RH-2 (Residential, House – Two Family) zoning district. Specifically, approximately 83 percent of the project site is zoned RM-2, and approximately 17 percent of the project site (eight parcels) is zoned RH-2. In addition, the majority of the project site is located in an 80-E height and bulk district, with the exception of two lots that cover approximately 8 percent of the project site and are in a 40-X height and bulk district.

The project site is on a south-facing hillside that slopes relatively steeply down to the south and gradually to the west. As measured at the sidewalk, the ground surface elevation across the site ranges from 254 feet San Francisco City Datum[1] at the northeast corner of the project site to 210 feet at the southwest corner, a grade change of 44 feet.

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[1] San Francisco City Datum establishes the city's zero point for surveying purposes at approximately 8.6 feet above the mean sea level established by 1929 U.S. Geological Survey datum.

Land uses immediately surrounding the project site consist primarily of three- to four-story residential buildings, with some office spaces, retail stores, restaurants, other businesses, and community spaces. Land uses north of the project site consist primarily of single-family and multi-family residences, with a café on the ground floor of a multi-dwelling apartment building on Sacramento Street east of Cherry Street. Single-family and multi-family residences are located east of the project site, as is the Laurel Heights Shopping Center, part of a commercial/retail corridor fronting California Street east of Spruce Street. Land uses directly south of the project site, along California Street, include single-family and multi-family residential buildings, a veterinary hospital, a law office, and a restaurant. Land uses directly west of the project site include a pharmacy and medical offices at 3838 California Street, multi-family residential buildings, and a gas station. Parking for 3838 California Street is provided in a subterranean garage with visitor access from California Street and staff access from Cherry Street via an easement that crosses Block A north of the 460 Cherry Street parking garage.

There are several notable uses in the vicinity of the project site. Less than 0.25 mile north of the project site is the Presidio, a 1,500-acre park. Surrounding school facilities include the Claire Lilienthal Elementary School and the University of California, San Francisco Laurel Heights Campus at 3333 California Street (which is proposed for redevelopment, as discussed below in the *Cumulative Setting* section). Public and community services nearby include the Jewish Community Center of San Francisco, San Francisco Fire Department Museum, Vogue Theatre, Presidio Branch Library, and St. Gregory Armenian Apostolic Church. The project site is within 0.5 mile of the Angelo J. Rossi Playground, Laurel Hill Playground, Presidio Heights Playground, and Julius Kahn Playground.

The project site is adjacent to several San Francisco Municipal Railway (Muni) transit lines. The 1 California, the 1AX-California A Express, the 1BX California Express, 33-Ashbury/18th, and 2-Clement bus routes run on California Street. There are seven bus stops within 0.25 mile of the project site.

The following regional transit services operate within San Francisco and are accessible from the project site using Muni or other modes of travel: Bay Area Rapid Transit, Golden Gate Transit, and Caltrain. See Section 4.2, *Transportation and Circulation*, of the EIR, for more information on public transportation near the project site.

CUMULATIVE SETTING

Reasonably foreseeable future projects within a 0.25-mile radius of the project site are listed below and mapped in Figure 4.1-1 of Section 4.1, *Introduction*, p. 4.1-9, of the EIR. Each project is the subject of an Environmental Evaluation Application, which is on file with the San Francisco Planning Department (planning department). Three cumulative projects within 0.25 mile of the project site were identified as:

- **3333 California Street (Case No: 2015-014028ENV):** The existing office building would be partially demolished and expanded to include new levels. The mixed-use project would include the following uses, depending on the variant: 558 to 744 residential dwelling units, 0 to 49,999 square feet of office space, 48,593 to 54,117 square feet of retail space, a 14,690-square-foot child care center, 895 to 971 parking spaces, and 236,000 square feet of open areas.
- **3641 California Street (Case No. 2018-007764ENV):** This project consists of demolition of an existing two-story institutional building (currently used as office space by doctors) and a surface parking lot and construction of a four-story building with six dwelling units, six off-street parking spaces, seven class 1 bicycle spaces, and ground-floor retail space. The building would be 18,030 square feet, with 872 square feet of retail, 3,058 square feet of parking, and 14,100 square feet of residential uses
- **3637–3657 Sacramento Street (Case No. 2007.1347E):** This project consists of demolition of a one-story parking garage, a two-story medical office building, and a three-story office building with surface parking for three vehicles and construction of a four-story building with 18 dwelling units, 10,000 square feet of medical office uses, 6,500 square feet of retail use, and 64 vehicle parking spaces on three below-grade levels.

C. COMPATIBILITY WITH EXISTING ZONING AND PLANS

See Chapter 3, *Plans and Policies*, in the EIR for a detailed discussion of land use plans that would be applicable to the proposed project as well as the proposed project's potential to conflict with those plans. Chapter 3 of the EIR also discusses the consistency of the proposed project with planning code and zoning requirements.

D. SUMMARY OF ENVIRONMENTAL EFFECTS

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

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

CEQA SECTION 21099(B)(1) (SENATE BILL 743)

California Environmental Quality Act (CEQA) section 21099(b)(1) requires the Office of Planning and Research (OPR) to develop revisions to the CEQA Guidelines and establish criteria for determining the significance of the transportation impacts of projects that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." CEQA section 21099(b)(2) states that, upon certification of the revised guidelines for determining transportation impacts, pursuant to section 21099(b)(1), automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA. In December 2018, the Natural Resources Agency finalized updates to the CEQA Guidelines that replaced the level-of-service metric with a vehicle-miles-traveled (VMT) metric as a transportation threshold. Use of a VMT metric for evaluating the transportation impacts of a project is consistent with Planning Commission resolution 19579, adopted March 3, 2016, replacing level of service with VMT when evaluating the effects of a project on the transportation system.

Aesthetics and Parking Analysis

California Public Resources Code section 21099(d), effective January 1, 2014, provides that "aesthetics and parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment." Accordingly, aesthetics and parking are not considered in determining if a project has the potential to result in significant environmental effects for projects that meet all of the following three criteria:

1. The project is in a transit priority area
2. The project is on an infill site
3. The project is residential, mixed-use residential, or an employment center

The proposed project meets each of the above three criteria; thus, the initial study and the EIR do not consider aesthetics and the adequacy of parking in determining the significance of project impacts under CEQA, and no aesthetics section is included.[2]

APPROACH TO ANALYSIS

This initial study examined the proposed project to identify potential effects on the environment. For each item on the initial study checklist, the evaluation considered the impacts of the proposed project both individually and cumulatively. All items on the initial study checklist that have been checked "less-than-significant impact with mitigation incorporated," "less-than-significant impact," "no impact," or "not applicable" indicate that, upon evaluation, staff members have determined that the proposed project could not have a significant adverse environmental effect related to that issue. A discussion is included for those issues checked "less-than-significant impact with mitigation incorporated" and "less-than-significant impact" as well as most items checked "no impact" or "not applicable." All identified mitigation measures listed in Section F, *Mitigation Measures and Improvement Measures*, have been agreed to by the project sponsor and will be incorporated into the proposed project. For items designated "no impact" or "not applicable," the conclusions regarding potential significant environmental effects are based on field observations, staff and consultant experience and expertise from similar projects, and/or standard reference materials available at the planning department, such as the *Transportation Impact Analysis Guidelines for Environmental Review*, the California Natural Diversity Database, and maps published by the California Department of Fish and Wildlife, the California Division of Mines and Geology (e.g., Mineral Resource Zone maps and designations), and the California Department of Conservation's Farmland Mapping and Monitoring Program. Whenever an impact is identified as "potentially significant," the impact is analyzed in the EIR. The "potentially significant" designation is used to identify topics that are addressed in detail in the EIR; it does not reflect a determination that the proposed project will result in a significant impact related to a particular topic. Such topics are included in the EIR because additional analysis is needed to determine the potential effect with respect to that environmental topic.

Cumulative Impact Analysis

Two approaches to a cumulative impact analysis are provided in CEQA Guidelines section 15130(b)(1): (a) the analysis can be based on a list of past, present, and probable future projects producing closely related impacts that could combine with those of a

[2] San Francisco Planning Department, *Eligibility Checklist: CEQA Section 21099 – Modernization of Transportation Analysis*, 3700 California Street, July 18, 2018.

proposed project or (b) a summary of projections contained in a general plan or related planning document can be used to determine cumulative impacts. The analyses in this initial study employ both a list-based approach and projections from the general plan or other related planning documents, as appropriate for the specific environmental topic being analyzed.

The following factors were used to determine an appropriate level for cumulative analysis in this initial study:

- *Similar Environmental Impacts.* A relevant project contributes to effects on resources that are also affected by the proposed project. A relevant future project is defined as one that is "reasonably foreseeable," such as a proposed project for which an application has been filed with the approving agency or funding has been approved.
- *Geographic Scope and Location.* A relevant project is located within the geographic area within which effects could combine. The geographic scope varies on a resource-by-resource basis. For example, the cumulative context for land use and planning analysis is the vicinity that would affect the Presidio Heights neighborhood, within a few blocks in each direction of the project site. In contrast, the geographic scope for evaluating cumulative effects on regional air quality consists of the affected air basin (i.e., the San Francisco Bay Area Air Basin).
- *Timing and Duration of Implementation.* Effects associated with activities for a relevant project (e.g., short-term construction or demolition or long-term operations) would most likely coincide with the related effects of the proposed project.

Three reasonably foreseeable future projects within 0.25 mile of the project site are identified in Section B, *Project Setting*, Cumulative Setting, p. 7. However, additional projects located more than 0.25 mile from the project site may also be considered in the cumulative analysis, as appropriate, for the environmental topic being analyzed.

Relationship to CPMC Long-Range Development Plan EIR

The project site is occupied by the CPMC, an acute-care hospital located at 3700 California Street. CPMC began relocating to a new hospital campus at Geary Street and Van Ness Avenue in the spring of 2019.[3] The new hospital and the

[3] *San Francisco Chronicle*, CPMC Van Ness Hospital Opens Saturday, March 1, 2019, https://www.sfchronicle.com/health/article/CPMC-Van-Ness-hospital-opens-Saturday-13653944.php, accessed April 18, 2019.

proposed 3700 California Street residential project are separate projects that are independently analyzed under CEQA. The environmental impacts associated with the new hospital were analyzed in an EIR prepared by the planning department and certified by the San Francisco Planning Commission on April 26, 2012.[4] The project evaluated in that EIR, referred to as the CPMC Long-Range Development Plan (LRDP) EIR, did not include demolition of the existing hospital at 3700 California Street. The LRDP Draft EIR states that "no substantial changes are proposed at the California Campus in the near term; no demolition or alternation of existing structures is proposed," and "it is assumed that a prospective purchaser would ultimately seek to renovate and/or redevelop the California Campus; however, the nature, timing, and extent of development are unknown at this time and are therefore beyond the scope of this EIR."[5] Because the future of the existing hospital was unknown at the time, the LRDP EIR did not subtract, or "net out," the environmental effects associated with the existing hospital in the impact analysis, except for the analyses of water demand, wastewater generation, and solid waste generation, for which substantial reductions were assumed for the 3700 California Street campus.[6]

The proposed 3700 California Street project would demolish the existing hospital on the project site. Therefore, in accordance with CEQA's requirement to analyze a project's impacts against the physical environmental conditions existing at the time the environmental analysis commences, this initial study and the EIR for the proposed project account for the removal of the existing hospital by netting out existing hospital impacts from quantitative analyses, with the exception of water demand and solid waste generation, for which existing hospital impacts are not subtracted from project impacts to ensure that the environmental impacts from removal of the existing hospital uses on the project site are appropriately taken into account (refer to Section E.12, *Utilities and Service Systems*). Existing hospital wastewater generation is netted out in this initial study analysis because the project site and the new hospital site at Geary Street and Van Ness Avenue are served by different wastewater treatment plants (the Oceanside Water Pollution Control Plant serves the project site and the Southeast Water Pollution Control Plant serves the CPMC Geary and Van Ness hospital campus).

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4 San Francisco Planning Department, *California Pacific Medical Center Long-Range Development Plan Final Environmental Impact Report*, Case No. 2005.0555E, State Clearinghouse No. 2006062157, 2010, *https://sf-planning.org/cpmc-documents-download.*

5 Ibid., pp. 2-131–2-132.

6 ICF memorandum to San Francisco Planning Department, *Recommendation for Accounting for Existing Hospital Use in 3700 California Street EIR Analysis*, February 28, 2019. This memorandum includes an additional discussion of the relationship between the proposed project and the LRDP EIR.

Effects Found to Be Potentially Significant

On the basis of this initial study, topics for which there are project-specific effects that have been determined to be potentially significant are:

- Transportation and circulation (all topics)
- Noise (all topics except aviation-related topics)
- Air quality (all topics except odors)

These environmental topics will be evaluated in the EIR prepared for the proposed project.

Effects Found Not to Be Significant

The following potential individual and cumulative environmental effects would be less than significant or reduced to a less-than-significant level through the recommended mitigation measures included in this initial study:

- Land use and planning (all topics)
- Population and housing (all topics)
- Cultural resources (all topics)
- Tribal cultural resources (all topics)
- Noise (aviation-related topics)
- Air quality (odors)
- Greenhouse gas emissions (all topics)
- Wind (all topics)
- Shadow (all topics)
- Recreation (all topics)
- Utilities and service systems (all topics)
- Public services (all topics)
- Biological resources (all topics)
- Geology and soils (all topics)
- Hydrology and water quality (all topics)
- Hazards and hazardous materials (all topics)
- Mineral resources (all topics)

- Energy (all topics)
- Agriculture and forestry resources (all topics)
- Wildfire (all topics)

These items, along with appropriate mitigation measures, are discussed in Section E of this initial study and therefore require no further environmental analysis in the EIR. As noted above, all identified mitigation measures listed in Section F, *Mitigation Measures and Improvement Measures*, have been agreed to by the project sponsor and will be incorporated into the proposed project.

E. EVALUATION OF ENVIRONMENTAL EFFECTS

Topics:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
1.	**LAND USE AND PLANNING Would the project:**					
a)	Physically divide an established community?	☐	☐	☐	☒	☐
b)	Cause a significant physical environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒	☐

Impact LU-1: The proposed project would not physically divide an established community. (*No Impact*)

The project site is a 214,000-square-foot, irregularly shaped area occupying one full city block (Block 1016, Lots 001–009) and portions of two other blocks (Block 1015, Lots 001, 052, and 053; Block 1017, Lots 027 and 028). The project site is within the confluence of three San Francisco neighborhoods: Presidio Heights (north of the project site), Jordan Park (southwest of the project site), and Laurel Heights (southeast of the project site). The project site is bounded by Sacramento Street to the north and California Street to the south. California Street is a major arterial street that connects to Van Ness Avenue/U.S. 101. Maple Street runs north–south through Blocks 1016 and 1017. Cherry Street runs north–south through Blocks 1015 and 1016. The project site is accessible by transit (1-California, 2-Clement, 4-Sutter, and 33-Stanyan) and bike routes (Route 65, Route 10, Route 165). The topography, street grid, and sidewalks allow for the passage of pedestrians and vehicles around the blocks that compose the project site; however, pedestrian passage through the project site is not available because of the existing hospital complex and associated uses.

The proposed project would not create a barrier or obstruction that would physically divide the community. The proposed project would be developed within already-established city blocks; it would not alter the street grid or permanently close any streets or sidewalks. The proposed project would include several features that would increase accessibility around the project site. For example, the project would widen the sidewalks along Maple Street and enhance other surrounding sidewalks with bulb-outs, light fixtures, and new paving. All edges of the proposed project would also comply with the Better Streets Plan, which promotes pedestrian safety and accessibility.[7]

For these reasons, the proposed project would have no impact with respect to physically dividing the surrounding community. No mitigation measures are required. This topic will not be addressed in the EIR.

Impact LU-2: The proposed project would not cause a significant physical environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. (*No Impact*)

The applicable land use plans that regulate development on the project site include the San Francisco General Plan and its implementing mechanisms in the San Francisco Planning Code and zoning maps. See Chapter 3, *Plans and Policies*, of the EIR for a detailed discussion of these and other land use plans that are applicable to the proposed project and identification of the proposed project's potential to conflict with land use plans and policies. The following discussion summarizes the key findings of the analysis as it relates to land use plans and policies.

Approximately 83 percent of the project site is zoned RM-2; the remaining 17 percent is zoned RH-2. Both of these zoning districts permit residential uses. The project proposes residential uses consistent with existing RH-2 and RM-2 zoning; no rezoning is proposed or required. The existing hospital/institutional uses at the project site were granted by a conditional use permit; therefore, the proposed residential uses would bring the project site into greater conformity with the residential RH-2 and RM-2 zoning districts.

Approximately 90 percent of the project site is subject to the 80-E height and bulk designation. The remaining 10 percent of the project site consists of two lots that are subject to the 40-X height and bulk designation. All of the buildings associated with the

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7 San Francisco Planning Department, *San Francisco Better Streets Plan: Policies and Guidelines for the Pedestrian Realm*, adopted by the San Francisco Board of Supervisors, December 7, 2010, Introduction, p. i, *http://www.sf-planning.org/ftp/BetterStreets/proposals.htm#Final_Plan*, accessed August 28, 2018.

proposed project would conform to existing zoning district as well as height and bulk district requirements; however, nine buildings in the RM-2 areas would exceed 50 feet in height, thereby requiring a conditional use permit. Therefore, a conditional use permit would be sought by the project sponsor. In addition, four single-family homes with heights of 46 feet would be located within the RH-2 zoning district as well as the 80-E height and bulk district and exceed the 40-foot height limit. A planned unit development exception for minor deviation from the height limit would be required. The project sponsor is also seeking this exception. Although the project would, in general, reduce existing heights, it should be noted that some areas would include buildings that would be taller than existing structures (e.g., along the California Street façade near the intersection of California and Maple streets).

Planned unit developments are intended for projects on sites of 0.5 acre or larger, developed as integrated units, and designed to produce an environment of stable and desirable character. Although the proposed project would be in compliance with Planning Code section 304(d) criteria, the project would seek approval for a planned unit development, with exceptions for the following planning code requirements: rear yard (section 134), moderation of building fronts (section 144.1), minor deviation from height measurement (section 261), and projections over streets (section 136). Some units in the project may also require an exception from the dwelling unit exposure requirement (section 140).

The proposed uses are consistent with the zoning requirements in the RM-2 and RH-2 zoning districts. Conditionally permitted uses and planned unit developments are conditionally allowed under the planning code and do not represent conflicts with zoning districts. Therefore, the proposed project would not be inconsistent with relevant planning code regulations. Furthermore, the proposed project would be consistent with applicable objectives and policies set forth in the general plan, specifically those in the housing element, recreation and open space element, and transportation element, and the urban design element.

The proposed project would not conflict with any land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect such that a substantial adverse physical change in the environment would result. Therefore, the proposed project would have no impact with respect to a conflict with a land use plan, policy, or regulation adopted for the purpose of mitigating an environmental effect that would result in a significant physical environmental impact. No mitigation measures are required. The physical environmental impacts from implementation of the proposed project are discussed in each of the environmental topic sections in this initial study and in the EIR. This topic will not be addressed in the EIR.

Impact C-LU-1: The proposed project, in combination with reasonably foreseeable future projects, would not cause a significant physical environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. (*No Impact*)

As shown above, the proposed project would have no impact with respect to physically dividing an established community or conflicting with a land use plan, policy, or regulation adopted for the purpose of mitigating an environmental effect such that a significant physical impact on the environmental would occur. Therefore, the proposed project would have no potential to combine with the effects of other cumulative projects to result in cumulative land use impacts. No mitigation measures are required. The physical environmental impacts of the proposed project in combination with reasonably foreseeable projects are discussed in each of the environmental topic sections in this initial study and in the EIR. This topic will not be addressed in the EIR.

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
2. POPULATION AND HOUSING. Would the project:					
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐	☐
b) Displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing?	☐	☐	☒	☐	☐

Impact PH-1: The proposed project would not directly or indirectly induce substantial unplanned population growth. (*Less than Significant*)

Substantial population growth is considered an increase in population that is unplanned, without consideration of, or planning for, infrastructure services and housing to support new residents, employees, and visitors. In general, a project that induces population growth is not viewed as having a significant impact on the environment, unless the physical changes that would be needed to accommodate project-related population growth would have adverse impacts on the environment. Project-related residential growth would result in direct physical environmental changes. These changes are analyzed and disclosed in the various environmental topic sections in this initial study and the EIR.

An indirect environmental impact is a change to the physical environment that is not immediately related to a proposed project. Specifically, indirect project-related population growth includes the ways in which a proposed project could foster economic or population growth in other locations or induce the construction of additional housing. Projects that would remove obstacles to population growth (e.g., a major expansion of a wastewater treatment plant or an extension of roadways into a previously unserved area) might, for example, allow for development to occur in an area that was not previously considered feasible for development because of infrastructure limitations. This type of development pattern typically occurs in suburban or rural areas adjacent to undeveloped land and is not generally applicable to a site that is located in a developed urban environment that is already served by infrastructure.

Direct Project Population Growth

Construction

Project construction is anticipated to occur in three distinct phases, by block, with some potential overlap between phases. Although the exact schedule would be dictated by market conditions at the time of project construction, the duration of construction for the project is anticipated to be approximately 40 months. The peak number of daily construction workers, 130, would be expected to occur approximately halfway through construction (the 21st month), during the construction phases for Blocks B and C and the excavation and shoring phase for Block A. During the entire construction period, there would be an average of approximately 80 construction workers at the project site daily. It is anticipated that construction employees associated with the proposed project who are not already living in the city would commute from their residences elsewhere in the Bay Area rather than permanently relocate to San Francisco; this is typical for employees in the various construction trades. Once the construction phases are complete, construction workers typically seek employment at other job sites in the region that require their particular skills. Thus, construction of the proposed project would not generate a substantial population increase in the city or region.

Operation

Onsite Residents

The proposed project would involve new residential development, including 31 new residential buildings with 240 new dwelling units, an existing nine-unit residential building that would be retained, and an existing medical building that would be converted to a 24-unit residential building, for a total of 273 dwelling units. The unit mix for the 273 dwelling units is as follows: 20 four-bedroom units, 96 three-bedroom units, 88 two-bedroom units, and 69 one-bedroom and studio units. The proposed project would directly increase the residential population on the project site, as shown in Table 1, Onsite Residents under the Proposed Project.

Table 1. Onsite Residents under the Proposed Project

Unit Type	Number	Bedrooms Per Unit	Total	Persons per Household Rate	Residents Per Unit	Bedroom Bonus	Added Population	Total Population
SFR	12	4	48	2.35	28	0.2	10	38
SFRH	2	4	8		5	0.2	2	6
MF – Studio	13	1	13		31	0	0	31
MF – 1 BR	56	1	56		132	0	0	132
MF – 2 BR	88	2	176		207	0	0	207
MF – 3 BR	96	3	288		226	0.15	43	269
MF – 4 BR	6	4	24		14	0.2	5	19
Total	273		613		642		60	701

Notes: Totals are rounded to the nearest whole number. Numbers may not sum because of rounding.
SFR = single family residence. MF = multi-family. SFRH = single-family rowhouse (on podium). BR = bedroom
Source: TMG Partners, 2019.

As shown in Table 1, based on the citywide average household size of 2.35 persons,[8] the proposed project would accommodate approximately 642 residents; however, taking into consideration the higher percentage of larger units proposed by the project, namely the three- and four-bedroom units, an additional 0.2 person per bedroom was included for four-bedroom units (i.e., single-family units and four-bedroom multi-family units), along with an additional 0.15 person per bedroom for multi-family three-bedroom units, resulting in a total of approximately 701 residents at the project site (including the approximately 21 existing onsite residents). Therefore, the proposed project would result in approximately 680 new residents.

Onsite Employees

According to the CPMC's 2008 Institutional Master Plan, the hospital that was previously located on the project site employed approximately 1,540 people.[9] The existing hospital employees were relocated to CPMC's new Van Ness and Geary Campus, less than 2 miles from the project site. The proposed project would remove the existing hospital/institutional uses and construct new residential uses on the site. The

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8 U.S. Census Bureau, *Quick Facts, Families and Living Arrangements, Persons per Household 2012–2016,* https://www.census.gov/quickfacts/fact/table/sanfranciscocitycalifornia,ca,US/HSD410217, accessed March 25, 2019.

9 California Pacific Medical Center, *2008 Institutional Master Plan,* Section Eight: California Campus, p. 104.

proposed project would not introduce office, retail, or other employment-generating uses, except that the project may include a limited number of employees for the residential uses, such as lobby and maintenance staff, estimated at up to 10 full-time employees. Thus, employment at the project site would be reduced by approximately 1,530 people under the proposed project.

Population Growth

Population growth is considered in the context of local and regional plans as well as population, housing, and employment projections. This analysis compares the residential population generated under the proposed project to existing conditions as well as projected population growth citywide and within the project vicinity.

As shown in Table 2, City and Bay Area Population Projections, 2020–2030, the Bay Area is expected to gain nearly 710,000 residents between 2020 and 2030, resulting in a total population of 8,496,800, a nine percent increase over the 2020 population.[10] The number of households is expected to increase by 8 percent (by 235,240 households) in the same period, for a total of 3,072,920 households.

Table 2. City and Bay Area Population Projections, 2020–2030

	2020	2030	Growth 2020–2030
Population			
City and County of San Francisco	890,400	981,800	91,400 (10%)
Bay Area	7,786,800	8,496,800	710,000 (9%)
Households			
City and County of San Francisco	379,600	413,370	33,770 (9%)
Bay Area	2,837,680	3,072,920	235,240 (8%)
Source: Association of Bay Area Governments, *Projections 2013*, December 2013.			

Citywide Population and Projected Growth

According to the 2016 American Community Survey, the City and County of San Francisco has a population of approximately 850,282.[11] According to the Association of Bay Area Governments' (ABAG's) *Projections 2013*, San Francisco's population will increase by approximately 91,400, from 890,400 in 2020 to 981,800 in 2030, while the Bay

10 Association of Bay Area Governments, *Projections 2013,* December 2013. The years 2020 and 2030 are used in this analysis because the proposed project is anticipated to be constructed and operational within that timeframe.

11 U.S. Census Bureau, *2012–2016 Five-Year American Community Survey,* San Francisco County, California, *https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table*, accessed April 26, 2019.

Area population will increase by approximately 710,000.[12] Therefore, the addition of 680 new residents resulting from the proposed project would account for approximately 0.74 percent of the residential growth expected in the city and approximately 0.10 percent of the residential growth expected in the Bay Area between 2020 and 2030.[13] Based on ABAG projections for population, this is well within the range of anticipated growth for the city. Therefore, the proposed project would not induce substantial unplanned population growth. Furthermore, as discussed in Section E.12, *Utilities and Service Systems*, and Section E.13, *Public Services*, the population growth accommodated by the proposed project would not require an expansion of infrastructure or services that would cause adverse physical environmental impacts. Therefore, the population increase resulting from the proposed project would not constitute substantial unplanned growth in the citywide context.

Population Growth in the Project Vicinity

The project site is located within Census Tract 133, which has a total population of approximately 4,561.[14] The total population of the census tracts within a 0.25-mile radius of the project site is approximately 15,247.[15] The introduction of 680 new residents as a result of the proposed project would increase the population in Census Tract 133 by 15 percent and within a 0.25-mile radius by 4.5 percent. Although this population increase would be noticeable compared to existing conditions, it would not be considered substantial or unplanned, unless it would result in adverse physical changes to the environment to accommodate project-related growth. As evaluated under other environmental topics in this initial study, such as Section E.11, *Recreation*; Section E.12, *Utilities and Services Systems*; and Section E.13, *Public Services*, the proposed project would not require the expansion of roads, infrastructure, or public services in a manner that would result in significant physical changes to the environment.

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12 Association of Bay Area Governments, *Projections 2013*, December 2013.

13 To calculate the amount of growth in the city and Bay Area, the total number of new residents added under the proposed project (680) is divided by the anticipated growth in the city (91,400) and Bay Area (710,000). City growth: (680 new residents/91,400) x 100 = 0.74; Bay Area growth: (680 new residents/710,000) x 100 = 0.10.

14 U.S. Census Bureau, *2012–2016 Five-Year American Community Survey*, San Francisco County and Census Tract 133, American FactFinder, *https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table*, accessed September 6, 2018.

15 U.S. Census Bureau, *2012–2016 Five-Year American Community Survey*, San Francisco County and Census Tracts 133 (4,561), 154 (6,161), and 401 (4,525), American FactFinder, *https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table*, accessed September 6, 2018.

Indirect Project-Related Population Growth

The proposed project would be located on an infill site surrounded by existing residential development. As discussed in Section E.12, *Utilities and Services Systems*, and Section E.13, *Public Services,* of this initial study as well as Section 4.2, *Transportation and Circulation*, of the EIR, the proposed project is served by existing transportation routes, utilities, and public services. It would not necessitate the extension of area roadways or the expansion of water or wastewater facilities. The proposed project would include realignment of existing domestic water lines, the installation of sewer laterals, and the construction and connection of new natural gas lines. However, because the project site is surrounded by existing development, and new infrastructure would be sized to meet the specific needs of the proposed project, the improvements would not enable additional development or indirectly induce substantial population growth in the area. Therefore, no indirect impacts related to population growth as a result of the proposed project would occur.

Conclusion

In summary, the proposed project would lead to an increase in the residential population and a decrease in onsite employment, which would be noticeable compared with existing conditions on the project site. However, these changes would be minor in the citywide and regional context and not substantial in relation to expected and planned increases in the residential population of the city. Therefore, the proposed project would not directly or indirectly induce substantial population growth in the area that would result in additional physical environmental impacts beyond those disclosed in this initial study and EIR. Impacts would be less than significant. No mitigation measures are required. This topic will not be addressed in the EIR.

Impact PH-2: The proposed project would not displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing. (*Less than Significant*)

The project site is currently developed with 622,000 square feet of hospital/medical office facilities, 105,000 square feet of parking facilities, and a nine-unit, approximately 7,000-square-foot residential building at 401 Cherry Street. As part of the proposed project, the building at 401 Cherry Street would be retained and renovated. Existing residents would be allowed to remain in the building during construction. Therefore, implementation of the proposed project would not displace existing people or housing units, and no replacement housing would be needed. The existing hospital employees began relocating to CPMC's new Van Ness and Geary Campus in the spring of 2019. Thus, the proposed project would not displace employees at CPMC. It is also noted that the planning department, with assistance from ALH Urban & Regional Economics, has completed extensive analysis of gentrification and displacement in the city to determine whether individual projects, including market-rate housing projects, contribute to gentrification and displacement and whether either of these phenomena directly or indirectly result in physical environmental effects. The planning department has not found empirical evidence supporting the position that market-rate development leads to residential or commercial displacement that results in secondary physical effects on the environment. Therefore, this impact would be less than significant, and no mitigation measures are required. This topic will not be addressed in the EIR.

Impact C-PH-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in cumulative population and housing impacts. (*Less than Significant*)

Projections for housing and employment growth in San Francisco are contained in Plan Bay Area 2040, which is the current regional transportation plan, and the Sustainable Communities Strategy adopted by the Metropolitan Transportation Commission and ABAG in July 2017, in compliance with California's governing greenhouse gas reduction legislation, SB 375. Plan Bay Area calls for an increasing percentage of Bay Area growth to occur as infill development in areas with good transit access and the services necessary to accommodate daily living in proximity to housing and jobs. With its extensive transit system and mixed-use neighborhoods, San Francisco is expected to accommodate an increasing share of future regional growth. Therefore, Plan Bay Area provides projections for the cumulative population and housing analysis.

The context for cumulative population growth is citywide. According to the San Francisco Planning Department's Housing Development Pipeline, there are 70,960 net new residential units currently in the pipeline, including the proposed project.[16]

Residential Population

The 70,729 new units currently in the pipeline (not including the proposed project) would increase the residential population in San Francisco by 166,213 residents.[17] The proposed project would increase the population in San Francisco by 680. Thus, the proposed project, in combination with the reasonably foreseeable future projects in the City's pipeline, would increase the residential population in San Francisco by 166,893.

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[16] San Francisco Planning. Housing Development Pipeline. Last updated 02/19/2019. Available here: https://sfplanning.org/resource/housing-development-pipeline

[17] The pipeline lists the proposed project as having 231 net new units, as opposed to the currently proposed 264 net new units. Thus, 70,960 units in the pipeline - 231 units = 70,729 units in the pipeline, not including the proposed project (70,729 units x 2.35 = 166,213 residents).

The population of the city of San Francisco is approximately 850,282.[18] The additional 166,893 residents resulting from the proposed project, in combination with the reasonably foreseeable future projects in the City's pipeline, would bring the citywide population to 1,017,175. Although the population increase resulting from the combination of these projects would substantial, it would be within the population projections assumed for San Francisco by ABAG. According to ABAG's *Projections 2013*, San Francisco's population will increase by approximately 195,300, from 890,400 in 2020 to 1,085,700 in 2040.[19] Therefore, the addition of 166,893 new residents would account for approximately 85 percent of the residential growth expected in the city.[20] These figures are within the range of anticipated growth for the city, according to ABAG projections.

In summary, the increase in the number of residents under the proposed project, in combination with the reasonably foreseeable future projects, would be consistent with the population growth projected by regional forecasts and therefore would not constitute substantial, unplanned growth. Therefore, cumulative impacts related to population growth resulting from implementation of the proposed project, in combination with the reasonably foreseeable future projects, would be less than significant.

Employee-Generated Housing Demand

The proposed project would replace existing hospital/medical office uses with residential uses, resulting in a net decrease in the number of onsite employees (approximately 1,530). There would be minimal project-related employment associated with the proposed uses at the project site, estimated to include up to 10 full-time employees. Therefore, the proposed project would not contribute to the cumulative generation of demand for employment-related housing, nor would it contribute to cumulative employment growth in the area.

Indirect Growth

An indirect environmental impact is a change to the physical environment that is not immediately related to the proposed project (CEQA Guidelines section 15064(d)(2)). The proposed project and the reasonably foreseeable projects would be located on infill sites

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18 U.S. Census Bureau, *2012–2016 Five-Year American Community Survey*, San Francisco County, California, *https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table*, accessed April 26, 2019.

19 Association of Bay Area Governments, *Projections 2013*. December 2013.

20 The project analysis on p. 19 compares project-related population growth to 2030 growth forecasts because the project would be operational prior to 2030. The cumulative analysis compares cumulative population growth to 2040 growth forecasts because many of the projects in the City's pipeline are large-scale, multi-phase developments that will be completed after 2030.

within an urbanized area and would not require new roads, infrastructure, or utilities that could enable additional development in areas and cause adverse physical impacts. Therefore, there would be no cumulative impacts related to indirect growth.

Conclusion

As described above, the proposed project, in combination with reasonably foreseeable future projects, would have less-than-significant cumulative population and housing impacts; no mitigation measures are required. This topic will not be addressed in the EIR.

Topics:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
3.	**CULTURAL RESOURCES** **Would the project:**					
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code?	☐	☒	☐	☐	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource, pursuant to section15064.5?	☐	☒	☐	☐	☐
c)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐	☐

Impact CR-1: The proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code. (*Less than Significant with Mitigation*)

As defined in section 15064.5 of the CEQA Guidelines, historical resources include properties listed in, or formally determined eligible for listing in, the California Register of Historical Resources (California Register) or an adopted local historic register. Historical resources also include resources identified as significant in a historical resource survey meeting one or more of the following criteria:

- Criterion 1 (Events): Is associated with events that have made a significant contribution to the broad pattern of California's history and cultural heritage;
- Criterion 2 (Persons): Is associated with the lives of persons important in our past;
- Criterion 3 (Architecture): Embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of an important creative individual or possesses high artistic values; or
- Criterion 4 (Information Potential): Has yielded, or may be likely to yield, information important to prehistory or history.

Properties that are not listed but otherwise determined to be historically significant, based on substantial evidence, would also be considered historical resources.

Under CEQA Guidelines section 15064.5(b), a significant impact would occur if the project "demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance." Under these provisions, the significance of a historical resource would be materially impaired (i.e., a significant impact would occur) if the project were to result in demolition, destruction, relocation, or alteration of the resource (which would be considered a direct impact of the project) or its immediate surroundings.

All of the buildings on the project site are older than 45 years of age and, thus, have reached the age at which they may qualify for listing in the California Register. These buildings include:

- 401 Cherry Street (Assessor's Parcel Number [APN] 1015/001), constructed in 1907;
- 3698 California Street/Marshal Hale hospital building (APN 1017/027 and 028), constructed in 1939;
- 3773 Sacramento Street (APN 1017/028), constructed in 1970/1971;
- 460 Cherry Street (APN 1015/053), constructed in 1965;
- 3905 Sacramento Street (APN 1015/052), constructed in 1960; and
- 3700 California Street/3801 Sacramento Street (APN 1016/001 and 002-009), constructed in 1911 and substantially altered and expanded between the 1950s and the 1980s.

The planning department documented the eligibility of all age-eligible onsite buildings for inclusion in the California Register in the *CPMC California Hospital Historic Resource Evaluation Response* (HRER), prepared in 2019 by the planning department's preservation staff (included as Appendix C to the EIR).[21] The HRER also evaluated the age-eligible onsite buildings for potential contributing status within new or existing historic districts. The HRER was based on information regarding the onsite buildings and their associated historic contexts from the following studies:

- *Historic Resource Evaluation Report for California Campus,* Knapp Architects, 2009;
- *CPMC California Campus Preliminary Historic Resource Evaluation,* Architectural Resources Group, 2016;
- *Historic Resource Evaluation California Pacific Medical Center, California Campus,* 3700 California Street, Richard Brandi Historic Preservation Consulting, 2018.

[21] The HRER associates 401 Cherry Street with the address 401–419 Cherry Street/3901 Sacramento Street and 460 Cherry Street with the address 3800 California Street/460 Cherry Street. The HRER also refers to 3700 California Street and 3801 Sacramento Street as a single building.

The HRER determined that the following buildings are not eligible for listing in the California Register as individual historical resources under any evaluative criterion:

- 401 Cherry Street
- 3773 Sacramento Street
- 460 Cherry Street
- 3905 Sacramento Street
- 3700 California Street/3801 Sacramento Street

The HRER determined that the age-eligible onsite buildings do not represent "a cohesive collection of architecturally related buildings" that "constitute a historic district" that is eligible for listing in the California Register. Furthermore, none of the buildings contribute to the nearby California Register–eligible Jordan Park Historic District or Presidio Heights Historic District.[22]

The HRER found that one building on the project site, the Marshal Hale hospital building at 3698 California Street, is eligible for listing in the California Register. The Marshal Hale hospital building, built in 1939, is a three-story Art Deco/Art Moderne building designed by architect Emory M. Frasier. Originally, the rectangular plan for the building was oriented along California Street. The HRER did not date the three-story wing that projects from the rear of the building; however, research indicates that this wing was constructed in 1940 to provide additional laboratory and storage space.[23] The building was further expanded when a six-story rear addition was built in 1970–1971; the addition faces Sacramento Street and is addressed as 3773 Sacramento Street. As noted above, this addition to the Marshal Hale hospital building was determined ineligible for inclusion in the California Register.

The Marshal Hale hospital building is significant under California Register Criterion 3 (Architecture) as a distinctive example of an Art Deco institutional building with Art Moderne design elements. The Marshal Hale hospital building is not significant under Criteria 1 (Event), 2 (Persons), and 4 (Information Potential). The HRER determined that the Marshal Hale hospital building at 3698 California Street retains integrity of location, association, design, workmanship, feeling, and materials. The building does not retain integrity of setting because of the construction of newer medical facilities within the surrounding CPMC California Campus. The alterations that have been made to the

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22 San Francisco Planning Department, *Historic Resource Evaluation Response, CPMC California Hospital*, Case No. 2017-003559ENV, October 17, 2018, revised February 22, 2019.

23 "New Wing for Hospital." *San Francisco Chronicle,* June 8, 1940.

Marshal Hale hospital building include the following: window replacements within the original openings; a simplified stepped cornice; a two-story eastern addition and a one-story addition near California Street; the 1940 rear wing; and the 1970–1971 addition near Sacramento Street. The Marshal Hale hospital building at 3698 California Street is a historical resource for the purposes of CEQA, although the 1940 rear wing and 1970–1971 addition do not contribute to the building's significance and are not considered historical resources on their own.

In consideration of the Marshal Hale hospital building's significance under California Register Criterion 3, the resource's period of significance is 1939, its year of construction. The HRER identified the following character-defining features of the Marshal Hale hospital building:

- Rectangular plan, three-story massing
- Central pavilion, three bays wide, and two slightly recessed wings, each four bays wide, that extend along California Street to the east and west
- Recessed entry, stepped up from the sidewalk, that features
    - Terrazzo floor in three colors, with brass divider strips that illustrate stylized flora and include a dedication plaque that reads "Hahnemann Hospital – Erected by the Homeopathic Foundation of California"
    - Side panels at the entranceway, with decorative stylized flora
    - Transom, with an applied scroll pattern topped by a triangular pattern
- Art Deco features that include
    - Massing that emphasizes verticality
    - Symmetrical balancing of features
    - Recessed façades arranged in a series of setbacks, emphasizing the geometric form
    - Low-relief decorative elements and stylized flora patterns at the central pavilion entrance of the building, including
        - Four fluted pilasters with flat trim that define the three bays
        - Two center pilasters with applied buttresses that rise midway up the second story
        - Blank recessed panel that forms the implied trabeation for the pilasters below, bordered by a molded stylized daisy motif and flanked by square panels with bas-relief decoration
        - Stepped cornice with an applied decorative crest below

- Art Moderne features that include
  - Rounded corner canopy projecting over the recessed entrance
  - Smoothed stucco finish on exterior walls
- Steel-sash windows that are arranged symmetrically across each bay and slightly recessed from the front of the façade, creating typical pilasters of the Art Deco and Art Moderne styles

Discussion of Impacts

The project proposes to adaptively reuse the Marshal Hale hospital building, the only identified historical resource per CEQA within the project site, as a 24-unit residential building. Rehabilitation of the Marshal Hale hospital building would involve demolition of the 1940 non-contributory rear wing and 1970–1971 non-contributory addition, which were constructed after the resource's period of significance. The building's extant original windows would be restored and reused; non-original windows on the building would be replaced with new windows that would match the originals in material, design, and operation. Doors would be inserted within new door openings where five ground-floor windows are currently located, following the arrangement and orientation of the original windows. A rear addition would be constructed at the northeast corner of the building, and new heating, ventilation, and air-conditioning (HVAC) and elevator equipment would be constructed on the building's roof where they would be minimally visible from the public right-of-way.

Under the proposed project, the building at 401 Cherry Street would also be retained. The remaining age-eligible buildings within the project site (3773 Sacramento Street, 460 Cherry Street, 3905 Sacramento Street, and 3700 California Street/3801 Sacramento Street) would be demolished. None of these buildings are CEQA historical resources. With the exception of the retained Marshal Hale hospital building and 401 Cherry Street, the project site would be redeveloped with 31 new residential buildings, containing a mix of single-family dwelling units and multi-family buildings. The new buildings would stand between three and seven stories tall. The proposed project would also introduce landscaped open spaces as well as new vehicle and bicycle parking.

The HRER provides an analysis of the proposed project's compliance with the *Secretary of the Interior's Standards for Rehabilitation*. The standards provide guidance for reviewing proposed work on historic properties, with the stated goal of making possible "a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values."[24] The standards are used by federal agencies for evaluating work on historic properties. The standards have also been adopted by local government bodies across the country for reviewing proposed rehabilitation work on historic properties under local preservation ordinances. The 10 standards are as follows:

1. A property will be used as it was historically or given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, or spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as added conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archaeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, or spatial relationships that characterize the property. The new work will be differentiated from the old and compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

[24] National Park Service, *Standards for Rehabilitation,* Technical Preservation Services, *https://www.nps.gov/tps/standards/four-treatments/treatment-rehabilitation.htm*, accessed October 17, 2018.

10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment will be unimpaired.[25]

The standards are a useful analytic tool for understanding and describing the potential impacts of substantial changes to historical resources. The HRER documented that the proposed project would be in conformance with standards 2, 3, 4, 5, 6, and 9 with regards to the Marshal Hale hospital building; standards 1, 7, 8, and 10 are not considered applicable to the proposed project. Therefore, the HRER determined that proposed rehabilitation of the Marshal Hale hospital building would adhere to the standards.

Demolition of existing hospital facilities that currently surround the Marshal Hale hospital building and construction of new residential buildings within the project site would alter the building's integrity of setting. The setting of the Marshal Hale hospital building has changed over time (e.g., with the construction of later hospital facilities that postdate the resource's year of construction, 1939). The HRER determined that the change to the Marshal Hale hospital building's integrity of setting caused by demolition of hospital facilities and construction of residential buildings would not result in a significant impact on the resource because the resource's existing setting currently lacks integrity. To further reduce the less-than-significant impact on historic resources, the project sponsor has agreement to implement Improvement Measure I-CR-A.

Improvement Measure I-CR-A: Historic Resource Interpretation

The project sponsor should provide a permanent display of interpretive materials concerning the history and architectural features of the Marshal Hale hospital building as well as the history of the CPMC California Campus. The historic interpretation should be supervised by an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards and conducted in coordination with an exhibit designer. The interpretative materials (which may include, but are not limited to, a display of current and historical photographs, news articles, artifacts associated with the hospital, and video recordings) should be placed in prominent public settings. A proposal describing the general parameters of the interpretive program should be approved by the planning department's preservation staff prior to issuance of a site permit. The substance, media, and other elements of such an interpretive display should be approved by the planning department's preservation staff prior to issuance of a temporary certificate of occupancy for Block 1017.

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[25] National Park Service, *Standards for Rehabilitation*.

As described in the HRER, construction activity surrounding the Marshal Hale hospital building, which would occur as part of the project, has the potential to demolish or alter in an adverse manner the physical characteristics that convey the resource's historical significance. Specifically, construction occurring adjacent to the Marshal Hale hospital building may cause structural or architectural damage to the characteristics that qualify the resource for listing in the California Register. Heavy equipment would be used to demolish the non-contributing rear addition to the Marshal Hale hospital building as well as surrounding hospital facilities and then construct new buildings within the surrounding project site. Excavation would be required in the vicinity of the resource to construct new building foundations. These activities would occur in proximity to the retained façades of the Marshal Hale hospital building; therefore, its character-defining features could sustain damage if construction equipment were to inadvertently come into contact with the resource. As a result, the project's impact on the Marshal Hale hospital building would be significant. Mitigation Measure M-CR-1 has been identified to ensure that the character-defining features of the Marshal Hale hospital building would not be permanently damaged by construction activities occurring adjacent to the resource. With implementation of Mitigation Measure M-CR-1, the overall historic integrity of the Marshal Hale hospital building would be retained, and the physical characteristics that convey its historical significance would not be demolished or altered in an adverse manner. Therefore, Mitigation Measure M-CR-1 would reduce the project-related impact on historical resources to a less-than-significant level. This topic will not be addressed in the EIR.

Mitigation Measure M-CR-1: Historic Preservation Plan and Protective Measures for 3698 California Street

A historic preservation plan and protective measures shall be prepared and implemented to aid in preserving and protecting those historical resources that would be retained and rehabilitated as part of the project. The historic preservation plan shall be prepared by a qualified historic preservation architect who meets the Secretary of Interior's Professional Qualification Standards (36 CFR, Part 61), and the project sponsor shall ensure that the contractor follows the plan. The preservation and protection plan, specifications, monitoring schedule, and other supporting documents shall be incorporated into the building or site permit application plan sets for Block 1017, and all documentation shall be reviewed and approved by the planning department's preservation staff.

Implementation of the historic preservation plan shall ensure that the proposed rehabilitation and adaptive reuse meet all requirements by establishing measures to protect retained building façades and character-defining features from construction equipment that could inadvertently damage historic resources. Specifically, the preservation plan shall incorporate construction specifications that require the construction contractor(s) to use all feasible means to avoid damage to the historic building, including, but not necessarily limited to, staging equipment and materials as far as possible from the historic building to avoid direct impact damage, maintaining a buffer zone when possible between heavy equipment and historical resources, appropriately shoring excavation sidewalls to prevent the movement of adjacent structures, designing and installing new adjacent foundations so as to minimize any uplift of soils, ensuring adequate drainage from adjacent sites, covering the roofs of adjacent structures to avoid damage from falling objects, and ensuring appropriate security to minimize risks related to vandalism and fire. The consultant shall conduct regular periodic inspections of the historic building during ground-disturbing activities on the project site. Should damage to the building occur, the building shall be remediated to its preconstruction condition at the conclusion of ground-disturbing activity on the site and fixed during rehabilitation of the resource.

Impact CR-2: Project-related activities could cause a substantial adverse change in the significance of an archaeological resource, pursuant to section 15064.5. (*Less than Significant with Mitigation*)

This section discusses archaeological resources, both as historical resources, according to CEQA Guidelines section 15064.5, as well as unique archaeological resources, as defined in section 21083.2(g). The potential for encountering archaeological resources is determined by several relevant factors, including archaeological sensitivity criteria, models, local geology, site history, the extent of soil disturbance/modification, and documented information on known archaeological resources in the area.

The planning department completed a preliminary archaeological review for the proposed project in March 2018.[26] According to the preliminary archaeological review, the project site was historically occupied by sand dunes, with no freshwater sources in the vicinity. The closest previously recorded prehistoric resource, a surface concentration of lithic debitage, was identified approximately 2,000 feet north of the project site. However, more recent geographic information system modeling of prehistoric sensitivity[27] ranks the project site as highly sensitive for the presence of

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[26] San Francisco Planning Department, *Environmental Planning Preliminary Archaeological Review: Checklist, Case No. 2017-003559ENV, 3700 California Street,* March 28, 2018.

[27] Far Western Anthropological Research Group, *Geoarchaeological Assessment and Site Sensitivity Model for the City and County of San Francisco, California*, draft, February 2019.

undiscovered near-surface and buried prehistoric archaeological resources, based on the locations of historic water sources in the area. If prehistoric archaeological resources are present, the impact of project excavations would be significant.

The project site is adjacent to the former location of the northern entrance to the historic Lone Mountain Cemetery, as depicted on an 1869 map.[28] It is unknown whether the project site includes any graves or related historic features. However, other maps indicate that the northern margin of the cemetery was California Street, the southern boundary of the project site. Review of historic maps revealed that both California Street and Sacramento Street were well established as major thoroughfares by 1884, and the project site was clearly outside of the Lone Mountain cemetery at that date; however, the project site remained relatively undeveloped. A hospital complex was established in 1887 in the eastern portion of the block, west of California Street and Maple Street. This complex expanded northward to Sacramento Street through 1899, and a number of residences were erected within the project site, near the intersection of Cherry Street and Sacramento Street. By 1913, the hospital complex encompassed the block between Maple Street and Spruce Street. This development persisted into the 1950s, although substantial redevelopment of the project site occurred in 1965.

Sanborn Fire Insurance Company maps of the project site show that the footprints of the historic buildings differ from those of the current development. However, one building does date to 1912. Therefore, it is possible that some portions of the project site remained undisturbed subsequent to the 1965 redevelopment. In addition, brick and concrete dating back to the 19th century may be encountered in the sandy fill within the upper 30 feet of the project site. Because of the proposed project, including mass grading and excavation throughout the project site, which could extend up to 75 feet below the ground surface in some locations, the potential exists for historic features in the fill, including historic hospital features; hollow fill features associated with previous residences and commercial operations; and, potentially, historic features such as mortuary furniture (e.g., headstones) or historic interments to be encountered during project construction. This impact would be considered significant. To reduce potential impacts on significant archaeological resources, Mitigation Measure M-CR-2 would require the project sponsor to retain the services of an archaeologist from the planning department's qualified archaeological consultants list and develop and implement an archaeological testing program. Implementation of Mitigation Measure M-CR-2 would reduce impacts on archaeological resources to a less-than-significant level. This topic will not be addressed in the EIR.

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28 United States Coastal Survey, *Map of the San Francisco Peninsula*, 1869.

Mitigation Measure M-CR-2: Archaeological Testing

Based on a reasonable presumption that archaeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources and on human remains and associated or unassociated funerary objects. The project sponsor shall retain the services of an archaeological consultant from the rotational Qualified Archaeological Consultants List (QACL) maintained by the planning department archaeologist. After the first project approval action, or as directed by the Environmental Review Officer (ERO), the project sponsor shall contact the planning department archaeologist to obtain the names and contact information for the next three archaeological consultants on the QACL. The archaeological consultant shall undertake an archaeological testing program, as specified herein. In addition, the consultant shall be available to conduct an archaeological monitoring and/or data recovery program if required pursuant to this measure. The archaeological consultant's work shall be conducted in accordance with this measure at the direction of the ERO. All plans and reports prepared by the consultant, as specified herein, shall be submitted first and directly to the ERO for review and comment and considered draft reports and subject to revision until final approval by the ERO. Archaeological monitoring and/or data recovery programs required by this measure could suspend construction of the proposed project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means for reducing potential effects on a significant archaeological resource, as defined in CEQA Guidelines section 15064.5 (a) and (c), to a less-than-significant level.

Consultation with Descendant Communities: On discovery of an archaeological site associated with descendant Native Americans, the overseas Chinese, or other potentially interested descendant group, an appropriate representative of the descendant group and the ERO shall be contacted. The term "archaeological site" is intended here to minimally include any archaeological deposit, feature, burial, or evidence of burial. An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American Contact List for the City and County of San Francisco maintained by the California Native American Heritage Commission; in the case of the overseas Chinese, this applies to individuals listed by the Chinese Historical Society of America. An appropriate representative of other descendant groups should be determined in consultation with the planning department archaeologist. The representative of the descendant group shall be given an opportunity to monitor archaeological field investigations of the archaeological site and offer recommendations to the ERO regarding appropriate treatment of the archaeological site, recovered data from the archaeological site, and, if applicable, interpretative treatment of the associated archaeological site. A copy of the final archaeological resources report shall be provided to the representative of the descendant group.

Archaeological Testing Program. The archaeological consultant shall prepare and submit to the ERO for review and approval an archaeological testing plan (ATP). The archaeological testing program shall be conducted in accordance with the approved ATP. The ATP shall identify the property type of the expected archaeological resource(s) that could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for testing. The purpose of the archaeological testing program will be to determine, to the extent possible, the presence or absence of archaeological resources and whether any archaeological resource encountered on the project site constitutes a historical resource under CEQA.

At the completion of the archaeological testing program, the archaeological consultant shall submit a written report of the findings to the ERO. If, based on the archaeological testing program, the archaeological consultant finds that significant archaeological resources may be present, the ERO, in consultation with the archaeological consultant, shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archaeological testing, archaeological monitoring, and/or an archaeological data recovery program. No archaeological data recovery shall be undertaken without the prior approval of the ERO or the planning department archaeologist. If the ERO determines that a significant archaeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor, either:

A) The proposed project shall be redesigned so as to avoid any adverse effect on the significant archaeological resource, or

B) A data recovery program shall be implemented, unless the ERO determines that the archaeological resource is of greater interpretive rather than research significance and that interpretive use of the resource is feasible.

Archaeological Monitoring Program. If the ERO, in consultation with the archaeological consultant, determines that an archaeological monitoring program shall be implemented, the archaeological monitoring program shall minimally include the following provisions:

- The archaeological consultant, project sponsor, and ERO shall meet and consult on the scope of the AMP reasonably prior to any project-related soil-disturbing activities commencing. The ERO, in consultation with the archaeological consultant, shall determine what project activities shall be archaeologically monitored. In most cases, any soil-disturbing activities, such as demolition, excavation, grading, utility installation, foundation work, pile driving (foundation, shoring, etc.), and site remediation, shall require archaeological monitoring because of the risk these activities pose to potential archaeological resources and their depositional context;
- The archaeological consultant shall undertake a training program for workers who are involved in soil-disturbing activities; this will include an overview of the expected resource(s), how to identify evidence of the expected resource(s), and the appropriate protocol to be implemented in the event of apparent discovery of an archaeological resource;
- The archaeological monitor(s) shall be present on the project site, according to a schedule agreed upon by the archaeological consultant and the ERO, until the ERO has, in consultation with project archaeological consultant, determined that project construction activities could have no effects on significant archaeological deposits;
- The archaeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis;
- If an intact archaeological deposit is encountered, all soil-disturbing activities in the vicinity of the deposit shall cease. The archaeological monitor shall be empowered to temporarily redirect demolition/excavation/pile installation/construction activities and equipment until the deposit is evaluated. If, in the case of pile installation or deep foundation activities (foundation, shoring, etc.), the archaeological monitor has cause to believe that the pile installation or deep foundation activities may affect an archaeological resource, the pile installation or deep foundation activities shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archaeological consultant shall immediately notify the ERO of the encountered archaeological deposit. The archaeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit and present the findings of this assessment to the ERO.

Whether or not significant archaeological resources are encountered, the archaeological consultant shall submit a written report of the findings of the monitoring program to the ERO.

Archaeological Data Recovery Program. The archaeological data recovery program shall be conducted in accord with an archaeological data recovery plan (ADRP). The archaeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archaeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archaeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical.

The scope of the ADRP shall include the following elements:

- *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations.
- *Cataloging and Laboratory Analysis*. Description of selected cataloging system and artifact analysis procedures.
- *Discard and Deaccession Policy*. Description of and rationale for field and post-field discard and deaccession policies.
- *Interpretive Program*. Consideration of an onsite/offsite public interpretive program during the course of the archaeological data recovery program.
- *Security Measures*. Recommended security measures to protect the archaeological resource from vandalism, looting, and non-intentionally damaging activities.
- *Final Report*. Description of proposed report format and distribution of results.
- *Curation*. Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

Human Remains, Associated or Unassociated Funerary Objects. If human remains and associated or unassociated funerary objects are discovered during any soil-disturbing activity, all applicable state and federal laws shall be followed, including immediate notification of the coroner of the City and County of San Francisco; in the event that the coroner determines that the human remains are Native American remains, the Native American Heritage Commission (NAHC) shall be notified. The NAHC shall appoint a most likely descendant (MLD) (Public Resources Code section 5097.98). The ERO shall also be immediately notified upon discovery of human remains. The archaeological consultant, project sponsor, ERO, and MLD shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines section 15064.5(d)) within six days of the discovery of the human remains. This proposed timing shall not preclude the Public Resources Code section 5097.98 requirement that descendants make recommendations or preferences for treatment within 48 hours of being granted access to the project site. The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, curation, possession, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing state regulations or in this mitigation measure compels the project sponsor and the ERO to accept recommendations of an MLD. The archaeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects, as specified in the treatment agreement if such as agreement has been made or, otherwise, as determined by the archaeological consultant and the ERO. If no agreement is reached, state regulations shall be followed, including the reinternment of the human remains and associated burial objects with appropriate dignity on the property in a location not subject to further subsurface disturbance (Public Resources Code section 5097.98).

Final Archaeological Resources Report. The archaeological consultant shall submit a draft final archaeological resources report (FARR) to the ERO that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery program(s) undertaken. The draft FARR shall include a curation and deaccession plan for all recovered cultural materials. The draft FARR shall also include an interpretation plan for public interpretation of all significant archaeological features.

Copies of the draft FARR shall be sent to the ERO for review and approval. Once approved by the ERO, the consultant shall also prepare a public distribution version of the FARR. Copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one copy, and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The environmental planning division of the planning department shall receive one bound and one unlocked, searchable PDF copy on CD of the FARR, along with copies of any formal site recordation forms (California Department of Parks and Recreation 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest or high interpretive value, the ERO may require additional content for the final report or a different format or distribution plan.

Impact CR-3: Project-related activities could disturb human remains, including those interred outside of formal cemeteries. (*Less than Significant with Mitigation*)

According to the preliminary archaeological review, the 1869 United States Coast Survey (USCS) map depicts the project site as being located next to the north entrance to Lone Mountain Cemetery. Additional maps confirmed that California Street was the northern boundary of the cemetery; therefore, it is unlikely that any historic burials would be present within the project site boundary. The project site has low potential for encountering early historic burials during project-related ground disturbance. However, there is always some potential for unknown human remains to be encountered during construction excavation. If human remains are discovered during construction, this would be considered a significant impact. This impact would be mitigated to a less-than-significant level with implementation of Mitigation Measure M-CR-2, above, which includes the procedures required for appropriate treatment of human remains. This topic will not be addressed in the EIR.

Impact C-CR-1: The proposed project, in combination with reasonably foreseeable future projects, could result in cumulative cultural resource impacts. (*Less than Significant with Mitigation*)

The geographic context for cumulative impacts on historical resources is typically confined to projects in the vicinity of the project site. Three reasonably foreseeable projects within 0.25 mile of the project site are identified in Section B, *Project Setting*, p. 5. These include a four-story residential building proposed at 3641 California Street (Case No. 2018-007764ENV), a four-story residential building and below-grade parking structure at 3637-3657 Sacramento Street (Case No. 2007.1347E), and a mixed-use development proposed at 3333 California Street (Case No: 2015-014028ENV). The 2019 HRER for the proposed project determined that the project site does not fall within the boundaries of a historic district; none of the three reasonably foreseeable projects is located within a historic district, either. As such, the proposed project, when considered with the three reasonably foreseeable projects, would not result in a cumulative impact on any historic district.

With regard to potential impacts on the Marshal Hale hospital setting, as discussed in Impact CR-1, the Marshal Hale building's setting currently lacks integrity. Furthermore, two of the three reasonably foreseeable projects would be far enough from the project site so as not to act in combination with one another and further diminish the setting of the Marshal Hale hospital building. The 3333 California Street project would be more than two and one-half blocks east of the project site, resulting in a limited visual change in the character of the California Street streetscape, as viewed from the vicinity of the Marshal Hale hospital building. This project would introduce mixed-use buildings that would be generally consistent with the scale of buildings that currently line California Street in the vicinity of the 3700 California Street and 3333 California Street development sites. Likewise, the 3637–3657 Sacramento Street development site, one block north of California Street, would not cause a discernible change in the setting of the Marshal Hale hospital building. The building at 3641 California Street would replace an existing building across California Street, opposite the Marshal Hale hospital building. Although the new building would be visible along with the renovated Marshal Hale hospital building, it would generally conform to the development pattern (in terms of scale and placement of the front façade at the lot line) of the mixed residential and commercial district in the vicinity and therefore would not further diminish the setting of the Marshal Hale hospital building. In light of the above, the proposed project, considered with the three reasonably foreseeable projects, would not result in a cumulative impact on historical resources.

The project site is adjacent to the former location of the northern entrance to the historic Lone Mountain Cemetery. The reasonably foreseeable projects are all within the boundaries of the historic Lone Mountain Cemetery. The reasonably foreseeable projects (although not the proposed project) are also within the boundaries of the later Laurel Hill Cemetery. Although known burials in the Laurel Hill Cemetery were disinterred and relocated outside of the city in the first decades of the 20th century, human remains and associated mortuary furniture, which were inadvertently left behind when the cemetery was relocated, have been found at several sites in the vicinity of the project site. Furthermore, the area is considered highly sensitive for the presence of undiscovered near-surface and buried prehistoric archaeological resources. Cumulatively, development in the project vicinity has the potential to result in impacts on human remains and related archaeological features, which is a potentially significant cumulative impact. If the project were to expose human remains or mortuary features, the project's impact could be cumulatively considerable. However, these impacts would be addressed with implementation of Mitigation Measure M-CR-2, above, which would ensure that the proposed project's contribution to any cumulative impacts on human remains and related archaeological features would be less than significant.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Not Applicable
4. TRIBAL CULTURAL RESOURCES **Would the project**					
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐	☐

Impact TCR-1: Project-related activities could cause a substantial adverse change in the significance of a tribal cultural resource, as defined in Public Resources Code section 21074. (*Less than Significant with Mitigation*)

Public Resources Code section 21074.2 requires the lead agency to consider the effects of a project on tribal cultural resources. As defined in section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, in a national, state, or local register of historical resources. Pursuant to Assembly Bill 52 (Public Resources Code section 21080.3.1(d)), on July 5, 2018, the planning department contacted Native American individuals and organizations for the San Francisco area, providing a description of the project and requesting comments on the identification, presence, and significance of tribal cultural resources in the project vicinity.[29] During the 30-day comment period, no Native American tribal representatives contacted the planning department to request consultation, suggesting that there are no known tribal cultural resources in the project area. However, there is always some potential for unknown tribal cultural resources to be encountered during excavation activities. Furthermore, the project site has been assessed as having high sensitivity for

[29] San Francisco Planning Department, *Tribal Notification – 3700 California Street*, July 5, 2018.

the potential presence of prehistoric archaeological resources, which could also be tribal cultural resources. If tribal cultural resources are discovered during construction, this would be considered a significant impact. This impact would be mitigated to a less-than-significant level with implementation of Mitigation Measure M-CR-2 in Section 3, *Cultural Resources*, which requires implementation of an archaeological testing program, and Mitigation Measure M-CR-3, below. This topic will not be addressed in the EIR.

Mitigation Measure M-CR-3: Tribal Cultural Resources Interpretive Program

If the Environmental Review Officer (ERO) determines that preservation in place of a tribal cultural resource (TCR), pursuant to Mitigation Measure M-CR-2, Archaeological Testing, is both feasible and effective, then the archaeological consultant shall prepare an archaeological resource preservation plan (ARPP). Implementation of the approved ARPP by the archaeological consultant shall be required when feasible. If the ERO determines that preservation in place of a TCR is not a sufficient or feasible option, then the project sponsor shall implement an interpretive program of the TCR in consultation with affiliated Native American tribal representatives. An interpretive plan produced in consultation with affiliated Native American tribal representatives, at a minimum, and approved by the ERO would be required to guide the interpretive program. The plan shall identify proposed locations for installations or displays, the proposed content and materials of those displays or installations, the producers or artists of the displays or installation, and a long-term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists; oral histories with local Native Americans; artifact displays and interpretation; and educational panels or other informational displays.

Impact C-TCR-1: The proposed project, in combination with reasonably foreseeable future projects, could result in cumulative tribal cultural resources impacts. (*Less than Significant with Mitigation*)

As discussed in Impact C-CR-1, the project site is adjacent to, and the reasonably forseeable projects are within the boundaries of, the historic Lone Mountain Cemetery and the later Laurel Hill Cemetary. The area is considered highly sensitive for the presence of undiscovered near-surface and buried prehistoric archaeological resources. Cumulatively, development in the project vicinity has the potential to result in impacts on tribal cultural resources, which is a potentially significant cumulative impact. If the project were to expose tribal cultural resources, the project's impact could be cumulatively considerable. However, these impacts would be addressed with implementation of Mitigation Measure M-CR-2 in Section 3, *Cultural Resources*, which requires implementation of an archaeological testing program, and Mitigation Measure M-CR-3, above, which would ensure that the proposed project's contribution to any cumulative impacts on tribal cultural resources would be less than significant. This topic will not be addressed in the EIR.

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
5. TRANSPORTATION AND CIRCULATION **Would the project:**					
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☒	☐	☐	☐	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☒	☐	☐	☐	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses?	☒	☐	☐	☐	☐
d) Result in inadequate emergency access?	☒	☐	☐	☐	☐

The proposed project would have the potential to result in significant impacts on transportation and circulation. Accordingly, this topic will be analyzed further and included in the EIR.

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
6. NOISE **Would the project:**					
a) Generate 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) Generate excessive ground-borne vibration or ground-borne noise levels?	☒	☐	☐	☐	☐
c) For a project in the vicinity of a private airstrip or an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☐	☒

There are no private airstrips or public or public use airports in the project vicinity, and the project is not in the vicinity of an airport land use plan. Therefore, topic 6c is not applicable. However, the proposed project would have the potential to result in significant impacts with respect to the other initial study questions. Accordingly, this topic, with the exception of private airstrip noise, will be analyzed further and included in the EIR.

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
7. AIR QUALITY **Would the project:**					
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐	☐
b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in non-attainment status under an applicable federal, state, or regional ambient air quality standard?	☒	☐	☐	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐	☐
d) Result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people?	☐	☐	☐	☒	☐

The proposed project is a residential project and does not include any land uses that are known to generate substantial odors, such as wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. During construction, diesel exhaust from construction equipment would generate odors. However, construction-related odors would be temporary and would not persist upon project completion. Operation of the proposed new residential uses, which are typical urban land uses, is not anticipated to create significant sources of new odors. Thus, odors would not be expected to occur as a result of operation of the proposed project. Therefore, no impact would occur with respect to topic 7d, and this topic will not be addressed in the EIR. The proposed project would have the potential to result in significant impacts with respect to the other questions. Accordingly, this topic, with the exception of odors, will be analyzed in the EIR.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Not Applicable
8. GREENHOUSE GAS EMISSIONS **Would the project:**					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐	☐
b) Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐	☐

Greenhouse gas (GHG) emissions and global climate change represent cumulative impacts. GHG emissions cumulatively contribute to the significant adverse environmental impacts of global climate change. Although no single project could generate enough GHG emissions to change the global average temperature noticeably, combined GHG emissions from reasonably foreseeable future projects will contribute to global climate change and its associated environmental impacts.

The Bay Area Air Quality Management District has prepared guidelines and methodologies for analyzing GHGs. These guidelines are consistent with CEQA Guidelines sections 15064.4 and 15183.5, which address the analysis and determination of significant impacts from a proposed project's GHG emissions. CEQA Guidelines section 15064.4 allows lead agencies to rely on a qualitative analysis to describe GHG emissions resulting from a project. CEQA Guidelines section 15183.5 allows for public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of GHGs and describes the required contents of such a plan. Accordingly, San Francisco has prepared Strategies to Address Greenhouse Gas Emissions,[30] which presents a comprehensive assessment of policies, programs, and ordinances that collectively represent San Francisco's qualified GHG reduction strategy in compliance with the CEQA Guidelines. These GHG reduction actions have resulted in a 36 percent reduction in GHG emissions in 2016 compared to 1990 levels,[31] exceeding the 2020 reduction goals outlined in the air district's 2017 Clean Air Plan, Executive Order S-3-05, and Assembly Bill 32 (also known as the Global Warming Solutions Act).[32]

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[30] San Francisco Planning Department, *Strategies to Address Greenhouse Gas Emissions in San Francisco,* July 2017, *http://sf-planning.org/strategies-address-greenhouse-gas-emissions*.

[31] San Francisco Department of the Environment, *San Francisco's Carbon Footprint, https://sfenvironment.org/carbon-footprint*, accessed May10, 2019.

[32] Executive Order S-3-05, Assembly Bill 32, and the air district's 2017 Clean Air Plan (continuing the trajectory set in the 2010 Clean Air Plan) set a target of reducing GHG emissions to below 1990 levels by 2020.

Given that the City has met the state and region's 2020 GHG reduction targets and San Francisco's GHG reduction goals are consistent with, or more aggressive than, the long-term goals established under order S-3-05,[33] order B-30-15,[34,35] and Senate Bill 32,[36,37] the City's GHG reduction goals are consistent with order S-3-05, order B-30-15, Assembly Bill 32, Senate Bill 32, and the 2017 Clean Air Plan. Therefore, proposed projects that are consistent with the City's GHG reduction strategy would be consistent with the aforementioned GHG reduction goals, would not conflict with these plans or result in significant GHG emissions, and would therefore not exceed San Francisco's applicable GHG threshold of significance.

The following analysis of the proposed project's impact on climate change focuses on the project's contribution to cumulatively significant GHG emissions. Because no individual project could emit GHGs at a level that could result in a significant impact on the global climate, this analysis is in a cumulative context, and this section does not include an individual project-specific impact statement.

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33 Office of the Governor, *Executive Order S-3-05*, June 1, 2005, *http://static1.squarespace.com/static/549885d4e4b0ba0bff5dc695/t/54d7f1e0e4b0f0798cee3010/1423438304744/California+Executive+Order+S-3-05+(June+2005).pdf*, accessed October 30, 2018. Executive Order S-3-05 sets forth a series of target dates by which statewide emissions of GHGs need to be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels (approximately 457 million metric tons of carbon dioxide equivalents [$MTCO_2E$]); by 2020, reduce emissions to 1990 levels (approximately 427 million $MTCO_2E$); and by 2050 reduce emissions to 80 percent below 1990 levels (approximately 85 million $MTCO_2E$). Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

34 Office of the Governor, *Executive Order B-30-15,* April 29, 2015, *https://www.gov.ca.gov/news.php?id=18938,* accessed October 30, 2018. Executive Order B-30-15, issued on April 29, 2015, sets forth a target of reducing GHG emissions to 40 percent below 1990 levels by 2030 (estimated at 2.9 million $MTCO_2E$).

35 San Francisco's GHG reduction goals are codified in section 902 of the Environment Code and include: (i) by 2008, determine City GHG emissions for 1990; (ii) by 2017, reduce GHG emissions by 25 percent below 1990 levels; (iii) by 2025, reduce GHG emissions by 40 percent below 1990 levels; and by 2050, reduce GHG emissions by 80 percent below 1990 levels.

36 Senate Bill 32 amends California Health and Safety Code Division 25.5 (also known as the California Global Warming Solutions Act of 2006) by adding section 38566, which directs that statewide greenhouse gas emissions to be reduced by 40 percent below 1990 levels by 2030.

37 Senate Bill 32 was paired with Assembly Bill 197, which modified the structure of the California Air Resources Board; institute requirements for the disclosure of greenhouse gas emissions criteria pollutants, and toxic air contaminants; and establish requirements for the review and adoption of rules, regulations, and measures for the reduction of greenhouse gas emissions.

Impact C-GG-1: The proposed project would generate greenhouse gas emissions, but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions. (*Less than Significant*)

Individual projects contribute to the cumulative effects of climate change by directly or indirectly emitting GHGs during construction and operational phases. Direct operational emissions include GHG emissions from new vehicle trips and area sources (natural gas combustion). Indirect emissions include emissions from electricity providers; energy required to pump, treat, and convey water; and emissions associated with waste removal, disposal, and landfill operations.

The proposed project would generate GHGs during construction and operation. Construction activities that are likely to emit GHGs include demolition of five existing buildings and other existing uses, site preparation and grading, excavation and shoring, building construction, and site finishing work. Throughout the construction process there would be also be daily transportation of materials. Equipment used for the above activities would be fueled by diesel, propane and gasoline, and propane, which would contribute to emissions of nitrogen oxides, particular matter, sulfur dioxide, carbon monoxide, methane, and carbon dioxide. Any temporary road obstructions caused by construction could lead to temporary traffic congestion.

The proposed project would generate operational GHG emissions from a variety of sources, including area sources (consumer products, architectural coatings, and landscape equipment), mobile sources (daily automobile and truck trips), and energy sources (natural gas combustion in boilers/heaters and stoves). Although the project site has three diesel emergency generators, the generators would be removed during construction of the proposed project. As described in Section 4.2, *Transportation and Circulation*, of the EIR, by subtracting vehicle trips associated with the existing hospital use from estimated vehicle trip generation under the proposed project, a net reduction in daily vehicle trips at the project site totaling nearly 5,000 would result (see Section 4.2, *Transportation and Circulation*, of the EIR for detailed information). Mobile sources are the primary emitters of GHG emissions. The GHG impact of relocating the existing hospital uses to other CPMC campuses, including the Van Ness Campus, was evaluated in the LRDP EIR.[38] Overall, the proposed project would result in a net reduction in annual long-term increases in GHGs emitted at the project site as a result of fewer vehicle trips (mobile sources) and the proposed residential operations, which would use less energy than the project site's current uses (refer to Section 19, *Energy*, of the initial study).

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[38] San Francisco Planning Department, *California Pacific Medical Center Long-Range Development Plan Final Environmental Impact Report*, Case No. 2005.0555E, State Clearinghouse No. 2006062157, 2010, *https://sf-planning.org/cpmc-documents-download.*

The proposed project would be subject to regulations adopted to reduce GHG emissions as identified in the GHG reduction strategy. As discussed below, compliance with the applicable regulations would reduce the project's GHG emissions related to transportation, energy use, waste disposal, wood burning, and use of refrigerants.

Compliance with the City's transportation management programs, transportation sustainability fees, bicycle parking requirements, low-emission car parking requirements, and car-sharing requirements would reduce the proposed project's transportation-related emissions. These regulations reduce GHG emissions from single-occupancy vehicles by promoting the use of alternative transportation modes with zero or lower GHG emissions on a per-capita basis. Furthermore, the proposed project would include the following features that would increase the walkability of the site and the surrounding area: widened sidewalks, enhanced sidewalk and entry paving, sidewalk bulb-outs, a new high-visibility crosswalk with flashing lights at the unsignalized intersection of California Street and Commonwealth Avenue, a new sidewalk extension at Commonwealth Avenue, new light fixtures, new street trees, and bicycle racks.

The proposed project would be required to comply with the energy efficiency requirements of the City's Green Building Code; alternative water sources for non-potable applications; Stormwater Management Ordinance; Water Use Reduction, Water Conservation, and Efficient Irrigation ordinances; and Energy Conservation Ordinance, which would promote energy and water efficiency, thereby reducing the proposed project's energy-related GHG emissions.[39] In addition, the project would be required to meet the renewable energy criteria of the Green Building Code, including renewable energy generation or green roof installation, further reducing the project's energy-related GHG emissions.

The proposed project's waste-related emissions would be reduced through compliance with the City's Recycling and Composting Ordinance, Construction and Demolition Debris Recovery Ordinance, and Green Building Code requirements. These regulations reduce the amount of materials sent to a landfill, reducing GHGs emitted by landfill operations. These regulations also promote reuse of materials, conserving their embodied energy[40] and reducing the energy required to produce new materials.

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[39] Compliance with water conservation measures reduce the energy (and GHG emissions) required to convey, pump and treat water required for the project.

[40] Embodied energy is the total energy required for the extraction, processing, manufacture and delivery of building materials to the building site.

Compliance with the City's street tree planting requirements would serve to increase carbon sequestration. As shown in Table 2-3 in Chapter 2, *Project Description*, p. 2-26, of the EIR, the proposed project would result in a net increase of 93 trees.[41] Other regulations, including those limiting refrigerant emissions and the air district's wood-burning regulations, would reduce emissions of GHGs and black carbon, respectively. Regulations requiring low-emitting finishes would reduce volatile organic compounds.[42] Thus, the proposed project was determined to be consistent with San Francisco's GHG reduction strategy.[43]

The project sponsor is required to comply with these regulations, which have proven effective as San Francisco's GHG emissions have measurably decreased when compared to 1990 emissions levels, demonstrating that the City has met and exceeded Executive Order S-3-05, Assembly Bill 32, and the 2017 Clean Air Plan GHG reduction goals for the year 2020. Furthermore, because San Francisco has reduced its GHG emissions, as of 2016, to 30 percent below 1990 levels, the City has met its goal of reducing GHG emissions to 25 percent below 1990 levels by 2017. Other existing regulations, such as those implemented through Assembly Bill 32, will continue to reduce a proposed project's contribution to climate change. In addition, San Francisco's local GHG reduction targets are consistent with the long-term GHG reduction goals of Executive Order S-3-05, Executive Order B-30-15, Assembly Bill 32, Senate Bill 32, and the 2017 Clean Air Plan. Therefore, because the proposed project is consistent with the City's GHG reduction strategy, it is also consistent with the GHG reduction goals of Executive Order S-3-05, Executive Order B-30-15, Assembly Bill 32, Senate Bill 32, and the 2017 Clean Air Plan, would not conflict with these plans, and would therefore not exceed San Francisco's applicable GHG threshold of significance. As such, the proposed project's contribution to cumulative GHG impacts would be less than cumulatively considerable, and no mitigation measures are required. This topic will not be addressed in the EIR.

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41 TMG Partners, *3700 California Street, Tree Planting* & *Removal Summary*, December 2018.

42 Although not a GHG, volatile organic compounds are precursor pollutants that form ground-level ozone. Increased ground-level ozone is an anticipated effect of future global warming that would result in added health effects locally. Reducing volatile organic compound emissions would reduce the anticipated local effects of global warming.

43 San Francisco Planning Department, *Greenhouse Gas Analysis: Compliance Checklist for 3700 California*, December 7, 2018.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Not Applicable
9. WIND **Would the project:**					
a) Create wind hazards in publicly accessible areas of substantial pedestrian use?	☐	☐	☒	☐	☐

Impact WI-1: The proposed project would not create wind hazards in publicly accessible areas of substantial pedestrian use. ***(Less than Significant)***

This section evaluates the wind impacts of the proposed project on public areas adjacent to the project site. It is based on a screening-level wind assessment prepared for the proposed project by RWDI, which is included as Appendix D to the EIR.[44]

Approach to Screening-Level Wind Analysis

The primary wind directions in San Francisco are from the west-northwest, west, northwest, and west-southwest. Based on data collected at the San Francisco International Airport between 1948 and 2015 and at the old San Francisco Federal Building at 50 United Nations Plaza between 1945 and 1950, these four wind directions have the greatest frequency of occurrences and consist of the majority of strong winds. In general, wind speeds are higher in the spring and summer and lower in fall and winter. Daily variation in wind speed is evident, with the strongest winds in the mid- to late afternoon and the lightest winds in the morning.

San Francisco Planning Code section 148, Reduction of Ground-level Wind Currents in Downtown Commercial (C-3) Districts, requires buildings in the C-3 downtown districts to be shaped so as not to cause ground-level wind currents to exceed defined comfort and hazard criteria. The hazard criterion of the planning code requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 miles per hour as averaged from a single full hour of the year. The hazard criterion is based on winds that are measured for one hour and averaged.

Because the project site is outside the C-3 District, it is not subject to Planning Code section 148. However, the wind hazard criterion is used as the CEQA significance threshold in the analysis of projects in San Francisco to determine whether a proposed project would substantially alter ground-level winds in public areas in an adverse manner.

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44 RWDI, *Screening-Level Wind Analysis for 3700 California Street San Francisco, California,* May 13, 2019.

To predict wind speeds and frequencies for the screening-level qualitative analysis, analysts consider variables including the geometry and orientation of the proposed buildings, the position and height of surrounding buildings, the upwind terrain, and the local wind climate. A greater potential for increased or accelerated winds would occur for prevailing wind directions between closely spaced buildings or where buildings taller than their surroundings intercept stronger winds at higher elevations and redirect them to the ground level.

Existing Project Site Conditions

As discussed in Section A, *Project Description*, p. 1, existing uses on the project site consist of six hospital/medical office buildings and parking garages associated with California Pacific Medical Center and a residential building. These buildings range from three to eight stories (25 to 112 feet), with the most prominent building being the six-story hospital at 3700 California Street located at the center of the site on Block B. The project site has some street trees along its perimeter, particularly on Block B, and there is an outdoor plaza on the northwest corner of Block B at the intersection of Cherry Street and Sacramento Street.

As discussed in Section B, *Project Setting*, p. 5, the project site, the topography of which slopes steeply down to the south and gradually down to the west, is surrounded by low-rise buildings in all directions that consist primarily of residential buildings, with some office spaces, retail stores, restaurants, other businesses, and community spaces. The upwind buildings located to the north and northwest of the project site along Sacramento and Cherry streets consist primarily of single-family and multi-family residences that are typically three to four stories in height, ranging from 30 to 40 feet tall. The tallest building (approximately 80 feet tall) in the immediate area is a pharmacy and medical offices at 3838 California Street, which is adjacent to the west side of the project site.

Wind conditions on the sidewalks surrounding the project site are influenced by the mid-rise buildings on Block B between Cherry and Maple streets. The existing 3700 California Street building abuts the property line along Cherry Street and ranges in height from 75 feet to 112 feet. Its height and mass relative to the surrounding buildings channels the prevailing westerly winds along Cherry Street and accelerates winds near the northeast corner of Cherry and California streets. The 3701 Sacramento Street building, which is located at the southwest corner of Sacramento and Maple streets and reaches a height of 85 feet, accelerates winds at the intersection of Sacramento and Maple streets. Wind flows are likely to be uncomfortable from time to time during windier days and may exceed the wind hazard criterion.

The project site is close to the ocean (approximately 3.2 miles to the west and 1.5 miles to the west-northwest and northwest) where the prevailing winds originate, and breezes are expected in the area throughout the year with windier conditions in the summer and spring and in the mid- to late afternoon. In the afternoon, particularly on days when the fog rolls in from the ocean, ground-level winds on the east-west sidewalks on California Street can be noticeable and pedestrians may feel chilled. However, given the relatively low heights of the existing buildings and surroundings as well as the landscaping, and the width of the public rights-of-way (between 68 and 85 feet), the existing wind conditions at public areas around the project site are not expected to exceed the hazardous level. For these reasons, wind conditions under existing conditions, especially in the late afternoon in the spring and summer, are expected to be noticeable but would not exceed the City's wind hazard criterion.

Impact Assessment

For the layout of the proposed new and adaptively reused buildings, see Figure 2-5 in Chapter 2, *Project Description*, of the EIR, p. 2-13. For elevations of the proposed new development see Figure 2-6 in Chapter 2, *Project Description*, of the EIR, p. 2-15. This assessment focuses on public sidewalks, which are the only public areas adjacent to the project site; the project would not include publicly accessible open space.

With the proposed project, the seven residential buildings on Block A would be similar in height to those on the existing site, ranging from three to five stories (40 to 65 feet). Block B would include 16 buildings ranging from three to seven stories (40 to 80 feet). Block C would include eight buildings ranging from three to seven stories (36 to 80 feet). The buildings on Blocks B and C would be slightly reduced in height and have lower massing than the existing buildings. Green space, landscaping, extensive gardens, and courtyards are planned throughout the project site.

Low single- and multi-family residential buildings (three stories of approximately 40 feet) would be constructed along the upwind west perimeter and north perimeter of Block B along Cherry and Sacramento streets. Under the proposed project, the new buildings at the upwind west and north perimeters of the Block B would be comparable in height to existing buildings across Cherry Street and across Sacramento Street. This would promote winds to flow over the development, rather than to be deflected down to the street level and channelized along Cherry Street and California Street. Under the proposed project, taller buildings (approximately 80 feet) would be located along the southwest, southeast, and northwest corners of Block B, and would incorporate setbacks at the upper floors, which are expected to reduce wind activity at the intersection of Sacramento and Maple streets and at the intersection of Cherry and California streets. As a result, the wind conditions on sidewalks along the adjacent streets would be improved by the proposed development relative to the existing conditions.

The expanded sidewalk areas along Maple Street would be located downwind of the proposed new and renovated buildings where relatively calm wind environments are anticipated under project conditions. Therefore, no wind hazard exceedance would be expected in these areas.

Other public parks in the surrounding areas, such as Laurel Hill Playground to the south and Presidio Heights Playground to the east, are too far from the project site to be affected by the proposed project's wind.

Conclusion

Wind conditions under the proposed project would not be expected to exceed the City's wind hazard criterion at any time throughout the year. Therefore, the proposed project would not substantially alter the existing wind conditions along public sidewalks in an adverse manner. This impact would be less than significant, and no mitigation is required. This topic will not be discussed in the EIR.

Impact C-WI-1: The proposed project, in combination with reasonably foreseeable future projects in the project site vicinity, would not result in cumulative wind impacts. *(Less than Significant)*

The geographic context for wind impacts is the area in the immediate vicinity of the project site, generally bound by the sidewalks and parcels surrounding the project site. Three reasonably foreseeable projects within 0.25 mile of the project site have been identified. These include a four-story (up to 40-foot-tall) residential building at 3641 California Street (Case No. 2018-007764ENV), a four-story (40-foot-tall) residential building and below-grade parking structure at 3637–3657 Sacramento Street (Case No. 2007.1347E), and a mixed-use development at 3333 California Street (Case No. 2015-014028ENV). As discussed above, the wind impacts of the proposed project are not expected to exceed the City's wind hazard criterion at any location. Only one of the cumulative projects (the four-story [up to 40-foot-tall] residential building at 3641 California Street) is close enough to the project site to have the potential to combine with the proposed project and affect wind patterns. Located south of the project site, this cumulative project would generally not be exposed to prevailing west and northwest winds. Furthermore, the proposed four-story (up to 40-foot-tall) building would be consistent with surrounding building heights, including an existing four-story (up to 40-foot-tall) residential building adjacent to the parcel to the west. This proposed four-story (up to 40-foot-tall) building would not be tall enough to cause substantial changes in existing wind conditions. Therefore, the proposed project, in combination with reasonably foreseeable future projects, would have less-than-significant cumulative wind impacts, and no mitigation measures are required. This topic will not be addressed in the EIR.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Not Applicable
10. SHADOW **Would the project:**					
a) Create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces?	☐	☐	☒	☐	☐

Impact SH-1: The proposed project would not create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces. ***(Less than Significant)***

This section evaluates the shadow impacts of the proposed project on outdoor recreation facilities and other public areas in the vicinity of the project site.

Approach to Analysis

The threshold for determining the significance of shadow impacts under CEQA is whether the proposed project would create new shadow in a manner that substantially affects the use and enjoyment of outdoor recreation facilities or other public areas. The analysis of shadow impacts takes into account use of the open space; time of day and year of project shadow; physical layout and facilities affected; the intensity, size, shape, and location of the shadow; and the proportion of open space affected.

To evaluate the impact of the proposed project on outdoor public areas, a preliminary shadow fan was prepared using a three-dimensional computer model of the proposed project to simulate levels of shading. Refer to Figures 2-5 and 2-6 in Chapter 2, *Project Description*, of the EIR (pp. 2-13 and 2-15) for the layout and elevations of the proposed project, respectively.

Public Open Spaces

Planning Code section 295 generally prohibits new structures over 40 feet in height that would cast additional shadows on open space that is under the jurisdiction of the San Francisco Recreation and Park Commission between one hour after sunrise and one hour before sunset, at any time of the year, unless that shadow would not result in a significant adverse effect on the use of the open space.

Laurel Hill Playground and the Presidio Heights Playground are the nearest San Francisco Recreation and Park Commission properties to the project site. Laurel Hill Playground is a 1.47-acre (64,033-square-foot) urban park, located about 1,742 feet to the southeast of the project site along the south side of Euclid Avenue. Presidio Heights Playground is a 0.44-acre (19,166-square-foot) urban park, located about 1,848 feet northeast of the project site, along the south side of Clay Street. Based on the shadow fan, the proposed project would not create any new shadow on either of these parks at any time throughout the year. There are no other San Francisco Recreation and Park Commission properties that are within, or near, the potential reach of shadow from the proposed project. For these reasons, the proposed project would have no shadow impact on San Francisco Recreation and Park Commission property, and no mitigation measures are required.

There are no other public parks or open spaces owned by other City agencies that are within, or near, the potential reach of the proposed project's shadow fan. Therefore, the proposed project would have no shadow impact on public parks or open spaces, and no mitigation measures are required.

Nearby Streets and Sidewalks

The proposed project would create new shadow on nearby streets and sidewalks at times of day and year when these areas would not already be shaded by existing buildings in the area. At certain times of day and year, the proposed project would cast net new shadow on nearby sidewalks, including those along Sacramento Street, California Street, Cherry Street, Maple Street, Arguello Boulevard, and Clay Street. Most of the sidewalks in this area are already shaded by existing buildings and, given that sidewalks are typically used by pedestrians traveling between destinations and not as a recreational resource, the additional project-related shadow would not substantially affect the use of the sidewalks.

Shadow from the proposed project on nearby sidewalks would be transitory in nature. Overall, the proposed project would not increase the amount of shadow on the sidewalks above levels that are common and generally expected in developed urban environments. For these reasons, the proposed project would have a less-than-significant shadow impact on the use of streets and sidewalks in the project vicinity, and no mitigation measures are required.

Conclusion

As discussed above, the proposed project would not create new shadow that substantially affects existing outdoor recreation facilities or other public areas. This impact would be less than significant, and no mitigation is necessary. This topic will not be discussed in the EIR.

Impact C-SH-1: The proposed project, in combination with reasonably foreseeable future projects in the project site vicinity, would not result in cumulative shadow impacts. *(Less than Significant)*

The geographic context for shadow impacts is the area in which the proposed project and cumulative projects, in combination, would shade the same public open spaces. Three reasonably foreseeable projects within 0.25 mile of the project site are identified in Section B, *Project Setting*, p. 5. These include a four-story residential building at 3641 California Street (Case No. 2018-007764ENV), a four-story residential building and below-grade parking structure at 3637–3657 Sacramento Street (Case No. 2007.1347E), and a mixed-use development at 3333 California Street (Case No. 2015-014028ENV). As discussed above under Impact SH-1, shadow from the proposed project would not reach any offsite publicly accessible recreation facilities or open spaces (other than sidewalks). Therefore, the proposed project would not have the potential to combine with impacts from reasonably foreseeable projects and result in cumulative shadow impacts on publicly accessible recreational facilities or open spaces. Although the three reasonably foreseeable projects would also shade public sidewalks, cumulative shadow from these projects would not increase shading on public sidewalks above levels that are common and generally accepted in developed urban environments. Therefore, the proposed project, in combination with reasonably foreseeable future projects, would have less-than-significant cumulative shadow impacts, and no mitigation measures are required. This topic will not be addressed in the EIR.

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
11. RECREATION **Would the project:**					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☒	☐	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐	☐

This analysis considers how population growth resulting from implementation of the proposed project would affect recreational facilities. According to the CEQA significance criteria, the project would have an adverse environmental impact if it were to deteriorate existing recreational resources through increased use or require the construction or expansion of recreational facilities that may have an adverse effect on the environment.

Existing Recreational Resources

The San Francisco Recreation and Park Department owns and maintains approximately 3,433 acres of publicly accessible recreational and open space in the city.[45] Together with the approximately 2,457 acres of open-space properties that are owned and managed by other City, state (255 acres, including the Candlestick Point State Recreation Area and Mount Sutro), and federal (1,642 acres, including the Presidio, Ocean Beach, Fort Funston, Fort Mason, Lands End, Sutro Heights, and China Beach) agencies, approximately 5,890 acres of parkland and open space are available within the city. These publicly owned open spaces make up approximately 20 percent of the city's land area and include a variety of parks, walkways, landscaped areas, recreational facilities, and unmaintained open space. The recreation and park department administers more than 220 parks, playgrounds, and open spaces, including two outside the city limits. The system includes 25 recreation centers, nine swimming pools, five golf courses, and numerous tennis courts, baseball diamonds, soccer fields, and other sports venues. Included in the recreation and park department's responsibilities are the Marina Yacht Harbor, San Francisco Zoo, and Lake Merced complex.

The project site is well situated with respect to accessiblity to neighborhood and regional parks, recreational facilities, and open space, with more than 1,125 acres of recreational space available within 0.5 mile of the project site. Table 3 lists the recreational resources within 0.5 mile of the project site.

Existing Park Maintenance

In 2003, voters passed Proposition C, which mandated the evaluation of park maintenance at city parks. The maintenance score for each park is based on criteria that reflect the different facilities at each park.[46] These scores reflect the park's performance in categories such as play areas, greenspace, hardscape, lawns, restrooms, seating areas, and others. As shown in Table 3, all the parks within 0.5 mile of the project site score very high, with an average score of 90.5 percent. The Julius Kahn Playground, the closest park to the project site, is generally very well maintained; it received a park mainteance score of 87.8 percent.

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[45] City and County of San Francisco, *Recreation and Open Space Element*, 2014, *http://generalplan.sfplanning.org/ Recreation_OpenSpace_Element_ADOPTED.pdf*, accessed: March 5, 2018.

[46] City and County of San Francisco, Office of the Controller, City Services Auditor, *City Performance, Park Maintenance Standards Fiscal Year 2015–2016*.

Table 3. Open Spaces within 0.5 Mile of Project Site

Name	Size (acres)	Distance from Project Area (miles)	FY 2016 Park Maintenance Score	Amenities
The Presidio of San Francisco	1,104	0.25 mile	Not under City jurisdiction; not applicable	Approximately 15 miles of bikeways, a 24-mile trail network, eight scenic overlooks, Baker Beach, golf course, and athletic fields
Julius Kahn Playground	12.38	0.31 mile	87.8%	State-of-the-art Parisian-style play area
Presidio Heights Playground	0.44	0.35 mile	88.8%	Full-length basketball court, slides, sandbox
Laurel Hill Playground	1.47	0.33 mile	89.2%	Play structure, sand pit, tennis court, baseball diamond
Angelo J. Rossi Playground	6.47	0.55 mile	90.7%	Baseball diamond, swimming pool, bocce ball
Bush & Broderick Mini Park	0.18	0.74 mile	94.4%	Children's play area, picnic tables
Muriel Leff Mini Park	0.21	0.66 mile	94.8%	Pocket of green, sandbox
Total	1,125.15	Average Score	90.5%	

Sources: San Francisco Recreation and Parks Department, *2010–2018 Find a Destination,* 2018, http://sfrecpark.org/parks-open-spaces/find-a-destination/, accessed: August 28, 2018.; U.S. National Parks Service, *Presidio of San Francisco, Outdoor Activities,* https://www.nps.gov/prsf/planyourvisit/outdooractivities.htm, accessed: September 20, 2018.

Ongoing Park Improvements

Beginning in 2001, the recreation and park department created its Capital Division, which is charged with renewing and revitalizing city parks through use of the 2000 Neighborhood Parks Bond. Following the Ten-Year Capital Plan in 2005, a number of bonds were passed to modernize the city's park and recreational facilities, including the 2008 Clean and Safe Neighborhood Park Bond, a $185 million bond that was used to renovate neighborhood parks, urban forest areas, trail networks, playfields, and restrooms.[47] In 2012, voters approved Proposition B, a $195 million General Obligation

[47] San Francisco Recreation and Parks Department, *Park Improvements*, *http://sfrecpark.org/park-improvements/*, accessed: September 23, 2018.

Bond, known as the 2012 San Francisco Clean and Safe Neighborhood Parks Bond, which provides funding for renewal, expansion, and repair of City-owned parks, including $8.2 million for the Angelo J. Rossi Playground, approximately 0.55 mile from the project site.[48]

Impact RE-1: The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated or the construction of new facilities would be required. (*Less than Significant*)

As discussed in Section E.2, *Population and Housing*, Table 1, p. 18, implementation of the proposed project would result in approximately 680 new city residents at the project site. The increased population resulting from the proposed project would be expected to increase demand on existing neighborhood and regional parks and other recreational facilities.

This analysis examines the condition of existing recreational resources, the population the project would be expected to generate, and any recreational or open space provided by the project as well as plans and programs for public parks and recreational facilities.

Existing and Proposed Onsite Open Space

Although the project site does not contain any publicly owned parks or recreational facilities, it does contain an outdoor plaza with hardscape features, trees, and seating areas on Block B, at the intersection of Cherry and Sacramento streets. On the northwest corner of Block C, there is a roof deck above a parking garage. The courtyard has a fence around the perimeter, with vegetation along both sides of the fence. Seating areas, hardscape features, trees, and planters are found within the courtyard. These features would be removed as part of the proposed project.

The proposed project would create housing, with amenities that would include onsite recreational facilities, private and shared garden areas, and open space. The proposed project's private open spaces would be directly accessible from individual units as well as common open spaces that would be accessible to all project residents. In total, the project would provide approximately 86,200 square feet (1.97 acres) of open space, comprising 52,800 square feet (1.21 acres) of private open space and 33,400 square feet (0.76 acre) of common open space, which is in excess of planning code requirements for

[48] San Francisco Recreation and Parks Department, *2012 San Francisco Clean and Safe Neighborhood Parks Bond Quarterly Status Report*, December 2014.

usable open space in the zoning districts where the project site is located. Common roof decks may also be included in some of the buildings. The project does not propose any publicly accessible open space.

Each single-family residence in Block A, Block B, and Block C would have a private yard. Additional private open spaces would be distributed around the multi-family buildings. In total, 93 residential units would have direct access to private open space. Common open spaces would be distributed throughout all three blocks, consisting of landscaping and hardscaping within interior courtyards, rear yards, and front-yard setbacks as well as shared gardens and patios. Block A would include a communal garden space west of Building A7. Block B would be organized around a central walkway that would be anchored by an inset garden, creating visual openness through the site and a focal point for Commonwealth Avenue where it terminates at California Street. Two other communal gardens would be located on either side of the central walkway on Block B. Block C would include a communal garden and reflecting pool. The project would also include a fitness facility for project residents.

Project-Generated Park Demand

As discussed in Section E.2, *Population and Housing*, Table 1, p. 18, implementation of the project would add approximately 680 new residents to the project area. The project site is within Census Tract 133, which has a total population of approximately 4,561.[49] The population of the census tracts within a 0.25-mile radius of the project site is approximately 15,247.[50] The proposed project would increase the population in Census Tract 133 by 15 percent compared with existing conditions and the population in census tracts within a 0.25-mile radius by 4.5 percent. Thus, project-related population growth would increase demand for recreational facilities, including parks and open space.

Although the proposed project would increase demand on parks, opens spaces, and other recreational facilities, the project site is situated in an area with a variety of easily accessible recreational spaces. As shown in Table 3, p. 58, seven parks and recreational facilities are within a 0.5 mile of the project site, providing a diverse range of amenities

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[49] U.S. Census Bureau, *2012–2016 Five-Year American Community Survey*, San Francisco County and Census Tract 133, American FactFinder, *https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table*, accessed: September 6, 2018.

[50] U.S. Census Bureau, *2012–2016 Five-Year American Community Survey*, San Francisco County and Census Tracts 133 (4,561), 154 (6,161), and 401 (4,525), American FactFinder, *https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table*, accessed: September 6, 2018.

and scoring high in terms of maintenance. The demand for recreational resources generated by the proposed project would be distributed among these open spaces, which would balance the demand and reduce the impact from use of any single park or recreational facility. In addition, the proposed project would include approximately 1.97 acres of open space for the use of residents, 0.76 acre of which would be common open space for residents. That amount of open space would exceed that of half of the parks within a 0.5-mile radius of the proposed project and serve to offset the demand for public park and recreational facilities.

Given that the project site is well served by a variety of well-maintained, accessible recreational spaces within 0.5 mile and the proposed project would offset its demand for recreational space through the provision of almost two acres of additional open space that would be available to residents, the demand generated by the proposed project would be balanced among existing and new facilities and would not cause physical deterioration of existing facilities or generate the need for the construction of new recreational spaces. Therefore, the proposed project would have a less-than-significant impact on existing recreational resources, and no mitigation measures are required. This topic will not be discussed in the EIR.

Impact RE-2: Construction of open space as part of the proposed project would not result in substantial adverse physical environmental impacts beyond those analyzed and disclosed in this initial study. (*Less than Significant*)

The proposed project would include construction of private open spaces that could be accessed by residents. In total, the project would provide approximately 86,200 square feet (1.97 acres) of open space, comprising 52,800 square feet (1.21 acres) of private open space and 33,400 square feet (0.76 acre) of common open space. In addition, common roof decks may be included in some of the buildings.

Chapter 2, *Project Description* (Section 2.5.10, Construction Activities and Schedule), in the EIR discusses the construction activities necessary to create project-proposed open spaces, including demolition, grading, and excavation. Impacts related to construction of the proposed project, including its open spaces, are analyzed and disclosed in the appropriate environmental topic sections of the initial study or in the EIR. Construction of the open spaces included in the proposed project would not result in significant impacts that are not disclosed in other impact sections of this initial study or in the EIR. Therefore, the impacts related to construction of the proposed project's open spaces would be considered less than significant. No mitigation measures are required. This topic will not be discussed in the EIR.

Impact C-RE-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in cumulative impacts on recreational facilities or resources. (*Less than Significant*)

As discussed in Section E.2, *Population and Housing*, p. 16, San Francisco has a population of approximately 850,282.[51] According to ABAG's *Projections 2013*, San Francisco's population will increase by approximately 91,400, from 890,400 in 2020 to 981,800 in 2030. Therefore, the 680 new residents generated by the proposed project would account for approximately 0.74 percent of the residential growth expected in the city by 2030.[52] Although the proposed project would represent only a small portion of the projected growth for the city, overall citywide growth would generate demand for recreational resources as the population increases. As discussed under "Ongoing Park Improvements," the City has bond funding and a capital improvements plan to address maintenance needs resulting from increased use of recreational facilities, which, along with policies in the open space element of the City's general plan, would meet this increased demand.

The geographic context for cumulative recreation impacts is generally the vicinity of the project site because neighborhood users tend to use parks and recreational facilities near their homes. Three reasonably foreseeable projects within 0.25 mile of the project site are identified in Section B, *Project Setting*, p. 5. These include a four-story residential building at 3641 California Street (Case No. 2018-007764ENV), a four-story residential building and below-grade parking structure at 3637–3657 Sacramento Street (Case No. 2007.1347E), and a mixed-use development at 3333 California Street (Case No. 2015-014028ENV). The 3333 California Street project would increase the residential population in the area by either 1,261 or 1,681, depending on the project variant ultimately constructed. The 3637–3657 Sacramento Street project would increase the residential population of the area by 42. The 3641 California Street project would increase the residential population in the area by 14. The proposed project would increase the population in the area by 680. Thus, the proposed project, in combination with the three reasonably foreseeable future projects, would increase the residential population in the area by either 1,997 or 2,417 and the number of new units by 846 or 1,032.

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[51] U.S. Census Bureau, *2012–2016 Five-Year American Community Survey*, San Francisco County, California, *https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table*, accessed April 26, 2019.

[52] To calculate the amount of growth in the city, the total number of new residents added under the proposed project (680) is divided by the anticipated growth in the city (91,400). City growth: (680 new residents/91,400) x 100 = 0.74.

The population of census tracts within a 0.25-mile radius of the project site is approximately 15,247.[53] The cumulative population increase within 0.25-mile of the project site resulting from the combination of the proposed project and the reasonably foreseeable future projects would be approximately 13 or 16 percent, depending on the project variant constructed for the 3333 California Street project. This would result in a cumulative increase in demand on local parks and recreational facilities, including those listed in Table 3, p. 58. As noted in the table, all of the parks possess very high maintenance scores, with an overall average of 90.5 percent.

Although the proposed project, in combination with the reasonably foreseeable projects, would increase the use of parks and recreational facilities, as shown in Table 3, p. 58, a wide variety of recreational open spaces are available within 0.5 mile of the project site. The increase in demand would be disbursed among these parks, which would minimize impacts on any single park. In addition, the City has bond funding and a capital improvement plan in place to fund necessary repairs and upgrades at existing parks. The proposed project would include private open space for use by residents, which would substantially offset the use of City parks and open spaces. Furthermore, the reasonably foreseeable projects would also be required to comply with the applicable open space requirements of the planning code, thereby partially offsetting their demand on parks of open spaces. Therefore, because abundant and well-maintained parks and open spaces exist in the project vicinity, and because the proposed project and reasonably foreseeable projects would be required to provide open space for project residents, in accordance with planning code requirements, the proposed project, in combination with reasonably foreseeable future projects, would have less-than-significant cumulative recreation impacts, and no mitigation measures are required. This topic will not be discussed in the EIR.

[53] U.S. Census Bureau, *2012–2016 Five-Year American Community Survey*, San Francisco County and Census Tracts 133 (4,561), 154 (6,161), and 401 (4,525), American FactFinder, *https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table*, accessed: September 6, 2018.

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
12. UTILITIES AND SERVICE SYSTEMS Would the project:					
a) Require or result in the relocation or construction of new or expanded, water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐	☐
d) Generate solid waste in excess of state or local standards, or in excess of the capacity or local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐	☐

The project site is located within an urban area that is served by water storage, treatment, and distribution facilities; combined wastewater and stormwater collection, storage, treatment and disposal facilities; and solid waste collection and disposal service systems. As discussed in Section D, *Summary of Environmental Effects*, p. 7, the existing hospital's water use and solid waste generation were not subtracted, or "netted out," from the estimates of the proposed project's water use and solid waste generation (Impacts UT-2 and UT-3, respectively). This approach ensures that environmental impacts resulting from relocation of the hospital are not double counted with respect to the LRDP EIR analysis, which analyzed the environmental impacts of CPMC's new hospital site at Geary Street and Van Ness Avenue. The existing hospital's wastewater generation at the project site is netted out from the wastewater generation analysis (Impact UT-1) because the project site and CPMC's new hospital site are served by different wastewater treatment plants (the Oceanside Water Pollution Control Plant serves the project site, and the Southeast Water Pollution Control Plant serves the CPMC Geary Street and Van Ness Avenue campus). Refer to Section D, *Summary of Environmental Effects*, p. 7, for additional discussion of the LRDP EIR and its relationship to this analysis.

Impact UT-1: Implementation of the proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, nor would it result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments. (*Less than Significant*)

As described in Impact PH-1 in Section E.2, *Population and Housing*, the proposed project would add approximately 680 residents (for a total of 701 residents when including 401 Cherry Street) to the project site. This would result in a reduction in the amount of wastewater generated at the project site and treated at the Oceanside Water Pollution Control Plant by approximately 10.2 million gallons per year, or 25,207 gallons per day, compared with existing conditions.[54,55,56] In addition, the proposed project would incorporate water-efficient fixtures, as required by California Code of Regulations title 24 and the San Francisco Green Building Ordinance. Specifically, the project would be required to comply with the following measures:

- Title 24, part 11 (2016 CALGreen Code), Residential Mandatory Measures, division 4.3, Water Efficiency and Conservation
- Title 24, part 11 (2016 CALGreen Code), Nonresidential Mandatory Measures, division 5.3, Water Efficiency and Conservation

With regard to stormwater, the project site is currently entirely covered by impervious surfaces and the proposed project would not expand any existing impervious surfaces; therefore, the proposed project would not result in an increase in stormwater runoff. Compliance with the City's Stormwater Management Ordinance,

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[54] This calculation assumes 95 percent of water used is discharged to the combined sewer (consistent with SPFUC's standard assumption for residential buildings, "Wastewater Service Charge Appeal," *http://www.sfwater.org/index.aspx?page=132*, accessed October 2018.).

[55] Existing wastewater generation at the project site is 19.575 million gallons annually (53,631 gallons daily), according to the LRDP EIR (see Section D, *Summary of Environmental Effects*, p. 7, for further discussion of the LRDP EIR). This number has been adjusted to include only buildings that are a part of the project site (e.g., does not include 3838 California Street), with the exception of 401 Cherry Street, which is not included because the residential population at 401 Cherry Street would not change under the proposed project. Proposed project wastewater generation is 28,424 gallons per day, not including residential units at 401 Cherry Street (approximately 10.4 million gallons annually, which equals 680 net new residents × 44 gallons of water use per day per resident × 0.95 percent of the water that becomes wastewater). San Francisco Public Utilities Commission, *2015 Urban Water Management Plan for the City and County of San Francisco*, June 2016, Figure 5-1, p. 5-5, *https://sfwater.org/modules/showdocument.aspx?documentid=9300*, accessed October 2018.

[56] Existing water generation for the project site calculated from: BFK. *CPMC LRPD EIR Existing and Forecasted Demand for Community Services Questions: CS-1, CS-2, CS-5, CS-6*. p.3 July 21, 2010.

adopted in 2010 and amended in 2016, and the 2016 Stormwater Management Requirements and Design Guidelines, would require the proposed project to reduce the existing volume and rate of stormwater runoff discharged from the project site. Pursuant to the ordinance, the stormwater management approach for the proposed project must reduce the existing runoff flow rate and volume by 25 percent for a two-year, 24-hour design storm. The stormwater management requirements set forth a hierarchy of best management practices (BMPs) to meet the stormwater runoff requirements. First-priority BMPs involve reducing stormwater runoff through approaches such as rainwater harvesting and reuse (e.g., for toilets and urinals and/or irrigation); infiltration through a rain garden, swale, trench, or basin; or the use of permeable pavement or a green roof. Second-priority BMPs include using biotreatment approaches such as flow-through planters or, for large sites, constructed wetlands. Third-priority BMPs, permitted only under special circumstances, involve using a filter to treat stormwater.

To achieve compliance with the stormwater management requirements, the proposed project would install appropriate stormwater management systems using low-impact design measures. A stormwater control plan would be designed for review and approval by San Francisco Public Utilities Commission (SFPUC). The stormwater control plan would also include a maintenance agreement that must be signed by the project sponsor to guarantee proper care of the necessary stormwater controls.

Because the proposed project would result in a decrease in wastewater and stormwater generation at the site, and therefore a decrease in stormwater and wastewater that would require treatment at the Oceanside Water Pollution Control Plant, the project would not require relocation or construction of stormwater or wastewater treatment facilities or expansion of existing facilities. The proposed project would, however, require new local connections to the existing combined sewer system. As discussed in Section 2.5.8 in Chapter 2, *Project Description*, in the EIR, the project would include the installation of 4- to 12-inch-diameter sewer laterals to connect each of the proposed residential buildings to the gravity sewer lines under California, Sacramento, Cherry, and Maple streets. The project also proposes to realign various 6- to 12-inch-diameter domestic water lines surrounding the project site. In addition, the project would install new connections to the surrounding Pacific Gas and Electric Company (PG&E) electric grid and natural gas system to provide service to the proposed buildings. The project would also provide connections to communication lines along adjacent roadways. These improvements are part of the project description, and the environmental impacts associated with their construction are evaluated throughout this initial study and EIR. Other than localized connections to the existing systems, the project would not result in the construction or relocation of stormwater, wastewater, electric, natural gas, or telecommunications facilities (e.g., electric substations, telecommunication towers). Therefore, this impact would be less than significant, and no mitigation measures are required. This topic will not be discussed in the EIR.

Impact UT-2: Adequate water supplies are available to serve the proposed project and reasonably foreseeable future development in normal, dry, and multiple dry years, unless the Bay Delta Plan Amendment is implemented; in that event, the SFPUC may develop new or expanded water supply facilities to address shortfalls in single and multiple dry years, but this would occur with or without the proposed project. Impacts related to new or expanded water supply facilities cannot be identified at this time or implemented in the near term; instead, the SFPUC would address supply shortfalls through increased rationing, which could result in significant cumulative effects, but the project would not make a considerable contribution to impacts from increased rationing. (*Less than Significant*)

In 2015, the SFPUC adopted its Urban Water Management Plan,[57] which estimates that current and projected water supplies will meet future retail demand[58] through 2035 under normal-year, single-dry-year and multiple-dry-year conditions; however, if a multiple-dry-year event occurs, the SFPUC will implement water use and supply reductions through its drought response plan and a corresponding retail water shortage allocation plan.

In December 2018, the State Water Resources Control Board adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, establishing water quality objectives to maintain the health of our rivers and the Bay-Delta ecosystem (the Bay-Delta Plan Amendment).[59] The state water board has stated that it intends to implement the Bay-Delta Plan Amendment by 2022, assuming all required approvals are obtained by that time. Implementation of the Bay-Delta Plan Amendment will result in a substantial reduction in SFPUC's water supplies from the Tuolumne River watershed during dry years, requiring rationing in San Francisco to a degree greater than that previously anticipated to address supply shortages that were not accounted for in the 2015 Urban Water Management Plan.

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[57] San Francisco Public Utilities Commission, *2015 Urban Water Management Plan for the City and County of San Francisco*, June 2016, *https://sfwater.org/index.aspx?page=75,* accessed June 4, 2019.

[58] "Retail" demand represents water the SFPUC provides to individual customers within San Francisco. "Wholesale" demand represents water the SFPUC provides to water agencies that supply other jurisdictions.

[59] State Water Resources Control Board, *Resolution No. 2018-0059*, *Adoption of Amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary and Final Substitute Environmental Document*, December 12, 2018, https://www.waterboards.ca.gov/plans_policies/docs/2018wqcp.pdf.

The SFPUC has prepared a memorandum to consider future water supply scenarios with adoption of the Bay-Delta Plan Amendment.[60] As discussed in the SFPUC memorandum, implementation of the plan amendment is uncertain for several reasons. Whether the Bay-Delta Plan Amendment will be implemented, when it will be implemented, and the form that implementation will take, as well as how the amendment will affect SFPUC's water supply, are currently unknown. The SFPUC memorandum estimates total shortfalls in water supply (i.e., total retail demand minus total retail supply) to retail customers through 2040 under three increasingly supply-limited scenarios:

1. Without implementation of the Bay-Delta Plan Amendment, wherein the water supply and demand assumptions contained in the 2015 Urban Water Management Plan and the 2009 Water Supply Agreement, as amended, would remain applicable.

2. With implementation of a voluntary agreement between the SFPUC and the State Water Resources Control Board, including a combination of flow and non-flow measures that would be designed to benefit fisheries at a lower water cost, particularly during multiple dry years, than that under the Bay-Delta Plan Amendment.

3. With implementation of the Bay-Delta Plan Amendment as adopted.

As estimated in the SFPUC memorandum, water supply shortfalls during dry years would be lowest without implementation of the Bay-Delta Plan Amendment and highest with implementation of the plan amendment. The range of shortfalls under the proposed voluntary agreement would be between those with and without implementation of the Bay-Delta Plan Amendment.[61]

Under the three scenarios, the SFPUC would have adequate water to meet total retail demands through 2040 in normal years.[62] For single dry years and multiple dry years (years 1, 2, and 3) of an extended drought, the SFPUC memorandum estimates that

[60] Memorandum from Steven R. Ritchie, SFPUC, to Lisa Gibson, Environmental Review Officer, San Francisco Planning Department, Environmental Planning Division, May 31, 2019.

[61] On March 26, 2019, the SFPUC adopted Resolution No. 19-0057 to support its participation in the voluntary agreement negotiation process. To date, those negotiations are ongoing with the California Natural Resources Agency. The SFPUC submitted a proposed project description to the state water board on March 1, 2019, that could be the basis for a voluntary agreement. Because the proposed voluntary agreement has yet to be accepted by the state water board as an alternative to the Bay-Delta Plan Amendment, the shortages that would occur with its implementation are not known with certainty; however, if accepted, the voluntary agreement would result in dry-year shortfalls of a lesser magnitude than those under the Bay-Delta Plan Amendment.

[62] Based on historic records of hydrology and reservoir inflow from 1920 to 2017 and current delivery and flow obligations, with the fully implemented infrastructure from the 2018 Phased Water System Improvement Program Variant, normal or wet years occurred during 85 out of 97 years. This translates into roughly nine normal or wet years out of every 10. Conversely, system-wide rationing is required roughly one out of every 10 years. This frequency is expected to increase as climate change intensifies.

shortfalls in water supplies relative to demand would occur both with and without implementation of the Bay-Delta Plan Amendment. Without implementation of the plan amendment, shortfalls would range from approximately 3.6 to 6.1 million gallons per day (mgd), or 5 to 6.8 percent, during dry years through 2040.

With implementation of the Bay-Delta Plan Amendment, shortfalls would range from 12.3 mgd (15.6 percent) in a single dry year to 36.1 mgd (45.7 percent) in years seven and eight of the 8.5-year design drought, based on 2025 demand levels, and from 21 mgd (23.4 percent) in a single dry year to 44.8 mgd (49.8 percent) in years seven and eight of the 8.5-year design drought, based on 2040 demand.

The proposed project would not require a water supply assessment under the California Water Code. Under sections 10910 through 10915 of the California Water Code, urban water suppliers, such as the SFPUC, must prepare water supply assessments for certain "large water demand" projects, as defined in CEQA Guidelines section 15155.[63] The proposed residential project would result in 264 new dwelling units; as such, it would not qualify as a "large water demand" project, as defined by CEQA Guidelines section 15155(a)(1). A water supply assessment is not required and has not been prepared for the project.

Although a water supply assessment is not required, the following discussion provides an estimate of the project's maximum water demand in relation to the three supply scenarios. No single development project alone in San Francisco would require the development of new or expanded water supply facilities or require the SFPUC to take other actions, such as imposing a higher level of rationing across the city in the event of a supply shortage in dry years. Therefore, a separate project-only analysis is not provided for this topic. The following analysis instead considers whether the proposed project, in combination with both existing development and projected growth through 2040, would require new or expanded water supply facilities, the construction or

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63 Pursuant to CEQA Guidelines section 15155(1), "a water-demand project" means:
(A) A residential development of more than 500 dwelling units.
(B) A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
(C) A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor area.
(D) A hotel or motel, or both, having more than 500 rooms.
(E) An industrial, manufacturing, or processing plant or industrial park for more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
(F) A mixed-use project that includes one or more of the projects specified in subdivisions (a)(1)(A), (a)(1)(B), (a)(1)(C), (a)(1)(D), (a)(1)(E), and (a)(1)(G) of this section.
(G) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a project with 500 dwelling units.

relocation of which could have significant cumulative impacts on the environment. It also considers whether a high level of rationing would be required that could have significant cumulative impacts. It is only under this cumulative context that development in San Francisco could have the potential to require new or expanded water supply facilities or require the SFPUC to take other actions, which, in turn, could result in significant physical environmental impacts related to water supply. If significant cumulative impacts could result, then the analysis considers whether the project would make a considerable contribution to the cumulative impact.

Based on guidance from the California Department of Water Resources and a citywide demand analysis, the SFPUC established 50,000 gallons per day as the equivalent project demand for projects that do not meet the definitions provided in CEQA Guidelines section 15155(a)(1).[64] The new development proposed by the project would represent 53 percent of the 500-unit limit provided in section 15155(1)(A) and (B). In addition, the proposed project would incorporate water-efficient fixtures, as required by Title 24 of the California Code of Regulations and the City's Green Building Ordinance. It is therefore reasonable to assume that the proposed project would result in an average daily water demand of less than 50,000 gallons.

The SFPUC has prepared estimates of total retail demand in five-year intervals from 2020 through 2040.[65] Assuming that the project would demand no more than 50,000 gallons of water per day (or 0.05 mgd), Table 4 compares this maximum with total retail demand from 2020 through 2040. At most, the proposed project's water demand would represent a small fraction of total projected retail water demand, ranging from 0.07 to 0.06 percent between 2020 and 2040. As such, the project's water demand is not substantial enough to require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects.

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[64] Memorandum from Steven R. Ritchie, assistant general manager, Water Enterprise, San Francisco Public Utilities Commission, to Lisa Gibson, Environmental Review Officer, San Francisco Planning Department – Environmental Planning, May 31, 2019.

[65] San Francisco Public Utilities Commission, *2015 Urban Water Management Plan for the City and County of San Francisco*, June 2016, *https://sfwater.org/index.aspx?page=75*, accessed June 4, 2019.

Table 4. Proposed Project Water Demand Relative to Total Retail Water Demand (mgd)

	2020	2025	2030	2035	2040
Total Retail Demand	72.1	79	82.3	85.9	89.9
Total Demand of Proposed Project	0.05	0.05	0.05	0.05	0.05
Total Demand of Proposed Project as Percentage of Total Retail Demand	0.07%	0.06%	0.06%	0.06%	0.06%

Adequate water supplies are available to serve the proposed project and reasonably foreseeable future development in normal, dry, and multiple dry years, unless the Bay-Delta Plan Amendment is implemented. As indicated above, the proposed project's maximum demand would represent less than 0.06 percent of the total retail demand in 2040, when implementation of the Bay-Delta Plan Amendment would result in a retail supply shortfall of up to 49.8 percent in a multiple-year drought. The SFPUC has indicated that it is accelerating its efforts to develop additional water supplies and explore other projects that would increase overall water supply resilience in case the Bay-Delta Plan Amendment is implemented. The SFPUC has identified possible projects that it will study, but it has not determined the feasibility of the projects and has not made any decision to pursue any particular supply project. The SFPUC has determined that the identified potential projects would take anywhere from 10 to 30 years, or more, to implement. The potential impacts that could result from construction and/or operation of any such water supply facility project cannot be identified at this time. In any event, under a worst-case scenario, demand for the SFPUC to develop new or expanded dry-year water supplies will exist, regardless of whether the proposed project is constructed.

In the event that the Bay-Delta Plan Amendment were to take effect sometime after 2022 and result in a dry-year shortfall, the expected action of the SFPUC for the next 10 to 30 years (or more) would be limited to requiring increased rationing, given the long lead times associated with developing additional water supplies. As discussed in the SFPUC memorandum, the SFPUC has established a process through its Retail Water Shortage Allocation Plan for actions it would take under circumstances that would require rationing. The level of rationing that would be required of the proposed project is unknown at this time. Both direct and indirect environmental impacts could result from high levels of rationing. However, the small increase in potable water demand attributable to the project, compared with citywide demand, would not substantially affect the levels of dry-year rationing that would otherwise be required throughout the city. Therefore, the proposed project would not make a considerable contribution to a cumulative environmental impact caused by implementation of the Bay-Delta Plan Amendment, and no mitigation measures are required. This topic will not be discussed in the EIR.

Impact UT-3: The proposed project would not generate solid waste in excess of applicable standards or local infrastructure capacity or otherwise impair attainment of solid waste reduction goals, and construction and operation of the proposed project would comply with all applicable statutes and regulations related to solid waste. (*Less than Significant*)

The California Integrated Waste Management Act of 1989 (Assembly Bill 939) requires municipalities to adopt an integrated waste management plan to establish objectives, policies, and programs related to waste disposal, management, source reduction, and recycling. Reports filed by the San Francisco Department of the Environment show that the city generated approximately 870,000 tons of waste material in 2000. By 2010, that figure decreased to approximately 455,000 tons. Waste diverted from landfills is defined as recycled or composted. San Francisco has a goal of 75 percent landfill diversion by 2010 and 100 percent by 2020.[66]

Recology provides solid waste collection, recycling, and disposal services for residential and commercial garbage, recycling, and composting in San Francisco through its subsidiaries: Golden Gate Disposal and Recycling, and Sunset Scavenger. Materials are collected and hauled to the Recology transfer station/recycling center at 501 Tunnel Avenue, near the southeastern city limit, for sorting and subsequent transportation to other facilities. Recyclable materials are taken to Recology's Pier 96 facility, where they are separated into commodities (e.g., aluminum, glass, and paper) and transported to other users for reprocessing. Compostables (e.g., food waste, plant trimmings, and soiled paper) are transferred to a Recology composting facility in Solano County, where they are converted to soil amendment and compost. The remaining material that cannot otherwise be reprocessed ("trash") is transported to landfills.

In September 2015, the city approved an agreement with Recology, Inc. for the transport and disposal of the city's municipal solid waste at the Recology Hay Road Landfill, northeast of Vacaville in Solano County. The city began disposing the majority of its municipal solid waste at the Recology Hay Road Landfill in January 2016, and that practice is anticipated to continue for approximately nine years, or until 3.4 million tons of municipal solid waste have been deposited in that landfill, whichever comes first. The city would have an option to renew the agreement for a period of six years, or until an additional 1.6 million tons of municipal solid waste have been deposited in the landfill,

[66] San Francisco Department of the Environment, *Zero Waste FAQs, https://sfenvironment.org/zero-waste-faqs*, accessed October 6, 2018.

whichever comes first.[67] The Recology Hay Road Landfill has a permitted maximum daily disposal capacity of 2,400 tons per day, a maximum permitted capacity of 37 million cubic yards, and a remaining permitted capacity of 30.4 million cubic yards (or 82 percent of its permitted capacity); its estimated closure date is January 1, 2077.[68] In 2017, approximately 626,997 tons of municipal solid waste was generated in the city, with 423,379 tons transported to Recology Hay Road Landfill, 107,295 tons to the Potrero Hills Landfill, 51,256 tons to the Corinda Los Trancos Landfill, and 10,457 tons to Altamont Landfill; the remainder was transported to 18 other landfills.[69] Together, 23 of the 26 landfills used by San Francisco in 2017 have a remaining capacity of 755,522,937 million cubic yards.[70]

San Francisco's Mandatory Recycling and Composting Ordinance (San Francisco Ordinance No. 100-09) requires all properties and everyone in the city to separate their recyclables, compostables, and landfill trash. Recycling, composting, and waste reduction are expected to increasingly divert waste from landfills per California and local requirements. Under Assembly Bill 939, all jurisdictions were required to divert 50 percent of their waste streams from landfill disposal by 2000. San Francisco met this threshold in 2003 and increased it to 69 percent in 2005 and 70 percent in 2006. San Francisco had a goal to divert 75 percent of its solid waste by 2010, which it exceeded when it diverted 80 percent in 2012. Under the current goal, 100 percent of solid waste would be diverted to landfills or incinerated by 2020 (i.e., or "zero waste").[71]

As described in Section A, *Project Description*, p. 1, construction activities would result in an estimated 61,800 cubic yards of excavation-related soil export during the approximately 41-month construction period. The proposed project would also generate

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[67] San Francisco Planning Department, *Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County Final Negative Declaration*, Case No. 2014.0653E, July 21, 2015, *http://sfmea.sfplanning.org/2014.0653E_Revised_FND.pdf*, accessed November 1, 2018.

[68] California Department of Resources Recycling and Recovery, *Facility/Site Summary Details: Recology Hay Road* (48-AA-00002), *https://www2.calrecycle.ca.gov/swfacilities/Directory/48-AA-0002*, accessed October 4, 2018.

[69] California Department of Resources Recycling and Recovery, *CalRecycle Disposal by Facility 2017, San Francisco County, https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Destination/DisposalByFacility*, accessed October 5, 2018.

[70] California Department of Resources Recycling and Recovery facility/site summary data were accessed for each landfill or disposal site on October 5, 2018. Remaining capacity data were not available for the Covanta Stanislaus, Yolo County Central, and Zanker Road class III landfills.

[71] San Francisco Department of the Environment, *San Francisco Sets North American Record for Recycling and Composting with 80 Percent Diversion Rate, https://sfenvironment.org/news/update/san-francisco-sets-north-american-record-for-recycling-composting-with-80-percent-diversion-rate*, accessed October 6, 2018.

an estimated 24,500 cubic yards of debris from demolition and remodeling. San Francisco's Construction and Demolition Debris Recovery Ordinance (San Francisco Ordinance No. 27-06) requires mixed construction and demolition debris be transported by a registered transporter and taken to a registered facility that must recover for reuse or recycling and divert from landfill at least 65 percent of all received construction and demolition debris. Excavated soil and demolition debris that is contaminated (e.g., with asbestos, PCBs, or lead-based paint) and classified as a hazardous waste would be would be taken to a *class I* facility for disposal in accordance with applicable hazardous waste laws and regulations. Soils not classified as hazardous waste would be transported to local disposal and reuse sites such as Treasure Island, Bay Meadows, or other available sites.

The proposed project would result in 680 new residents, for a total of 701 residents. Solid waste production is estimated at 6.6 pounds per person per day for residential uses.[72,73] Using this solid waste generation rate, the proposed project would generate approximately 4,488 pounds of solid waste daily and 1.64 million pounds (819 tons) annually.[74] This equates to 0.9 percent of the Recology Hay Road Landfill's permitted maximum daily disposal capacity of 2,400 tons per day. Given the city's progress to date on diversion and waste reduction, and given the existing future long-term capacity available at the Recology Hay Road Landfill and other area landfills, the proposed project would be served by regional landfills with sufficient permitted capacity to accommodate its solid waste disposal needs. The proposed project would also comply with all applicable statutes and regulations related to solid waste. Therefore, this impact would be less than significant, and no mitigation measures are required. This topic will not be discussed in the EIR.

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[72] California Department of Resources Recycling and Recovery, *Disposal Rate Calculator, San Francisco 2017 Reporting Year, https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/DisposalRateCalculator*, accessed October 5, 2018.

[73] The City of San Francisco's actual waste production rate is 3.9 pounds per person based on the Disposal Rate Calculator Annual Rate (see source in above footnote). The higher target rate of 6.6 pounds per person was used to ensure a conservative (i.e., higher) estimate of the solid waste that would be generated by the proposed project.

[74] A total of 6.6 pounds per day × 680 residents (not including 401 Cherry Street) = 4,488 pounds per day/1.64 million pounds per year.

Impact C-UT-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in cumulative impacts on utilities and service systems. (*Less than Significant*)

Wastewater and Stormwater

The geographic context for cumulative wastewater and stormwater impacts is the Oceanside Water Pollution Control Plant drainage basin. The city's combined sewer system and treatment facilities are designed to accept both wastewater and stormwater flows, and stormwater flows are the largest component during wet weather. As with the proposed project, all reasonably foreseeable projects in the drainage basin would be required to comply with San Francisco regulations regarding wastewater and stormwater generation. Although reasonably foreseeable projects would likely result in increased wastewater flows, regulations require that, for applicable projects, stormwater flows be reduced by 25 percent over existing conditions. The 25 percent reduction in stormwater flows would result in an overall reduction in combined flows during peak wet-weather flow events. Furthermore, as discussed above, the proposed project would result in a net reduction in wastewater flows from the project site compared to existing conditions. Therefore, the proposed project, in combination with reasonably foreseeable future projects, would have a less-than-significant cumulative impact on the combined sewer collection and treatment system.

Water

As explained in Impact UT-2, p. 67, no single development project alone in San Francisco would require the development of new or expanded water supply facilities. The analysis provided in Impact UT-2 considers whether the proposed project, in combination with both existing development and projected growth through 2040, would require new or expanded water supply facilities, the construction or relocation of which could have significant cumulative impacts on the environment. Therefore, no separate cumulative analysis is required.

Solid Waste

The geographic context for cumulative solid waste impacts is the city. Long-range growth forecasts are considered in planning for future landfill capacity. In addition, the city currently exceeds statewide goals for reducing solid waste and is therefore expected to reduce solid waste volumes in the future. All projects are required to comply with San Francisco's construction and demolition debris recovery and recycling and composting ordinances. As with the proposed project, compliance with these ordinances would reduce the solid waste generation from construction and operation of reasonably foreseeable development projects.

Although reasonably foreseeable development projects could incrementally increase total waste generation from the city by increasing the number of residents and excavation, demolition, and remodeling activities associated with growth, the increasing rate of diversion citywide through recycling, composting, and other methods would result in a decreasing share of total waste that requires deposition into the landfill. Given the City's progress to date on diversion and waste reduction and given the future long-term capacity available at the Recology Hay Road Landfill and other area landfills, reasonably foreseeable development projects would be served by a landfill with sufficient permitted capacity to accommodate their solid waste disposal needs. For these reasons, the proposed project, in combination with reasonably foreseeable future projects, would have less-than-significant cumulative impacts related to solid waste.

Conclusion

Based on the above, the proposed project would not combine with reasonably foreseeable projects to create a significant cumulative impact on utilities and service systems, and this impact would be less than significant. No mitigation measures are required. This topic will not be discussed in the EIR.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Not Applicable
13. PUBLIC SERVICES **Would the project?**					
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services, such as fire protection, police protection, schools, parks, or other public facilities?	☐	☐	☒	☐	☐

Impact PS-1: The proposed project would increase demand for fire and police protection, schools, and other public services but not to the extent that would require new or physically altered fire, police, school, or other public facilities, the construction of which could result in significant environmental impacts. (*Less than Significant)*

Fire Protection and Emergency Medical Service

The San Francisco Fire Department provides fire suppression and emergency medical services in the city, including the project site. In addition, several privately operated ambulance companies are authorized to provide advanced life support (ALS) services.

The fire department consists of three divisions, which are subdivided into 10 battalions and 45 active stations throughout the city. The project site would be served by Station 10, which is at 655 Presidio Avenue (at Bush Street), approximately 0.5 mile from the project site. Station 10 has one fire engine and one truck.[75] Other nearby stations include Station 21 (1442 Grove Street), 1.19 miles from the project site; Station 5 (1301 Turk Street), 1.45 miles from the project site; and Station 12 (1145 Stanyan Street), 1.68 miles from the project site.

The fire department responds to non-life-threatening fire and medical emergencies (Code 2) as well as life-threatening fire and medical emergencies (Code 3). Response times are measured from the time a unit is dispatched to the time the unit arrives at the scene. According to San Francisco's Emergency Medical Services Agency policy, the target response time for a life-threatening emergency medical incident should be

75 FireDepartment.net, *Fire Equipment at San Francisco Fire Department*, 2018, *https://www.firedepartment.net/directory/california/san-francisco-county/san-francisco/san-francisco-fire-department/fire-equipment*, accessed: September 19, 2018.

within 10 minutes 90 percent of the time. In fiscal year 2016–2017, there were 60,848 Code 2 incidents and 85,743 Code 3 incidents. Ambulances arrived on scene in response to Code 3 calls within 10 minutes 91.6 percent of the time; ambulances arrived on scene in response to Code 2 calls within 20 minutes 94.5 percent of the time during the fiscal year.[76] In fiscal year 2017–2018, 93 percent of ambulances arrived on scene within 10 minutes. The fire department is on track to meet its target in fiscal year 2018–2019 as well.[77]

The proposed project would construct residential buildings at the project site that would comply with all applicable building and fire code requirements. Low-pressure water for firefighting purposes would be provided from four existing fire hydrants along California, Sacramento, and Cherry streets. In addition, four new low-pressure fire hydrants would be installed along California and Sacramento streets to serve the area and the proposed project.

As discussed in Section E.2, *Population and Housing*, Table 1, p. 18, implementation of the proposed project would result in approximately 680 new city residents at the project site. The increased population resulting from the proposed project would be expected to increase demand for fire protection and emergency medical services. However, the increase would be funded largely through project-related increases to the City's tax base and would not be substantial given the overall demand for fire protection and emergency services throughout the city.

The fire department conducts ongoing assessments of its service capacity and response times to maintain acceptable service levels, given the demand resulting from changes in population. The fire department is currently meeting its goals in terms of response times.

The proposed project would comply with all applicable building and fire codes and install new hydrants along California and Sacramento streets. The proposed project would not result in substantial demand for service or oversight. For these reasons, implementation of the proposed project would not require the construction of new, or alteration of existing, fire protection facilities, the construction of which could result in significant environmental impacts. This impact would be less than significant, and no mitigation would be required. This topic will not be discussed in the EIR.

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[76] City and County of San Francisco, Office of the Mayor, *Mayor's 2018–2019 and 2019–2020 Proposed Budget, https://sfmayor.org/mayors-office-public-policy-and-finance-0 p. 190*, accessed: September 19, 2018.

[77] City and County of San Francisco, *Ambulance Response to Life-Threatening Emergencies,* 2018, *https://sfgov.org/scorecards/public-safety/ambulance-response-life-treatening-emergencies*, accessed: September 19, 2018.

Police Protective Services

The San Francisco Police Department, headquartered at 850 Bryant Street in the Hall of Justice (approximately 3 miles southeast of the project site), provides police protection services for the city. The police department is mandated by the City Charter to maintain a minimum of 1,971 sworn officers. In 2015, the board of supervisors passed resolution No. 248-15, which increased the mandated minimum staffing level to 2,200 sworn officers.[78] However, despite implementation of a six-year hiring plan, the San Francisco Police Department is short of its goal. The police department is currently slated to hire five academy classes per year for at least the next two years, with 50 recruits in each class.[79]

The proposed project is within the Richmond Police District, the boundaries of which reach from the southern border of the Presidio to the north, Divisadero Street to the east, Lincoln Street to the south, and the Great Highway to the west. The closest police station to the project site is approximately 0.64 mile southwest of the project site at 461 Sixth Avenue.[80] The Richmond Police District includes the neighborhoods within the project site (Presidio Heights, Jordan Park, and Laurel Heights) as well as Inner and Outer Richmond, Sea Cliff, and Golden Gate Park.[81] Serving a population of 91,753 and covering 12.8 percent of the land mass of the city, the district is mostly residential. It contains 40 schools, seven health care facilities, 80 alcohol outlets, one single-resident-occupancy hotel, 18 senior centers, and eight public housing facilities.[82]

The police department does not have a standard for the ratio of officers to the population; rather, it bases its staffing levels on the number of service calls and crime incidents. The police department's annual statistics for 2017 demonstrate a 3.4 percent decrease in homicides and a 5 percent decrease in homicides by firearm compared to the previous year. Non-fatal shooting incidents have decreased by 15.8 percent; however, property crimes in San Francisco have increased, similar to the trend in other Bay Area cities. Automobile thefts in San Francisco have increased by 24 percent.[83]

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78 San Francisco Board of Supervisors, *Resolution No. 248-15, Establishing a Population-Based Police Staffing Policy,* June 23, 2015, *http://sfbos.org/ftp/uploadedfiles/bdsupvrs/resolutions15/r0248-15.pdf*, accessed: September 19, 2018.

79 San Francisco Police Department, *Personal Communication*, March 13, 2018.

80 San Francisco Police Department, *Police District Maps, http://sanfranciscopolice.org/police-district-maps*, accessed: September 20, 2018.

81 San Francisco Police Department, *Richmond District Map, http://sanfranciscopolice.org/richmond-station*, assessed: September 19, 2018.

82 Public Safety Strategies Group, LLC, *District Station Boundary Analysis Report*, 2015, submitted to City and County of San Francisco, Controller's Office, March 3, 2015.

83 City and County of San Francisco, *City Performance Scorecards*, Violent Crime Rate and Property Crime Rate, *https://sfgov.org/scorecards/public-safety/violent-crime-rate-and-property-crime-rate*, accessed: September 23, 2018.

As discussed in Section E.2, *Population and Housing*, Table 1, p. 18 implementation of the proposed project would result in approximately 680 new city residents at the project site. The new residents would increase the demand for police services in the Richmond Police District, which, by citywide comparison, receives a low number of calls for police services. Between 2008 and 2013, the district received only 7.5 percent of the total number of citywide police calls.[84] The proposed project would increase the population served by the Richmond Police District by 0.74 percent. Thus, the increased demand generated by the proposed project would be small relative to the existing service population, would not affect a high-demand district, and could be accommodated by existing services. The increased demand for police services related to the proposed project's onsite population would be funded largely through project-related increases to the City's tax base. The increased demand would not be considered substantial given the relatively low demand for such services at the district level and the ongoing staffing analysis and dynamic resource deployment that occurs on a citywide basis.

Although the police department is currently short with respect to the mandated minimum number of officers (i.e., 2,200), the San Francisco Police Department is on track to reach the mandated minimum through current recruiting and hiring efforts. The additional sworn officers would be housed in existing San Francisco Police Department stations and in nearby areas. Therefore, the proposed project would not result in substantial adverse environmental impacts associated with the construction or alteration of police facilities to maintain acceptable service ratios, response times, or other performance objectives. For these reasons, police protection impacts as a result of the proposed project would be less than significant, and no mitigation would be required. This topic will not be discussed in the EIR.

Schools

The San Francisco Unified School District operates San Francisco's public schools. During the 2016–2017 academic year, the school district managed 117 schools (75 elementary schools, 16 middle schools, 18 high schools, six alternative schools, and two continuation schools), with a total enrollment of 60,133 students.[85] As shown in

[84] Public Safety Strategies Group, LLC, *District Station Boundary Analysis Report*, submitted to City and County of San Francisco, Controller's Office, March 3, 2015.

[85] California Department of Education, *Educational Demographics Office, Fiscal, Demographic, and Performance Data on California's K–12 Schools*, 2018, *https://www.ed-data.org/district/San-Francisco/San-Francisco-Unified*, accessed: September 18, 2018.

Table 5, enrollment in district schools has been steadily increasing since 2009–2010. Projections from the 2009 school district Capital Plan indicate that elementary enrollment will continue to grow because of the large cohorts of the early 2000s. High school enrollment will experience a continuous decline over the next five years, reflecting the declining birth trend of the 1990s.[86]

Table 5. Enrollment in San Francisco Unified School District Schools

	Years							
	2009–2010	**2010–2011**	**2011–2012**	**2012–2013**	**2013–2014**	**2014–2015**	**2015–2016**	**2016–2017**
Total Enrollment	55,140	55,571	56,222	56,970	57,620	58,414	58,865	60,133

Source: California Department of Education, Educational Demographics Office, *Fiscal, Demographic, and Performance Data on California's K–12 Schools*, 2018, *https://www.ed-data.org/district/San-Francisco/San-Francisco-Unified*, accessed: September 18, 2018.

The project site is within the attendance area for Sutro Elementary School, located at 235 12th Avenue.[87] Other nearby schools include Claire Lilienthal K–2 Elementary School, Madison Campus (3950 Sacramento Street); Cobb Elementary School (2725 California Street); Roosevelt Middle School (460 Arguello Boulevard); and George Peabody Elementary School (215 Sixth Avenue). Under the current system, school district students are not automatically assigned to a particular school but, rather, entered into a diversity index lottery system in which families can request to be enrolled in schools anywhere in the district. The system assigns students to schools according to a number of factors, including parental choice, school capacity, and special program needs.[88]

To analyze the demand on schools resulting from implementation of the proposed project, estimates are made regarding the number of students that would be generated by the proposed project. A Lapkoff & Gobalet study from February 16, 2018, evaluated variations in student generation rates between different San Francisco developments.

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[86] San Francisco Unified School District, *San Francisco Unified School District Capital Plan, FY 2010–2019,* September 2009, *http://www.sfusd.edu/en/assets/sfusd-staff/about-SFUSD/files/capital-plan-final-2010-2019.pdf*, accessed: February 22, 2018.

[87] San Francisco Unified School District, 2016–2017 School Location Map, *http://www.sfusd.edu/en/assets/sfusd-staff/enroll/files/2016-17/2016-17_schools_map.pdf*, accessed: April 26, 2019.

[88] San Francisco Unified School District, *History of the Student Assignment in the San Francisco Unified School District*, 2011, *http://www.sfusd.edu/zh/assets/sfusd-staff/enroll/files/SFUSD-Presentation-Handouts-1-2016-09-21.pdf*, accessed: February 22, 2018.

The study noted that, overall, student generation rates are affected by several factors, including the size of the unit, cost of housing (including market-rate vs. affordable units), unit occupancy type (rental vs. ownership), housing type (e.g. high-rise, townhouse, garden-style housing), and the neighborhood type.[89] Given the project location, building type, and overall high ratio of residential units with two or more bedrooms, as well as the project features and amenities that would be provided (e.g., onsite family-friendly recreational amenities as well as a family transportation demand management package consisting of onsite storage for family gear, utility carts, and cargo bikes), the project is expected to yield a larger student population compared with a typical development project, based on the Lapkoff & Gobalet study. Thus, a larger generation rate was used to ensure a conservative (i.e., higher) estimate of students generated by the proposed project. Table 6 identifies the number of school-aged children that would be generated by the proposed project using this rate. As shown, the proposed project would generate approximately 93 students.

Although it is likely that a portion of the students would attend a private school or would already be enrolled in the San Francisco Unified School District (SFUSD) system, this analysis conservatively assumes that all of the students would enroll in public schools. The potential increase in the number of K–12 students (i.e., 93) would represent an increase of approximately 0.15 percent in district enrollment compared with the 2016–2017 academic year.

Table 6. Students Generated by the Proposed Project

Unit Type	Number	Student Generation Rate	Estimated Student Growth Due to Project
SFR	12	0.75	9
SFRH	2	0.75	1
MF – Studio	13	0.2	3
MF – 1 BR	56	0.2	11
MF – 2 BR	88	0.2	18
MF – 3 BR	96	0.5	48
MF – 4 BR	6	0.5	3
Total	273	Total	93

Notes: Totals are rounded to the nearest whole number. Numbers may not sum because of rounding.
SFR = single family residence. MF = multi-family. SFRH = single-family rowhouse (on podium). BR = bedroom
Source: TMG Partners, 2019.

[89] Lapkoff & Gobalet Demographic Research, Inc., *Demographic Analyses and Enrollment Forecasts for the San Francisco Unified School District*, published February 16, 2018, pp. 34-36, *http://www.sfusd.edu/en/assets/sfusd-staff/about-SFUSD/files/demographic-analyses-enrollment-forecast.pdf*, accessed: April 26, 2019.

The SFUSD would have adequate capacity within its existing facilities to accommodate the additional 93 students generated by the proposed project. As shown above in Table 6, p. 82, although enrollment continues to grow, the SFUSD had 60,133 students in 2016–2017. Furthermore, the SFUSD maintains a property and building portfolio with capacity for more than 90,000 students,[90] thereby providing ample capacity for growth in its student population within existing structures. In addition, the Leroy F. Greene School Facilities Act of 1998, or Senate Bill 50, authorizes school districts to levy developer fees to finance the construction or reconstruction of school facilities. These fees are intended to address increased educational demands on the school district resulting from new development. For these reasons, the increase in students resulting from operation of the proposed project would not result in a substantial unmet demand for school facilities that would require the construction of new, or the alteration of existing, school facilities. This impact would be less than significant, and no mitigation would be required. This topic will not be discussed in the EIR.

Libraries

The San Francisco Public Library provides library services to the city, operating a main branch at 100 Larkin Street along with 27 other neighborhood branch libraries. All of the San Francisco neighborhood branch libraries are open a minimum of 50 hours each week, with some open for 55 hours a week. The two neighborhood branches closest to the project site are the Presidio Branch Library and the Richmond/Senator Milton Marks Branch Library.

- The Presidio Branch Library – Approximately 0.62 mile from the project site, the historic building was designed in 1921 and contains more than 10,205 square feet of space. The onsite collection includes more than 32,900 items.[91]
- The Richmond/Senator Milton Marks Branch Library – Approximately 0.71 mile from the project site, the historic building was designed in 1914 and fully renovated and reopened in 2009. It contains more than 13,800 square feet of space. The onsite collection includes more than 103,949 items.[92]

As discussed in Section E.2, *Population and Housing*, in Table 1, p. 18, implementation of the proposed project would result in approximately 680 new city residents at the project site. The increased population resulting from the proposed project would be expected to

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[90] San Francisco Unified School District, *San Francisco Unified School District Capital Plan 2010–2019*, pp. 24–25, *http://www.sfusd.edu/en/assets/sfusd-staff/about-SFUSD/files/capital-plan-final-2010-2019.pdf*, accessed: September 18, 2018.

[91] San Francisco Public Library, *Facts & Figures, Statistics by Location*, *https://sfpl.org/?pg=2000696401*, accessed: September 18, 2018.

[92] Ibid.

increase demand on library services; however, in the context of overall citywide demand for library services, it would not be a substantial increase. The project site is midway between the two above-described libraries, both of which were renovated within the last 20 years. In fiscal year 2016–2017, the Presidio Branch Library received 106,714 visits, and the Richmond Branch Library received 398,762 visits. The Presidio Branch Library was renovated in 2011, and the Richmond Branch Library was renovated in 2009. Considering the number of annual visits each branch receives, as well as the recent renovations, demand from the 680 new city residents would be easily absorbed by the existing branches. In addition, demand would also be absorbed by the main downtown branch library and other neighborhood branches in San Francisco. Therefore, implementation of the proposed project would not require the construction of new, or alteration of existing, library facilities, the construction of which could result in a significant physical environmental impact. In conclusion, impacts on library facilities from the proposed project would be less than significant. No mitigation measures are required. This topic will not be discussed in the EIR.

Impact C-PS-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in cumulative impacts on public services. (*Less than Significant*)

The geographic contexts for cumulative fire, police, and library impacts are the police, fire, and library service areas, while the geographic context for cumulative school impacts is the school district service area. Three reasonably foreseeable projects within 0.25 mile of the project site are identified in Section B, *Project Setting*, p. 5. These include a four-story residential building at 3641 California Street (Case No. 2018-007764ENV), a four-story residential building and below-grade parking structure at 3637–3657 Sacramento Street (Case No. 2007.1347E), and a mixed-use development proposed at 3333 California Street (Case No. 2015-014028ENV). The reasonably foreseeable future projects within 0.25 mile of the project site or, in the case of schools, within the school district area, in combination with the proposed project, would increase the population in the area, leading to an increase in demand for public services, including fire and police protection, school services, and library services. These essential city service providers continually assess demand, based on anticipated growth and service needs. By analyzing the applicable metrics, these agencies and services are able to adjust staffing, capacity, response times, and other measures of performance. As a result, the future projects would not result in any service gap in fire, police, schools, or library services. These projects would also be required to contribute school fees, which would provide needed improvements in school services. Therefore, the proposed project, in combination with reasonably foreseeable future projects, would have less-than-significant cumulative public services impacts, and no mitigation measures are required. This topic will not be addressed in the EIR.

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

The project site is characterized by dense urban development and surface streets that are interspersed by small landscaped areas and street trees,[93] as discussed in Chapter 2, *Project Description*, of the EIR. Because the project site is fully developed, it does not contain natural land cover or communities, protected wetlands and waters,[94] riparian habitat, or other sensitive natural communities, as defined by the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service

[93] Per Public Works Code article 16, Urban Forestry Ordinance, section 802, a street tree is defined as any tree growing within the public right-of-way, including unimproved public streets and sidewalks, and any tree growing on land under the jurisdiction of Public Works.

[94] U.S. Fish and Wildlife Service, *National Wetland Inventory*, 2018, updated: June 25, 2018, *https://www.fws.gov/wetlands/*, accessed: August 20, 2018.

(USFWS). Only ornamental landscape vegetation is present, including 163 trees, 91 of which are regulated trees (77 street trees and 14 significant trees)[95] and 72 of which are non-regulated trees.[96] Ornamental vegetation is not a sensitive natural community, as indicated by the CDFW Natural Communities List.[97] The nearest undeveloped areas with potential wildlife habitat are the Presidio of San Francisco located approximately 0.21 mile (1,150 feet) to the north, and Golden Gate Park located approximately 0.78 mile (4,100 feet) to the south. The nearest mapped water bodies are located approximately 0.6 mile and 0.65 mile northwest in the Presidio of San Francisco.[98] The project site is not located within the boundaries of a habitat conservation plan, natural community conservation plan, or other approved local, state, or regional habitat conservation plan. Therefore, topics 14(b), 14(c), and 14(f) are not applicable to the proposed project and are not discussed below.

Impact BI-1: The proposed project could have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (*Less than Significant with Mitigation*)

Wildlife species are protected under the federal Endangered Species Act, the Migratory Bird Treaty Act (MBTA), the California Endangered Species Act, and regulations concerning California Species of Special Concern. Qualified biologists reviewed the California Natural Diversity Database,[99] California Native Plant Society,[100] and USFWS Information for Planning and Conservation[101] occurrences of special-status plant and wildlife species within the city, focusing on occurrences within 2 miles of the project site. Biologists analyzed the likelihood of special-status

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95 *Significant trees* are trees of any species within 10 feet of the public right-of-way that are 12 inches in diameter, have a canopy spread of 15 feet, or are 20 feet tall.

96 TMG Partners, *3700 California Street, Tree Planting & Removal Summary*, December 2018.

97 California Department of Fish and Wildlife, *Natural Communities List*, 2018b, *https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline*, accessed: August 20, 2018.

98 U.S. Fish and Wildlife Service, *National Wetlands Inventory*, 2018, updated: June 25, 2018, *https://www.fws.gov/wetlands/data/Mapper.html*, accessed: August 20, 2018.

99 California Department of Fish and Wildlife, CNDDB RareFind records search of San Francisco North U.S. Geological Survey 7.5-minute quadrangles, RareFind Version 5, 2018, *https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data*, accessed: August 20, 2018.

100 California Native Plant Society, *Online Inventory of Rare and Endangered Plants of California,* 2018, *http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi/Html?item=checkbox_9.htm*, accessed: August 20, 2018.

101 U.S. Fish and Wildlife Service, *List of Endangered and Threatened Species that May Occur in the Proposed Project Location and/or May Be Affected by the Proposed Project,* 2018, *https://ecos.fws.gov/ipac/*, accessed: August 20, 2018.

species to occur in the vicinity of the project site based on known species occurrences and natural history parameters, including, but not limited to, the species' range, habitat, foraging needs, migration routes, and reproductive requirements.

Because of existing development on the project site, the lack of natural habitat within the project site, and existing development between the project site and the nearest natural habitat, no candidate, sensitive, or special-status plant or wildlife species are anticipated to occur on the site, with the possible exception of one bird species. The nearest natural habitat is at the Presidio, approximately 0.2 mile from the project site. The onsite structures could support American peregrine falcon (*Falco peregrine anatum*), which is a fully protected species under the California Fish and Game Code section 3511. Although suitable nesting habitat (i.e., tall buildings) is present within and in proximity to the project site, nesting is unlikely because the project site is surrounded by urban development and this species prefers more remote areas with multiple foraging habitats. Foraging habitat (open air space) for avian prey is present north of the project site at the Presidio; this area would not be affected by project construction activities. Notwithstanding, the potential exists for proposed construction activities, including the demolition of structures, to result in "take" of the American peregrine falcon caused by the direct mortality of adult or young birds, nest destruction, or disturbance resulting in nest abandonment and/or the loss of reproductive effort. This is considered a significant impact.

Structures on the project site could support a variety of other nesting resident and migratory birds in addition to the American peregrine falcon, including cliff swallow (*Petrochelidon pyrrhonota*) and black phoebe (*Sayornis nigricans*). Trees and landscape vegetation offer suitable nesting habitat for additional birds including house finch (*Haemorhous mexicanus*) and Anna's hummingbird (*Calypte anna*). Native bird species are protected by both state (California Fish and Game Code sections 3503 and 3513) and federal (MBTA of 1918) laws. As illustrated in Table 2-3 in Chapter 2, *Project Description*, p. 2-26, the proposed project would remove 42 of the 77 existing street trees and plant 68 new street trees, for a total of 103 street trees. Nine of the 14 significant trees would be removed because of conflicts with proposed buildings. Of the other 72 non-regulated[102] trees on-site, 70 would be removed and replaced with 146 new trees. Overall, the project would increase the total number of trees onsite from 163 to 256 after removing 121 trees and planting 214 new trees. If project construction occurs during the nesting season (January 15 to August 15), tree and structure removal could result in the direct mortality of adult or young birds, the destruction of active nests, and/or disturbance of nesting

[102] City-owned trees are subject to regulation by the Bureau of Urban Forestry.

adults, causing nest abandonment and/or loss of reproductive effort. Disturbance of nesting birds that result in the abandonment of active nests or litters or the loss of active nests through vegetation or structure removal would be a significant impact.

The proposed project would implement Mitigation Measure M-BI-1 to reduce potential impacts on the American peregrine falcon and native birds protected under the MBTA and California Fish and Game Code sections 3503 and 3513. With implementation of this mitigation measure, impacts on candidate, sensitive, and special-status species would be less than significant. This topic will not be discussed in the EIR.

Mitigation Measure M-BI-1: Preconstruction Nesting Bird Surveys and Buffer Areas

Nesting birds and their nests shall be protected during construction by implementation of the following measures for each construction phase:

a. To the extent feasible, the project sponsor shall conduct initial activities including, but not limited to, vegetation removal, tree trimming or removal, ground disturbance, building demolition, site grading, and other construction activities that may compromise breeding birds or the success of their nests outside of the nesting season (January 15 through August 15).

b. If construction during the bird nesting season cannot be fully avoided, a qualified wildlife biologist shall conduct pre-construction nesting surveys within 14 days prior to the start of construction or demolition at areas that have not been previously disturbed by project activities or after any construction breaks of 14 days or more. Typical experience requirements for a "qualified biologist" include a minimum of four years of academic training and professional experience in biological sciences and related resource management activities and a minimum of two years of experience in biological monitoring or surveying for nesting birds. Surveys of suitable habitat shall be performed in publicly accessible areas within 100 feet of the project site in order to locate any active nests of common bird species and within 250 feet of the project site to locate any active raptor (birds of prey) nests.

c. If active nests are located during the preconstruction nesting bird surveys, a qualified biologist shall evaluate if the schedule of construction activities could affect the active nests; if so, the following measures shall apply, as determined by the biologist:

    i. If construction is not likely to affect the active nest, construction may proceed without restriction; however, a qualified biologist shall regularly monitor the nest at a frequency determined appropriate for the surrounding construction activity to confirm there is no adverse effect. Spot-check monitoring frequency would be determined on a nest-by-nest basis considering the particular construction activity, duration, proximity to the nest, and physical barriers that may screen activity from the nest. The qualified biologist may revise his/her determination at any time during the nesting season in coordination with the planning department.

ii. If it is determined that construction may affect the active nest, the qualified biologist shall establish a no-disturbance buffer around the nest(s) and all project work shall halt within the buffer until a qualified biologist determines the nest is no longer in use. These buffer distances shall be equivalent to the survey distances (100 feet for passerines and 250 feet for raptors); however, the buffers may be adjusted if an obstruction, such as a building, is within line of sight between the nest and construction.

iii. Modifying nest buffer distances, allowing certain construction activities within the buffer, and/or modifying construction methods in proximity to active nests shall be done at the discretion of the qualified biologist and in coordination with the planning department, who would notify the California Department of Fish and Wildlife (CDFW). Necessary actions to remove or relocate an active nest(s) shall be coordinated with the planning department and approved by CDFW.

iv. Any work that must occur within established no-disturbance buffers around active nests shall be monitored by a qualified biologist. If adverse effects in response to project work within the buffer are observed and could compromise the nest, work within the no-disturbance buffer(s) shall halt until the nest occupants have fledged.

v. Any birds that begin nesting within the project area and survey buffers amid construction activities are assumed to be habituated to construction-related or similar noise and disturbance levels, so exclusion zones around nests may be reduced or eliminated in these cases as determined by the qualified biologist in coordination with the planning department, who would notify CDFW. Work may proceed around these active nests as long as the nests and their occupants are not directly affected.

d. In the event inactive nests are observed within or adjacent to the project site at any time throughout the year, any removal or relocation of the inactive nests shall be at the discretion of the qualified biologist in coordination with the planning department, who would notify and seek approval from the CDFW, as appropriate. Work may proceed around these inactive nests.

Impact BI-2: The proposed project could interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (*Less than Significant with Mitigation*)

The project site is completely developed and surrounded by dense urban development with high levels of human activity. The project site is not known to contain native wildlife nursery sites or urban bird refugues,[103] and it lacks features (e.g., parks located within 300 feet of water bodies) with potential to be considered urban bird refuges. No fish habitat or wildlife nursery habitat exists on or adjacent to the project site.

The project site is within the Pacific Flyway, a north/south-oriented path stretching from Alaska to Patagonia, that many species of birds migrate along as they travel between breeding and overwintering locations. Bird strikes on glass windows, which are often not readily obvious to birds because of visually disorienting lights, contribute substantially to avian mortality in urban areas, estimated to be as high as 1 to 5 percent of all bird deaths annually.[104] Bird stikes are exacerbated by artificial nocturnal lighting emanating from large buildings, particularly for noctural migrants and migrating songbirds.[105] The City has adopted guidelines to address this issue and provided regulations for bird-safe design within San Francisco Planning Code section 139, Standards for Bird-Safe Buildings, which establishes building design standards to reduce avian mortality rates associated with bird strikes.[106] The project site is not located in or within 300 feet of an urban bird refuge, so the standards concerning location-related hazards are not applicable to the proposed project.[107] Although not considered within or near an urban bird refuge, the project would comply with the hazard-related standards for buildings in section 139.

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103 San Francisco Planning Department, *Urban Bird Refuge Data Viewer*, 2011, *https://data.sfgov.org/Energy-and-Environment/Urban-Bird-Refuge/v8rh-bhzp/data*, accessed: August 20, 2018.

104 San Francisco Planning Department, *Standards for Bird-Safe Buildings*, adopted: July 14, 2011, *http://sf-planning.org/standards-bird-safe-buildings*, accessed: September 19, 2018.

105 Ogden, L. E., *Collision Course: The Hazards of Lighted Structures and Windows to Migrating Birds, Special Report for the World Wildlife Fund and the Fatal Light Awareness Program*, September 1996, *http://default.sfplanning.org/publications_reports/bird_safe_bldgs/Ogden_Collision_Course_Lighted_structures-1996.pdf,* accessed: September 19, 2018.

106 San Francisco Planning Department, *Standards for Bird-Safe Buildings*, Adopted July 14, 2011, *http://sf-planning.org/standards-bird-safe-buildings*, accessed: September 19, 2018.

107 San Francisco Planning Department, *Urban Bird Refuge Data Viewer*, 2011, *https://data.sfgov.org/Energy-and-Environment/Urban-Bird-Refuge/v8rh-bhzp/data*, accessed: August 20, 2018.

Although the project site and surrounding area is developed and not in proximity to an urban bird refuge, the project site is used by native resident birds and located within a bird migratory route. As discussed in Impact BI-1, construction activities have the potential to result in direct mortality for nesting birds, which would be a significant impact. With implementation of Mitigation Measure M-BI-1 and compliance with the Standards for Bird-Safe Buildings, impacts on native resident or migratory birds would be less than significant. This topic will not be discussed in the EIR.

Impact BI-3: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (*Less than Significant*)

There are numerous trees on the project site, and construction of the proposed project would necessitate tree removal. Under the City of San Franciso's Urban Forestry Ordinance (article 16 of the public works code), trees designated as protected trees are subject to conditions before removal, including that either the tree be replaced or an in-lieu fee be paid to the department of public works to support its Urban Forestry Program (section 806(b) of the public works code). A protected tree is a landmark, significant, or street tree.

The tree survey report prepared for the project site categorized trees in accordance with the Urban Forestry Ordinance.[108] The project site currently contains 163 trees. Of those, 91 trees are subject to regulation by the Bureau of Urban Forestry; 72 trees are located on private property and non-regulated.[109] Of the 91 trees that are subject to regulation, 77 are street trees and 14 are significant trees. Landmark trees are absent from the project site.[110] The proposed project would remove 42 of the existing 77 street trees and plant 68 new street trees, for a total of 103 street trees. The reasons for removal of the street trees vary and include (a) poor health or poor structure determination by the arborist report and/or by the Bureau of Urban Forestry inspector, based on a September 26, 2017, site visit, and (b) conflicts with the proposed buildings, driveways, or tree planting standards. The property currently has a total of 14 significant trees that are being retained to the extent possible; the building footprints have been redesigned so as to preserve five trees. Despite these efforts, nine of the existing significant trees must be removed due to various conflicts with the proposed buildings. Of the other 72

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108 Tree Management Experts, *CPMC California Campus Arborist Report Tree Survey Tree Protection Plan*, May 22, 2018.

109 TMG Partners, *3700 California Street, Tree Planting & Removal Summary*, December 2018.

110 San Francisco Department of the Environment, *Map of San Francisco's Landmark Trees*, 2018, *https://sfenvironment.org/article/landmark-tree-program/map-of-san-francisco%E2%80%9A%27s-landmark-trees,* accessed: September 19, 2018.

non-regulated trees on-site, 70 would be removed and replaced with 146 new trees.[111] Overall, the project would increase the total number of trees onsite from 163 to 256 after removing 121 trees and planting 214 new trees, as detailed in Table 2-3 in Chapter 2, *Project Description,* p. 2-26. Notwithstanding the increase in total trees that would result from the project, the project is requesting a partial waiver from Public Works Code section 806(d) to provide 31 fewer street trees than required. With approval of the partial waiver, the project would comply with the department of public works and the urban forestry ordinances. If a waiver is not granted, the project sponsor would be required to pay an in-lieu fee, per Public Works Code section 807(f). Impacts associated with conflicts with any local policies or ordinances protecting biological resources would be less than significant, and no mitigation measures are necessary. This topic will not be discussed in the EIR.

Impact C-BI-1: The proposed project, in combination with reasonably foreseeable projects, could result in cumulative biological resources impacts. (*Less than Significant with Mitigation*)

The geographic context for cumulative biological resources impacts is the vicinity of the project site where construction activities and tree removals could affect resources (e.g., nesting raptors) that may be present at the site or nearby. Three reasonably foreseeable future projects within 0.25 mile of the project site are identified in Section B, *Project Setting*, p. 5. These include a proposed four-story residential building at 3641 California Street (Case No. 2018-007764ENV), a four-story residential building and below-grade parking structure at 3637–3657 Sacramento Street (Case No. 2007.1347E), and a mixed-use development proposed at 3333 California Street (Case No. 2015-014028ENV). The proposed project would not modify any natural habitat. It would have no impact on candidate, sensitive, or special-status species (apart from possible impacts on special-status avian species, which are addressed below); riparian habitat; and other sensitive natural communities. Furthermore, it would not conflict with any local policy or ordinance for protecting biological resources or an approved conservation plan. For these reasons, the proposed project would not have the potential to combine with reasonably foreseeable future projects in the vicinity and result in a significant cumulative impact related to the aforementioned resources.

Similar to the proposed project, reasonably foreseeable projects in the area would be located within a dense urban environment that lacks suitable habitat for candidate, sensitive, or special-status species. Nearby projects would result in an increase in population density, modified project site designs (e.g., building heights and materials),

[111] TMG Partners, 3700 California Street, *Tree Planting & Removal Summary*. December 2018.

and tree removal. For example, the nearby 3333 California Street project would remove 185 trees. As with the proposed project, such development could have an impact on nesting and migratory birds. These future projects would also be subject to the requirements of the MBTA, the California Fish and Game Code, and San Francisco Planning Code section 139, Standards for Bird-Safe Buildings. However, cumulative impacts on nesting birds, which may include special-status avian species, could be significant because reasonably foreseeable projects would remove a substantial number of trees that provide nesting habitat for avian species. With implementation of Mitigation Measure M-BI-1, tree removal and initial ground-disturbing activities associated with the proposed project would occur outside the nesting season or require a site survey to identify nesting birds and, if necessary, establishment of no-work buffer zones to protect nesting birds. These measures would ensure that the proposed project's contribution to any cumulative impacts on nesting and migratory birds would be less than significant. This topic will not be addressed in the EIR.

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

The project would connect to San Francisco's sewer and stormwater collection and treatment system and would not use a septic or alternative water disposal system. Therefore, Topic 15e is not applicable to the project.

The information in this section is based on the *preliminary geotechnical evaluation* prepared for the project, unless otherwise noted.[112] The scope of the preliminary geotechnical evaluation included reviewing and analyzing subsurface conditions regarding soil and groundwater at the project site. The preliminary geotechnical

112 Langan Treadwell Rollo. 2015. Preliminary Geotechnical Evaluation, Former CPMC California Campus Redevelopment, San Francisco, California. (Langan Project: 730370820.) Oakland, CA.

evaluation's conclusions and recommendations are based on geotechnical data from the surrounding area and on field investigations, which included 40 soil borings conducted at the project site.

Impact GE-1: The proposed project would not directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, liquefaction, lateral spreading, or landslides. (*Less than Significant*)

Federal Regulations to Address Seismic Hazards

Earthquake Hazard Reduction Act of 1977. Federal laws codified in United States Code title 42, chapter 86, were enacted to reduce risks to life and property from earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program. Implementation of these requirements are regulated, monitored, and enforced at the state and local levels. Key regulations and standards applicable to the proposed project are summarized below.

California Regulations to Address Seismic Hazards

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (Alquist-Priolo Act). The Alquist-Priolo Act (Public Resources Code section 2621 et seq.) is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location and construction of most types of structures intended for human occupancy[113] over active fault traces and strictly regulates construction in the corridors along active faults (i.e., earthquake fault zones).

California Building Standards Code. The California Building Standards Code, or state building code, is codified in title 24 of the California Code of Regulations. The state building code provides standards that must be met to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures within the state. The state building code generally applies to all occupancies in California, with modifications adopted in some instances by state agencies or local governing bodies. The current state building code incorporates, by adoption, the 2016 edition of the International Building Code of the International Code Council, with the California amendments. These amendments include building design and construction criteria that have been tailored for California earthquake conditions.

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[113] With reference to the Alquist-Priolo Act, a *structure for human occupancy* is defined as one "used or intended for supporting or sheltering any use or occupancy that is expected to have a human occupancy rate of more than 2,000 person-hours per year" (California Code of Regulations, title 14, division 2, section 3601[e]).

Chapter 16 of the state building code deals with structural design requirements governing seismically resistant construction (section 1604), including, but not limited to, factors and coefficients used to establish a seismic site class and seismic occupancy category appropriate for the soil/rock at the building location and the proposed building design (sections 1613.5 through 1613.7). Chapter 18 includes, but is not limited to, the requirements for foundation and soil investigations (section 1803); excavation, grading, and fill (section 1804); allowable load-bearing values of soils (section 1806); foundation and retaining walls (section 1807); and foundation support systems (sections 1808 through 1810). Chapter 33 includes, but is not limited to, requirements for safeguards at work sites to ensure stable excavations and cut-and-fill slopes (section 3304) as well as the protection of adjacent properties, including requirements for noticing (section 3307). Appendix J of the state building code includes, but is not limited to, grading requirements for the design of excavation and fill (sections J106 and J107), specifying maximum limits on the slope of cut-and-fill surfaces and other criteria, required setbacks and slope protection for cut-and-fill slopes (J108), and erosion control through the provision of drainage facilities and terracing (sections J109 and J110). San Francisco has adopted Appendix J of the state building code, with amendments to J103, J104, J106, and J109, as articulated in the local building code.

California Division of Occupational Safety and Health Regulations. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching, as specified in California Division of Occupational Safety and Health regulations (title 8).

Local Regulations to Address Seismic Hazards

San Francisco Subdivision Code. Section 1358, Preliminary Soils Report, of the San Francisco Subdivision Code requires developers to file soil reports, indicating any soil characteristics that may create hazards and identifying measures to avoid soil hazards and prevent grading from creating unstable slopes. The ordinance requires a state-registered civil engineer to prepare the soils report.

Slope and Seismic Protection Hazard Zone Act (San Francisco Building Code section 106A.4.1.4).[114] Section 106A.4.1.4 of the San Francisco Building Code applies to projects on a slope of 25 percent or more, with excavation or fill involving more than 50 cubic yards; new construction with more than 1,000 square feet of new projected roof area; or an addition with more than 500 square feet of new projected roof area. As described in Information Sheet S-19,[115] for projects that are subject to the ordinance, the building permit

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114 Enacted by Ordinance No. 121-18, effective June 23, 2018.

115 San Francisco Department of Building Inspection. 2018. *Information Sheet No. S-19*. October 2, 2018. Available: https://sfdbi.org/sites/default/files/IS%20S-19.pdf. Accessed: January 15, 2019.

must be accompanied by a geotechnical report prepared and signed by both a licensed geologist and a licensed geotechnical engineer that identifies areas of potential slope instability, defines potential geological and geotechnical risks, and makes recommendations to address these concerns. The building department would determine if the project would be subject to requirements of the act, based on the proposed scope of work and conditions at the site, as part of the building permit review process.

As discussed below, to ensure that the potential for adverse geologic, soil, and seismic hazards is adequately addressed, San Francisco relies on the state and local regulatory review process as well as building permits approved pursuant to the California Building Standards Code (California Code of Regulations, title 24); the San Francisco Building Code, which is the state building code plus local amendments that supplement the state code; the building department's implementing procedures, including administrative bulletins and information sheets; and the Seismic Mapping Hazards Act (Public Resources Code sections 2690 to 2699.6).

Impact Analysis

Fault Rupture

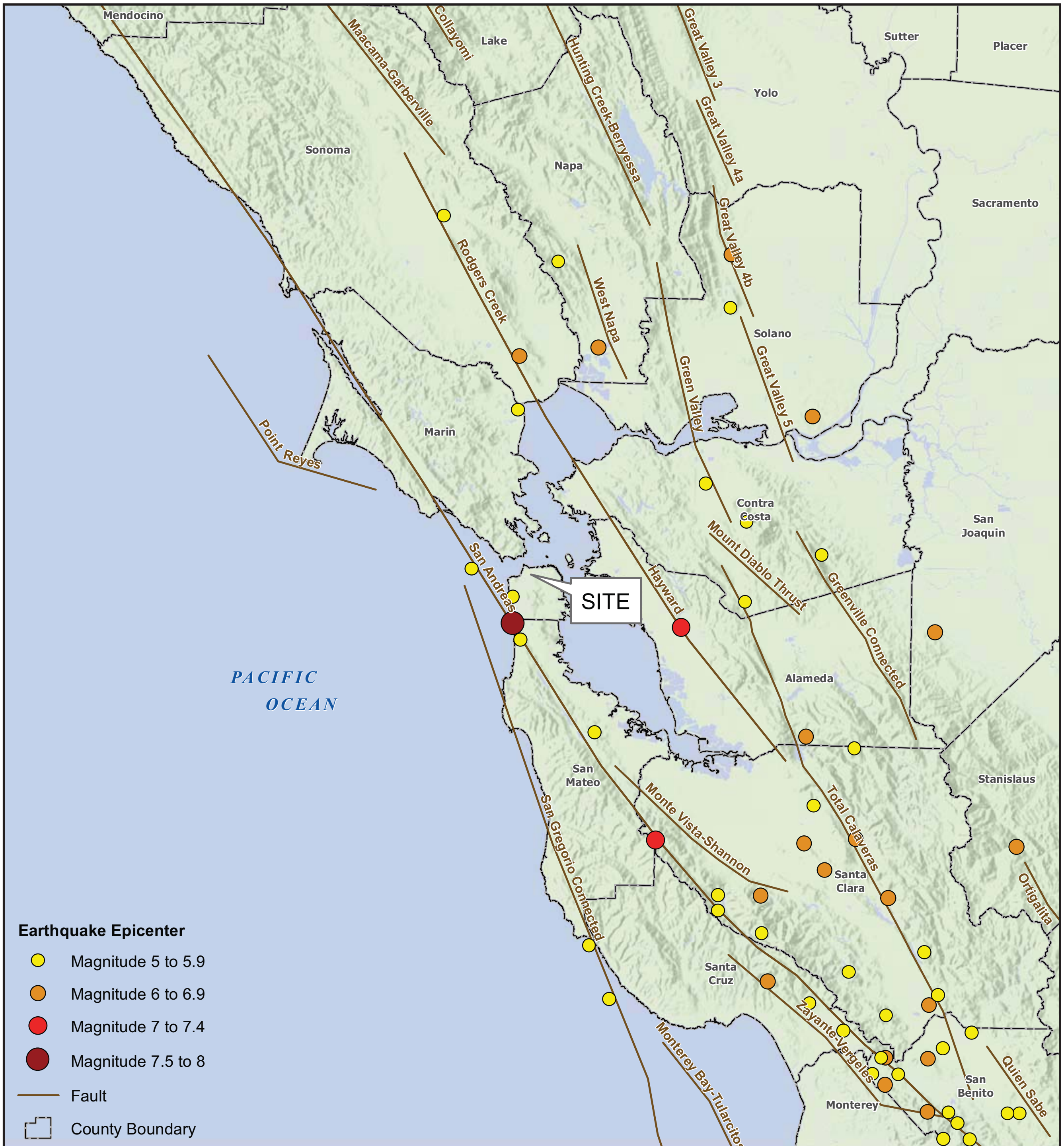
The project site is not within an earthquake fault zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known fault or potentially active fault exists within the project site.[116] In a seismically active area, such as the San Francisco Bay Area, the remote possibility exists for future faulting in areas where faults were not previously mapped; however, the likelihood of such fault rupture is extremely low. Furthermore, the project would not increase the risk of fault rupture because it would not add a substantial load to any fault or introduce water, a lubricant, into a fault zone. Therefore, this impact would be less than significant.

Ground Shaking

The San Andreas, Hayward, and Calaveras faults are the closest major faults to the project site and capable of a mean characteristic moment magnitude of 7 or greater (see Figure 1).[117] The site is approximately 6 miles east of the San Andreas fault, 12 miles west

116 California Geological Survey. 2000. *Earthquake Zones of Required Investigation: San Francisco North Quadrangle.* Available: http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps. Accessed: September 13, 2018.

117 *Mean characteristic moment magnitude* is a way of measuring the strength of a characteristic earthquake, or a rupture event that repeats regularly, on a fault in terms of energy released during the seismic event.



Notes:

1. Quaternary fault data displayed are based on a generalized version of USGS Quaternary Fault and fold database, 2010. For cartographic purposes only.
2. The Earthquake Epicenter (Magnitude) data is provided by the U.S Geological Survey (USGS) and is current through 08/26/2014.
3. Basemap hillshade and County boundaries provided by USGS and California Department of Transportation.
4. Map displayed in California State Coordinate System, California (Teale) Albers, North American Datum of 1983 (NAD83), Meters.

SOURCE: Langan Treadwell Rollo. 2015. *Preliminary Geotechnical Evaluation, Former CPMC California Campus Redevelopment, San Francisco, California.* (Langan Project: 730370820.) Oakland, CA.

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3700 California Street
Case No. 2017-003559ENV

Figure 1
Regional Faults

of the Hayward fault, and 24 miles west of the Calaveras fault. The proposed project would most likely experience periodic minor earthquakes and perhaps a major earthquake (moment magnitude greater than 6) on one of the nearby faults during its service life. Overall, there is a 72 percent likelihood of an earthquake of magnitude 6.7 or greater occurring in the San Francisco Bay Area between 2014 and 2043.[118] The intensity of earthquake ground motion at the site would depend on the characteristics of the generating fault, the distance to the earthquake epicenter, magnitude, and the duration of the earthquake. Ground shaking at the project site during a major earthquake on one of the nearby faults would be very strong.

In accordance with the state and local building code requirements described above, the geotechnical investigation analyzed the potential for seismic shaking and recommended that the project's seismic design be developed in accordance with the provisions of the building code and based on the site conditions and the proposed development.[119] With implementation of the recommendations in the geotechnical investigation, as incorporated in the project plans and required by the building code, the proposed project would not substantially increase risks from seismic ground shaking. The impact of strong seismic ground shaking would be less than significant.

Landslides, Liquefaction, Lateral Spreading, and Seismic Settlement

With respect to landslides, according to the general plan, the project site is not located within a mapped landslide zone.[120] Furthermore, the site is not within a designated earthquake-induced landslide zone, as shown on the California Geological Survey seismic hazard zone map for the area.[121] However, some areas of the project site have an average slope of 25 percent or more. In addition, the project would involve more than 50 cubic yards of excavation or fill; therefore, the project may be subject to the

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118 Field, E.H., Biasi, G.P., Bird, P., Dawson, T.E., Felzer, K.R. Jackson, D.D., Johnson, K.M., Jordan, T.H., Madden, C. Michael, A.J., Milner, K.R., Page, M.T., Parsons, T., Powers, P.M., Shaw, B.E., Thatcher, W.R., Weldon, R.J. II, and Zeng, Y. 2015. *Long-term, Time-dependent Probabilities for the Third Uniform California Earthquake Rupture Forecast (UCERF3).* Bulletin of the Seismological Society of America. (USGS Fact Sheet 2015-3009.) Available: https://pubs.usgs.gov/fs/2015/3009/pdf/fs2015-3009.pdf. Accessed: September 6, 2018.

119 It should be noted that the proposed building must be built to California Building Standards Code standards in effect at the time of application.

120 City and County of San Francisco. *San Francisco General Plan*, Community Safety Element, Map 4, *http://www.sf-planning.org/ftp/General_Plan/Community_Safety_Element_2012.pdf*, accessed January 9, 2019.

121 California Geological Survey. 2000. *Earthquake Zones of Required Investigation: San Francisco North Quadrangle.* Available: http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps. Accessed: September 13, 2018.

requirements of the Slope and Seismic Protection Hazard Zone Act (San Francisco Building Code section 106A.4.1.4).[122] With adherence to the requirements of state and local building codes, the proposed project would not substantially increase risks with respect to landslides, and this impact would be less than significant.

Liquefaction occurs when saturated soils lose strength and stiffness with applied stress, such as an earthquake. The lack of cohesion causes solid soil to behave like a liquid, resulting in ground deformation. Ground deformation can take on many forms, including, but not limited to, flow failure, lateral spreading, lowering of the ground surface, ground settlement, loss of bearing, ground fissures, and sand boils. Liquefaction within subsurface layers, which can occur during ground-shaking associated with an earthquake, could result in ground settlement. Lateral spreading typically occurs on gentle slopes with a rapid, fluid-like flow movement. It can also occur when the potential exists for liquefaction in underlying saturated soils.

The project site is not within a mapped liquefaction zone, according to the San Francisco General Plan and the state seismic hazard zone map for liquefaction hazards;[123,124] however, the geotechnical report notes that the project site is located on sediments that may be subject to liquefaction below the ground surface. Surficial conditions at the project site include artificial fill and Holocene dune and beach sand (Qhs).[125] The area is underlain by Quaternary sediments that were deposited in the last 1.8 million years, including (from youngest to oldest) fill, dune sand, and the Colma formation. In general, the ground surface at the project site is underlain by 3 to 28 feet of loose to dense clean dune sand. This native sand increases in density with depth. In some areas of the project site, some or all of this material was removed during excavation for the existing basements. The northeast corner of the project site, just southeast of the intersection of Maple and Sacramento streets, underlying the current parking/garden area, is the site of a former excavation. In this area, sand and gravel fill extend from ground surface to an approximate depth of 30 feet. The Colma formation underlies the dune sand at between 3 and 28 feet below the ground surface and the artificial fill at 30 feet below the ground

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122 Enacted by Ordinance No. 121-18, effective June 23, 2018.

123 City and County of San Francisco. *San Francisco General Plan*, Community Safety Element, Map 4, *http://www.sf-planning.org/ftp/General_Plan/Community_Safety_Element_2012.pdf*, accessed January 9, 2019.

124 California Geological Survey. 2000. *Earthquake Zones of Required Investigation*, San Francisco North Quadrangle. http://gmw.conservation.ca.gov/shp/ezrim/maps/san_francisco_north_ezrim.pdf, accessed April 16, 2019.

125 Knudsen, K.L., J.S. Noller, J.M. Sowers, W.R. Lettis. 1997. *Quaternary Geology and Liquefaction Susceptibility Maps, San Francisco, California, 1:100,000 Quadrangle.* Available: *https://pubs.usgs.gov/* of/1997/of97-715/sf_plate1.pdf. Accessed: September 14, 2018.

surface, for a thickness of 12 to 90 feet thick across the project site. Based on groundwater conditions between 1983 and 2002, the groundwater level slopes down and toward the south/southwest, ranging in depth from about 25 to 40 feet below the ground surface.

Underlying dune sands and the Colma formation at the project site are at a depth that could intersect groundwater. Where the soils below the groundwater table are clayey, risk of liquefaction is low. However, where the soils are predominantly sandy, such as is the case for the portion of the site east of Maple Street, there is a risk of liquefaction if loads such as new structures are applied to the soil above the bearing layer. Subsurface exploration indicates that liquefiable layers are present beneath the ground surface for the portion of the project site east of Maple Street at depths from 27 to 88 feet below street grades, ranging in thickness from 5 to 35 feet. Total settlement as a result of liquefaction could vary between 0.5 to 4.5 inches across the portion of the project site east of Maple Street. Although detailed foundation information for existing buildings is not available, it is likely that liquefiable layers lie below the load-bearing strata. Therefore, this settlement risk as a result of liquefaction exists for buildings as well as new structures. To address this risk, the preliminary geotechnical report suggests that foundations could extend to the bearing layer or, alternatively, buildings could be supported on improved ground (i.e., engineered soil, which could transfer building loads onto the bearing layer). Surface liquefaction is not a risk at the project site because liquefiable layers, where they occur, are deeper than 40 feet beneath street grades. Preliminary geotechnical testing suggests that risk of lateral spreading at the project site is low.

Because the project could experience liquefaction and differential settlement resulting from liquefaction, if not constructed properly, the proposed project could increase the risk of liquefaction and differential settlement and could expose people and structures to substantial adverse geologic effects. However, in accordance with the provisions of the 2016 state building code and Special Publication 117A,[126] the preliminary geotechnical report provides recommendations to address these hazards. The building department permit review process ensures that the project's structural and foundation plans will comply with applicable building code provisions and be in conformance with the measures recommended in the project-specific geotechnical reports and required by

[126] California Geological Survey. 2008. *Guidelines for Evaluating and Mitigating Seismic Hazards in California.* Available: *https://www.conservation.ca.gov/cgs/Documents/Publications/SP_117a.pdf*. Accessed: January 15, 2019.

Administrative Bulletin AB-082.[127] Compliance with these requirements would ensure that the proposed project would not exacerbate the potential for seismically related ground failure, including liquefaction and lateral spreading. Therefore, this impact would be less than significant. This topic will not be discussed in the EIR.

Impact GE-2: The proposed project would not result in substantial soil erosion or the loss of topsoil. (*Less than Significant*)

San Francisco Public Works Code section 146, Construction Site Runoff Control, requires all construction sites to implement best management practices to minimize surface runoff erosion and sedimentation. In addition, pursuant to section 146.7, if construction activities disturb 5,000 square feet or more of ground surface, then the project sponsor must develop an Erosion and Sediment Control Plan and submit a project application to the San Francisco Public Utilities Commission prior to commencing construction-related activities. An erosion control plan is a site-specific plan that details the use, location, and placement of sediment and erosion control devices.

The project site is primarily built out and covered with buildings, streets, and sidewalks that would have required the removal of topsoil. Therefore, the site does not contain any topsoil.

The proposed project would involve excavation of approximately 61,800 cubic yards of soil to a depth ranging from 15 to 75 feet below the ground surface to construct below-grade parking podiums. Grading and excavation would expose soil onsite and could result in erosion. However, construction-related activities would be required to comply with the construction site runoff controls of Public Works Code section 146, which requires all construction sites, regardless of size, to implement best management practices to prevent discharges of construction site runoff into the City's) combined stormwater/sewer system. Furthermore, construction sites that disturb 5,000 square feet or more of ground surface, such as the proposed project, are required to apply for a construction site runoff control permit from the San Francisco Public Utilities Commission and submit an Erosion and Sediment Control Plan that includes best management practices to prevent stormwater runoff and soil erosion during construction. Compliance with Public Works Code section 146 would ensure that the project would not result in substantial erosion during construction. The impact would be less than significant, and no mitigation is required.

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[127] City and County of San Francisco. 2018. *Administrative Bulletin AB-082.* Guidelines and Procedures for Structural, Geotechnical, and Seismic Hazard Engineering Design Review. Available: *https://sfdbi.org/sites/default/files/AB-082.pdf*. Accessed: February 18, 2019.

Once constructed, the project would include enhanced sidewalks, entry paving, approximately 4,500 square feet of planted areas, light fixtures, sidewalk bulb-outs, and bicycle racks, ultimately reducing the amount of impervious area within the project site. The project would be required to comply with state and local building code requirements to address drainage issues at the site and comply with the City's stormwater management ordinance regarding post-construction stormwater runoff. For these reasons, the project would not result in substantial erosion upon completion of construction activities. The impact would be less than significant, and no mitigation is required. This topic will not be discussed in the EIR.

Impact GE-3: The proposed project would not create substantial risks to life or property as a result of being located on expansive soil. (*Less than Significant*)

Expansive soils are characterized by their ability to undergo significant volume changes (i.e., shrink and swell) due to variations in moisture content. Expansive soils are typically very fine grained and have a high to very high percentage of clay. They can damage structures and buried utilities and increase maintenance requirements. The presence of expansive soils is typically associated with high clay content, as determined by site-specific data. According to section 1803 of the state building code, in areas that are likely to have expansive soil, the building official shall require soil tests to determine where such soils do exist. If present, the geotechnical report must include recommendations and special design and construction provisions for foundations on expansive soils, as necessary. However, the proposed project would not be located on expansive soil and therefore would not result in a substantial risk to life or property. As discussed above in Impact GE-1, underlying the project site are dune sand and the Colma formation. Although the upper portion of the Colma formation consists of clay, the clay is sandy, with the sand content varying across the project site. Excavation would extend into this layer at Block B, where material would be excavated to a maximum depth of 75 feet below ground surface. Because the clay is predominantly sandy, it is unlikely to be expansive. Compliance with building code requirements would ensure that potential impacts related to expansive soils would be less than significant. No mitigation measures are necessary. This topic will not be discussed in the EIR.

Impact GE-4: The proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (*Less than Significant with Mitigation*)

Paleontological resources include fossilized remains or traces of animals, plants, and invertebrates, including their imprints, from a previous geological period. Collecting localities and the geological formations containing those localities are also considered paleontological resources; they represent a limited, nonrenewable, and impact-sensitive scientific and educational resource.

To identify impacts on paleontological resources, the paleontological sensitivity of geologic units present within the project site was identified. Paleontological sensitivity is an indicator of the likelihood of a geologic unit to yield fossils.[128] Unlike archaeological sites, which are narrowly defined, paleontological sites are defined by the entire extent (both areal and stratigraphic) of a unit or formation. Once a unit is identified as containing vertebrate fossils, or other rare fossils, the entire unit is a paleontological site. For this reason, the paleontological sensitivity of geologic units is described and analyzed broadly, rather than being limited to jurisdictional boundaries.

The fossil-yielding potential of geologic units in a particular area depends on the geologic age and origin of the units, as well as on the processes they have undergone, both geologic and anthropogenic.[129] The potential for a project to affect paleontological resources is related to ground disturbance. Ground disturbance would take place during project construction; therefore, this impact analysis addresses construction impacts.

Based on information from the scientific literature, each geologic unit in the study area was assigned a paleontological sensitivity according to guidelines developed by the Society of Vertebrate Paleontology. The Impact Mitigation Guidelines Revisions Committee of the Society of Vertebrate Paleontology has published Standard Guidelines[130] which include procedures for the investigation, collection, preservation, and cataloguing of fossil-bearing sites. The Standard Guidelines are widely accepted among paleontologists and are followed by most investigators. The Standard Guidelines identify the two key phases of paleontological resource protection as (1) assessment and (2) implementation. Assessment involves identifying the potential for a project site or area to contain significant nonrenewable paleontological resources that could be damaged or destroyed by project excavation or construction. Implementation involves formulating and applying measures to reduce such adverse effects. The Society of Vertebrate Paleontology defines the level of potential as one of four sensitivity categories for sedimentary rocks: high, undetermined, low, and no Potential).[131] The levels of potential are defined as follows.

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128 Society of Vertebrate Paleontology. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Available: *http://vertpaleo.org/Membership/Member-Ethics/SVP_Impact_Mitigation_Guidelines.aspx*. Accessed: September 6, 2018.

129 *Anthropogenic* means caused by human activity.

130 Society of Vertebrate Paleontology. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Available: http://vertpaleo.org/Membership/Member-Ethics/SVP_Impact_Mitigation_Guidelines.aspx. Accessed: September 6, 2018.

131 Ibid.

- **High Potential**. Assigned to geologic units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered; and sedimentary rock units suitable for the preservation of fossils ("e.g., middle Holocene and older, fine-grained fluvial sandstones…fine-grained marine sandstones, etc."). Paleontological potential consists of the potential for yielding abundant fossils, a few significant fossils, or "recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data."
- **Undetermined Potential**. Assigned to geologic units "for which little information is available concerning their paleontological content, geologic age, and depositional environment." In cases where no subsurface data already exist, paleontological potential can sometimes be assessed by subsurface site investigations.
- **Low Potential**. Field surveys or paleontological research may allow determination that a geologic unit has low potential for yielding significant fossils (e.g., basalt flows). Mitigation is generally not required to protect fossils.
- **No Potential**. Some geologic units have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks (e.g., gneisses, schists) and plutonic igneous rocks (e.g., granites, diorites). Mitigation is not required.

As discussed above under Impact GE-1, geologic units underlying the project site are artificial fill, dune sand, and the Colma formation. Terrestrial sedimentary deposits underlying the project site that are Pleistocene age or older have the potential to contain significant paleontological resources. The Colma formation in San Francisco is documented as having yielded vertebrate fossils, including species of mammoth and bison (*Mammuthus columbi* and *Bison latifrons*) at the southeast base of Telegraph Hill in San Francisco.[132] This geologic unit is considered sensitive for paleontological resources. Other geologic units at the project site are not documented as having yielded such fossils.

To accommodate the below-grade parking levels and foundation, the project would entail excavation to a maximum depth of 13 feet on Block A, 75 feet on Block B, and 17 feet on Block C, for a total excavation of 61,800 cubic yards. It was conservatively assumed that the dune sand immediately underlying the project site and overlying the Colma formation is a uniform thickness of 3 feet, although, this layer actually ranges from 3 to 28 feet deep across the project site, as discussed above in *Landslides, Liquefaction, Lateral Spreading, and Seismic Settlement*, p. 99. Excavation for Block A would extend up to 10 feet into the Colma formation, translating to up to 11,885 cubic yards of

[132] Rodda, Peter U., and Baghai, Nina. 1993. Late Pleistocene Vertebrates from Downtown San Francisco, California. *J. Paleont.* 67(g), pp. 1068–1063.

Colma formation sediments.[133,134] Excavation for Block B would extend up to 72 feet into the Colma formation, translating to approximately 27,884 cubic yards of Colma formation sediments. Excavation for Block C would involve excavation into artificial fill, which extends to a depth of 30 feet in the northernmost portion of the lot, deeper than the proposed excavation for this block. Because excavation would be wholly within artificial fill, excavation would remove no Colma formation sediments from Block C. In total, the proposed project would involve excavation of approximately 39,769 cubic yards of Colma formation sediments, specifically in Blocks A and B. Accordingly, excavation at the project site has potential to disturb significant paleontological resources. Such disturbance would constitute a significant impact. However, implementation of Mitigation Measure M-GE-4, which would require that the project sponsor monitor for the discovery of paleontological resources, evaluate found resources, and prepare and follow a recovery plan for found resources, would reduce the likelihood that significant paleontological resources would be destroyed or lost. With implementation of this mitigation measure, the impact would be less than significant. This topic will not be discussed in the EIR.

Mitigation Measure M-GE-4: Inadvertent Discovery of Paleontological Resources

Before the start of any excavation activities, the project applicant shall retain a qualified paleontologist, as defined by the Society of Vertebrate Paleontology, who is experienced in teaching non-specialists. The qualified paleontologist shall train all construction personnel who are involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils that are likely to be seen during construction, the proper notification procedures should fossils be encountered, and the laws and regulations protecting paleontological resources.

The qualified paleontologist shall make periodic visits during earthmoving in high sensitivity sites to verify that workers are following established procedures.

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133 The total excavation of Colma formation sediments was based on an estimate of total excavation volume by block. These estimates of excavation volume by block were based on haul trip allocations by block during the excavation phase.

134 To determine the total excavation volume of Colma formation sediments in Blocks A and B, the area of excavation was calculated by first dividing the total volume by block in cubic feet by the total depth of excavation by block in feet. This area of excavation in square feet was then multiplied by the depth of excavation in Colma formation sediments (total depth of excavation by block minus 3 feet, assuming a uniform layer of dune sand of 3 feet), yielding volume of Colma formation excavation by block in cubic feet. This number was divided by 9 to yield the volume by cubic yards. For Block C, because excavation is would take place in an area where artificial fill extends deeper than the total excavation, there would be no excavation of Colma formation.

If potential paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease all earthwork or other types of ground disturbance within 25 feet of the find and notify the project sponsor, the qualified paleontologist, and the planning department. The fossil should be protected by an "exclusion zone" (i.e., an area of approximately 5 feet around the discovery that is marked with caution tape to prevent damage to the fossil). Construction work in the affected areas shall remain stopped or be diverted to allow recovery of fossil remains in a timely manner. The qualified paleontologist shall evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines if the resource is deemed significant (see Society of Vertebrate Paleontology, *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources,* http://vertpaleo.org/Membership/MemberEthics/SVP_Impact_Mitigation_Guidelines.aspx). The recovery plan may include a field survey, construction monitoring, sampling and data recovery procedures, university or museum storage coordination for any specimen recovered, and a report of findings. If storage of a specimen is required, upon receipt of the fossil collection, a signed repository receipt form shall be obtained and provided to the planning department. Recommendations in the recovery plan that are determined by the planning department to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered. The project sponsor shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented, including the costs necessary to prepare and identify collected fossils and any curation fees charged for university or museum storage.

Impact C-GE-1: The proposed project, in combination with reasonably foreseeable future projects in the project site vicinity, would not result in cumulative impacts related to geology, soils, seismicity, and paleontological resources. (*Less than Significant*)

Geologic, soil, seismicity, and paleontological impacts are generally site specific and highly localized. Therefore, the potential for the proposed project to combine with reasonably foreseeable future projects and create a cumulative impact related to geology, soils, seismicity, and paleontological resources would be low. Furthermore, with respect to geology, soils, and seismicity, all projects in the vicinity would also be subject to building department requirements for geotechnical review and required to comply with the state and local building codes. For these reasons, the proposed project, in combination with reasonably foreseeable future projects, would have less-than-significant cumulative impacts related to geology, soils, seismicity, and paleontological resources. This topic will not be addressed in the EIR.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Not Applicable
16. HYDROLOGY AND WATER QUALITY Would the project:					
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:	☐	☐	☐	☒	☐
i. Result in substantial erosion or siltation onsite or offsite;	☐	☐	☐	☒	☐
ii. Substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite;	☐	☐	☐	☒	☐
iii. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒	☐
iv. Impede or redirect floodflows?	☐	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒	☐

The project site is not located within a 100-year flood hazard area, as designated on the City's interim floodplain map,[135] or an area identified as being subject to potential inundation in the event of a tsunami along the San Francisco coast or a dam or levee failure.[136] The project site is approximately 1.4 miles south of San Francisco Bay in an elevated upland area of the city with a ground surface that ranges from 254 feet at the northeast corner of the site to 210 feet at the southwest corner. Therefore, the proposed

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135 City and County of San Francisco, *San Francisco's Interim Floodplain Map, Northwest,* November 12, 2015, http://sfgsa.org/sites/default/files/Document/SF_NW.pdf, accessed September 23, 2018.

136 City and County of San Francisco, *Community Safety Element of the San Francisco General Plan,* 2012, Map 5 (Tsunami Hazard Zones San Francisco) and Map 6 (Potential Inundation Areas Due to Reservoir Failure), *http://www.sf-planning.org/ftp/General_Plan/Community_Safety_Element_2012.pdf*, accessed September 23, 2018.

project would not create a risk related to a release of pollutants due to inundation in a flood hazard, tsunami, or seiche zone. Topic 14(d) is not applicable to the proposed project and is not discussed below. [137,138,139]

Impact HY-1: The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or conflict with or obstruct implementation of a water quality control plan. (*Less than Significant*)

Water Quality and Waste Discharge

Stormwater and wastewater within the project site is collected in the city's combined sewer system, which collects, transports, and treats sanitary sewage and stormwater runoff in the same facilities prior to discharge to the Pacific Ocean. During dry weather (typically May through September), the wastewater flows consist mainly of industrial wastewater and sanitary sewage (wastewater from toilet flushing and other wastewater from sanitary conveniences of households and businesses that contains human waste), collectively referred to as wastewater. During wet weather (generally October through April), the combined sewer system collects large volumes of stormwater runoff in addition to wastewater, referred to as wet-weather flows.

San Francisco is divided into drainage basins or watersheds that drain either to the Oceanside Water Pollution Control Plant or the Southeast Water Pollution Control Plant and may also drain to the North Point Wet-Weather Facility during a storm.[140] The combined sewer flows from the project site are treated at the Oceanside Treatment Plant, which treats 20 percent of the city's flows.[141] Discharges from the Oceanside Treatment Plant are regulated by Westside National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037681 (as issued by the San Francisco Regional Water Quality Control Board) and the U.S. Environmental Protection Agency's Combined Sewer Overflow Control Policy. According to the 2019 NPDES permit, the Oceanside

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137 San Francisco city datum establishes the city's zero point for surveying purposes at approximately 8.6 feet above the mean sea level established by the 1929 U.S. Geological Survey datum.

138 A seiche is an oscillation in a partially enclosed water body, such as a bay, which may cause local flooding. A seiche could occur in San Francisco Bay from seismic or atmospheric activity.

139 Langan Treadwell Rollo, *Preliminary Geotechnical Evaluation, Former CPMC California Campus Redevelopment, San Francisco, California,* 2015, Langan Project: 730370820, Oakland, CA.

140 San Francisco Public Utilities Commission, San Francisco's Wastewater Treatment Facilities, 2014, *https://sfwater.org/modules/showdocument.aspx?documentid=5801,* accessed September 24, 2018.

141 Ibid.

Treatment Plant has a maximum dry weather design flow of 43 million gallons per day. During wet weather, the facility has wet weather flow capacity of 65 million gallons per day; it has the capacity to provide primary treatment for an additional 22 million gallons per day and secondary treatment to up to 43 million gallons per day. If wet-weather flows exceed the capacity of the overall system, the excess is stored in the Westside Wet Weather Facilities, which provides primary treatment. The system will pump out, via the Westside Pump Station, any combined wastewater that exceed 175 million gallons per day and will discharge to the seven near-shore combined sewer overflow discharge structures authorized by the NPDES Order. The permit requires wet-weather overflows from Combined Sewer Overflow Discharges to comply with technology-based requirements based on the U.S. Environmental Protection Agency's Combined Sewer Overflow Control Policy.[142]

In addition to compliance with the applicable NPDES permit, new development projects must comply with article 4.2, section 147 of the San Francisco Public Works Code, which was last updated on April 2, 2016. The intent of this San Francisco Stormwater Management Ordinance (No. 64-16) is to reduce the volume of stormwater entering the city's combined and separate sewer systems. Stormwater management ordinance compliance approvals for this project will be conducted by the SFPUC. SFPUC has developed the 2016 Stormwater Management Requirements and Design Guidelines in accordance with the requirements of this ordinance.

Construction-Related Stormwater Runoff

As discussed in Section A, *Project Description*, implementation of the proposed project would create and/or replace over 5,000 square feet of impervious surface and would involve demolition, excavation (approximately 61,800 cubic yards of soil), site preparation, and three overlapping construction phases to occur over a period of approximately 40 months. Excavation, earthmoving, and grading would expose soil and could result in erosion and excess sediment in stormwater runoff being carried to the combined sewer system. Excavation and site preparation activities, especially during the wet-season months, have the greatest potential to result in adverse effects on water quality. In addition, stormwater runoff from demolition debris, soil stockpiles, temporary onsite use and storage of vehicles, fuels, wastes, or other hazardous materials

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142 San Francisco Regional Water Quality Control Board, Waste Discharge Requirements and National Pollutant Discharge Elimination System Permit for the City and County of San Francisco Oceanside Water Pollution Control Plant, Wastewater, Collection System, and Westside Recycled Water Project, Order No. R2-2009-XXXX, NPDES No. CA0037681, adopted draft under consideration, *https://www.waterboards.ca.gov/sanfranciscobay/board_info/agendas/2019/August/Oceanside/Tentative_Order.pdf*, accessed April 25, 2019.

could carry pollutants to the combined sewer system if proper handling methods are not employed. Runoff from the project site would drain into the city's combined sewer system, ensuring that such runoff is properly treated to meet the city's Westside NPDES Permit and the U.S. Environmental Protection Agency's Combined Sewer Overflow Control Policy. Construction site runoff from projects that drain to the combined sewer system is regulated under Public Works Code section 146. These projects must prepare an erosion and sediment control plan or a stormwater pollution prevention plan and are required to submit a construction site runoff control permit application to the SFPUC prior to any land-disturbing activities. An erosion and sediment control plan would specify best management practices (BMPs) and erosion and sedimentation control measures to prevent sediment from entering the city's combined sewer system.[143] The construction BMPs that would most likely be implemented as part of the proposed project would address inspection and maintenance, water conservation, spill prevention and control, street cleaning, and prevention of illicit connection and discharge. These BMPs would minimize disturbance to the project site, adjacent areas, and storm drains and would retain sediment.[144] The SFPUC's Construction Runoff Control Program staff enforces this requirement through periodic and unplanned site inspections. In addition, prior to the commencement of any land-disturbing activities, a construction site runoff control permit would be obtained.

Construction-Related Dewatering

Construction dewatering in areas with shallow groundwater may be required during excavation activities. If the groundwater is contaminated, it would need to undergo specific handling/disposal procedures and would need to be treated prior to any discharge. As noted in the project description, the groundwater level at the project site is about 25 to 40 feet below ground surface.[145] Given that the depth of excavation would be up to 75 feet below ground surface, groundwater dewatering would likely be required during construction. If groundwater is encountered during construction, a Batch Wastewater Discharge Permit would be required to ensure groundwater discharges meet specified water quality standards before they may be discharged from the

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143 Best management practices are detailed in the San Francisco Public Utilities Commission's *Construction Best Practices Handbook*, August 2013, *http://sfwater.org/modules/showdocument.aspx?documentid=4282*, accessed September 24, 2018.

144 Ibid.

145 Langan Treadwell Rollo, *Preliminary Geotechnical Evaluation, Former CPMC California Campus Redevelopment, San Francisco, California*, 2015, Langan Project: 730370820, Oakland, CA.

proposed project.[146] If soil borings and wells are used for dewatering, these dewatering activities would be required to comply with article 12B of the public health code (the Soil Boring and Well Regulation Ordinance). The SFPUC's Wastewater Enterprise, Collection Systems Division, provides the permits for dewatering. With discharge to the combined sewer system, in accordance with the regulatory requirements described above, water quality impacts from construction-related dewatering would be less than significant.

Operation – Wastewater and Stormwater Discharges

During project operation, the proposed project would comply with all applicable water quality regulations for disposal of wastewater and stormwater discharges. The projected wastewater discharges would be related primarily to the proposed onsite residential uses. Stormwater discharges would include runoff from streets, sidewalks and other impervious surfaces. Project-generated wastewater and stormwater would flow into the city's combined sewer system and would be treated to standards contained in the city's Westside NPDES Permit for the Oceanside Treatment Plant prior to discharge to the Pacific Ocean.

The proposed project would increase the area of permeable or landscaped areas and install low-impact development features on the site, which would reduce the volume of stormwater runoff. Proposed control measures would be designed to reduce the peak flow and volume from a two-year, 24-hour storm event by at least 25 percent, as required, which would reduce peak flows entering the combined sewer system during wet-weather events and minimize the potential for downstream or localized flooding. Several sewer laterals would be installed to connect to existing sewer lines under Sacramento, Maple, California, and Cherry streets. Wastewater volumes from the project site would decrease compared with existing conditions (see Section E.12, *Utilities and Service Systems*). Stormwater, which makes up the majority of wet-weather peak flows, would decrease compared with existing conditions as a result of the overall increase in pervious surface throughout the project site. The stormwater design guidelines encourage the use of low-impact development features, a stormwater management approach that is modeled after nature, and post-construction BMPs such as cisterns, green roofs, and planters to comply with stormwater management requirements. In addition, the stormwater control plan, in compliance with the stormwater management ordinance, is required to demonstrate that the project meets the stormwater quality performance standards contained in the 2016 Stormwater

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146 San Francisco Public Utilities Commission, *Batch Wastewater Permit Discharge Application Instructions*, July 25, 2018, *https://sfwater.org/modules/showdocument.aspx?documentid=2326*, accessed September 25, 2018.

Management Requirements and Design Guidelines.[147] A stormwater control plan would be prepared, and the proposed project would incorporate low-impact development features, in accordance with the San Francisco Stormwater Management Ordinance, to limit the amount of water entering the combined sewer system. Project-proposed low-impact development features implemented in compliance with the ordinance that capture stormwater would be metered, with discharges conveyed to the combined sewer system and the Oceanside Treatment Plant. As explained above on p. 109, the Oceanside Treatment Plant has a secondary treatment capacity of 43 million gallons per day but is permitted for peak wet-weather flows of up to 175 million gallons per day. Wet-weather flows in excess of 175 million gallons per day receive only wet-weather primary treatment. Measures to slow the discharge of stormwater runoff from the project site reduce the volume of peak flows to the treatment plant during and after a storm and result in less wastewater being discharged that received only primary treatment, reducing the potential for the treatment plant to exceed water quality standards.

The current use at the project site (i.e., a hospital) generates medical waste, which can be hazardous. In general, medical facilities are known for extensive use of hazardous materials, such as cleansers, disinfectants, and chemical agents, which are required for sanitation. The proposed project would use hazardous materials for cleaning and disinfecting common spaces but would not generate medical waste. Thus, there would be less potential for contaminated runoff compared with existing conditions. It is expected that the amount of sanitary sewage from the project would be less than that from existing uses, as described above. The proposed project would be residential use and would not include industrial or other uses that would add substantial amounts of polluted runoff to combined sewer flows.

In summary, by implementing low-impact development features and post-construction BMPs,[148] reducing the impervious area, implementing construction site runoff requirements in accordance with the public works code, and reducing hazardous materials onsite, conflicts with an existing water quality control plan would not occur. In addition, the project would not create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems or provide additional sources of polluted runoff. Water quality impacts related to a violation of water quality

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147 San Francisco Public Utilities Commission, Stormwater Management Requirements and Design Guidelines, May 2016, *http://sfwater.org/modules/showdocument.aspx?documentid=9026*, accessed September 24, 2018.

148 Post-construction BMPS are long-lasting treatment features such as cisterns, green roofs, bioretention basins and planters, permeable pavement, and infiltration trenches.

standards or degradation of water quality or stormwater flows would be less than significant. No mitigation measures are required. This topic will not be discussed in the EIR.

Impact HY-2: The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin or conflict with or obstruct implementation of a sustainable groundwater management plan. (*Less than Significant*)

The project site is located within the Lobos Groundwater Basin, which covers an area of approximately 2,400 acres.[149] Recharge to the Lobos Groundwater Basin is estimated at 1,570 acre-feet per year, with half being attributed to municipal leakage.[150] The Lobos basin is adequate to provide groundwater but currently does not contribute to the city's water supply. In 2017, the SFPUC began pumping water from the Westside Groundwater Basin aquifer and will continue to expand wells in this basin in order to blend 4 million gallons a day of treated groundwater with the municipal water supply by 2021.[151] The proposed project would continue to be connected to the existing SFPUC potable water infrastructure and would not rely on wells for its water supply. Furthermore, the existing site is covered predominantly by hardscape areas with limited open space and landscaping, which includes 163 trees[152] and a courtyard with perimeter vegetation, allowing minimal infiltration of rainwater into the groundwater basin. This condition would continue under the proposed project because most pervious surface areas would be located above subterranean parking levels. Therefore, operation of the proposed project would not deplete groundwater supplies in the project area or conflict with a sustainable groundwater management plan.

As discussed above and in Section E.15, *Geology and Soils*, groundwater depths vary across the project site. Dewatering of excavations during construction may occur and could temporarily lower groundwater levels in the project vicinity. However, any effects of construction-related groundwater dewatering would be temporary. Once dewatering is completed, groundwater levels would return to normal. Therefore, the project would not conflict with any sustainable groundwater management plan.

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149 California Department of Water Resources, California's Groundwater Bulletin 118, 2003 Update, Lobos Groundwater Basin, February 2004, *https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-B118-Basin-Descriptions/B118_2003_BasinDescription_2_038.pdf*, accessed September 24, 2018.

150 Ibid.

151 SFPUC, San Francisco Groundwater Supply Project, 2018, *https://www.sfwater.org/index.aspx?page=1136*, accessed September 24, 2018.

152 TMG Partners, 3700 California Street, Tree Planting & Removal Summary. December 2018.

Given the above, the proposed project would not substantially deplete groundwater supplies, interfere substantially with groundwater recharge, or conflict with a sustainable groundwater management plan. Impacts related to groundwater would be less than significant. No mitigation measures are required. This topic will not be discussed in the EIR.

Impact HY-3: The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation onsite or offsite; substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite; or impede or redirect floodflows. (*Less than Significant)*

The project site is currently covered almost entirely by impervious surfaces and no streams or creeks occur on the project site. Impervious surfaces at the site would decrease, but drainage patterns would remain generally the same because most pervious surface areas would be provided above subterranean parking garages. The project would incrementally reduce the amount of impervious surface on the project site through implementation of low-impact development features and other measures identified in the stormwater management ordinance, which also requires that the project decrease stormwater runoff. In particular, because the project site is within the combined sewer area and is more than 50 percent impervious, the proposed project would be required to decrease the stormwater runoff rate and volume by 25 percent from predevelopment conditions for the 2-year, 24-hour design storm. Therefore, the proposed project would not be expected to result in substantial erosion or flooding associated with changes in drainage patterns. The impact of the proposed project related to potential erosion or flooding would be less than significant. No mitigation measures are required. This topic will not be discussed in the EIR.

Impact C-HY-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in cumulative impacts related to hydrology and water quality. (*Less than Significant*)

The geographic context for cumulative hydrology and water quality impacts is the Oceanside Treatment Plant drainage basin (in the case of treatment capacity), the groundwater basin (in the case of groundwater recharge), and the vicinity of the project site (in the case of local stormwater infrastructure capacity). Three reasonably foreseeable future projects are in the vicinity of the project and identified in Section B, *Project Setting*, p. 5, as a four-story residential building at 3641 California Street (Case No. 2018-007764ENV), a four-story residential building and below-grade parking structure at 3637–3657 Sacramento Street (Case No. 2007.1347E), and a mixed-use development at 3333 California Street (Case No. 2015-014028ENV). The proposed project would result in no impact with respect to a release of pollutants in flood, tsunami, and/or seiche hazard areas. Therefore, the project would not have the potential to contribute to cumulative impacts related to these issue areas.

As stated above in Impacts HY-1, HY-2, and HY-3, the proposed project would result in less-than-significant impacts related to water quality, groundwater levels, alteration of drainage patterns, and the capacity of drainage infrastructure. The proposed project, 3333 California Street (Case No. 2015-014028ENV), 3641 California Street (Case No. 2018-007764ENV), 3637–3657 Sacramento Street (Case No. 2007.1347E), and all future projects within San Francisco would be required to comply with the water quality and drainage control requirements that apply to all land use development projects in the city, including development of an erosion and sediment control plan for construction activities and a stormwater control plan for post-construction operation. Because development projects would be required to follow the same regulations as the proposed project, peak stormwater drainage rates and volumes resulting from design storms would gradually decrease over time with the implementation of new, conforming development projects. As a result, cumulative impacts with respect to drainage patterns, water quality, stormwater runoff, and stormwater capacity of the combined sewer system would be less than significant. In addition, San Francisco's very limited current use of groundwater would preclude any significant adverse cumulative effects on groundwater levels. Thus, the proposed project would not combine with cumulative development projects to result in a cumulative impact related to hydrology and water quality, and cumulative impacts would be less than significant. No mitigation measures are required. This topic will not be discussed in the EIR.

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

The project site is not included on a list of hazardous sites compiled pursuant to Government Code Section 65962.5, nor is it covered by an airport land use plan or within 2 miles of a public airport or a public use airport. The proposed project is in a developed area and not adjacent to wildlands. The risk of wildfire is low, as indicated by its California Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zone designation of Local Responsibility Area (LRA) Unzoned.[153] Therefore, topics 17(d), 17(e), and 17(g) are not applicable to the proposed project and are not discussed further.

The information in this section is based on information provided in the *phase I environmental site assessment* prepared for the project site, unless otherwise noted.[154]

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153 California Department of Forestry and Fire Protection. 2007. San Francisco County: Draft Fire Hazard Severity Zones in LRA. Available: http://frap.fire.ca.gov/webdata/maps/san_francisco/fhszl06_1_map.38.pdf. Accessed: September 19, 2018.

154 PES Environmental, Inc., *Phase I Environmental Site Assessment, California Pacific Medical Center, California Campus, San Francisco, California,* October 29, 2015, prepared for TMG Partners, San Francisco, CA. Novato, CA.

Current and Historic Land Uses

The project site has been developed since the 1890s. In 1911, a four-story brick hospital was constructed on the site. The building underwent extensive expansion and alteration work from the 1950s through the 1980s to form the existing hospital building at 3700 California Street. A nine-story medical office building at 3801 Sacramento Street was constructed in 1967 and connected to the hospital building at 3700 California Street. Other structures on the project site were constructed between 1907 (401 Cherry Street) and 1971 (460 Cherry Street). Although alterations to various onsite structures have occurred over time, no significant changes have taken place at the project site since 1986.

From a hazardous materials perspective, notable former onsite uses have included hospitals, an independent electrical plant (fuel source/location unknown), onsite laundry facilities at 3700 California Street, a print shop located in the basement of the 3700 California Street building between 1987 and 2002, a morgue, and laboratories. Former onsite commercial cleaners include Boyd's Cleaners/Cherry Street Cleaners (3893 Sacramento Street), which was present as early as 1913 and as late as 1960; and Arts & Crafts cleaners (3777 Sacramento Street), which was present between 1936 and 1966.

There have been multiple commercial cleaners adjacent to the project site:

- North of the project site
  - Chinese hand laundry (3908 Sacramento Street), 1913
- West of the project site
  - Fairmont Cleaners (3923 Sacramento Street), 1955–1958
  - Fairmont Cleaners (3925 Sacramento Street), 1966–1971
  - Boyd Cleaners/Lane Cleaners (3927 Sacramento Street), 1955–1960
  - Rite Way Cleaners (3828 California Street), 1953–1958
- East of the project site:
  - Spruce Cleaners/Peninou French Cleaners, 1903–2015
  - Williams Self-Service Laundry (3701 Sacramento Street), 1958–1960

Recognized Environmental Conditions

The following recognized environmental conditions[155] were identified by the environmental site assessment.

- A 550-gallon underground storage tank (UST) was installed in 1969 at 3773 Sacramento Street and removed in 1989. At the time of removal, a subsurface release was identified. Three monitoring wells were installed to assess groundwater conditions in the vicinity of the former UST. Periodic groundwater samples were collected in 1989, and the analytical results indicated no significant impact on groundwater. A draft case closure document was prepared by the San Francisco Department of Public Health, which indicated that no further action, other than removing the groundwater monitoring wells, was necessary. However, the wells had not been removed at the time the environmental site assessment was prepared, and the leaking underground storage tank case was still open. The case has been recommended for closure by the local regulatory agency. However, because the case is still open, it is technically a recognized environmental condition.
- Low levels of chlorinated volatile organic compounds (VOCs) were detected in groundwater samples obtained from the eastern portion of the project site in 2006. The detected concentrations were below California drinking water maximum contaminant levels, as well as applicable conservative risk-based San Francisco Regional Water Quality Control Board residential environmental screening levels, and the reported concentrations did not indicate a risk to current or future site occupants. A source of the VOCs detected in groundwater at that time has not been identified. Furthermore, the extent and magnitude of chlorinated VOCs in groundwater has not been fully characterized, and thus there is a potential for these chemicals to represent a health risk concern to future users of the site. As such, this groundwater contamination represents a recognized environmental condition. In addition, the contamination represents a potential vapor encroachment condition, based on the detection of chlorinated VOCs in groundwater, the historical presence of on- and offsite cleaners and a print shop, and the lack of current site characterization.[156]

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155 ASTM International guidelines (ASTM E1527-13) define a *recognizable environmental condition* as the "presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

156 A potential *Vapor Encroachment Condition* is the potential presence of any chemicals of concern in the indoor air environment of existing or planned structures on a property caused by the release of vapor from contaminated soil or groundwater on the property or close to the property, at a concentration that presents or may present unacceptable health risk to occupants.

Other Observations

Certain building material systems were identified in surveys as asbestos-containing materials. Based on the pre-1981 construction dates of many of the structures at the project site, additional materials that may potentially contain asbestos but have not yet been tested should be considered potential asbestos-containing materials until testing proves otherwise.

Based on the construction date of the onsite buildings, the potential exists for lead-based paint to be present.

As part of prior geotechnical investigations, a total of three groundwater monitoring wells were installed at the project site (at 3905 Sacramento Street, 3773 Sacramento Street, and 3700 California Street). The wells do not appear to be currently used.

Three diesel-powered backup power generators are present at the project site: two at 3700 California Street and one at 3698 California Street. No concerns related to the generators were noted.

One 15,000-gallon UST was observed at the southeastern corner of 3700 California Street, and one diesel fuel aboveground storage tank was observed at 3698 California Street. Inspection revealed no evidence of leakage or significant staining.

Transformers are present at the 3700 California Street and 3698 California Street buildings.

Chemicals present at the project site include de-scaling chemicals, biocides, and medical gas.

Impact HZ-1: The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. (*Less than Significant*)

The following regulations and articles from the San Francisco Health Code, implemented by the health department, apply to the proposed project:

- **Article 22** – Provides for safe handling of hazardous wastes in the city, authorizes the health department to implement state hazardous waste regulations, and gives the health department the authority to conduct inspections and document compliance.

- **Article 22B** – In 2008, the City adopted San Francisco Health Code article 22B and San Francisco Building Code section 106.A.3.2.6, which collectively constitute the Construction Dust Control Ordinance.[157] The ordinance requires all site preparation work, demolition, or other construction activities in San Francisco that have the potential to create dust or expose or disturb more than 10 cubic yards or 500 square feet of soil to comply with specified dust control measures, whether or not the activity requires a permit from the Department of Building Inspection (DBI). For projects affecting more than 0.5 acre, such as the proposed project, the Construction Dust Control Ordinance requires the project sponsor to submit a dust control plan for approval by the health department prior to issuance of a building permit by DBI. Building permits will not be issued without written notification from the Director of Public Health, stating that the applicant has a site-specific dust control plan, unless the director waives the requirement. The Construction Dust Control Ordinance requires project sponsors and contractors who are responsible for construction activities to control construction dust on the site or implement other practices for equivalent dust control that are acceptable to the Director of Public Health.

  Dust suppression activities may include watering all active construction areas to prevent dust from becoming airborne; increased watering may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by article 21, section 1100 et seq., of the San Francisco Public Works Code.

  The project site is approximately 4.9 acres; therefore, the project sponsor would be required to prepare a dust control plan for approval by the health department.

In addition, the project would be subject to compliance with the construction site runoff control requirements of Public Works Code section 146, which requires projects that drain to the combined sewer system and disturb 1 acre or more to prepare an Erosion and Sediment Control Plan or a Storm Water Pollution Prevention Plan.[158]

- **Erosion and Sediment Control Plan or Stormwater Pollution Prevention Plan** – An erosion and sediment control plan or stormwater pollution prevention plan specifies BMPs and erosion and sedimentation control measures to prevent sediment from

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[157] City and County of San Francisco, Board of Supervisors, *Ordinance 176-08*, effective July 30, 2008, *https://sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances08/o0176-08.pdf*, accessed February 18, 2019.

[158] San Francisco Public Utilities Commission, *Construct Site Runoff Control Technical Standards and Guidelines,* February 2014, p. 10, *https://sfport.com/sites/default/files/Business/Docs/Permit%20Services/SFPUC%20Construction%20Site%20Runoff%20Control%20Tech%20Standards%20and%20Guidelines%20Feb%202014.pdf*, accessed January 4, 2018.

entering the city's combined sewer system.[159] The construction best management practices that would most likely be implemented as part of the proposed project would address spill prevention and control issues, street cleaning, and the prevention of illicit connections and discharges. The San Francisco Public Utilities Commission's Construction Runoff Control Program staff enforces this requirement through periodic and unplanned site inspections. In addition, prior to the commencement of any land-disturbing activities, a construction site runoff control permit would have to be obtained.

Construction

Construction activities associated with implementation of the proposed project would involve the routine transport, use, and disposal of hazardous materials such as fuel, solvents, paints, oils, grease, and caulking. Such transport, use, and disposal must be compliant with applicable regulations, such as the Resource Conservation and Recovery Act (RCRA), U.S. Department of Transportation hazardous materials regulations, and California Occupational Safety and Health Administration (Cal/OSHA) regulations. The solvents, paints, oils, grease, and caulking would be transported, used, and disposed of during the construction phase; these materials are typically used in construction projects and would not represent transport, use, or disposal of acutely hazardous materials. In addition, the erosion and sediment control plan or stormwater pollution prevention plan required for any construction activity that discharges to the combined sewer system would require implementation of best management practices related to hazardous materials storage and soil stockpiles, inspections, maintenance, employee training, and the containment of releases to prevent runoff into existing stormwater collection systems or waterways. Hazardous materials associated with hospital operations would be removed and relocated or disposed of, in accordance with applicable laws and regulations, by CPMC prior to the onset of project construction. Because compliance with existing regulations is mandatory, construction activities associated with the proposed project are not expected to create a significant hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials. The impacts would be less than significant. No mitigation measures are required. This topic will not be discussed in the EIR.

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[159] Best management practices are detailed in the San Francisco Public Utilities Commission's *Construction Best Practices Handbook*, August 2013, *http://sfwater.org/modules/showdocument.aspx?documentid=4282*, accessed September 24, 2018.

Operation

The residential land uses at the project site would involve handling common types of hazardous materials related to cleaning and building maintenance, such as cleansers, disinfectants, and chemical agents for sanitation. These commercial products are labeled to inform users of potential risks and appropriate handling procedures. These commercial products would be used in small amounts. These commercial products are typically consumed during use. Therefore, the proposed project would not result in the production of significant quantities of hazardous waste and would not create a significant hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials. This impact would be less than significant. No mitigation measures are required. This topic will not be discussed in the EIR.

Impact HZ-2: The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (*Less than Significant*)

The following regulations, ordinances, and programs apply to the handling of onsite hazardous materials:

- **Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act** – The Federal Toxic Substances Control Act (1976) and the RCRA (1976) established a program administered by the U.S. Environmental Protection Agency to regulate the generation, transport, treatment, storage, and disposal of hazardous waste. The RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.
- **U.S. Department of Transportation** – The U.S. Department of Transportation is responsible for regulating and ensuring the safe and secure movement of hazardous materials to industry and consumers by all modes of transportation. The department develops regulations and standards for classifying, handling, and packaging shipments of hazardous materials within the U.S. to minimize threats to life, property, or the environment due to hazardous materials–related incidents.
- **Article 22A** – Discussed above under Impact HZ-1. The proposed project would be subject to article 22A, the Maher Ordinance.
- **Article 22B** – Discussed above under Impact HZ-1. The project site is approximately 4.9 acres; therefore, the project sponsor would be required to prepare a dust control plan for approval by the health department.

- **Local Oversight Program** – Under the Local Oversight Program, the health department provides oversight for sites that have experienced a release from a UST, pursuant to Title 23 of the California Code of Regulations, chapter 16. Under this program, the State Water Resources Control Board provides regulatory guidance and also reviews, comments on, and approves site assessment reports, feasibility studies, and work plans; reviews monitoring data to evaluate the effectiveness of the remediation strategy; and, upon completion of remediation, issues a letter or other document that certifies that the cleanup goals have been met.
- **UST and Facility Closure** – Article 21 of the San Francisco Health Code addresses issues related to the closure of USTs and hazardous materials handling facilities. To close a facility (including USTs), a closure plan must be prepared that identifies how the need for future maintenance of the facility will be eliminated, how the threat to the environmental and public health and safety will be eliminated, and how all hazardous materials in the facility will be removed and appropriately disposed of. The plan must be submitted to the City for approval prior to closure. This article also requires soil from the UST excavation, and possibly the groundwater, to be sampled. Upon completion of closure, a final report documenting UST removal activities and any residual contamination left in place must be submitted to the City. Upon approval of this report, the City issues a Certificate of Completion. If a release is indicated, the site owner is required to assess the extent of any contamination and conduct site remediation, as needed, in compliance with health department Local Oversight Program requirements. The health department can approve abandonment of the UST in place if removal is not feasible.
- **Article 22A** – Article 22A, also known as the Maher Ordinance, amended August 2013, requires a project sponsor to conduct a site assessment to determine the potential for site contamination and the level of exposure risk associated with the project prior to issuance of a building permit. Based on that information, the project sponsor may be required to conduct additional investigations. If the results of the additional investigations reveal the presence of hazardous substances (i.e., in excess of state or federal standards), the project sponsor would be required to submit appropriate documentation to the health department or other appropriate state or federal agencies and remediate any site contamination prior to the issuance of any building permit. Sites that meet the following criteria would be subject to the Maher Ordinance:
    - A lot either currently or previously zoned or permitted for industrial use
    - A lot either currently or previously developed with industrial land uses
    - Areas within 150 feet of any of the elevated portions of U.S. 101, I-80, or I-280

- Areas of bay fill
- A lot known or suspected by the health department to contain hazardous substances in the soil and/or groundwater
- A lot known or suspected by the health department to contain or to be within 100 feet of an UST

The Maher Ordinance also requires groundwater testing when contamination is suspected. The proposed project would be subject to the Maher Ordinance.

- **San Francisco Public Works Code** – Section 146, Construction Site Runoff Control, requires all construction sites to implement best management practices to minimize surface runoff erosion and sedimentation. In addition, pursuant to section 146.7, if construction activities would disturb 5,000 square feet or more of ground surface, then the project sponsor must develop an erosion and sediment control plan and submit a project application to the San Francisco Public Utilities Commission prior to commencing construction-related activities. An erosion and sediment control plan is a site-specific plan that details the use, location, and placement of sediment and erosion control devices. It is also used to prevent construction-related materials, wastes, spills, or residues from entering a stormwater conveyance system.[160]

Hazardous Soil and Groundwater

The proposed project would require excavation of approximately 61,800 cubic yards of soil across Blocks A, B, and C during the construction phase. The project site is located in a Maher zone, which indicates that the health department, as set forth in Building Code section 106A.3.2.4, has identified the project site as likely containing hazardous substances in the soil or groundwater. Therefore, before the proposed project can obtain a building permit, the project applicant must comply with the requirements of article 22A of the Health Code, which the health department administers.

Under article 22A (commonly called "the Maher Ordinance"), the project sponsor must retain the services of a qualified professional to prepare a site history report (commonly referred to as a phase I environmental site assessment). The environmental site assessment must determine whether hazardous substances may be present on the site at levels that exceed health risk levels or other applicable standards established by California Environmental Protection Agency (Cal/EPA), the Regional Water Quality Control Board, and the Department of Toxics Substances Control. If so, the project

[160] San Francisco Public Utilities Commission, *Construction Site Runoff Control Technical Standards and Guidelines.* February 2014, p.18, *https://sfwater.org/modules/showdocument.aspx?documentid=9347*, accessed April 18, 2019.

sponsor is required to conduct soil and/or groundwater sampling and analysis under a work plan approved by the health department. The sampling analysis must provide an accurate assessment of hazardous substances present at the site that may be disturbed, or may cause a public health or safety hazard, given the intended use of the site. Where such analysis reveals the presence of hazardous substances that exceed Cal/EPA public health risk levels given the intended use, the project sponsor must submit a site mitigation plan to the health department. The site mitigation plan must identify the measures that the project sponsor will take to ensure that the intended use will not result in public health or safety hazards in excess of the acceptable public health risk levels established by Cal/EPA or other applicable regulatory standards. The site mitigation plan also must identify any soil and/or groundwater sampling and analysis that it recommends the project sponsor conduct following completion of the measures to verify that remediation is complete. If the project sponsor chooses to address public health or safety hazards from hazardous substances through land use or activity restrictions, the project sponsor must record a deed restriction specifying the land use restrictions or other controls that will ensure protection of public health or safety from hazards substances remaining on the site.

To comply with various regulatory requirements, the health department will require the site mitigation plan to contain measures to address potential risks to the environment and to protect construction workers, nearby residents, workers, and/or pedestrians from potential exposure to hazardous substances and underground structures during soil excavation and grading activities. The site mitigation plan must also contain procedures for initial response to unanticipated conditions such as discovery of USTs, sumps, or pipelines during excavation activities. Specified construction procedures at a minimum must comply with Building Code section 106A.3.2.6.3 and Health Code article 22B related to construction dust control; and Public Works Code section 146 concerning construction site runoff control. Additional measures would typically include notification, field screening, and worker health and safety measures to comply with Cal/OSHA requirements. The health department would require discovered USTs to be closed pursuant to article 21 of the San Francisco Health Code and compliance with applicable provisions of Chapters 6.7 and 6.75 of the California Health and Safety Code (commencing with section 25280) and its implementing regulations. The closure of any UST must also be conducted in accordance with a permit from the San Francisco Fire Department.

If remediation is required, it would typically be achieved through one of several methods that include off-haul and disposal of contaminated soils,[161] onsite treatment of soil or groundwater, or vapor barrier installation. Alternatively, or in addition, restriction on uses or activities at the project site may be required along with a recorded deed restriction. Compliance with San Francisco Health Code article 22A and the related regulations identified above would ensure that project activities that disturb or release hazardous substances that may be present at the project site would not expose people to unacceptable risk levels.

In compliance with San Francisco Health Code article 22A, the project sponsor has enrolled in the Maher program and submitted a phase I environmental site assessment to the health department to assess the potential for site contamination. As discussed above, the environmental site assessment found that low levels of chlorinated VOCs, below drinking water maximum contaminant levels and residential environmental screening levels, had been detected in groundwater samples obtained from the eastern portion of the project site. However, the source of the VOCs has not been identified, and the extent and magnitude of the VOCs in groundwater beneath the project site has not been fully characterized. Accordingly, there is a potential for these chemicals to be present beneath the project site at concentrations that may represent a health risk concern to future users of the project site.

The project sponsor is required to remediate the potential soil or groundwater contamination described above in accordance with article 22A of the San Francisco Health Code. The health department has requested a phase II work plan for the project site, based on the results of the phase I environmental site assessment.[162] The work plan request concluded that, in addition to the two recognized environmental conditions identified by the environmental site assessment, the following should be implemented:

- Prior to any substantial renovation or demolition at the project site, any building materials to be disturbed should be tested for asbestos-containing materials so that presently unknown asbestos-containing materials at the site can be properly managed. In addition, an asbestos operations and maintenance plan should be developed, as necessary, based on testing at the project site.

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[161] Off-haul and disposal of contaminated materials from the project site would be in accordance with the federal RCRA and U.S. Department of Transportation regulations and the California Hazardous Waste Control program (California Health and Safety Code section 21000 et seq.)

[162] City and County of San Francisco, *Phase II Work Plan Request, 3700 California Street*, EHB-SAM No. SMED: 1759, Department of Public and Environmental Health, December 12, 2018, San Francisco, California.

- Prior to any significant renovation or demolition at the project site, any building materials to be disturbed should be tested for lead-based paint so that presently unknown lead-based paint at the site can be properly managed.
- Groundwater monitoring wells installed for the purpose of monitoring groundwater associated with the recognized environmental condition from the former 3773 Sacramento Street UST, as discussed in the environmental site assessment, should be decommissioned in accordance with California Department of Water Resources Well Standards 74-81 and 74-90.
- Groundwater monitoring wells installed for the purpose of monitoring groundwater for geotechnical investigations at 3905 Sacramento Street, 3773 Sacramento Street, and 3700 California Street should be decommissioned in accordance with California Department of Water Resources Well Standards 74-81 and 74-90.

The health department would oversee this process, and various regulations would apply to any disturbance of contaminants in soil or groundwater that would be encountered during construction to ensure that no unacceptable exposures to the public would occur. Thus, the proposed project would not result in a significant hazard to the public or environment from the disturbance or release of contaminated soil or groundwater and the proposed project would result in a less-than-significant impact.

Asbestos-Containing Materials

The project site is occupied by buildings that were constructed prior to the mainstream use of asbestos-containing materials; however, this does not preclude their potential presence. Although the environmental site assessment did not sample building materials for asbestos-containing materials, based on the dates of construction and renovation of buildings on the project site, asbestos-containing materials may be present in building materials that could become airborne during demolition.

The Department of Toxic Substances Control considers asbestos hazardous and removal is required. The asbestos-containing materials must be removed in accordance with local and state regulations, Bay Area Air Quality Management District (air district), Cal/OSHA, and California Department of Health Services requirements. This includes materials that could be disturbed by the proposed demolition and construction activities.

Specifically, *California Health and Safety Code* section 19827.5 requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The California legislature vests the air district with the authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and the air district is to be notified ten days in advance of any proposed demolition or abatement work. Any disturbance of asbestos-containing materials at the project site would be subject to the requirements of air district regulation 11, rule 2: Hazardous Materials—Asbestos Demolition, Renovation, and Manufacturing. The local office of Cal/OSHA must also be notified of asbestos abatement to be carried out. Asbestos abatement contractors must follow state regulations contained in Title 8 of *California Code of Regulations* section 1529 and sections 341.6 through 341.14, where there is asbestos-related work involving 100 square feet or more of asbestos-containing materials. The owner of the property where abatement is to occur must have a hazardous waste generator number assigned by and registered with the Office of the California Department of Health Services. The contractor and hauler of the material are required to file a hazardous waste manifest that details the hauling of the material from the site and the disposal of it. Pursuant to California law, the DBI would not issue the required permit until the applicant has complied with the requirements described above.

These regulations and procedures already established as part of the building permit review process would ensure that any potential impacts due to asbestos-containing building materials would be reduced to a less-than-significant level.

Lead-Based Paint

Similar to asbestos-containing materials, lead-based paint was not sampled for the phase I environmental site assessment and may be present in all buildings on the project site. Work that could result in disturbance of lead paint must comply with *San Francisco Building Code* section 3426, Work Practices for Lead-Based Paint on Pre-1979 Buildings and Steel Structures. Where there is any work that may disturb or remove lead paint on the exterior of any building built prior to 1979, section 3426 requires specific notification and work standards, and identifies prohibited work methods and penalties.

Section 3426 applies to the exterior of all buildings or steel structures on which original construction was completed prior to 1979 (which are assumed to have lead-based paint on their surfaces, unless demonstrated otherwise through laboratory analysis), and to the interior of residential buildings, hotels, and child care centers. The ordinance contains performance standards, including establishment of containment barriers, at least as effective at protecting human health and the environment as those in the U.S. Department of Housing and Urban Development Guidelines (the most recent Guidelines for Evaluation and Control of Lead-Based Paint Hazards) and identifies prohibited practices that may not be used in disturbances or removal of lead-based paint. Any person performing work subject to the ordinance shall, to the maximum extent possible, protect the ground from contamination during exterior work; protect floors and other horizontal surfaces from work debris during interior work; and make all reasonable efforts to prevent migration of lead paint contaminants beyond containment barriers during the course of the work. Cleanup standards require the removal of visible work debris, including the use of a high-efficiency particulate air filter vacuum following interior work.

The ordinance also includes notification requirements and requirements for signs. Prior to the commencement of work, the responsible party must provide written notice to the Director of DBI, of the address and location of the project; the scope of work, including specific location within the site; methods and tools to be used; the approximate age of the structure; anticipated job start and completion dates for the work; whether the building is residential or nonresidential, owner-occupied, or rental property; the dates by which the responsible party has fulfilled or will fulfill any tenant or adjacent property notification requirements; and the name, address, telephone number, and pager number of the party who will perform the work. Further notice requirements include a posted sign notifying the public of restricted access to the work area, a notice to residential occupants, availability of a pamphlet related to protection from lead in the home, and notice of early commencement of work (by owner, requested by tenant), and notice of lead-contaminated dust or soil, if applicable. Section 3426 contains provisions regarding inspection and sampling for compliance by DBI, as well as enforcement, and describes penalties for non-compliance with the requirements of the ordinance.

Demolition would also be subject to the Cal/OSHA Lead in Construction Standard (8 California Code of Regulations [CCR] section 1532.1). This standard requires development and implementation of a lead compliance plan when materials containing lead would be disturbed during construction. The plan must describe activities that could emit lead, methods that will be used to comply with the standard, safe work practices, and a plan to protect workers from exposure to lead during construction activities. Cal/OSHA would require 24-hour notification if more than 100 square feet of materials containing lead would be disturbed.

Compliance with procedures required by Building Code section 3426 and the Lead in Construction Standard would ensure that potential impacts of demolition or renovation of structures with lead-based paint would be less than significant.

Other Hazardous Building Materials

Other hazardous building materials that could be present include fluorescent light ballasts that could contain polychlorinated biphenyl (PCBs) or diethylhexyl phthalate, and switches, thermostats, and fluorescent light tubes that could contain mercury vapors.

Disruption of these materials could pose health threats for construction workers if not properly disposed of. Each of these materials is subject to federal and/or state regulation to ensure that they are properly handled during removal and disposal prior to the start of building demolition or renovation. PCBs have been prohibited in most uses since 1978, although some electrical transformers still in use today use oils that contain PCBs. However, disposal of PCBs is regulated at both the federal level (the Toxic Substances Control Act, U.S. Code title 15, chapter 53; and implementing regulations in 40 Code of Federal Regulations [CFR] 761) and at the state level (22 CCR 66261.24), and diethylhexyl phthalate is covered under federal regulations (40 CFR 261.33). Disposal of these materials as hazardous waste must comply with applicable laws and regulations and may involve incineration or other treatment or disposal in an approved chemical waste landfill. Mercury is regulated as a hazardous waste under 22 CCR 66262.11 and 22 CCR 66273.4 and its disposal is regulated as hazardous waste under 22 CCR 66261.50. Because they are considered a hazardous waste, all fluorescent lamps and mercury-containing switches and thermostats must be recycled or taken to a handler of universal waste. Compliance with the existing regulations noted here would ensure that potential impacts of exposure to these hazardous building materials would be less than significant.

Conclusions

Based on mandatory compliance with existing laws and regulatory requirements and the information and conclusions from the environmental site assessment, the proposed project would not result in a significant hazard to the public or environment from contaminated soil and/or groundwater, asbestos, lead-based paint, or other hazardous building materials, and the proposed project would result in a less-than-significant impact with respect to these hazards. Therefore, no mitigation measures are required. This topic will not be discussed in the EIR.

Impact HZ-3: The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (*Less than Significant*)

The handling or emission of hazardous or acutely hazardous materials near schools must consider potential health effects on children, who are considered sensitive receptors.

The existing schools within 0.25 mile of the project site are the following:

- Claire Lilienthal Elementary School, Madison Campus (3950 Sacramento Street, San Francisco, CA 94118), located 0.1 mile from the project site
- Presidio Hill School (3839 Washington Street, San Francisco, CA 94118), located 0.15 mile from the project site

- Temple Emanu-El Preschool (Two Lake Street, San Francisco, CA 94118), located 0.2 mile from the project site
- Rosenberg Early Childhood Center (3200 California Street, San Francisco, CA 94118), located 0.23 mile from the project site

Construction

Development of the proposed project would involve demolition and construction, both of which would require the handling and transport of hazardous wastes. Existing regulations require surveys for asbestos-containing materials, lead-based paint, and other hazardous building materials. If surveys determine that hazardous building materials are present, the project sponsor would be required to comply with regulations described above in Impact HZ-1 and Impact HZ-2, which would ensure that hazardous materials would be handled safely and would not be released within 0.25 mile of schools. As discussed under Impact HZ-1 and Impact HZ-2, hazardous materials used during construction would be managed in accordance with applicable laws and regulations, and potential impacts on nearby receptors would be less than significant. Through compliance with these requirements, impacts related to hazardous or acutely hazardous materials encountered during construction of the proposed project would be less than significant at nearby schools or proposed schools. No mitigation is required. This topic will not be discussed in the EIR.

Operation

Project operation would not be expected to involve emissions of toxic air contaminants. Rather, the demolition phase would involve removal of three emergency generators from the hospital facility, with an associated reduction in toxic air contaminant emissions. Refer to Section 4.4, *Air Quality,* in the EIR for further discussion of toxic air contaminants.

As discussed under Impact HZ-1, the proposed project would include the use of common household items in quantities too small to create a significant hazard to the public or the environment. The proposed residential uses would not generate hazardous emissions. The current medical uses at the project site include the use of hazardous chemicals and biohazardous materials, which results in the generation of hazardous waste. The new residential use proposed under the project would represent a decrease in the use and generation of hazardous materials and waste. Therefore, the proposed project would have a less-than-significant impact. No mitigation is required. This topic will not be discussed in the EIR.

Impact HZ-4: The proposed project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. (*Less than Significant*)

Project construction would conform to the provisions of the City's Building Code and Fire Code. The removal of the existing hospital and construction of the proposed residential uses at the project site would result in a net reduction in vehicle trips in the project vicinity.[163] Ingress and egress to the project site would be provided at California Street, Cherry Street, and Maple Street, allowing emergency vehicle access to the project site. Four existing low-pressure water fire hydrants would be maintained along California, Sacramento, and Cherry streets, and four new low-pressure fire hydrants would be installed along California and Sacramento streets. Moreover, the City has a published emergency response plan, prepared by the San Francisco Department of Emergency Management as part of the City's Emergency Management Program, which also includes plans for hazard mitigation and disaster preparedness and recovery.

The emergency response plan identifies hazards to which San Francisco is particularly susceptible (e.g., earthquakes, hurricanes, tsunamis, floods, winter storms, and acts of terrorism, including the use of chemical, biological, radiological, nuclear, and explosive weapons). The emergency response plan complies with several relevant state and federal directives for emergency planning, including the California Standardized Emergency Management System and the Incident Command System. The emergency response plan includes sections regarding operations, including management and procedures; staffing, operations, and logistics for the City's emergency operations center; and mutual aid, which involves other agencies. The emergency response plan assigns responsibilities for disaster planning; operations, including fire and rescue, law enforcement, human services, infrastructure, transportation, communications, and community support; and logistics, as well as finance and administration, to City agencies and departments. The emergency response plan also identifies volunteer agencies, such as the American Red Cross, that are integral to disaster response efforts. The emergency response plan contains 16 "annexes" (similar to appendices), consistent with a federally established framework, that cover topics such as firefighting, public works and engineering, mass casualty care, and earthquakes, among numerous others. The earthquake annex, in particular, sets forth planning assumptions for a series of earthquakes of varying magnitudes on different faults and procedures for the assessment of damage and injuries.

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163 *Memorandum #1: Final Travel Demand Estimates for 3700 California* (Fehr & Peers, October 2, 2018) and *Memorandum #2: Transportation Impact Analysis for 3700 California* (Fehr & Peers, October 17, 2018). Case No. 2017-003559ENV, October 2018.

Residents of the newly constructed project would be subject to a potential disaster, including a major earthquake and other hazards identified in the emergency response plan. In particular, the project area would be subject to ground shaking from potentially large earthquakes occurring along the San Andreas or Hayward faults or other faults in the region. However, the proposed project would be subject to current (and more stringent) building and structural standards than most existing buildings. During the review of the building permit application, the DBI and fire department would review the project plans for compliance with all regulations related to fire safety, which may include the development of an emergency procedure manual or an exit drill plan for the residents and employees of the proposed new and adaptively reused buildings. Compliance with fire safety regulations would ensure that construction and operation of the proposed project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan or expose people or structures to a significant risk of loss, injury, or death involving fires. Adherence to the San Francisco Fire Code and Building Code, along with implementation of the emergency response plan, would reduce potential impacts related to interference with emergency response or evacuation plans to less-than-significant levels**,** and no mitigation measures are required. This topic will not be discussed in the EIR.

Impact C-HZ-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in cumulative impacts related to hazards and hazardous materials. (*Less than Significant*)

Environmental impacts related to hazards and hazardous materials are generally site specific. Therefore, reasonably foreseeable projects would not combine with the proposed project to result in cumulative impacts related to hazards and hazardous materials. In addition, development projects would be subject to the same fire safety and hazardous materials handling and disposal regulations applicable to the proposed project:

- Federal Toxic Substances Control Act
- RCRA
- Hazardous and Solid Waste Act
- Article 21 of the San Francisco Health Code
- Article 22 of the San Francisco Health Code
- Article 22A of the San Francisco Health Code (Maher Ordinance)
- Article 22B of the San Francisco Health Code
- Local Oversight Program
- San Francisco Building Code
- San Francisco Fire Code

For these reasons, cumulative impacts related to hazards and hazardous materials would be less than significant, and no mitigation measures are required. This topic will not be discussed in the EIR.

Topics:	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
18. MINERAL RESOURCES Would the project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒	☐

Impact MI-1: The proposed project would not a) result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or b) result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. (*No Impact*)

Land in San Francisco includes a number of different Mineral Resource Zone classifications as defined by the California Division of Mines and Geology (CDMG) under the Surface Mining and Reclamation Act of 1975.[164,165] The project site is within an urbanized area designated as Mineral Resource Zone-3(a), which signifies an area containing mineral deposits, the significance of which cannot be evaluated from available data. Thus, the project site is not a designated area of known significant mineral deposits or a locally important mineral resource recovery site. However, this classification indicates that the area is a potential source of construction aggregate (e.g., sand and gravel).

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164 California Division of Mines and Geology, *Special Report 146, Plate 2.41, Mineral Land Classification Map: Aggregate Resources Only San Francisco County*, 1982, *ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/SR_146-2/SR-146_Plate_2.41.pdf*, accessed September 27, 2018.

165 California Division of Mines and Geology, *Open File Report 96-03, 1996; Special Report 146 Part I, 1986;* and *Special Report 146 Part II,* 1987, *tp://ftp.conservation.ca.gov/pub/dmg/pubs/sr/SR_146-1/SR_146-1_Text.pdf and ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/SR_146-2/SR_146-2_Text.pdf*, accessed September 27, 2018.

The project site is primarily developed and located within a developed area of the city and is the site of an existing hospital campus. According to the *preliminary geotechnical evaluation* prepared for the proposed project,[166] which is based on available geotechnical data from the surrounding area and on limited field investigations including 40 soil borings conducted at the project site, the soils underlying the project site are composed of historic fill, dune sand (Holocene to Pleistocene), and Colma formation (Pleistocene). The fill extends to a maximum depth of 30 feet, depending on the location on the project site. Three to 28 feet of dune sand underlie the existing ground surface. Twelve to 90 feet of Colma formation underlie the dune sand. The Colma formation consists of sand with varying amounts of clay and silt. None of these materials is a source of aggregate used in construction materials, which is typically composed of gravel (pebbles), crushed stone, or crushed recycled concrete.

The proposed project would involve excavation to maximum depths of 13 feet on Block A, 75 feet on Block B, and 17 feet on Block C. As with most land within San Francisco, the project site would likely not be a significant source of construction aggregate or significant mineral resources. Therefore, implementation of the proposed project would not adversely affect mineral resources, nor would it result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state. Furthermore, there are no operational mineral resource recovery sites in the project vicinity whose accessibility or operations would be affected by the construction or operation of the proposed project. Therefore, there would be no impact on mineral resources, and no mitigation measures are required. This topic will not be discussed in the EIR.

Impact C-MI-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in cumulative impacts on mineral resources. (*No Impact*)

Because there are no designated areas with significant mineral deposits or locally important mineral resource recovery sites in the city, reasonably foreseeable projects would not affect any such deposits or sites. Therefore, the proposed project would not combine with reasonably foreseeable projects to result in cumulative impacts on mineral resources.

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166 Langan Treadwell Rollo, *Preliminary Geotechnical Evaluation, Former CPMC California Campus Redevelopment, San Francisco,* April 29, 2015.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Not Applicable
19. ENERGY **Would the project:**					
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐	☐

Impact EN-1: The proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation; or conflict with or obstruct a state or local plan for renewable energy or energy efficiency. (*Less than Significant*)

In California, energy consumption in buildings is regulated by Title 24 of the California Code of Regulations. Title 24 includes standards that regulate energy consumption for the heating, cooling, ventilation, and lighting of residential and nonresidential buildings. In San Francisco, documentation demonstrating compliance with Title 24 standards is required to be submitted with a building permit application. Compliance with Title 24 standards is enforced by the building department. The proposed project, which would be located on an infill site, would include new construction and the adaptive reuse of two existing onsite buildings. The proposed project would be required to comply with the standards of Title 24 and the requirements of the 2016 San Francisco Green Building Code. In addition, as of January 2018, new construction in the city is required to install sufficient electrical infrastructure to charge electric vehicles in 20 percent of off-street parking spaces, and all off-street parking spaces must be constructed with dimensions capable of accommodating future electric charging infrastructure.[167]

Non-renewable energy consumption would occur during the proposed project construction and operational phases. Construction energy consumption would be primarily in the form of indirect energy inherent in the production of materials used for construction (e.g., the energy necessary to manufacture a steel beam from raw materials) and the fuel used by construction equipment. Construction-related energy consumption is roughly proportional to the size of the new buildings proposed and, for the proposed

[167] City and County of San Francisco Department of Building Inspection, *Administrative Bulletin AB-093*, updated 2018, *https://sfdbi.org/sites/default/files/AB-093.pdf*, accessed November 3, 2018.

project, would also be related to the scale of the intervention necessary to adaptively reuse and remodel the existing residential and medical buildings at 401 Cherry Street and 3698 California Street, respectively.

Operational-related energy consumption would include electricity and natural gas, as well as fuel used by residents and visitors as expressed through vehicle miles traveled. Electricity and natural gas would be used for building space heating and lighting (uses that are covered by Title 24, discussed above) as well as for operation of equipment and machines.

Energy conservation design features to meet state and local goals for energy efficiency and renewable energy have been incorporated into the project design to reduce wasteful, inefficient, and unnecessary consumption of energy during project construction and operation. As stated above, the proposed project would be required to comply with the standards of Title 24 and the requirements of the 2016 San Francisco Green Building Code, thus minimizing the amount of fuel, water, and energy used. The roof coverage of the project would incorporate either 15 percent solar, or 30 percent living roof, or a combination of the two. The proposed project would also incorporate transportation demand management measures into its design, such as car-share parking and bicycle parking and repair stations, and be located in proximity to several public transportation options. Furthermore, the project would be required to install sufficient electrical infrastructure to charge electric vehicles in 20 percent of off-street parking spaces, and design all off-street parking spaces with dimensions capable of accommodating future electric charging infrastructure. These features would minimize the amount of transportation fuel consumed. As shown in Section 4.2, *Transportation and Circulation*, of the EIR, Table 4.2-2, p. 4.2-25, the project site is in an area with a comparably low level of VMT per capita, relative to the regional average, and new residents would most likely engage in vehicle use patterns similar to those of the existing population in the neighborhood and general vicinity. Given the project's features and location, it would not result in wasteful use of fuel from vehicle trips.

The following discussion provides a quantitative assessment of the proposed project's energy use, including energy use calculations and a discussion of energy conservation measures. Electrical energy demand is measured by power flow, expressed in kilowatt-hours (kWh) and natural gas is measured in cubic feet of gas or by its heat content in British thermal units[168] (BTUs), or therms. Diesel and gasoline fuel use is measured in gallons. Energy calculation worksheets are provided in Appendix E to the EIR.

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[168] 1 kBTU = 3.412 kWh and 1 kBTU = 3.412 kWh

Construction

Energy use associated with phased construction of the proposed project would include electricity use associated with the use of electric equipment, diesel fuel consumption from on-road hauling trips and off-road construction diesel equipment, and gasoline consumption from on-road worker commute and vendor trips. Electricity use associated with electric construction equipment for the proposed project would require the use of 9,600 kWh. Construction of the proposed project would use approximately 36,200 gallons of diesel for off-road construction equipment. Approximately 36,600 gallons of diesel and 49,600 gallons of gasoline would be used for on-road trips during construction of the proposed project. Construction of the proposed project would be phased over a three-year timeframe; thus, construction-related energy use would be temporary. Furthermore, as compared to other states and the country as whole, construction projects in California and, in particular in the San Francisco Bay Area, use the most energy-efficient equipment available in order to meet state and local goals for criteria air pollutant and greenhouse gas emissions reductions. As a result, construction activities would not have a measurable effect on regional energy supplies or on peak energy demand resulting in a need for additional capacity. Therefore, as a temporary activity, construction of the proposed project would not result in inefficient or wasteful use of fuel or energy.

Operation

In the LRDP EIR, energy impacts associated with removal of the California Campus and the addition of the Cathedral Hill Campus were evaluated qualitatively. In that document, the impacts of the Cathedral Hill Campus were evaluated with respect to that campus' consistency with Leadership in Energy and Environmental Design certification and existing regulations related to energy efficiency. Removal of the California Campus, and its corresponding energy use, was not incorporated into the analysis of energy impacts in the LRDP EIR. Consequently, the existing energy conditions for the proposed project are considered to be the energy consumption of the existing hospital. For this reason, unless otherwise indicated, the energy consumption of the project proposed is compared to the energy consumption of the existing hospital, including building energy (electricity and natural gas) and fuel use (i.e., existing conditions), to determine the net difference in energy consumption.[169]

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[169] ICF memorandum to San Francisco Planning Department, *Recommendation for Accounting for Existing Hospital Use in 3700 California Street EIR Analysis*, February 28, 2019. This memorandum includes an additional discussion of the relationship between the proposed project and the LRDP EIR.

Energy use associated with operation of the proposed project would include onsite use associated with buildings; electricity for off-site water treatment and distribution; and fuel from mobile sources. In the interim year of 2023, when only Block C is operational, the total estimated energy consumption for that block would be approximately 4,200,000 kBTU/year. However, because the existing hospital uses at the California Campus consume approximately 88,400,000 kBTU/year, the proposed project in 2023 would result in a net decrease in operational-related energy consumption of more than 84,000,000 kBTU/year from the project site. When Blocks A through C are fully operational beginning in 2024, the total project energy use would be approximately 11,400,000 kBTU/year; however, there would still be negative net energy consumption, relative to existing energy consumption at the project site, of approximately 75,900,000 kBTU per year.

After incorporation of the energy conservation measures into the project design, as required by the City's Green Building Code, the proposed project would save approximately 9 percent of annual building energy use (reduced from approximately 12,600,000 kBTU/year to approximately 11,400,000 kBTU/year). With implementation of the energy conservation measures required to meet the City's Green Building Code, the proposed project would meet and improve upon the Title 24 energy conservation standards.

On-site renewable energy generation is not included in the above building energy use estimates and would further reduce regional energy demand associated with the proposed project. During operation, the estimated renewable energy output from solar arrays on the project roofs, if included, would generate renewable energy that could power onsite uses or be sold back to the grid. However, at this time, it is not known whether or not the solar array will be constructed (or a green roof) or, if constructed, the amount of energy it would generate.

The estimated annual electricity use associated with water supply, treatment, and distribution during operation of the proposed project would be approximately 55,000 kWh/year in 2023 when only Block C is operational, and 154,000 kWh/year in 2024 when the entire project is operational. As discussed in *Relationship to CPMC Long-Range Development Plan EIR,* p. 10, the analysis of water demand in the LRDP EIR "netted out" water consumption associated with the existing hospital uses. However, that analysis did not quantify the electricity associated with water demand. Nevertheless, to be consistent with the LRDP EIR, this analysis conservatively does not net out energy associated with water consumption at the existing hospital campus.

During operation of the proposed project in 2023, mobile sources would use approximately 2,400 gallons of diesel and 19,000 gallons of gasoline per year, based on an annual VMT estimate of 583,000 miles. The existing uses at the project site currently use approximately 58,200 gallons of diesel and 576,300 gallons of gasoline, with annual VMT totaling more than 15,000,000 miles. As such, in 2023, the proposed project would result in a net decrease of more than 55,800 gallons of diesel and more than 557,600 gallons of gasoline relative to existing conditions. In 2024, the proposed project would result in the consumption of approximately 8,000 gallons of diesel, 62,300 gallons of gasoline, with annual VMT totaling approximately 1,998,000 miles. This represents a net decrease in diesel and gasoline consumption, relative to existing conditions, of more than 50,100 and 514,000 gallons, respectively.

Based on compliance with the Title 24 conservation standards of the California Code of Regulations and the assessment of the projected demand for energy resources, operation of the proposed project would not have a measurable effect on regional energy supplies or on peak energy demand resulting in a need for additional capacity. Natural gas and electric service would be provided to meet the needs of the project, as required by the California Public Utilities Commission, which obligates PG&E and the SFPUC to provide service to its existing and potential customers. PG&E and the SFPUC update their service projections in order to meet regional energy and water demand. Energy conservation and production measures in the proposed project would decrease overall energy consumption, decrease reliance on non-renewable energy sources, and increase reliance on renewable energy sources at the project site. The proposed project would also be consistent with San Francisco's greenhouse gas reduction strategy (see Section E.8, *Greenhouse Gas Emissions*). Construction energy consumption would be a temporary energy expenditure and would not occur in an inefficient or wasteful manner. Furthermore, with removal of the existing hospital use, the proposed project would result in a net reduction in energy consumption associated with onsite electricity use in buildings and fuel for mobile sources compared with existing conditions at the site.

In summary, construction and operation of the proposed project would not use energy resources in a wasteful, inefficient, or unnecessary manner, nor would the proposed project conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the proposed project would have a less-than-significant impact on energy resources, and no mitigation measures are required. This topic will not be discussed in the EIR.

Impact C-EN-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in cumulative energy impacts. (*Less than Significant*)

The geographic context for the analysis of cumulative impacts associated with energy is the service territory of the energy utility that serves the project site, PG&E, while the geographic context for the analysis of cumulative impacts associated with fuel use is the city. The proposed project would replace existing hospital/medical office uses with residential uses, resulting in a net decrease in energy use compared with existing conditions at the site. Energy and fuel use during project construction would represent a small fraction of the energy and fuel use associated with operation of the existing onsite hospital. Like the proposed project, all new development in the city would be required to comply with the standards of Title 24 and the 2016 San Francisco Green Building Code, thereby minimizing the amount of fuel, water, and energy used. Per capita VMT in the city is relatively low compared with the regional average; therefore, reasonably foreseeable development, including the project, would not result in wasteful use of fuel for transportation purposes. As such, the proposed project, in combination with reasonably foreseeable future projects, would have less-than-significant cumulative energy impacts, and no mitigation measures are required. This topic will not be addressed in the EIR.

Topics:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*	*Not Applicable*
20.	**AGRICULTURE AND FORESTRY RESOURCES**					
	In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.					
	Would the project:					
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☐	☒
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or forest land to non-forest use?	☐	☐	☐	☐	☒

The project site is located within an urbanized area and does not contain traditional or urban agricultural uses, and it is not zoned for such uses. The California Department of Conservation's Farmland Mapping and Monitoring Program identifies the project site as Urban and Built-Up Land, which is defined as "... land [that] is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes."[170] Because the project site does not contain agricultural uses and is not zoned for such uses, the proposed project would not convert any prime farmland, or Farmland of Statewide Importance to non-agricultural use, and it would not conflict with existing zoning for agricultural use or a Williamson Act contract, nor would it involve any changes to the environment that could result in the conversion of farmland. Therefore, topics E.20(a), (b) and (e) are not applicable to the proposed project.

The project site does not contain forest land or timberland and is not zoned for such uses. Forest land is defined as "land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits" (Public Resources Code section 12220(g)). Timberland is defined as "privately owned land, or land acquired for state forest purposes, which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, and which is capable of growing an average annual volume of wood fiber of at least 15 cubic feet per acre" (Government Code section 51104). Because the project site does not contain forest land or timberland and is not zoned for such uses, the proposed project would not convert any forest land or timberland to non-forest use, and it would not conflict with existing zoning for forest land or timberland use, nor would it involve any changes to the environment that could result in the conversion of forest land or timberland. Therefore, topics E.20(c) and (d) are not applicable to the proposed project.

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[170] California Department of Conservation, Division of Land Resource Protection, *Farmland Mapping and Monitoring Program, San Francisco Bay Area Important Farmland 2012*, September 2015, *ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/regional/2012/bay_area_2012_fmmp_base.pdf*, accessed September 27, 2018.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Not Applicable
21. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:					
a) Substantially impair an adopted emergency response plan or emergency evacuation plans?	☐	☐	☐	☐	☒
b) Because of slopes, prevailing winds, or other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or result in temporary or ongoing impacts on the environment?	☐	☐	☐	☐	☒
d) Expose people or structure to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☐	☒

The City and bordering areas within San Mateo County do not have any state responsibility areas for fire prevention or lands that have been classified as very high fire hazard severity zones.[171] Therefore, this topic is not applicable. Refer to topic 17, Hazards and Hazardous Materials, for a discussion of wildland fire risks.

[171] California Department of Forestry and Fire Protection, Fire and Resource Assessment Program, *San Francisco County Draft Fire Hazard Severity Zones in Local Responsibility Areas Map*, October 5, 2007; *San Mateo County Fire Hazard Severity Zones in State Responsibility Areas Map*, November 7, 2007; and *San Mateo County Very High Fire Hazard Severity Zones in Local Responsibility Areas Map*, November 24, 2008, http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact	Not Applicable
22. MANDATORY FINDINGS OF SIGNIFICANCE **Does the project:**					
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☒	☐	☐	☐	☐
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐	☐

The discussion of biological resources in Section E.14, p. 85, shows that, with mitigation, the proposed project would not significantly affect any habitats, plant or animal communities, or threatened or endangered species. The discussion of cultural resources in Section E.3, p. 24, shows that, with mitigation, the proposed project would not significantly affect historic resources, archaeological resources, or human remains. The discussion of tribal cultural resources in Section E.4, p. 41, shows that, with mitigation, the proposed project would not significantly affect tribal cultural resources. The discussion of geology and soils in Section E.15, p. 94, shows that, with mitigation, the proposed project would not significantly affect paleontological resources or unique geologic features. The initial study has addressed cumulative impacts under each environmental topic and determined that cumulative impacts related to biological resources, cultural resources, and tribal cultural resources would require mitigation to reduce impacts to less than significant. For all other topics, the initial study supports a determination that the proposed project, in combination with reasonably foreseeable projects, would not result in significant cumulative impacts. The EIR will address potential impacts, including cumulative impacts, related to transportation and circulation, noise, and air quality. These topics, along with plans and policies, other CEQA topics, and alternatives, will be evaluated in the EIR.

F. MITIGATION MEASURES AND IMPROVEMENT MEASURES

The following mitigation measures have been identified to reduce potentially significant impacts resulting from the proposed project to less-than-significant levels within the initial study. Other potentially significant impacts pertaining to transportation and circulation, noise, and air quality are analyzed in the EIR, and mitigation measures and improvement measures have been identified for those topics where necessary. The project sponsor has agreed to implement all mitigation and improvement measures identified in this initial study, which are listed below.

Mitigation Measure M-CR-1: Historic Preservation Plan and Protective Measures for 3698 California Street

A historic preservation plan and protective measures shall be prepared and implemented to aid in preserving and protecting those historical resources that would be retained and rehabilitated as part of the project. The historic preservation plan shall be prepared by a qualified historic preservation architect who meets the Secretary of Interior's Professional Qualification Standards (36 CFR, Part 61), and the project sponsor shall ensure that the contractor follows the plan. The preservation and protection plan, specifications, monitoring schedule, and other supporting documents shall be incorporated into the building or site permit application plan sets for Block 1017, and all documentation shall be reviewed and approved by the planning department's preservation staff.

Implementation of the historic preservation plan shall ensure that the proposed rehabilitation and adaptive reuse meet all requirements by establishing measures to protect retained building façades and character-defining features from construction equipment that could inadvertently damage historic resources. Specifically, the preservation plan shall incorporate construction specifications that require the construction contractor(s) to use all feasible means to avoid damage to the historic building, including, but not necessarily limited to, staging equipment and materials as far as possible from the historic building to avoid direct impact damage, maintaining a buffer zone when possible between heavy equipment and historical resources, appropriately shoring excavation sidewalls to prevent the movement of adjacent structures, designing and installing new adjacent foundations so as to minimize any uplift of soils, ensuring adequate drainage from adjacent sites, covering the roofs of adjacent structures to avoid damage from falling objects, and ensuring appropriate security to minimize risks related to vandalism and fire. The consultant shall conduct regular periodic inspections of the historic building during ground-disturbing activities on the project site. Should damage to the building occur, the building shall be remediated to its preconstruction condition at the conclusion of ground-disturbing activity on the site and fixed during rehabilitation of the resource.

Improvement Measure I-CR-A: Historic Resource Interpretation

The project sponsor should provide a permanent display of interpretive materials concerning the history and architectural features of the Marshal Hale hospital building as well as the history of the CPMC California Campus. The historic interpretation should be supervised by an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards and conducted in coordination with an exhibit designer. The interpretative materials (which may include, but are not limited to, a display of current and historical photographs, news articles, artifacts associated with the hospital, and video recordings) should be placed in prominent public settings. A proposal describing the general parameters of the interpretive program should be approved by the planning department's preservation staff prior to issuance of a site permit. The substance, media, and other elements of such an interpretive display should be approved by the planning department's preservation staff prior to issuance of a temporary certificate of occupancy for Block 1017.

Mitigation Measure M-CR-2: Archaeological Testing

Based on a reasonable presumption that archaeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources and on human remains and associated or unassociated funerary objects. The project sponsor shall retain the services of an archaeological consultant from the rotational Qualified Archaeological Consultants List (QACL) maintained by the planning department archaeologist. After the first project approval action, or as directed by the Environmental Review Officer (ERO), the project sponsor shall contact the planning department archaeologist to obtain the names and contact information for the next three archaeological consultants on the QACL. The archaeological consultant shall undertake an archaeological testing program, as specified herein. In addition, the consultant shall be available to conduct an archaeological monitoring and/or data recovery program if required pursuant to this measure. The archaeological consultant's work shall be conducted in accordance with this measure at the direction of the ERO. All plans and reports prepared by the consultant, as specified herein, shall be submitted first and directly to the ERO for review and comment and considered draft reports and subject to revision until final approval by the ERO. Archaeological monitoring and/or data recovery programs required by this measure could suspend construction of the proposed project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means for reducing potential effects on a significant archaeological resource, as defined in CEQA Guidelines section 15064.5 (a) and (c), to a less-than-significant level.

Consultation with Descendant Communities: On discovery of an archaeological site associated with descendant Native Americans, the overseas Chinese, or other potentially interested descendant group, an appropriate representative of the descendant group and the ERO shall be contacted. The term "archaeological site" is intended here to minimally include any archaeological deposit, feature, burial, or evidence of burial. An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American Contact List for the City and County of San Francisco maintained by the California Native American Heritage Commission; in the case of the overseas Chinese, this applies to individuals listed by the Chinese Historical Society of America. An appropriate representative of other descendant groups should be determined in consultation with the planning department archaeologist. The representative of the descendant group shall be given an opportunity to monitor archaeological field investigations of the archaeological site and offer recommendations to the ERO regarding appropriate treatment of the archaeological site, recovered data from the archaeological site, and, if applicable, interpretative treatment of the associated archaeological site. A copy of the final archaeological resources report shall be provided to the representative of the descendant group.

Archaeological Testing Program. The archaeological consultant shall prepare and submit to the ERO for review and approval an archaeological testing plan (ATP). The archaeological testing program shall be conducted in accordance with the approved ATP. The ATP shall identify the property type of the expected archaeological resource(s) that could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for testing. The purpose of the archaeological testing program will be to determine, to the extent possible, the presence or absence of archaeological resources and whether any archaeological resource encountered on the project site constitutes a historical resource under CEQA.

At the completion of the archaeological testing program, the archaeological consultant shall submit a written report of the findings to the ERO. If, based on the archaeological testing program, the archaeological consultant finds that significant archaeological resources may be present, the ERO, in consultation with the archaeological consultant, shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archaeological testing, archaeological monitoring, and/or an archaeological data recovery program. No archaeological data recovery shall be undertaken without the prior approval of the ERO or the planning department archaeologist. If the ERO determines that a significant archaeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor, either:

A) The proposed project shall be redesigned so as to avoid any adverse effect on the significant archaeological resource, or

B) A data recovery program shall be implemented, unless the ERO determines that the archaeological resource is of greater interpretive rather than research significance and that interpretive use of the resource is feasible.

Archaeological Monitoring Program. If the ERO, in consultation with the archaeological consultant, determines that an archaeological monitoring program shall be implemented, the archaeological monitoring program shall minimally include the following provisions:

- The archaeological consultant, project sponsor, and ERO shall meet and consult on the scope of the AMP reasonably prior to any project-related soil-disturbing activities commencing. The ERO, in consultation with the archaeological consultant, shall determine what project activities shall be archaeologically monitored. In most cases, any soil-disturbing activities, such as demolition, excavation, grading, utility installation, foundation work, pile driving (foundation, shoring, etc.), and site remediation, shall require archaeological monitoring because of the risk these activities pose to potential archaeological resources and their depositional context;
- The archaeological consultant shall undertake a training program for workers who are involved in soil-disturbing activities; this will include an overview of the expected resource(s), how to identify evidence of the expected resource(s), and the appropriate protocol to be implemented in the event of apparent discovery of an archaeological resource;

- The archaeological monitor(s) shall be present on the project site, according to a schedule agreed upon by the archaeological consultant and the ERO, until the ERO has, in consultation with project archaeological consultant, determined that project construction activities could have no effects on significant archaeological deposits;
- The archaeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis;
- If an intact archaeological deposit is encountered, all soil-disturbing activities in the vicinity of the deposit shall cease. The archaeological monitor shall be empowered to temporarily redirect demolition/excavation/pile installation/construction activities and equipment until the deposit is evaluated. If, in the case of pile installation or deep foundation activities (foundation, shoring, etc.), the archaeological monitor has cause to believe that the pile installation or deep foundation activities may affect an archaeological resource, the pile installation or deep foundation activities shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archaeological consultant shall immediately notify the ERO of the encountered archaeological deposit. The archaeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit and present the findings of this assessment to the ERO.

Whether or not significant archaeological resources are encountered, the archaeological consultant shall submit a written report of the findings of the monitoring program to the ERO.

Archaeological Data Recovery Program. The archaeological data recovery program shall be conducted in accord with an archaeological data recovery plan (ADRP). The archaeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archaeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archaeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical.

The scope of the ADRP shall include the following elements:

- *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations.
- *Cataloging and Laboratory Analysis*. Description of selected cataloging system and artifact analysis procedures.
- *Discard and Deaccession Policy*. Description of and rationale for field and post-field discard and deaccession policies.
- *Interpretive Program*. Consideration of an onsite/offsite public interpretive program during the course of the archaeological data recovery program.
- *Security Measures*. Recommended security measures to protect the archaeological resource from vandalism, looting, and non-intentionally damaging activities.
- *Final Report*. Description of proposed report format and distribution of results.
- *Curation*. Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

Human Remains, Associated or Unassociated Funerary Objects. If human remains and associated or unassociated funerary objects are discovered during any soil-disturbing activity, all applicable state and federal laws shall be followed, including immediate notification of the coroner of the City and County of San Francisco; in the event that the coroner determines that the human remains are Native American remains, the Native American Heritage Commission (NAHC) shall be notified. The NAHC shall appoint a most likely descendant (MLD) (Public Resources Code section 5097.98). The ERO shall also be immediately notified upon discovery of human remains. The archaeological consultant, project sponsor, ERO, and MLD shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines section 15064.5(d)) within six days of the discovery of the human remains. This proposed timing shall not preclude the Public Resources Code section 5097.98 requirement that descendants make recommendations or preferences for treatment within 48 hours of being granted access to the project site. The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, curation, possession, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing state regulations or in this mitigation measure compels the project sponsor and the ERO to accept recommendations of an MLD. The archaeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects, as specified in the treatment agreement if such as agreement has been made or, otherwise, as determined by the archaeological consultant and the ERO. If no agreement is reached, state regulations shall be followed, including the reinternment of the human remains and associated burial objects with appropriate dignity on the property in a location not subject to further subsurface disturbance (Public Resources Code section 5097.98).

Final Archaeological Resources Report. The archaeological consultant shall submit a draft final archaeological resources report (FARR) to the ERO that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery program(s) undertaken. The draft FARR shall include a curation and deaccession plan for all recovered cultural materials. The draft FARR shall also include an interpretation plan for public interpretation of all significant archaeological features.

Copies of the draft FARR shall be sent to the ERO for review and approval. Once approved by the ERO, the consultant shall also prepare a public distribution version of the FARR. Copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one copy, and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The environmental planning division of the planning department shall receive one bound and one unlocked, searchable PDF copy on CD of the FARR, along with copies of any formal site recordation forms (California Department of Parks and Recreation 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest or high interpretive value, the ERO may require additional content for the final report or a different format or distribution plan.

Mitigation Measure M-CR-3: Tribal Cultural Resources Interpretive Program

If the Environmental Review Officer (ERO) determines that preservation in place of a tribal cultural resource (TCR), pursuant to Mitigation Measure M-CR-2, Archaeological Testing, is both feasible and effective, then the archaeological consultant shall prepare an archaeological resource preservation plan (ARPP). Implementation of the approved ARPP by the archaeological consultant shall be required when feasible. If the ERO determines that preservation in place of a TCR is not a sufficient or feasible option, then the project sponsor shall implement an interpretive program of the TCR in consultation with affiliated Native American tribal representatives. An interpretive plan produced in consultation with affiliated Native American tribal representatives, at a minimum, and approved by the ERO would be required to guide the interpretive program. The plan shall identify proposed locations for installations or displays, the proposed content and materials of those displays or installations, the producers or artists of the displays or installation, and a long-term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists; oral histories with local Native Americans; artifact displays and interpretation; and educational panels or other informational displays.

Mitigation Measure M-BI-1: Preconstruction Nesting Bird Surveys and Buffer Areas

Nesting birds and their nests shall be protected during construction by implementation of the following measures for each construction phase:

a. To the extent feasible, the project sponsor shall conduct initial activities including, but not limited to, vegetation removal, tree trimming or removal, ground disturbance, building demolition, site grading, and other construction activities that may compromise breeding birds or the success of their nests outside of the nesting season (January 15 through August 15).

b. If construction during the bird nesting season cannot be fully avoided, a qualified wildlife biologist shall conduct pre-construction nesting surveys within 14 days prior to the start of construction or demolition at areas that have not been previously disturbed by project activities or after any construction breaks of 14 days or more. Typical experience requirements for a "qualified biologist" include a minimum of four years of academic training and professional experience in biological sciences and related resource management activities and a minimum of two years of experience in biological monitoring or surveying for nesting birds. Surveys of suitable habitat shall be performed in publicly accessible areas within 100 feet of the project site in order to locate any active nests of common bird species and within 250 feet of the project site to locate any active raptor (birds of prey) nests.

c. If active nests are located during the preconstruction nesting bird surveys, a qualified biologist shall evaluate if the schedule of construction activities could affect the active nests; if so, the following measures shall apply, as determined by the biologist:

i. If construction is not likely to affect the active nest, construction may proceed without restriction; however, a qualified biologist shall regularly monitor the nest at a frequency determined appropriate for the surrounding construction activity to confirm there is no adverse effect. Spot-check monitoring frequency would be determined on a nest-by-nest basis considering the particular construction activity, duration, proximity to the nest, and physical barriers that may screen activity from the nest. The qualified biologist may revise his/her determination at any time during the nesting season in coordination with the planning department.

ii. If it is determined that construction may affect the active nest, the qualified biologist shall establish a no-disturbance buffer around the nest(s) and all project work shall halt within the buffer until a qualified biologist determines the nest is no longer in use. These buffer distances shall be equivalent to the survey distances (100 feet for passerines and 250 feet for raptors); however, the buffers may be adjusted if an obstruction, such as a building, is within line of sight between the nest and construction.

iii. Modifying nest buffer distances, allowing certain construction activities within the buffer, and/or modifying construction methods in proximity to active nests shall be done at the discretion of the qualified biologist and in coordination with the planning department, who would notify the California Department of Fish and Wildlife (CDFW). Necessary actions to remove or relocate an active nest(s) shall be coordinated with the planning department and approved by CDFW.

iv. Any work that must occur within established no-disturbance buffers around active nests shall be monitored by a qualified biologist. If adverse effects in response to project work within the buffer are observed and could compromise the nest, work within the no-disturbance buffer(s) shall halt until the nest occupants have fledged.

v. Any birds that begin nesting within the project area and survey buffers amid construction activities are assumed to be habituated to construction-related or similar noise and disturbance levels, so exclusion zones around nests may be reduced or eliminated in these cases as determined by the qualified biologist in coordination with the planning department, who would notify CDFW. Work may proceed around these active nests as long as the nests and their occupants are not directly affected.

d. In the event inactive nests are observed within or adjacent to the project site at any time throughout the year, any removal or relocation of the inactive nests shall be at the discretion of the qualified biologist in coordination with the planning department, who would notify and seek approval from the CDFW, as appropriate. Work may proceed around these inactive nests.

Mitigation Measure M-GE-4: Inadvertent Discovery of Paleontological Resources

Before the start of any excavation activities, the project applicant shall retain a qualified paleontologist, as defined by the Society of Vertebrate Paleontology, who is experienced in teaching non-specialists. The qualified paleontologist shall train all construction personnel who are involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils that are likely to be seen during construction, the proper notification procedures should fossils be encountered, and the laws and regulations protecting paleontological resources.

The qualified paleontologist shall also make periodic visits during earthmoving in high sensitivity sites to verify that workers are following the established procedures.

If potential paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease all earthwork or other types of ground disturbance within 25 feet of the find and notify the project sponsor, the qualified paleontologist, and the planning department. The fossil should be protected by an "exclusion zone" (i.e., an area of approximately 5 feet around the discovery that is marked with caution tape to prevent damage to the fossil). Construction work in the affected areas shall remain stopped or be diverted to allow recovery of fossil remains in a timely manner. The qualified paleontologist shall evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines if the resource is deemed significant (see Society of Vertebrate Paleontology, *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources,* http://vertpaleo.org/Membership/MemberEthics/SVP_Impact_Mitigation_Guidelines.aspx). The recovery plan may include a field survey, construction monitoring, sampling and data recovery procedures, university or museum storage coordination for any specimen recovered, and a report of findings. If storage of a specimen is required, upon receipt of the fossil collection, a signed repository receipt form shall be obtained and provided to the planning department. Recommendations in the recovery plan that are determined by the planning department to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered. The project sponsor shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented, including the costs necessary to prepare and identify collected fossils and any curation fees charged for university or museum storage.

G. PUBLIC NOTICE AND COMMENT

On September 19, 2018, the planning department mailed a notice of preparation (NOP) of an environmental impact report to property owners within 300 feet of the project site, tenants, community groups, and other potentially interested parties. During the notice of preparation review and comment period, a total of 14 comment letters and emails were submitted to the planning department. Nearly all comments received in response to the NOP were administrative in nature (e.g., requests for document copies). Other topics raised include support of the project and consistency with building inspection procedures. A letter was also received from the Native American Heritage Commission (NAHC), summarizing general tribal outreach requirements. No environmental concerns specific to the proposed project or the scope and contents of the EIR were received. The NOP is available for review as part of Case No. 2017-003559ENV and found in Appendix A to the EIR. Relevant topics raised in the comment letters have been addressed in this initial study, or in the EIR to which this initial study is attached, as appropriate.

H. DETERMINATION

On the basis of this Initial Study:

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

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

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

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

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

for Lisa Gibson
Environmental Review Officer
for
John Rahaim
Director of Planning

DATE June 12, 2019

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APPENDIX C HISTORIC RESOURCE EVALUATION RESPONSE

Historic Resource Evaluation Response

1650 Mission St.
Suite 400
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Reception:
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Planning
Information:
415.558.6377

Date	October 17, 2018; revised February 22, 2019
Case No.:	**2017-003559ENV**
Project Address:	**CPMC California Hospital (Various Addresses)**
Zoning:	RM-2 Residential – Mixed, Moderate Density & RH-2 Residential – House, Two Family 80-E & 40-X Height and Bulk District
Block/Lot:	1015/001, 1015/052, 1015/053, 1016/001-009, 1017/027, 1017/028
Date of Review:	August 29, 2018 (Part 1)
Staff Contact:	Jeanie Poling (Environmental Planner) (415) 575-9072 jeanie.poling@sgfgov.org Stephanie Cisneros (Preservation Planner) (415) 575-9186 stephanie.cisneros@sfgov.org

PART I: HISTORIC RESOURCE EVALUATION

Buildings and Property Description

The subject site spans 14 parcels over three blocks bounded by California Street to the south, Arguello Boulevard to the west, Sacramento Street to the north, and Spruce Street to the east in the Presidio Heights neighborhood. The entire site is located in the RM-2 (Residential – Mixed, Moderate Density) and RH-2 (Residential – House, Two Family) zoning districts and the 80-E and 40-X height and bulk districts. The site includes the age-eligible buildings at the following addresses:

- **401-419 Cherry Street/3901 Sacramento Street:** A three-story-over-raised-basement, nine-unit residential building constructed in 1907. Originally designed in the Shingle style by local architect Emil Blanckenburg and constructed by builder Robert Grant and Son, the building has undergone extensive alterations to remove the original shingles and replace with stucco and replace and insert new windows. The building was acquired by CPMC in 2002 and is presently used as CPMC's Family House, which provides temporary housing for low-income families of ill or premature infants.

- **3698 California Street:** The Marshal Hale Memorial Hospital at 3698 California Street is a three-story building designed in the Art Deco/Art Moderne style by local architect Emory M. Frasier and constructed in 1939. The 1939 building's plan is rectangular shaped and is considered to be one of the most in-tact components of the CMPC California Campus. Visible alterations to 3698 California are: window replacements in the same openings; simplification of the stepped cornice; a small two-story addition at the east wing with a one-story addition that extends toward California Street (date unknown); and a three-story wing (ca. 1970) extending north to connect the 1939 building with the 1970/1971 rear addition.

- **3773 Sacramento Street:** A five-story, rectangular-plan concrete building constructed in 1970/1971. The primary façade along Sacramento Street is architecturally undistinguished and consists of a series of recessed bays with windows that are delineated by vertical concrete ribs. A two-story parking structure occupies the front of the lot. The building has undergone a number of alterations since construction, mostly involving the removal of and alterations to interior partitions and finishes.

- **3800 California Street/460 Cherry Street:** A five-story, reinforced concrete, parking garage with a below grade floor and an entrance on California Street constructed 1965. The structure was originally constructed as a three-story, six-level parking structure in 1965 and received two additional floors at a later, unknown date. The rectangular plan structure currently has a three-story wing and an entrance on Cherry Street (460 Cherry Street) and has half-height walls along both California and Cherry streets. Solid walls comprise the other two sides. There is no discernible architectural style.

- **3905 Sacramento Street:** A three-story, rectangular plan building constructed in 1960 and best described as an example of a restrained Midcentury Modern building designed by local architect John G. Kelly. The building has undergone a number of alterations since construction, mostly involving the removal of and alterations to interior partitions and finishes.

- **3700 California Street/3801 Sacramento Street:** A four- to six-story hospital complex originally constructed as a four-story brick hospital in 1911. The building has undergone extensive expansions and alterations from the 1950s through the 1980s, many of which were completed by architectural firms Stone, Mulloy, Marraccini & Peterson (1950s – 1965 additions) and Kaplan & McLaughlin (1965 – 1970 additions). A nine-story medical office building at 3801 Sacramento Street designed by Stone, Marracini & Peterson was constructed in 1967 as an interconnected addition to the hospital building at 3700 California Street.

The above properties comprise a majority of the CPMC California Campus. However, the campus also encompasses two additional buildings at 3838 California Street (Category C property) and 3848-3850 California Street (Category B property), which are not included in the proposed scope of work and will not undergo a change of use or be otherwise altered as part of the project.

Pre-Existing Historic Rating / Survey

The subject site is not included on any historic resource surveys or listed on any local, state or national registries. The age-eligible buildings within the site are considered "Category B" properties (Properties Requiring Further Consultation and Review) for the purposes of the Planning Department's California Environmental Quality Act (CEQA) review procedures due their respective ages.

Neighborhood Context and Description

The CPMC California Campus is located in a primarily residential area with mixed residential/commercial corridors along California and Sacramento streets. The campus is located directly north of the eligible Jordan Park Historic District and a half-block south of the eligible Presidio Heights Historic District.

The CPMC California Campus is comprised of a multiple of buildings constructed over the course of approximately 80 years, from 1907 to the 1980s designed in various architectural styles. The Campus' history can be summarized as follows:

> *In 1875, the institution that became the CPMC California Campus began as a one-room outpatient clinic known as the Pacific Dispensary for Women and Children at 520 Taylor Street, two blocks west from Union Square. In the late 19th century, dispensaries generally functioned as an alternative to hospitals for the urban poor and immigrant communities. In 1880, the Pacific Dispensary became known as the Hospital for Children and Training School for Nurses after it welcomed students at the first nursing school on the West Coast. Five years later, it rebranded as the Children's Hospital – a Hospital for Children and Training School for Nurses. After relocating several times, the institution eventually found a permanent home in 1887 at the eastern portion of the block bounded by Sacramento to the north, California to the south, and Maple and Cherry streets to the east and west. The campus expanded several times through the turn of the century through various public and private donations. By the early 1950s, however, the hospital and its boosters began fundraising millions of dollars to redevelop and modernize the facility in order to employ current medical procedures, standards, and equipment. From the late 1980s onward, Children's Hospital underwent a series of mergers with San Francisco Bay Area hospitals in order to remain competitive and economically viable. In 1988, it physically expanded through a merger with the Marshal Hale Memorial Hospital, which originally began as the Hahnemann Homeopathic Hospital, on the parcel directly to the east. In 1991, it merged with the Pacific Presbyterian Medical Center to create CPMC, which then acquired Davies Medical Center in 1998 and St. Luke's Hospital in 2007, along with other smaller facilities in San Francisco. During this period of expansion, the former Children's Hospital became known as the CPMC California Campus and the central location of CPMC's women and children's services, including high-risk obstetrics, neonatal and pediatric intensive care, pediatric acute care, breast health center, minimally invasive gynecological surgical program, and a dedicated pediatric emergency room by 2008.*[1]

Three previous Historic Resource Evaluations (HREs) have been prepared for the CPMC California Campus that assess the above buildings and provide more in-depth neighborhood contexts and site history:

- "Historic Resource Evaluation Report for California Campus," by Knapp Architects, November 9, 2009.
- "CPMC California Campus Preliminary Historic Resource Evaluation," by Architectural Resources Group (ARG), May 2016.
- "Historic Resource Evaluation California Pacific Medical Center, California Campus, 3700 California Street," by Richard Brandi, April 16, 2018.

The HRE produced by Richard Brandi conducted an analysis of the surrounding blocks for a potential historic district. The HRE concluded that the surrounding blocks were comprised of a mix of two-, three- and four-story flats and apartment buildings designed in various architectural styles such that, together, the area did not comprise a historic district.

[1] Brandi, Richard, "Historic Resource Evaluation: California Pacific Medical Center, California Campus (formerly Children's Hospital), 3700 California Street," April 16, 2018, page 6.

CEQA Historical Resource(s) Evaluation

Step A: Significance

Under CEQA section 21084.1, a property qualifies as a historic resource if it is "listed in, or determined to be eligible for listing in, the California Register of Historical Resources." The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources or not included in a local register of historical resources, shall not preclude a lead agency from determining whether the resource may qualify as a historical resource under CEQA.

401-419 Cherry Street/3901 Sacramento Street

Individual	Historic District/Context
Property is individually eligible for inclusion in a California Register under one or more of the following Criteria:	Property is eligible for inclusion in a California Register Historic District/Context under one or more of the following Criteria:
Criterion 1 - Event: ☐ Yes ☒ No	Criterion 1 - Event: ☐ Yes ☒ No
Criterion 2 - Persons: ☐ Yes ☒ No	Criterion 2 - Persons: ☐ Yes ☒ No
Criterion 3 - Architecture: ☐ Yes ☒ No	Criterion 3 - Architecture: ☐ Yes ☒ No
Criterion 4 - Info. Potential: ☐ Yes ☒ No	Criterion 4 - Info. Potential: ☐ Yes ☒ No
Period of Significance:	Period of Significance: ☐ Contributor ☐ Non-Contributor

3698 California Street

Individual	Historic District/Context
Property is individually eligible for inclusion in a California Register under one or more of the following Criteria:	Property is eligible for inclusion in a California Register Historic District/Context under one or more of the following Criteria:
Criterion 1 - Event: ☐ Yes ☒ No	Criterion 1 - Event: ☐ Yes ☒ No
Criterion 2 - Persons: ☐ Yes ☒ No	Criterion 2 - Persons: ☐ Yes ☒ No
Criterion 3 - Architecture: ☒ Yes ☐ No	Criterion 3 - Architecture: ☐ Yes ☒ No
Criterion 4 - Info. Potential: ☐ Yes ☒ No	Criterion 4 - Info. Potential: ☐ Yes ☒ No
Period of Significance: 1939	Period of Significance: ☐ Contributor ☐ Non-Contributor

3773 Sacramento Street

Individual	Historic District/Context
Property is individually eligible for inclusion in a California Register under one or more of the following Criteria:	Property is eligible for inclusion in a California Register Historic District/Context under one or more of the following Criteria:
Criterion 1 - Event: ☐ Yes ☒ No	Criterion 1 - Event: ☐ Yes ☒ No
Criterion 2 - Persons: ☐ Yes ☒ No	Criterion 2 - Persons: ☐ Yes ☒ No
Criterion 3 - Architecture: ☐ Yes ☒ No	Criterion 3 - Architecture: ☐ Yes ☒ No
Criterion 4 - Info. Potential: ☐ Yes ☒ No	Criterion 4 - Info. Potential: ☐ Yes ☒ No
Period of Significance:	Period of Significance: ☐ Contributor ☐ Non-Contributor

3800 California Street/460 Cherry Street

Individual	Historic District/Context
Property is individually eligible for inclusion in a California Register under one or more of the following Criteria:	Property is eligible for inclusion in a California Register Historic District/Context under one or more of the following Criteria:
Criterion 1 - Event: ☐ Yes ☒ No	Criterion 1 - Event: ☐ Yes ☒ No
Criterion 2 - Persons: ☐ Yes ☒ No	Criterion 2 - Persons: ☐ Yes ☒ No
Criterion 3 - Architecture: ☐ Yes ☒ No	Criterion 3 - Architecture: ☐ Yes ☒ No
Criterion 4 - Info. Potential: ☐ Yes ☒ No	Criterion 4 - Info. Potential: ☐ Yes ☒ No
Period of Significance:	Period of Significance: ☐ Contributor ☐ Non-Contributor

3905 Sacramento Street

Individual	Historic District/Context
Property is individually eligible for inclusion in a California Register under one or more of the following Criteria:	Property is eligible for inclusion in a California Register Historic District/Context under one or more of the following Criteria:
Criterion 1 - Event: ☐ Yes ☒ No	Criterion 1 - Event: ☐ Yes ☒ No
Criterion 2 - Persons: ☐ Yes ☒ No	Criterion 2 - Persons: ☐ Yes ☒ No
Criterion 3 - Architecture: ☐ Yes ☒ No	Criterion 3 - Architecture: ☐ Yes ☒ No
Criterion 4 - Info. Potential: ☐ Yes ☒ No	Criterion 4 - Info. Potential: ☐ Yes ☒ No
Period of Significance:	Period of Significance: ☐ Contributor ☐ Non-Contributor

3700 California Street/3801 Sacramento Street

Individual	Historic District/Context
Property is individually eligible for inclusion in a California Register under one or more of the following Criteria:	Property is eligible for inclusion in a California Register Historic District/Context under one or more of the following Criteria:
Criterion 1 - Event: ☐ Yes ☒ No	Criterion 1 - Event: ☐ Yes ☒ No
Criterion 2 - Persons: ☐ Yes ☒ No	Criterion 2 - Persons: ☐ Yes ☒ No
Criterion 3 - Architecture: ☐ Yes ☒ No	Criterion 3 - Architecture: ☐ Yes ☒ No
Criterion 4 - Info. Potential: ☐ Yes ☒ No	Criterion 4 - Info. Potential: ☐ Yes ☒ No
Period of Significance:	Period of Significance: ☐ Contributor ☐ Non-Contributor

Based on the information provided in the above HREs and found in the Planning Department files, Preservation staff finds that the building at 3698 California Street (Marshal Hale Memorial Hospital) is eligible for inclusion on the California Register under Criterion 3.

All other evaluated buildings that are part of the CPMC California Campus have not been found to be individually eligible for listing in the California Register under any criteria. Additionally, the campus does not illustrate a cohesive collection of architecturally related buildings such that they would constitute a historic district. These determinations are discussed in more detail below.

Finally, the Department has determined that the campus does not contribute to the nearby eligible historic districts, Jordan Park Historic District and Presidio Heights Historic District. These districts are primarily residential in nature and exhibit cohesive examples of high style architecture. The Jordan Park Historic District is eligible under Criterion C for its collection of high style Italianate, Queen Anne, Period Revival, and Edwardian styles designed and constructed by Joseph Leonard within the period of 1900-1920. The Presidio Heights Historic District is also eligible under Criterion C for its collection of late-Victorian architecture, Shingle (or First Bay Region), Arts & Crafts, Classical Revival, Colonial Revival, Tudor Revival, French Provincial, and Mediterranean Revival architecture designed by various master architects. The CPMC California Campus does not fit within the parameters of significance for either historic district and does not exhibit the character-defining features or architectural styles of these districts.

Criterion 1: Property is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
To be eligible under the event Criterion, the building cannot merely be associated with historic events or trends but must have a specific association to be considered significant. The CPMC California Campus was developed over a period of approximately 80 years (ca. 1907 – 1980s). Individually and together as a campus, the buildings do not have ties to historically significant events related to the important medical care, practice or breakthroughs. Staff concurs with the findings of all three HREs that the subject buildings are not eligible for inclusion on the California Register individually or as contributors to a potential historic district under Criterion 1.

Criterion 2: Property is associated with the lives of persons important in our local, regional or national past.
Staff concurs with the findings of all three HREs that the subject buildings are not eligible for inclusion in the California Register individually or as contributors to a potential historic district under Criterion 2. The ARG HRE discusses the hospital's employment of prominent doctors, nurses and researchers over the course of its history in great depth and identifies that although a number of these professionals have made outstanding contributions to medicine throughout the duration of their careers, none of these individuals achieved prominence while working at the CPMC California Campus. Therefore, none of the buildings within this campus are eligible under Criterion 2 individually or as contributors to a historic district.

Criterion 3: Property embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
Staff is in agreement with the findings of all three HREs that none of the CPMC California Campus buildings are individually eligible for listing in the California Register under Criterion 3, except for the Marshal Hale Memorial Hospital building (3698 California Street). Additionally, the Campus as a whole is not eligible as a historic district under Criterion 3 because the buildings that comprise the campus were constructed in different decades and in a variety of architectural styles, and do not represent a cohesive collection of aesthetically unified buildings.

Marshal Hale Memorial Hospital
The Marshal Hale Memorial Hospital was constructed in two parts: a three-story, rectangular plan, 1939 medical clinic building facing California Street (3698 California) designed by Emory M. Frasier and a six-story, rectangular plan addition constructed in 1970/1971 that faces Sacramento Street (3773 Sacramento). The 1970/1971 addition is connected to the 1939 building via a three-story wing that is centered on the rear façade of 3698 California. Together, the buildings presently form an H-shaped plan.

The original 1939 Marshal Hale Memorial Hospital appears to be eligible for listing in the California Register under Criterion 3 because it embodies the distinctive characteristics of Art Deco institutional architecture. The rectangular shaped plan building is an Art Deco institutional building with transitional elements of the Art Moderne style. Despite the 1970/1971 additions, 3698 California Street can still be read and understood independently as the Marshal Hale Memorial Hospital and the original 1939 building has undergone no major alterations to its primary exterior. Considered separately from 3698 California, the later addition at 3773 Sacramento does not appear to be individually eligible under this Criterion, nor does it appear to have impaired the overall significance of 3698 California Street.

Criterion 4: Property yields, or may be likely to yield, information important in prehistory or history. Based upon a review of information in the Departments records, the subject buildings are not significant under Criterion 4 since this significance criterion typically applies to rare construction types when involving the built environment. The subject buildings are not an example of a rare construction type. Assessment of archeological sensitivity is undertaken through the Department's Preliminary Archeological Review process and is outside the scope of this review.

Step B: Integrity

To be a resource for the purposes of CEQA, a property must not only be shown to be significant under the California Register of Historical Resources criteria, but it also must have integrity. Integrity is defined as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's period of significance." Historic integrity enables a property to illustrate significant aspects of its past. All seven qualities do not need to be present as long the overall sense of past time and place is evident.

The subject property (3698 California Street) has retained or lacks integrity from the period of significance noted in Step A:

Location:	☒ Retains	☐ Lacks	**Setting:**	☐ Retains	☒ Lacks
Association:	☒ Retains	☐ Lacks	**Feeling:**	☒ Retains	☐ Lacks
Design:	☒ Retains	☐ Lacks	**Materials:**	☒ Retains	☐ Lacks
Workmanship:	☒ Retains	☐ Lacks			

The Marshal Hale Memorial Hospital building at 3698 California Street retains a good degree of overall integrity despite the fact that its setting has been altered over the course of CPMC's ownership and occupation of the larger campus. New buildings have been constructed and alterations to existing buildings have occurred over the course of approximately 80 years to allow for more space and updated facilities needed for medical usage. Considered as a separate entity from the rear 1970/1971 additions and later addition to the east, the rectangular plan 1939 building has undergone no major alterations since originally constructed. Visible alterations are: window replacements in the same openings; simplification of the stepped cornice; a small two-story addition at the east wing with a one-story addition that extends toward California Street; and a three-story wing extending north to connect the 1939 building with the 1970 rear addition. Overall, 3698 California Street conveys its significance as an Art Deco institutional building with Art Moderne transitional elements.

Since the remaining buildings of the CPMC California Campus were not determined to meet any of the criteria that would identify them as eligible for the California Register of Historical Resources, analysis of their integrity was not conducted.

Step C: Character Defining Features

If the subject property has been determined to have significance and retains integrity, please list the character-defining features of the building(s) and/or property. A property must retain the essential physical features that enable it to convey its historic identity in order to avoid significant adverse impacts to the resource. These essential features are those that define both why a property is significant and when it was significant, and without which a property can no longer be identified as being associated with its significance.

<u>3698 California Street</u>

The character-defining features of the 3698 California Street include the following:

- Rectangular plan, three-story massing
- Central pavilion that is three bays wide and two slightly recessed wings, each four bays wide, that extend along California Street to the east and west
- Recessed entry stepped up from the sidewalk that features
    - Terrazzo floor in three colors with brass divider strips that illustrate stylized flora and includes a dedication plaque which reads "Hahnemann Hospital – Erected by the Homeopathic Foundation of California"
    - Side panels of the entranceway with decorative stylized flora
    - Transom with an applied scroll pattern topped by a triangular pattern
- Art Deco features that include
    - Massing that emphasizes verticality
    - Symmetrical balancing of features
    - Recessed facades arranged in a series of setbacks emphasizing the geometric form
    - Low relief decorative elements and stylized flora patterns at the central pavilion entrance of the building including
        - Four fluted pilasters with flat trim that define its three bays
        - Two center pilasters with applied buttresses that rise midway up the second story
        - Blank recessed panel that forms the implied trabeation for the pilasters below bordered by a molded stylized daisy motif and flanked by square panels with bas-relief decoration
        - Stepped cornice with an applied decorative crest below
- Art Moderne features that include
    - Rounded corner canopy projecting over the recessed entrance
    - Smoothed stucco finish on exterior walls
- Steel sash windows arranged symmetrically across each bay and are slightly recessed from the front of the façade, creating pilasters typical of the Art Deco and Art Moderne styles

The interior of the Marshal Hale Memorial Hospital building has undergone numerous alterations to allow for the installation and use of upgraded medical technologies and practices such that there is little to no historic fabric left. Therefore, there are no interior character-defining features.

Since the remaining buildings of the CPMC California Campus were not determined to meet any of the criteria that would identify them as eligible for the California Register of Historical Resources, this analysis was not conducted.

CEQA Historic Resource Determination

☒ Historical Resource Present
- ☒ Individually-eligible Resource *(3698 California Street)*
- ☐ Contributor to an eligible Historic District
- ☐ Non-contributor to an eligible Historic District

☒ No Historical Resource Present *(401-419 Cherry Street/3901 Sacramento Street; 3773 Sacramento Street; 3800 California Street/460 Cherry Street; 3905 Sacramento Street; 3700 California Street/3801 Sacramento Street)*

PART I: PRINCIPAL PRESERVATION PLANNER REVIEW

Signature: Allison Vanderslice Date: 10/19/2018
Allison Vanderslice, *Principal Preservation Planner*

PART II: PROJECT EVALUATION

Proposed Project ☒ Demolition ☒ Alteration

Per Drawings Dated: December 2017

Project Description:

The 213,733-square-foot project site spans 14 parcels on three blocks bounded by California Street to the south, Arguello Boulevard to the west, Sacramento Street to the north, and Spruce Street to the east in the Presidio Heights neighborhood. The project site contains six buildings with hospital, medical office, and parking uses, and one nine-unit residential building at 401 Cherry Street. The project would demolish five buildings and retain the 401 Cherry Street residential building and the three-story medical building (former Marshal Hale Hospital) at 3698 California Street. The Marshal Hale building is proposed to become a 24-unit residential building. The project would include the construction of 31 new buildings, consisting of 14 single-family homes and 17 multi-family buildings, ranging in height from three to seven stories (36 to 80 feet). In total the project site would result in 33 buildings containing 273 dwelling units (nine existing and 264 new); 416 vehicle parking spaces; 424 bicycle parking spaces; and approximately 86,000 sf of private and common open space. To accommodate the construction of the new buildings, the project would require excavation of approximately 61,800 cubic yards of soil to a maximum depth of 75 feet.

Marshal Hale Memorial Hospital Rehabilitation and Adaptive Reuse
The proposed project will include the retention, rehabilitation and reuse of the existing hospital building at 3698 California Street. The exterior facades along Maple Street and California Street will be rehabilitated

in their existing states and will not undergo removal of character-defining features. As part of the adaptive reuse of the historic resource, the building will undergo the following exterior alterations:

- Demolition of the rear 1970/1971 additions and later addition to the east to bring the building back to its original 1939 rectangular plan;
- Retention, restoration and reuse of existing original windows;
- Replacement of non-original windows with new windows of the same material, design and operation as original windows;
- Removal of five ground floor windows facing California and Maple streets to allow for the insertion of doors that access private open space. The doors will be inserted at locations that maintain the existing fenestration pattern and orientations;
- Horizontal addition at the rear (northeast corner); and
- Installation of HVAC and elevator equipment on the roof in a minimally visible location.

Project Evaluation

If the property has been determined to be a historical resource in Part I, please check whether the proposed project would materially impair the resource and identify any modifications to the proposed project that may reduce or avoid impacts.

Subject Property/Historic Resource:

☒ The project will not cause a significant adverse impact to the historic resource (*3698 California Street*) as proposed.

☐ The project will cause a significant adverse impact to the historic resource as proposed.

California Register-eligible Historic District or Context:

☒ The project will not cause a significant adverse impact to a California Register-eligible historic district or context as proposed.

☐ The project will cause a significant adverse impact to a California Register-eligible historic district or context as proposed.

Impacts Analysis[2]

Although plans are cursory at this time, Staff finds that the proposed rehabilitation of 3698 California Street and associated alterations to allow for its reuse as a residential building generally meet *Secretary of the Interior's Standards for Rehabilitation* (Secretary's Standards 2, 3, 4, 5, 6, and 9) per the following analysis. Standards 1, 7, 8, and 10 are not applicable to the proposed project and are not included in this analysis.

Standard 2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

[2] The proposed project does not have the potential to cause an impact on the two additional CPMC buildings at 3838 California Street and 3848-3850 California Street, as the proposed project does not include these two buildings, and given that the former is a Category C property and the latter is not immediately adjacent to the project site.

The proposed work will not remove any character-defining features of 3698 California Street, but will restore features that have been lost or altered.

The proposed project complies with Standard 2.

Standard 3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

The proposed project will not include alterations or additions to 3698 California Street that create a false sense of historical development. Five existing ground-floor windows along California and Maple streets will be removed and replaced with new doors to accommodate the new residential use of the building. These doors will maintain the verticality of the existing fenestration pattern and will be compatible in design.

Therefore, the proposed project complies with Standard 3.

Standard 4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

3698 California Street contains rear and side additions that were not part of the original construction. These later additions have not acquired significance in their own right and removing them to allow for new construction will not contribute to a loss in the building's historical integrity.

Therefore, the proposed complies with Standard 4.

Standard 5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

The proposed work would preserve and rehabilitate the materials, features, finishes, and construction techniques that characterize 3698 California Street.

The proposed project complies with Standard 5.

Standard 6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

The proposed work will include rehabilitation to original features where these features are not deteriorated or damaged beyond repair. Non-original features and original features that are deteriorated beyond repair will be replaced such that they will match the old in design, color, texture, and materials.

The proposed project complies with Standard 6.

Standard 9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

The proposed work will rehabilitate and convert 3698 California Street from a former hospital use to a residential use. Exterior alterations to the historic resource will be restorative in nature and/or minimally invasive to accommodate the new use for the building. A new addition at the rear (northeast corner) is proposed but will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion and massing of the Marshal Hale Memorial Hospital building. The proposed work will not destroy historic materials, features, or spatial relationships that characterize the property.

Therefore, the proposed project complies with Standard 9.

Summary
Staff finds that the proposed rehabilitation and adaptive reuse of the Marshal Hale Memorial Hospital building generally meets the Secretary's Standards and will not cause a significant impact to the identified historic resource. However, the larger redevelopment of the CPMC California Campus will result in the removal and replacement of hospital buildings surrounding the historic resource with new residential buildings. While changes have already occurred to the setting of the Marshal Hale Memorial Hospital building due to changes at the CPMC California Campus over time, the proposed project will further reduce the historical integrity of the resource's setting and association. However, the historic resource will retain integrity of location, workmanship, design, materials, and feeling and therefore would retain its historical integrity. The following improvement measure (**Historic Resource Interpretation)** would help convey the historic setting and association of the resource by interpreting for the public the resource's historic medical context.

The project includes a rehabilitation and adaptive reuse of the existing resource, which will not cause a significant impact. However, the surrounding construction activities have the potential to cause damage to the existing resource, which would be a significant impact. The Mitigation Measure (**Historic Preservation Plan and Protective Measures**) will assist in ensuring that the resource will not be damaged during adjacent proposed project construction.

Below are measures that will help minimize the impact of the larger redevelopment of the CPMC California Campus to the Marshal Hale Memorial Hospital building by providing a context for understanding the resource's significance and ensuring the protection of the resource during construction. The below measures would ensure that adjacent construction activities shall not damage the historic resource and that the history of the historic resource and the larger hospital complex are interpreted for the public. Application of these measures will ensure significant impacts during construction do not occur and would further reduce the less than significant impact to the setting of the resource.

> **Improvement Measure – Historic Resource Interpretation.** The project sponsor should provide a permanent display of interpretive materials concerning the history and architectural features of the Marshal Hale Memorial Hospital building and the history of the CPMC California Campus. The historic interpretation should be supervised by an architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards, and should be conducted in coordination with an exhibit designer. The interpretative materials (which may include, but are not limited to, a display of current and historical photographs, news articles, artifacts associated with the hospital, video) should be placed in prominent, public settings. A proposal describing the general parameters of the interpretive program should be approved by Planning Department Preservation staff prior to issuance of a Site Permit. The substance, media and other elements of

such interpretive display should be approved by Planning Department Preservation staff prior to issuance of a Temporary Certificate of Occupancy.

Mitigation Measure – Historic Preservation Plan and Protective Measures.
A historic preservation plan and protective measures shall be prepared and implemented to aid in preserving and protecting those historical resources that would be retained and rehabilitated as part of the project. The Historic Preservation Plan shall be prepared by a qualified historic preservation architect who meets the Secretary of Interior's Professional Qualification Standards (36 CFR, Part 61). The project sponsor shall ensure that the contractor follows these plans. The preservation and protection plan, specifications, monitoring schedule, and other supporting documents shall be incorporated into the building or site permit application plan sets. The documentation shall be reviewed and approved by Planning Department Preservation staff.

The historic preservation plan shall ensure that proposed rehabilitation and adaptive reuse meet the standards by establishing measures to protect retained building façades and character-defining features from effects of construction equipment that could inadvertently damage the resource. Specifically, the Preservation Plan shall incorporate construction specifications for the proposed project with a requirement that the construction contractor(s) use all feasible means to avoid damage to the historic building, including, but not necessarily limited to, staging of equipment and materials as far as possible from the historic building to avoid direct impact damage; maintaining a buffer zone when possible between heavy equipment and the historical resource appropriately shoring excavation sidewalls to prevent movement of adjacent structures; design and installation of the new adjacent foundations to minimize uplift of soils; ensuring adequate drainage from adjacent sites; covering the roof of adjacent structures to avoid damage from falling objects; and ensuring appropriate security to minimize risks of vandalism and fire. The consultant shall conduct regular periodic inspections of the historic building during ground-disturbing activities on the project site. Should damage to the building occur, the building shall be remediated to its preconstruction condition at the conclusion of ground-disturbing activity on the site and shall be fixed during rehabilitation of the resource.

PART II: PRINCIPAL PRESERVATION PLANNER REVIEW

Signature: Allison Vandl ______ Date: 2/26/2019

Allison Vanderslice, *Principal Preservation Planner*

cc: Virnaliza Byrd, Environmental Division/ Historic Resource Impact Review File
Jeanie Poling, Environmental Planner
Christopher May, Project planner

APPENDIX D WIND STUDY

REPORT

3700 CALIFORNIA STREET

SAN FRANCISCO, CALIFORNIA

SCREENING-LEVEL WIND ANALYSIS

RWDI #1802345

May 13, 2019

SUBMITTED TO

Heidi Mekkelson
Senior Project Manager
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1. INTRODUCTION

RWDI was retained by ICF to conduct a screening-level pedestrian wind analysis for the proposed 3700 California Street development in San Francisco, CA (**Image 1**). The objective of this analysis is to provide a qualitative evaluation of the potential wind impact of the proposed development. This qualitative analysis is based on the following:

- a review of regional long-term meteorological data for San Francisco;
- design drawings received from ICF on July 20, 2018;
- our engineering judgment and knowledge of wind flows around buildings; and,
- our experience of wind-tunnel testing of various buildings[1-3], including many projects in the San Francisco area.

This qualitative approach provides a screening-level estimation of the potential wind impact. To quantify these conditions or refine any conceptual wind control measures, physical scale model tests in a wind tunnel would typically be required.

Image 1: Site plan – Aerial View of Site and Surroundings (Courtesy of Google™ Earth)

2. BUILDING AND SITE INFORMATION

The proposed development is bounded by California Street to the south and Sacramento Street to the north, on both sides of Maple Street and Cherry Street (**Image 1**). The site is immediately surrounded by low-rise buildings in all directions. Downtown San Francisco is approximately 3 miles to the east. The site is currently occupied by several parking structures and low and mid-rise medical office buildings, with the tallest existing buildings ranging in height from 85 ft (3801 Sacramento St. outpatient medical building) to 112 ft above local grade (3700 California St. main hospital building).

Block A of the proposed development, located west of Cherry Street, and would include seven buildings ranging from three to five stories (42 to 75 feet) in height as shown in **Image 2**. Block B, located between Cherry and Maple streets, would include 18 buildings ranging from three to seven stories (42 to 90 feet). Block C, located to the east of Maple Street, would include seven buildings ranging from three to seven stories (36 to 80 feet). Extensive gardens, courtyards, green space and landscaping would be planned throughout the project site, as shown in the roof and landscape plan in **Image 2**, and the rendering provided in **Image 3**.

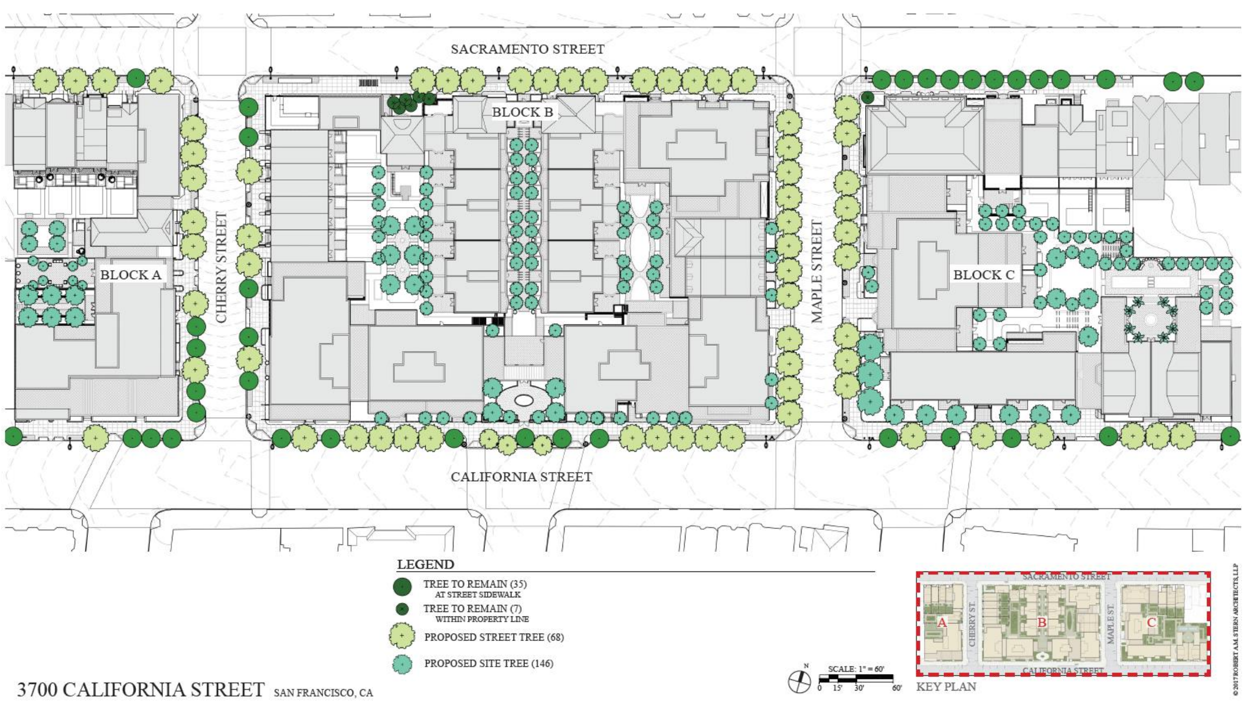


Image 2: Proposed Roof and Landscape Plan for Block A, Block B and Block C

Image 3: 3D Rendering of the Proposed Development – View from South

3. METEOROLOGICAL DATA

Long-term wind data recorded at a height of 33' at San Francisco International Airport between 1948 and 2015 are used as a reference for this wind assessment. They are presented as an annual wind rose in **Image 4a**. Of the primary wind directions, four have the greatest frequency of occurrence and make up the majority of the strong winds that occur. These wind directions are west-northwest, west, northwest and west-southwest.

Another set of wind data is often used in San Francisco for projects that are subject to the San Francisco Planning Code requirements in Section 148. This wind data was gathered at the old San Francisco Federal Building at 50 United Nations Plaza (at a height of 132' above grade) during the six-year period of 1945 to 1950. For that analysis, hourly measurements of speed and direction were averaged over one-minute periods and tabulated for each month (averaged over the six years) in three-hour periods. These data indicate that four of the 16 measured wind directions in San Francisco contain the greatest frequency of occurrence, as well as the majority of strong wind occurrences. These are northwest, west-northwest, west, and west-southwest. The results of the analysis of these data are summarized in **Image 4b**. That image shows a similar distribution of wind speeds and directions as that in **Image 4a**.

Based on the above wind data, winds from these four directions are most important for the proposed project, but winds from other directions are also considered in our analysis.

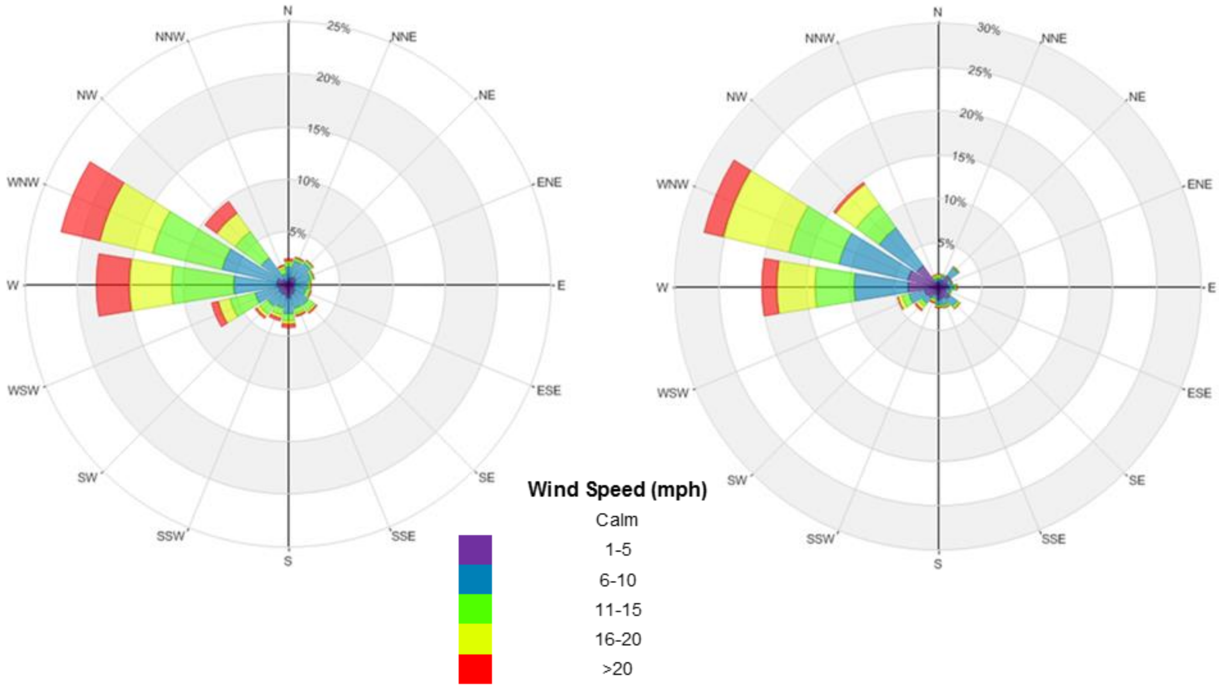


Image 3a: Annual Distribution of Winds Approaching San Francisco International Airport (1948 to 2017)

Image 3b: Annual Distribution of Winds Approaching San Francisco Downtown Station (6:00 To 20:00, 1945 To 1950)

4. SAN FRANCISCO PLANNING CODE REQUIREMENTS

San Francisco Planning Code Section 148, Reduction of Ground-level Wind Currents in Downtown Commercial (C-3) Districts, requires buildings in the C-3 downtown districts to be shaped so as not to cause ground-level wind currents to exceed defined comfort and hazard criteria.

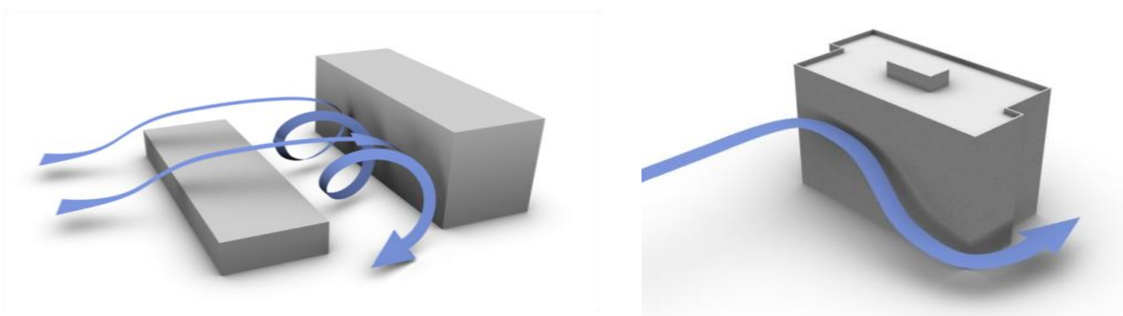
The hazard criterion of the Planning Code requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 miles per hour (mph) as averaged from a single full hour of the year. The hazard criterion is based on winds that are measured for one hour and averaged. The corresponding one-minute hazard criterion speed is 36 mph. The equivalent wind speeds are defined by average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence. The text in the report simply refers to the data as wind speeds.

As the project site is located outside the C-3 District, it is not subject to Planning Code Section 148. However, the wind hazard criterion is also used for the assessment of hazardous winds for the purpose of analysis under the California Environmental Quality Act (CEQA). This wind hazard criterion, especially the potential for a proposed project to create new (or additional) locations where the wind hazard criterion would be exceeded, is used to determine whether the proposed project would substantially alter ground-level winds in public areas in an adverse manner.

5. PEDESTRIAN WIND CONDITIONS

Predicting wind speeds and occurrence frequencies is complicated as it involves many complex variables including building geometry, orientation, position and height of surrounding buildings, upstream terrain and the local wind climate. RWDI has conducted thousands of wind tunnel model studies on pedestrian wind conditions around buildings, yielding a broad knowledge base.

When a building is taller than those around it rather than similar in height, it can intercept and redirect winds downward (see **Image 5a**). The winds can be directed down the vertical face of the building to ground level, and these redirected winds can be relatively strong and turbulent, especially around the exposed building corners (**Image 5b**).



(a) Downwashing

(b) Flow Accelerations at Downwind Corner

Image 5: General Wind Flow Phenomena

In the existing site configuration, prevailing westerly winds are expected to channel along Cherry Street, and accelerate near the northeast corner of Cherry and California streets (see **Image 5b** and **Image 6**). These existing wind flows are likely to be uncomfortable from time to time during windier days, which may exceed the hazard criterion.

Given the size (maximum of seven stories in height and below the 80 ft height limit) and the use of positive design features such as stepped facades and dense landscaping, it is unlikely that the project would cause any substantial changes to wind conditions on the surrounding pedestrian areas, and in several locations likely improve conditions, such as along Cherry Street and near the northeast corner of Cherry and California streets. It is also our opinion that the wind hazard criterion would not be exceeded after the construction of the proposed development.

The following discussions compare the wind conditions with and without the proposed project, with the focus on select key pedestrian areas. Wind control measures are suggested to improve the wind conditions.

5.1 Sidewalks

Wind conditions on the sidewalks surrounding the development are expected to be similar, or improved from the existing site conditions, as buildings would be of similar height and several positive design elements would improve wind conditions. As illustrated in **Image 6**, prevailing westerly winds are expected to channel along Cherry Street, and accelerate near the northeast corner of Cherry and California streets. The proposed development would have buildings with reduced height along the east side of Cherry Street (Buildings B3 through B6), while including notches in Building B7. These massing changes are expected to reduce this channeling effect, and improve wind conditions along Cherry and California Streets. Similar positive wind control measures would be implemented into the design of Building B12, which is expected to reduce wind activity near the intersection of Sacramento and Maple streets.

Wind conditions at all other sidewalk locations are expected to be better than existing conditions as a result of these positive design features and would comply with the wind hazard criterion.

Image 6: Anticipated Wind Flows through the Existing (Top) and Proposed (Bottom) Development

5.2 Building Entrances

Entrances to the proposed Block A, B and C buildings would be located throughout the development (see **Image 2**). Many of the entrances would be recessed within the façade of the buildings, and therefore sheltered from oncoming winds and would have suitable wind conditions.

Due to the exposure of Buildings B3 through B7 along Cherry Street to prevailing winds from the west and northwest, accelerated wind speeds at the entrances located along Cherry Street may occur from time to time where not sheltered by the building. However, exceedance of the wind hazard criterion is not expected due to limited building heights and several positive design features in the buildings, including the recessed entrances. If improved conditions are desired along Cherry Street, the design team can consider incorporating additional landscaping near the recessed entrances. Additionally, the project would remove 121 trees from the project site and plant 214 new trees (see **Image 7**). Some of the trees proposed for removal are mature trees that currently provide wind protection at grade. As these mature trees would be replaced with younger trees, there would be a temporary reduction of wind protection at grade due to the removal of the mature canopy. The new trees would mature within a few years. The increased number of trees (approximately 75% increase) would, as they mature, provide better wind protection than the existing trees as there would be an increase of tree coverage along the street and a more balanced distribution of trees across the site.

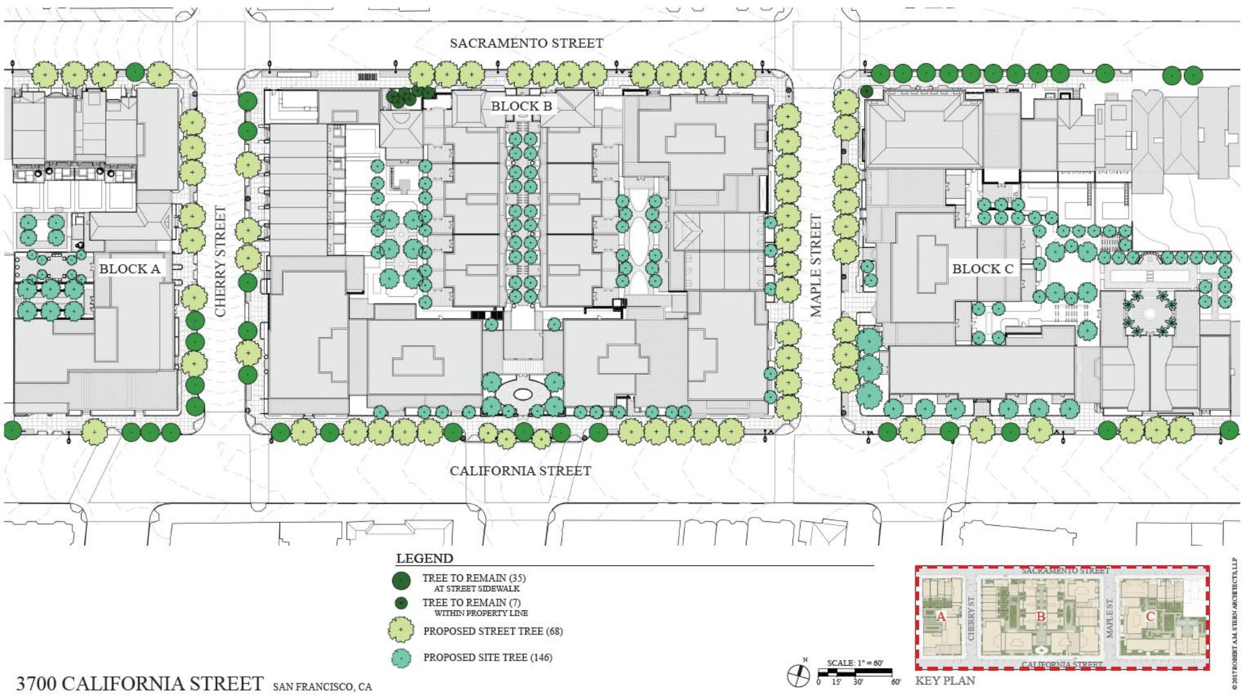


Image 7: Proposed Street Tree Plan

5.3 Gardens / Courtyards

Extensive gardens and pedestrian amenity spaces would be located in Blocks A, B and C (see **Image 7**). Calm wind conditions are expected within these gardens as they are well protected by the massing of the surrounding buildings. In addition, extensive landscaping is currently planned for these areas. However, greater wind activity is anticipated in the private greenspace located between B2 and B3, and at the northwest corner of building C4, and the southwest corner of building C6 due to a combination of channelling and downwashing winds as previously described.

Wind conditions within these areas are expected to comply with the wind hazard criterion.

5.4 Terraces

Above grade wind conditions of the terraces are generally expected to be calm, as most of the terraces are located within sheltered areas. For example, the larger 6th floor terrace on building A7 is located along the south side of the building, and is protected by the massing of the building from prevailing winds. Similar conditions are anticipated throughout Block B and Block C. Accelerated winds may occur on the north 6th floor terrace on building B7, west 4th floor terrace of building B12, on the 5th floor terrace between buildings B9 and B10 and the west 7th floor terrace on building C5, since these areas will be more exposed to prevailing west and northwest winds (see **Image 8**). Lower wind speeds at these areas can be achieved by installing taller guardrails (minimum 6 ft tall) along the outer terrace perimeters as well as installing trellises and landscaping within these areas. Examples of these wind reduction measures are shown in **Image 9**. Exceedance of the wind hazard criterion is not expected at this area.

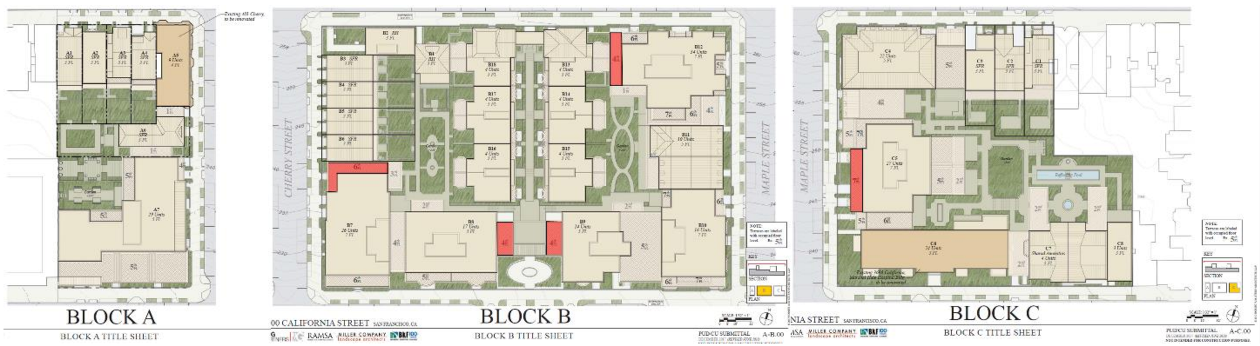


Image 8: Locations where Wind Reduction Measures are Suggested

Image 9: Examples of Wind Reduction Measures for Above Grade Terrace Areas

5.5 Impact of Cumulative Projects

The geographic context for wind impacts is the area in the immediate vicinity of the project site, generally bound by the sidewalks and parcels surrounding the project site. Three reasonably foreseeable projects within 0.25 mile of the project site have been identified. These include a four-story (up to 40-foot-tall) residential building at 3641California Street (Case No. 2018-007764ENV), a four-story (40-foot-tall) residential building and below-grade parking structure at 3637–3657 Sacramento Street (Case No. 2007.1347E), and a mixed-use development at 3333 California Street (Case No. 2015-014028ENV). As discussed above, wind impacts of the proposed project are not expected to exceed the City's wind hazard criterion at any location. Only one of the related projects (the four-story (up to 40-foot-tall) residential building at 3641 California Street) is close enough to the project site to have the potential to combine with the proposed project and affect wind patterns. Located south of the project site, this related project is not generally exposed to prevailing west and northwest winds. Further, the proposed four-story (up to 40-foot-tall) building would be consistent with surrounding building heights, including an existing four-story (up to 40-foot-tall) residential building that is adjacent to the parcel to the west. This proposed four-story (up to 40-foot-tall) building is not tall enough to cause substantial changes to existing wind conditions. Therefore, cumulative wind impacts are not anticipated.

Image 10: Site Plan of Cumulative Projects within 0.25 Mile of the Project Site

6. SUMMARY

Given the size and positive design features of the proposed development, wind conditions are predicted to comply with the wind hazard criterion at all pedestrian areas around the project. Wind speeds at most entrances, all surrounding sidewalks, interior gardens / courtyards and at most above grade terraces are expected to be suitable for the intended usages. Increased wind speeds are predicted at some terrace locations where there is more exposure to prevailing west and northwest winds.

If the design team wishes to achieve lower wind speeds at entrances along Cherry Street or on the above grade terraces, wind control strategies have been suggested.

7. APPLICABILITY OF RESULTS

The assessment presented in this report are for 3700 California Street development based on the design drawings and documents received from ICF on July 20, 2018. In the event of any substantial changes to the design, construction or operation of the building or addition of surroundings in the future, RWDI could provide an assessment of their impact on the pedestrian wind conditions discussed in this report. It is the responsibility of others to contact RWDI to initiate this process.

8. REFERENCES

1) C.J. Williams, H. Wu, W.F. Waechter and H.A. Baker (1999), "Experience with Remedial Solutions to Control Pedestrian Wind Problems", 10th International Conference on Wind Engineering, Copenhagen, Denmark.

2) H. Wu, C.J. Williams, H.A. Baker and W.F. Waechter (2004), "Knowledge-based Desk-Top Analysis of Pedestrian Wind Conditions", ASCE Structure Congress 2004, Nashville, Tennessee.

3) H. Wu and F. Kriksic (2012). "Designing for Pedestrian Comfort in Response to Local Climate", Journal of Wind Engineering and Industrial Aerodynamics, vol.104-106, pp.397-407.

APPENDIX E ENERGY MODEL OUTPUTS

Construction Off-Road Energy

Equipment List			Block A			Block B			Block C			Diesel Equipment (gallons)				Electric Equipment (kWh)			
Phase	Equipment Type	Horsepower	Quantity	Avg. Usage Hours per Day	Total Usage Days	Quantity	Avg. Usage Hours per Day	Total Usage Days	Quantity	Avg. Usage Hours per Day	Total Usage Days	Total Fuel Consumption - Block A	Total Fuel Consumption - Block B	Total Fuel Consumption - Block C	All Construction	Total Electric - Block A	Total Electric - Block B	Total Electric - Block C	All Construction
Demolition	Crawler Tractors	212	2	4	6	2	4	12	2	4	51	142	285	1,211	1,638				
	Cranes	231	1	8	6	1	8	12	1	8	8	155	310	207	673				
	Dumper/Tender	16	4	8	26	4	8	53	4	8	34	186	380	244	810				
	Aerial Lifts	63	1	2	6	1	2	12	1	2	8	11	21	14	46				
	Concrete/Industrial Saws	81	1	8	26	1	8	53	1	8	34	236	481	308	1,025				
	Excavators	158	1	8	13	1	8	26	1	8	17	230	460	301	991				
	Forklifts	89	1	8	13	1	8	26	1	8	17	130	259	169	558				
	Generator Sets	84	1	6	26	1	6	53	1	6	34	183	374	240	797				
	Pumps	84	1	8	5	1	8	10	1	8	6	47	94	56	198				
	Rubber Tired Dozers	247	2	7	5	2	7	10	2	7	6	242	484	290	1,017				
	Skid Steer Loaders (Bobcat)	97	2	7	26	2	7	53	2	7	34	494	1,008	646	2,148				
	Tractors/Loaders/Backhoes	97	1	8	26	1	8	53	1	8	34	282	576	369	1,228				
	Welders	46	1	4	13	1	4	13	1	4	17	33	33	44	111				
Site Preparation & Grading	Tractors/Loaders/Backhoes	97	1	8	23	1	8	23	1	8	23	250	250	250	750				
	Dumper/Tender	16	4	8	18	4	8	18	4	8	18	129	129	129	387				
	Crushing/proc. Equipment	85	1	8	8	1	8	8	1	8	8	76	76	76	228				
	Excavators	158	1	8	23	1	8	23	1	8	23	407	407	407	1,221				
	Pumps	84	1	8	23	1	8	23	1	8	23	216	216	216	649				
	Signal Boards	6	1	8	23	1	8	23	1	8	23	15	15	15	46				
	Sweepers/Scrubbers	64	1	2	23	1	2	23	1	2	23	41	41	41	124				
Excavation & Shoring	Bore/Drill Rigs	221	1	8	28	1	8	52	1	8	31	693	1,287	767	2,747				
	Dumper/Tender	16	2	6	28	2	6	52	2	6	31	75	140	83	298				
	Excavators	158	1	8	28	1	8	52	1	8	31	495	920	549	1,964				
	Pumps	84	1	8	14	1	8	26	1	8	15	132	245	141	517				
	Crawler Tractors	212	1	8	7	1	8	7	1	8	4	166	166	95	427				
Drainage/Utilities/ Subgrade	Cement and Mortar Mixers	9	1	4	5	1	4	5	1	4	5	3	3	3	8				
	Cranes3	0	0	0	0	0	0	0	0	0	0	-	-	-	-				
	Excavators	158	1	4	37	1	4	37	1	4	37	327	327	327	982				
	Plate Compactors	8	1	4	13	1	4	13	1	4	13	6	6	6	17				
	Rough Terrain Forklifts	100	1	2	37	1	2	37	1	2	37	104	104	104	311				
	Trenchers	78	1	4	37	1	4	37	1	4	37	162	162	162	485				
Building Construction	Aerial Lifts	0	0	0	355	0	0	495	0	0	473	-	-	-	-				
	Bore/Drill Rigs	221	1	8	18	1	8	25	1	8	24	439	613	585	1,637				
	Cement and Mortar Mixers	9	1	4	71	1	4	99	1	4	95	36	50	48	133				
	Cranes B18*(Crane is Electric)*	231	1	6	178	1	6	248	1	6	237				-	2,568	3,581	3,422	9,572
	Dumper/Tender	16	1	8	71	1	8	99	1	8	95	127	177	170	474				
	Forklifts	89	1	4	18	1	4	25	1	4	24	88	123	118	330				
	Other General Industrial Equipmen	88	1	6	71	1	6	99	1	6	95	525	732	699	1,956				
	Pressure Washers	13	1	2	18	1	2	25	1	2	24	6	9	9	24				
	Pumps	84	1	6	18	1	6	25	1	6	24	125	175	167	467				
	Rubber Tired Loaders	203	1	6	71	1	6	99	1	6	95	1,211	1,688	1,613	4,512				
	Sweepers/Scrubbers	64	1	2	18	1	2	25	1	2	24	32	45	43	120				
Sitework	Tractors/Loaders/Backhoes	97	1	4	35	1	4	60	1	4	50	190	326	272	788				
	Dumper/Tender	16	2	4	35	2	4	60	2	4	50	63	108	90	260				
	Crushing/proc. Equipment	0	1	0	0	0	0	0	1	0	0	-	-	-	-				
	Excavators	158	1	4	35	1	4	60	1	4	50	310	531	442	1,283				
	Graders	187	1	8	3	1	8	6	1	8	5	63	126	105	293				
	Pressure Washers	13	1	2	35	1	2	60	1	2	50	13	22	18	53				
	Pumps	84	1	8	35	1	8	60	1	8	50	329	564	470	1,364				
	Sweepers/Scrubbers	64	1	2	10	1	2	12	1	2	10	18	22	18	57				
All Equipment												9,246	14,569	12,338	36,154	2,568	3,581	3,422	9,572

Construction On-Road Energy

Hauling Trips	Block A				Block B				Block C			
Phase Name	Number of days	Average Worker Trips	Average Material Trips	Total Hauling Trips	Number of days	Average Worker Trips	Average Material Trips	Total Hauling Trips	Number of days	Average Worker Trips	Average Material Trips	Total Hauling Trips
		trips/day	trips/day	total trips		trips/day	trips/day	total trips		trips/day	trips/day	total trips
Demolition	39	48	0	832	79	48	0	1,696	51	48	0	1,088
Site Preparation & Grading	23	38	0	0	23	38	0	0	11	38	0	0
Excavation & Shoring	56	28	0	448	103	28	0	832	62	28	0	496
Drainage/Utilities/ Subgrade	79	38	0	0	126	38		0	73	38	0	0
Building Construction (New Construction)	355	29	5	0	495	104	16	0	473	59	9	0
Sitework	70	30	0	280	120	30	0	480	100	30	0	400
Total Trips		19,768	1,632	1,560		67,260	7,779	3,008		38,132	4,197	1,984
Total Miles		213,492	11,912	31,200		726,404	56,784	60,160		411,822	30,637	39,680
LDA, LDT1, LDT2 - Gas %		99%				99%				99%		
LDA, LDT1, LDT2 - Dsl %		1%				1%				1%		
HHDT, MHDT - Gas %			9%				9%				9%	
HHDT, MHDT - Dsl %			91%				91%				91%	
Fuel Consumption - Gas		7,531	225			25,623	1,072			14,526	578	
Fuel Consumption - Dsl		61	1,306	6,022		209	6,225	11,612		118	3,359	7,659
Total Gas Gallons	**49,554**											
Total Dsl Gallons	**36,571**											

Worker Trip Length	10.8	miles
Materials Trip Length	7.3	miles
Haul Trip Length	20	miles

Operational Data Summary

Energy Consumption	Existing (2023)	Block C (2023)	Blocks A-C (2024)
Water Use - Indoor (million gallons)	79	7	19
Water Use - Outdoor (million gallons)	15	5	14
Water Electricity (kWh)	478,822	54,728	154,073
Net - Water electricity (kWh)	N/A	(424,094)	(324,749)
Electricity - unmitigated (kWh)	9,808,288	933,974	2,679,683
Electricity - mitigated (kWh)	9,808,288	807,580	2,342,127
Natural Gas (kBTU)	54,978,524	1,397,130	3,425,438
Total kBTU (non-water, unmitigated)	88,445,795	4,583,980	12,568,896
Total kBTU (non-water, mitigated)	88,445,795	4,152,708	11,417,108
Net	N/A	(83,861,815)	(75,876,899)
% Reduction		9%	9%

Conversions, etc.

	Supply	Treat	Distribute	Wastewater	Total
Indoor Water Treatment Intensity (kWh/Mgal)	2,117	111	1,272	1,911	5,411
Outdoor Water Treatment Intensity (kWh/Mgal)	2,117	111	1,272	-	3,500

**from CalEEMod*

1 kWh	3412.142	BTU
1 kBTU	1000	BTU
1 horsepower-hour	0.7456999	kWh

Operational Data from CalEEMod

Existing (2018)

Water		
million gallons/year	*indoor*	*outdoor*
Apartments Mid Rise	0.586386	0.369678
Hospital	66.1282	12.5959
Medical Office Building	11.9207	2.2706
Parking Lot	0	0
Total	78.6	15.2

Electricity		
kWh/yr	*unmitigated*	*mitigated*
Apartments Mid Rise	37,998	37,998
Hospital	8,547,940	8,547,940
Medical Office Building	1,185,600	1,185,600
Parking Lot	36,750	36,750
	9,808,288	9,808,288

Natural Gas	
kBTU/yr	
Apartments Mid Rise	78,574
Hospital	53,063,600
Medical Office Building	1,836,350
Parking Lot	-
	54,978,524

Block C only (2023)

Water		
million gallons/year	*indoor*	*outdoor*
Apartments Mid Rise	5.21232	3.28603
City Park	0	0.917441
Enclosed Parking with Ele	0	0
Health Club	1.36621	0.837352
Parking Lot	0	0
Single Family Housing	0.195462	0.123226
Total	6.8	5.2

Electricity		
kWh/yr	*unmitigated*	*mitigated*
Apartments Mid Rise	337,759	308,102
City Park	-	-
Enclosed Parking with Elevator	396,447	337,250
Health Club	174,636	140,102
Parking Lot	1,184	592
Single Family Housing	23,948	21,534
	933,974	807,580

Natural Gas	
kBTU/yr	
Apartments Mid Rise	698,434
City Park	-
Enclosed Parking with Elevator	-
Health Club	571,725
Parking Lot	-
Single Family Housing	126,971
	1,397,130

Blocks A-C (2024)

Water		
million gallons/year	*indoor*	*outdoor*
Apartments Mid Rise	16.8749	10.6385
City Park	0	2.35913
Enclosed Parking with Ele	0	0
Health Club	1.36621	0.837352
Parking Lot	0	0
Single Family Housing	0.912156	0.575055
Total	19.2	14.4

Electricity		
kWh/yr	*unmitigated*	*mitigated*
Apartments Mid Rise	160,436	146,348
Apartments Mid Rise	337,759	308,102
Apartments Mid Rise	595,301	543,029
City Park	-	-
Enclosed Parking with Elevator	188,311	160,193
Enclosed Parking with Elevator	396,447	337,250
Enclosed Parking with Elevator	710,302	604,242
Health Club	174,636	140,102
Parking Lot	1,184	592
Parking Lot	1,579	789
Parking Lot	1,973	987
Single Family Housing	23,948	21,534
Single Family Housing	39,913	35,890
Single Family Housing	47,895	43,068
	2,679,683	2,342,127

Natural Gas	
kBTU/yr	
Apartments Mid Rise	331,756
Apartments Mid Rise	698,434
Apartments Mid Rise	1,230,990
City Park	-
Enclosed Parking with Elevator	-
Health Club	571,725
Parking Lot	-
Single Family Housing	126,971
Single Family Housing	211,619
Single Family Housing	253,943
	3,425,438

Operational VMT	VMT	Diesel (gallons)	Gasoline (gallons)
Existing	15,343,271	58,188	576,275
Block C	582,823	2,387	18,696
Blocks A, B, C	1,997,924	8,072	62,260
Net (2023)	(14,760,448)	(55,801)	(557,579)
Net (2024)	(13,345,347)	(50,116)	(514,015)

EMFAC Summary

All Fuels	2018		2021		2023		2024	
Vehicle Type	Fleet Mix	MPG	Fleet Mix	MPG	Fleet Mix	MPG	Fleet Mix	MPG
HHDT	0.8%	4	0.8%	5	0.9%	5	0.9%	5
LDA	60.2%	28	59.0%	30	58.4%	32	58.1%	34
LDT1	5.4%	24	5.4%	25	5.5%	27	5.5%	28
LDT2	17.5%	22	17.5%	24	17.4%	25	17.4%	26
LHDT1	2.4%	10	2.4%	10	2.4%	11	2.4%	11
LHDT2	0.5%	10	0.5%	11	0.5%	12	0.6%	12
MCY	0.9%	35	0.8%	35	0.7%	35	0.7%	35
MDV	8.9%	18	9.9%	20	10.4%	22	10.6%	22
MH	0.0%	6	0.0%	6	0.1%	6	0.1%	6
MHDT	2.2%	8	2.5%	8	2.7%	9	2.8%	9
OBUS	0.4%	6	0.4%	7	0.4%	7	0.3%	7
SBUS	0.1%	9	0.1%	9	0.1%	9	0.1%	9
UBUS	0.7%	5	0.7%	5	0.7%	6	0.6%	6
Gas	93%		92%		91%		91%	
Dsl	6%		6%		7%		7%	
Weighted		24		26		28		29

Gas		2018		2021		2023		2024
	Fleet Mix	MPG	Fleet Mix	MPG	Fleet Mix	MPG	Fleet Mix	MPG
HHDT	0.0%	4	0.0%	4	0.0%	4	0.0%	5
LDA	62.8%	27	61.8%	30	61.3%	31	61.1%	32
LDT1	5.8%	24	5.9%	25	5.9%	27	6.0%	27
LDT2	18.5%	21	18.6%	23	18.7%	25	18.7%	26
LHDT1	1.9%	8	1.7%	8	1.6%	9	1.6%	9
LHDT2	0.2%	7	0.2%	7	0.2%	7	0.2%	8
MCY	1.0%	35	0.9%	35	0.8%	35	0.8%	35
MDV	9.3%	18	10.4%	20	10.9%	21	11.1%	22
MH	0.0%	5	0.0%	5	0.0%	5	0.0%	5
MHDT	0.3%	5	0.3%	5	0.3%	5	0.3%	5
OBUS	0.2%	5	0.1%	5	0.1%	5	0.1%	5
SBUS	0.1%	9	0.1%	9	0.1%	9	0.1%	9
UBUS								
Weighted		25		27		28		29

DSL		2018		2021		2023		2024
	Fleet Mix	MPG	Fleet Mix	MPG	Fleet Mix	MPG	Fleet Mix	MPG
HHDT	13.3%	5	12.2%	5	11.7%	6	11.5%	6
LDA	14.1%	41	12.4%	44	11.4%	46	11.0%	47
LDT1	0.1%	21	0.0%	21	0.0%	22	0.0%	22
LDT2	3.1%	30	3.0%	31	2.9%	33	2.8%	33
LHDT1	11.1%	18	12.8%	19	13.4%	19	13.6%	20
LHDT2	4.8%	16	5.2%	16	5.4%	17	5.5%	17
MCY								
MDV	4.6%	23	5.1%	25	5.2%	26	5.3%	27
MH	0.2%	10	0.2%	10	0.2%	10	0.2%	11
MHDT	33.4%	9	35.4%	9	37.2%	10	37.9%	10
OBUS	4.8%	8	4.2%	8	3.9%	8	3.7%	8
SBUS	0.6%	8	0.6%	9	0.6%	9	0.6%	9
UBUS	9.8%	6	8.9%	6	7.9%	6	7.7%	6
Weighted		15		16		16		17

For Construction Worker Trips and Material Hauling Trips

Gas			
	Fleet Mix	MPG	
HHDT	0.4%	4	LDA/LDT1/LDT2 weighted
LDA	71.6%	30	28
LDT1	6.8%	25	HHDT/MHDT weighted
LDT2	21.6%	23	5
MHDT	99.6%	5	

DSL			
HHDT	25.6%	5	LDA/LDT1/LDT2 weighted
LDA	80.3%	44	41
LDT1	0.2%	21	HHDT/MHDT weighted
LDT2	19.5%	31	8
MHDT	74.4%	9	

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SAN FRANCISCO
Calendar Year: 2018
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumptior

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption
SAN FRANCISCO	2018	HHDT	Aggregated	Aggregated	GAS	4.232775863	113.8262438	84.68937947	0.032438443
SAN FRANCISCO	2018	HHDT	Aggregated	Aggregated	DSL	1113.433038	71728.39635	7306.565711	14.75055487
SAN FRANCISCO	2018	HHDT	Aggregated	Aggregated	NG	165.8205255	6765.48679	646.7000496	2.937416203
SAN FRANCISCO	2018	LDA	Aggregated	Aggregated	GAS	150028.5876	5466135.561	704059.5323	199.280033
SAN FRANCISCO	2018	LDA	Aggregated	Aggregated	DSL	1986.736072	75951.14903	9343.11257	1.849638849
SAN FRANCISCO	2018	LDA	Aggregated	Aggregated	ELEC	2478.519495	90756.86176	12462.52008	0
SAN FRANCISCO	2018	LDT1	Aggregated	Aggregated	GAS	15322.12859	500929.7929	71095.9906	21.1375766
SAN FRANCISCO	2018	LDT1	Aggregated	Aggregated	DSL	17.56532449	284.4432466	62.18270761	0.013848884
SAN FRANCISCO	2018	LDT1	Aggregated	Aggregated	ELEC	41.89903428	1301.444028	199.1280534	0
SAN FRANCISCO	2018	LDT2	Aggregated	Aggregated	GAS	47962.83267	1611343.291	225815.2717	75.42681084
SAN FRANCISCO	2018	LDT2	Aggregated	Aggregated	DSL	421.4311507	16758.27813	2094.493243	0.566000657
SAN FRANCISCO	2018	LDT2	Aggregated	Aggregated	ELEC	236.983315	8164.415858	1205.252507	0
SAN FRANCISCO	2018	LHDT1	Aggregated	Aggregated	GAS	4156.688109	163980.0973	61928.45936	20.03642107
SAN FRANCISCO	2018	LHDT1	Aggregated	Aggregated	DSL	1312.547191	59848.93243	16510.19247	3.35678597
SAN FRANCISCO	2018	LHDT2	Aggregated	Aggregated	GAS	478.5405465	17952.59037	7129.541117	2.517003417
SAN FRANCISCO	2018	LHDT2	Aggregated	Aggregated	DSL	593.7281229	25536.17802	7468.352876	1.628775297
SAN FRANCISCO	2018	MCY	Aggregated	Aggregated	GAS	10857.26243	84857.98245	21714.52486	2.434830727
SAN FRANCISCO	2018	MDV	Aggregated	Aggregated	GAS	22134.59116	810219.4119	104112.6722	44.89771493
SAN FRANCISCO	2018	MDV	Aggregated	Aggregated	DSL	589.6787332	24956.66398	2910.41794	1.087437729
SAN FRANCISCO	2018	MDV	Aggregated	Aggregated	ELEC	17.860714	593.4578242	89.51930011	0
SAN FRANCISCO	2018	MH	Aggregated	Aggregated	GAS	254.4953847	2472.264065	25.45971828	0.519037242
SAN FRANCISCO	2018	MH	Aggregated	Aggregated	DSL	76.64679389	885.6047203	7.664679389	0.090528983
SAN FRANCISCO	2018	MHDT	Aggregated	Aggregated	GAS	531.565191	26761.39378	10635.55634	5.832986221
SAN FRANCISCO	2018	MHDT	Aggregated	Aggregated	DSL	3573.846502	179710.797	31707.65846	20.46412438
SAN FRANCISCO	2018	OBUS	Aggregated	Aggregated	GAS	246.8890706	13906.85068	4939.756525	3.020557823
SAN FRANCISCO	2018	OBUS	Aggregated	Aggregated	DSL	401.8098269	25796.07523	3660.80082	3.353532074
SAN FRANCISCO	2018	SBUS	Aggregated	Aggregated	GAS	111.1010136	5675.610379	444.4040545	0.610427228
SAN FRANCISCO	2018	SBUS	Aggregated	Aggregated	DSL	97.14262873	3219.410315	1121.012467	0.385934973
SAN FRANCISCO	2018	UBUS	Aggregated	Aggregated	DSL	572.9484106	52770.56682	2291.793642	8.820689503
SAN FRANCISCO	2018	UBUS	Aggregated	Aggregated	NG	118.7725128	10233.8513	475.090051	2.705033641

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SAN FRANCISCO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption
SAN FRANCISCO	2021	HHDT	Aggregated	Aggregated	GAS	1.973460213	105.7956396	39.48499195	0.025409965
SAN FRANCISCO	2021	HHDT	Aggregated	Aggregated	DSL	1101.864373	73603.90795	7568.648365	14.20704125
SAN FRANCISCO	2021	HHDT	Aggregated	Aggregated	NG	193.3361249	7880.247458	754.0108872	3.351363781
SAN FRANCISCO	2021	LDA	Aggregated	Aggregated	GAS	156525.5687	5485729.948	737676.722	184.9273348
SAN FRANCISCO	2021	LDA	Aggregated	Aggregated	DSL	2150.12764	74995.64982	10054.87345	1.719412865
SAN FRANCISCO	2021	LDA	Aggregated	Aggregated	ELEC	3437.540513	128234.7069	17025.82004	0
SAN FRANCISCO	2021	LDT1	Aggregated	Aggregated	GAS	16761.84806	522112.2277	78069.05378	20.60616675
SAN FRANCISCO	2021	LDT1	Aggregated	Aggregated	DSL	13.38344571	201.2913795	46.50750711	0.009602285
SAN FRANCISCO	2021	LDT1	Aggregated	Aggregated	ELEC	89.96328653	3347.041415	443.3604358	0
SAN FRANCISCO	2021	LDT2	Aggregated	Aggregated	GAS	52137.20517	1651683.774	245279.9206	70.63742593
SAN FRANCISCO	2021	LDT2	Aggregated	Aggregated	DSL	519.2189144	18224.18264	2531.875151	0.583783006
SAN FRANCISCO	2021	LDT2	Aggregated	Aggregated	ELEC	453.7823347	14192.01589	2281.319781	0
SAN FRANCISCO	2021	LHDT1	Aggregated	Aggregated	GAS	4210.778474	152494.5848	62734.32521	18.26846126
SAN FRANCISCO	2021	LHDT1	Aggregated	Aggregated	DSL	1786.7713	77205.19346	22475.3352	4.13277763
SAN FRANCISCO	2021	LHDT2	Aggregated	Aggregated	GAS	508.2105804	18182.08239	7571.580414	2.482945286
SAN FRANCISCO	2021	LHDT2	Aggregated	Aggregated	DSL	780.0375104	31735.11177	9811.890594	1.93226074
SAN FRANCISCO	2021	MCY	Aggregated	Aggregated	GAS	10817.92141	76215.41818	21635.84282	2.197954832
SAN FRANCISCO	2021	MDV	Aggregated	Aggregated	GAS	26173.65712	920124.0757	123708.042	46.24663452
SAN FRANCISCO	2021	MDV	Aggregated	Aggregated	DSL	800.2633122	30806.17698	3907.270048	1.243021053
SAN FRANCISCO	2021	MDV	Aggregated	Aggregated	ELEC	155.328691	5144.096967	795.3181306	0
SAN FRANCISCO	2021	MH	Aggregated	Aggregated	GAS	305.8361054	3475.460083	30.59584398	0.697085399
SAN FRANCISCO	2021	MH	Aggregated	Aggregated	DSL	109.697929	1292.808498	10.9697929	0.1278892
SAN FRANCISCO	2021	MHDT	Aggregated	Aggregated	GAS	518.6676677	25320.9636	10377.5027	5.365242437
SAN FRANCISCO	2021	MHDT	Aggregated	Aggregated	DSL	4009.563494	213998.2057	35796.06284	22.79988707
SAN FRANCISCO	2021	OBUS	Aggregated	Aggregated	GAS	226.6624857	11012.85447	4535.063014	2.35996787
SAN FRANCISCO	2021	OBUS	Aggregated	Aggregated	DSL	393.5458219	25390.47274	3599.582631	3.19745504
SAN FRANCISCO	2021	SBUS	Aggregated	Aggregated	GAS	121.7251516	5855.844793	486.9006065	0.628342648
SAN FRANCISCO	2021	SBUS	Aggregated	Aggregated	DSL	112.9750264	3693.647899	1303.716141	0.431314443
SAN FRANCISCO	2021	UBUS	Aggregated	Aggregated	DSL	583.0155953	53687.52206	2332.062381	8.959800302
SAN FRANCISCO	2021	UBUS	Aggregated	Aggregated	NG	122.8402498	10604.35535	491.3609991	2.801250763

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Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption
SAN FRANCISCO	2023	HHDT	Aggregated	Aggregated	GAS	1.547012098	123.1967968	30.95261805	0.027666096
SAN FRANCISCO	2023	HHDT	Aggregated	Aggregated	DSL	1101.651548	75402.68465	7731.816001	13.45614733
SAN FRANCISCO	2023	HHDT	Aggregated	Aggregated	NG	208.4748874	8499.459351	813.052061	3.542058905
SAN FRANCISCO	2023	LDA	Aggregated	Aggregated	GAS	161367.5254	5500029.786	761670.7597	175.3054275
SAN FRANCISCO	2023	LDA	Aggregated	Aggregated	DSL	2222.455113	73903.19705	10370.40078	1.613492211
SAN FRANCISCO	2023	LDA	Aggregated	Aggregated	ELEC	4412.675884	169210.7402	21756.09899	0
SAN FRANCISCO	2023	LDT1	Aggregated	Aggregated	GAS	17686.48377	532518.1594	82418.29182	20.03246346
SAN FRANCISCO	2023	LDT1	Aggregated	Aggregated	DSL	11.36426563	166.0423852	39.12492889	0.007711946
SAN FRANCISCO	2023	LDT1	Aggregated	Aggregated	ELEC	160.0194593	6393.259144	797.3853014	0
SAN FRANCISCO	2023	LDT2	Aggregated	Aggregated	GAS	54830.80016	1673679.19	257591.6391	67.138442
SAN FRANCISCO	2023	LDT2	Aggregated	Aggregated	DSL	574.4446948	18775.88338	2770.510642	0.575377929
SAN FRANCISCO	2023	LDT2	Aggregated	Aggregated	ELEC	714.5721077	21349.61024	3577.617186	0
SAN FRANCISCO	2023	LHDT1	Aggregated	Aggregated	GAS	4245.007142	147426.4467	63244.28135	17.32941209
SAN FRANCISCO	2023	LHDT1	Aggregated	Aggregated	DSL	2100.581135	86548.77605	26422.66814	4.497064
SAN FRANCISCO	2023	LHDT2	Aggregated	Aggregated	GAS	527.9141419	18347.35831	7865.134122	2.449684507
SAN FRANCISCO	2023	LHDT2	Aggregated	Aggregated	DSL	905.3433114	35148.39284	11388.07994	2.076996524
SAN FRANCISCO	2023	MCY	Aggregated	Aggregated	GAS	10819.31106	72227.4956	21638.62212	2.088230963
SAN FRANCISCO	2023	MDV	Aggregated	Aggregated	GAS	28726.1768	977999.148	135868.7269	46.02886465
SAN FRANCISCO	2023	MDV	Aggregated	Aggregated	DSL	932.4038663	33840.55559	4517.46627	1.291943228
SAN FRANCISCO	2023	MDV	Aggregated	Aggregated	ELEC	349.1603017	10983.10624	1777.799604	0
SAN FRANCISCO	2023	MH	Aggregated	Aggregated	GAS	343.7103485	3986.303668	34.38478327	0.77301647
SAN FRANCISCO	2023	MH	Aggregated	Aggregated	DSL	132.1292039	1516.641535	13.21292039	0.14568744
SAN FRANCISCO	2023	MHDT	Aggregated	Aggregated	GAS	516.0580389	24788.32201	10325.28924	5.108154592
SAN FRANCISCO	2023	MHDT	Aggregated	Aggregated	DSL	4267.480541	240025.9423	37523.1845	23.95854391
SAN FRANCISCO	2023	OBUS	Aggregated	Aggregated	GAS	214.836699	9579.374084	4298.452673	2.018394904
SAN FRANCISCO	2023	OBUS	Aggregated	Aggregated	DSL	377.0522232	25043.24311	3447.862854	2.980035432
SAN FRANCISCO	2023	SBUS	Aggregated	Aggregated	GAS	128.6973376	5989.04175	514.7893504	0.639658595
SAN FRANCISCO	2023	SBUS	Aggregated	Aggregated	DSL	124.6668791	4054.442942	1438.6385	0.462908313
SAN FRANCISCO	2023	UBUS	Aggregated	Aggregated	DSL	558.7237881	51214.22967	2234.895152	8.200444241
SAN FRANCISCO	2023	UBUS	Aggregated	Aggregated	NG	147.7740029	13136.11847	591.0960117	3.382300354

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Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption
SAN FRANCISCO	2024	HHDT	Aggregated	Aggregated	GAS	1.128626437	129.8816231	22.58155775	0.027847076
SAN FRANCISCO	2024	HHDT	Aggregated	Aggregated	DSL	1104.365622	76354.37625	7858.384306	13.29613217
SAN FRANCISCO	2024	HHDT	Aggregated	Aggregated	NG	215.2692661	8776.611325	839.5501376	3.613647593
SAN FRANCISCO	2024	LDA	Aggregated	Aggregated	GAS	163734.1006	5508576.903	773124.2786	170.5019541
SAN FRANCISCO	2024	LDA	Aggregated	Aggregated	DSL	2245.991202	73372.38859	10478.65414	1.558671538
SAN FRANCISCO	2024	LDA	Aggregated	Aggregated	ELEC	5004.454312	195338.1059	24640.17335	0
SAN FRANCISCO	2024	LDT1	Aggregated	Aggregated	GAS	18144.31553	537839.8913	84533.10791	19.72762025
SAN FRANCISCO	2024	LDT1	Aggregated	Aggregated	DSL	10.52080826	152.5494388	36.09846578	0.00695812
SAN FRANCISCO	2024	LDT1	Aggregated	Aggregated	ELEC	202.3157893	8273.533315	1009.227447	0
SAN FRANCISCO	2024	LDT2	Aggregated	Aggregated	GAS	56108.06507	1684641.33	263352.4596	65.39601893
SAN FRANCISCO	2024	LDT2	Aggregated	Aggregated	DSL	598.2141521	18953.02185	2869.618118	0.566750238
SAN FRANCISCO	2024	LDT2	Aggregated	Aggregated	ELEC	869.0407731	25403.37938	4340.460832	0
SAN FRANCISCO	2024	LHDT1	Aggregated	Aggregated	GAS	4255.958369	145205.3312	63407.43832	16.87331818
SAN FRANCISCO	2024	LHDT1	Aggregated	Aggregated	DSL	2253.840821	90672.9642	28350.4822	4.638597992
SAN FRANCISCO	2024	LHDT2	Aggregated	Aggregated	GAS	537.9041039	18436.23298	8013.969671	2.429776887
SAN FRANCISCO	2024	LHDT2	Aggregated	Aggregated	DSL	965.7201108	36643.24526	12147.54412	2.131810792
SAN FRANCISCO	2024	MCY	Aggregated	Aggregated	GAS	10824.88122	70626.09721	21649.76244	2.044097522
SAN FRANCISCO	2024	MDV	Aggregated	Aggregated	GAS	29933.21275	1003721.835	141548.0335	45.71141944
SAN FRANCISCO	2024	MDV	Aggregated	Aggregated	DSL	994.4453375	35161.12803	4799.570526	1.304654778
SAN FRANCISCO	2024	MDV	Aggregated	Aggregated	ELEC	465.6163304	14266.46023	2361.897603	0
SAN FRANCISCO	2024	MH	Aggregated	Aggregated	GAS	362.5762447	4192.615487	36.27212752	0.795387326
SAN FRANCISCO	2024	MH	Aggregated	Aggregated	DSL	143.2054296	1614.614115	14.32054296	0.152336607
SAN FRANCISCO	2024	MHDT	Aggregated	Aggregated	GAS	516.7564417	24640.80273	10339.26289	4.987448539
SAN FRANCISCO	2024	MHDT	Aggregated	Aggregated	DSL	4559.674657	252707.8914	40097.34972	24.79076437
SAN FRANCISCO	2024	OBUS	Aggregated	Aggregated	GAS	208.8643161	8973.80319	4178.957236	1.868301234
SAN FRANCISCO	2024	OBUS	Aggregated	Aggregated	DSL	381.8908533	24918.91404	3497.08446	2.947322564
SAN FRANCISCO	2024	SBUS	Aggregated	Aggregated	GAS	132.0786294	6057.814108	528.3145176	0.644425449
SAN FRANCISCO	2024	SBUS	Aggregated	Aggregated	DSL	130.6640037	4243.532018	1507.844487	0.478285769
SAN FRANCISCO	2024	UBUS	Aggregated	Aggregated	DSL	558.9523917	51235.0517	2235.809567	8.203603141
SAN FRANCISCO	2024	UBUS	Aggregated	Aggregated	NG	147.8663723	13144.53181	591.4654891	3.384485233

APPENDIX F TRANSPORTATION ANALYSIS

3700 California Street

Environmental Impact Report

Case Number 2017-003559ENV

Transportation Technical Appendix

Prepared for:

City and County of San Francisco
Planning Department

Prepared by:

Fehr & Peers

April 2019

TRANSPORTATION TECHNICAL APPENDIX

Appendix F.1: Roadway Classifications

Appendix F.2: Transit Screenline Analysis

Appendix F.3: Intersection Volumes, Counts, and Geometries

Appendix F.4: CPMC EIR Existing Parking

Appendix F.5: Project Designs

Appendix F.6: Travel Demand Memorandum

Appendix F.7: Construction Information

Appendix F.1 – Roadway Classifications

FEHR PEERS

Roadway Classifications

The San Francisco Planning Department has developed a street hierarchy system for the City and County of San Francisco, in which the function and design of each street are consistent with the character and use of adjacent land. The major classifications in the Vehicle Circulation Plan of the San Francisco *General Plan* are:

- **Freeways:** Limited access, very high capacity facilities; primary function is to carry intercity traffic; they may, as a result of route location, also serve the secondary function of providing for travel between distant sections in the city.
- **Major Arterials:** Cross-town thoroughfares whose primary function is to link districts within the city and to distribute traffic from and to the freeways; these are routes generally of citywide significance; of varying capacity depending on the travel demand for the specific direction and adjacent land uses.
- **Transit Conflict Streets:** Streets with a primary transit function which are not classified as major arterials but experience significant conflicts with automobile traffic.
- **Secondary Arterials:** Primarily intra-district routes of varying capacity serving as collectors for the major thoroughfares; in some cases supplemental to the major arterial system.
- **Recreational Streets:** A special category of street whose major function is to provide for slow pleasure drives and cyclist and pedestrian use; more highly valued for recreational use than for traffic movement. The order of priority for these streets should be to accommodate: 1) pedestrians, hiking trails or wilderness routes, as appropriate; 2) cyclists; 3) equestrians; 4) automobile scenic driving. This should be slow and consistent with the topography and nature of the area.
- **Collector Streets:** Relatively low-capacity streets serving local distribution functions primarily in large, low-density areas, connecting to major and secondary arterials.
- **Local Streets:** All other streets intended for access to abutting residential and other land uses, rather than for through traffic; generally of lowest capacity.

In addition to the San Francisco Planning Department's roadway classifications, the freeways, major arterials, and transit conflict streets are included in the Congestion Management Program (CMP) Network and Metropolitan Transportation System (MTS) Network (see below).

Transit Preferential Streets

The Transit Preferential Street network classification system takes into consideration all transportation functions, and identifies the major transit routes where general traffic should be routed away from. There are two classifications of transit preferential streets: Primary Transit Streets, which are either transit-oriented or transit-important; and Secondary Transit Streets.

- **Primary Transit Street – Transit-Oriented:** Not major arterials, with either high transit ridership, a high frequency of service, or surface rail. Along these streets, the emphasis should be on moving transit vehicles, and impacts on automobile traffic should be of secondary concern.

- **Primary Transit Street – Transit-Important:** Major arterials, with either high transit ridership, high frequency of service, or surface rail. Along these streets, the goal is to improve the balance between modes of transportation, and the emphasis should be on moving people and goods, rather than on moving vehicles.
- **Secondary Transit Street:** Medium transit ridership and low-to-medium frequency of service, or medium frequency of service and low-to-medium transit ridership, or connects two or more major destinations.

In general, it is City policy that transit preferential treatments should be concentrated on the most important transit streets, and the treatments applied should respond to all transportation needs of the street. For example, on streets that are major arterials for transit and not for automobile traffic, treatments should emphasize transit priority; on streets that are major arterials for both transit and automobiles, treatments should emphasize a balance between the modes. It is also City policy that automobile facility features (such as driveways and loading docks) should be reduced, relocated or prohibited on transit preferential streets in order to avoid traffic conflicts and automobile congestion.

Citywide Pedestrian Network

The Citywide Pedestrian Network is a classification of streets throughout the City used to identify streets devoted to or primarily oriented to pedestrian use. The main classifications are:

- **Citywide Pedestrian Network Street:** An inter-neighborhood connection with "citywide significance" includes both exclusive pedestrian and pedestrian-oriented vehicular streets. These streets include the Bay, Ridge, and Coast trails, are used by commuters, tourists, general public and recreaters, and connect major institutions with transit facilities.
- **Neighborhood Network Street:** A neighborhood commercial, residential or transit street that serves pedestrians from the general vicinity. Some streets may be part of the Citywide network, but are generally oriented towards neighborhood-serving uses. Types include exclusive pedestrian and pedestrian-oriented vehicular streets. As part of the Neighborhood Network Street network, streets are classified as **Neighborhood Commercial Streets**, which are streets that are predominately commercial use with parking and loading conflicts, or **Neighborhood Network Connection Streets**, which are intra-neighborhood connection streets that connect neighborhood destinations.

In general, it is City policy that sufficient pedestrian movement space should be provided to minimize pedestrian congestion, sidewalks should be widened where intensive commercial, recreational or institutional activity is present, and efforts should be made to ensure convenient and safe pedestrian crossings at intersections.

Congestion Management Program (CMP) Network

The CMP Network is the network of freeways, state highways, major arterials and transit conflict streets (see Roadway Classifications, above) established in accordance with state Congestion Management legislation. As part of the CMP, the San Francisco County Transportation Authority is required to determine the level of service (LOS) for the CMP Network streets every two years. The LOS is based on the average travel speed for each

- **Primary Transit Street – Transit-Important:** Major arterials, with either high transit ridership, high frequency of service, or surface rail. Along these streets, the goal is to improve the balance between modes of transportation, and the emphasis should be on moving people and goods, rather than on moving vehicles.
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Metropolitan Transportation System (MTS) Network

The MTS Network is defined by Metropolitan Transportation Commission (MTC) as part of its Regional Transportation Plan. The MTS is a regional network of roadways, transit corridors and transfer points, identified by the MTC on the basis of specific criteria. The criteria identified facilities that provide relief to congested corridors, improve connectivity, accommodate travel demand and serve a regional transportation function. The State highways and major thoroughfares designated in San Francisco's CMP roadway network are all included in the regional MTS network. There are a few instances in which the local CMP network is not identical to the MTS network due to differences in the criteria used to define each network.

Appendix F.2 – Transit Screenline Analysis

FIGURE A-1
SFMTA SCREENLINES

Muni Screenline

FIGURE B-1
REGIONAL SCREENLINES

Regional Screenline

Table D.1: Muni Downtown Screenlines - AM Peak Hour

Outbound Screenline	Existing			Existing Plus Project		
	AM Peak Hour[1] Ridership	AM Peak Hour[1] Capacity	AM Peak Hour[1] Capacity Utilization	Project Trips	AM Peak Hour Ridership	AM Peak Hour Capacity Utilization
Kearny/Stockton[2]	2,211	3,050	72%	0	2,211	72%
Other lines[3]	538	1,141	47%	0	538	47%
Northeast Screenline Total	*2,749*	*4,191*	*66%*	*0*	*2,749*	*66%*
Geary[4]	1,821	2,490	73%	0	1,821	73%
California[5]	1,610	2,010	80%	23	1,633	81%
Sutter/Clement[6]	480	630	76%	0	480	76%
Fulton/Hayes[7]	1,277	1,680	76%	0	1,277	76%
Balboa[8]	758	1,019	74%	0	758	74%
Northwest Screenline Total	*5,946*	*7,829*	*76%*	*23*	*5,969*	*76%*
Third Street[9]	350	793	44%	1	351	44%
Mission[10]	1,643	2,509	65%	0	1,643	65%
San Bruno/Bayshore[11]	1,689	2,134	79%	0	1,689	79%
Other lines[12]	1,466	1,756	83%	0	1,466	83%
Southeast Screenline Total	*5,148*	*7,193*	*72%*	*1*	*5,149*	*72%*
Subway lines[13]	**6,330**	**6,205**	**102%**	**0**	**6,330**	**102%**
Haight/Noriega[14]	1,121	1,554	72%	0	1,121	72%
Other lines[15]	465	700	66%	0	465	66%
Southwest Screenline Total	***7,916***	***8,459***	***94%***	***0***	***7,916***	***94%***
Total All Screenlines	*21,759*	*27,672*	*79%*	*24*	*21,783*	*79%*

Notes:

1. AM peak hour includes inbound trips only (i.e. into from Downtown)
2. 8 Bayshore, 30 Stockton, 30X Marina Express, 41 Union, 45 Union-Stockton
3. F Market & Wharves, 10 Townsend, 12 Folsom-Pacific
4. 38 Geary, 38R Geary, 38AX Geary 'A' Express, 38BX Geary 'B' Express
5. 1 California, 1AX California 'A' Express, 1AX California 'B' Express
6. 2 Clement, 3 Jackson
7. 5 Fulton, 5R Fulton Rapid, 21 Hayes
8. 31 Balboa, 31AX Balboa 'A' Express, 31BX Balboa 'B' Express
9. T Third Street
10. 14 Mission, 14R Mission Rapid, 14X Mission Express, 49 Van Ness-Mission
11. 8AX Bayshore 'A' Express, 8BX Bayshore 'B' Express, 8 Bayshore, 9 San Bruno, 9R San Bruno Rapid
12. J Church, 10 Townsend, 12 Folsom-Pacific (OB), 19 Polk, 27 Bryant
13. K Ingleside, L Taraval, M Ocean View, N Judah
14. 6 Parnassus, 71/71R Haight-Noriega/Rapid, 16X Noriega Express, NX Judah Express
15. F Market & Wharves

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015; Fehr & Peers, 2017.
Bold indicates capacity utilization of 85 percent or greater

Table D.2: Muni Downtown Screenlines - Existing Conditions PM Peak Hour

Outbound Screenline	Existing			Existing Plus Project		
	PM Peak Hour[1] Ridership	PM Peak Hour[1] Capacity	PM Peak Hour[1] Capacity Utilization	Project Trips	PM Peak Hour Ridership	PM Peak Hour Capacity Utilization
Kearny/Stockton[2]	2,245	3,327	67%	0	2,245	67%
Other lines[3]	683	1,078	63%	0	683	63%
Northeast Screenline Total	*2,928*	*4,405*	*66%*	*0*	*2,928*	*66%*
Geary[4]	1,964	2,623	75%	0	1,964	75%
California[5]	1,322	1,752	75%	33	1,355	77%
Sutter/Clement[6]	425	630	67%	0	425	67%
Fulton/Hayes[7]	**1,184**	**1,323**	**89%**	**0**	**1,184**	**89%**
Balboa[8]	625	974	64%	0	625	64%
Northwest Screenline Total	*5,519*	*7,302*	*76%*	*33*	*5,552*	*76%*
Third Street[9]	**782**	**793**	**99%**	**2**	**784**	**99%**
Mission[10]	1,407	2,601	54%	0	1,407	54%
San Bruno/Bayshore[11]	1,536	2,134	72%	0	1,536	72%
Other lines[12]	1,084	1,675	65%	0	1,084	65%
Southeast Screenline Total	*4,810*	*7,203*	*67%*	*2*	*4,812*	*67%*
Subway lines[13]	4,904	6,164	80%	0	4,904	80%
Haight/Noriega[14]	977	1,554	63%	0	977	63%
Other lines[15]	555	700	79%	0	555	79%
Southwest Screenline Total	*6,435*	*8,418*	*76%*	*0*	*6,435*	*76%*
Total All Screenlines	*19,693*	*27,328*	*72%*	*35*	*19,728*	*72%*

Notes:

1. PM peak hour includes outbound trips only (i.e. away from Downtown)
2. 8 Bayshore, 30 Stockton, 30X Marina Express, 41 Union, 45 Union-Stockton
3. F Market & Wharves, 10 Townsend, 12 Folsom-Pacific
4. 38 Geary, 38R Geary, 38AX Geary 'A' Express, 38BX Geary 'B' Express
5. 1 California, 1AX California 'A' Express, 1AX California 'B' Express
6. 2 Clement, 3 Jackson
7. 5 Fulton, 5R Fulton Rapid, 21 Hayes
8. 31 Balboa, 31AX Balboa 'A' Express, 31BX Balboa 'B' Express
9. T Third Street
10. 14 Mission, 14R Mission Rapid, 14X Mission Express, 49 Van Ness-Mission
11. 8AX Bayshore 'A' Express, 8BX Bayshore 'B' Express, 8 Bayshore, 9 San Bruno, 9R San Bruno Rapid
12. J Church, 10 Townsend, 12 Folsom-Pacific (OB), 19 Polk, 27 Bryant
13. K Ingleside, L Taraval, M Ocean View, N Judah
14. 6 Parnassus, 71/71R Haight-Noriega/Rapid, 16X Noriega Express, NX Judah Express
15. F Market & Wharves

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015; Fehr & Peers, 2017.
Bold indicates capacity utilization of 85 percent or greater

Table D.1: Regional Transit Screenlines - Existing Conditions PM Peak Hour

Screenline	AM[1] Peak Hour Ridership	AM[1] Peak Hour Capacity	AM Capacity Utilization[3]	PM[2] Peak Hour Ridership	PM[2] Peak Hour Capacity	PM Capacity Utilization[3]
East Bay						
BART	25,399	23,256	**109%**	22,488	22,784	**107%**
AC Transit	1,568	2,829	55%	2,256	3,926	57%
Ferries	810	1,170	69%	805	1,615	50%
Screenline Subtotal	*27,777*	*27,255*	***102%***	*27,549*	*28,325*	*97%*
North Bay						
Golden Gate Transit Buses	1,330	2,543	52%	1,384	2,817	49%
Ferries	1,082	1,959	55%	968	1,959	49%
Screenline Subtotal	*2,412*	*4,502*	*54%*	*2,352*	*4,776*	*49%*
South Bay						
BART	14,150	19,367	73%	13,500	18,900	71%
Caltrain	2,171	3,100	70%	2,377	3,100	77%
SamTrans	255	520	49%	141	320	44%
Screenline Subtotal	*16,576*	*22,987*	*72%*	*16,018*	*22,320*	*72%*
Regional Total	*46,765*	*54,744*	*85%*	*45,919*	*55,412*	*83%*

Notes:

1. AM peak hour includes inbound trips only (i.e. toward Downtown).
2. PM peak hour includes outbound trips only (i.e. away from Downtown).
3. Every agency listed in this table has an overcrowding threshold of 100 percent.

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015; San Francisco Planning Department, *Updated BART Regional Screenlines*, October 2016; Fehr & Peers, 2017.

Bold indicates capacity utilization of 100 percent or greater

Table D.4: Muni Downtown Screenlines – Cumulative AM Peak Hour

Outbound Screenline	Cumulative			Cumulative Plus Project		
	AM Peak Hour[1] Ridership	AM Peak Hour[1] Capacity	AM Peak Hour[1] Capacity Utilization	Project Trips	AM Peak Hour Ridership	AM Peak Hour Capacity Utilization
Kearny/Stockton[2]	7,394	9,473	78%	0	7,394	78%
Other lines[3]	758	1,785	42%	0	758	42%
Northeast Screenline Total	8,152	11,258	72%	0	8,152	72%
Geary[4]	2,701	3,763	72%	0	2,701	72%
California[5]	**2,029**	**2,306**	**88%**	**23**	**2,052**	**89%**
Sutter/Clement[6]	609	756	81%	0	609	81%
Fulton/Hayes[7]	**1,962**	**1,977**	**99%**	**0**	**1,962**	**99%**
Balboa[8]	690	1,008	68%	0	690	68%
Northwest Screenline Total	7,991	9,810	81%	23	8,014	82%
Third Street[9]	2,422	5,712	42%	1	2,423	42%
Mission[10]	**3,117**	**3,008**	**104%**	**0**	**3,117**	**104%**
San Bruno/Bayshore[11]	**1,952**	**2,197**	**89%**	**0**	**1,952**	**89%**
Other lines[12]	**1,795**	**2,027**	**89%**	**0**	**1,795**	**89%**
Southeast Screenline Total	9,286	12,944	72%	1	9,287	72%
Subway lines[13]	**6,314**	**7,020**	**90%**	**0**	**6,314**	**90%**
Haight/Noriega[14]	**1,415**	**1,596**	**89%**	**0**	**1,415**	**89%**
Other lines[15]	175	560	31%	0	175	31%
Southwest Screenline Total	***7,904***	***9,176***	***86%***	***0***	***7,904***	***86%***
Total All Screenlines	*33,333*	*43,188*	*77%*	*24*	*33,357*	*77%*

Notes:
1. AM peak hour includes inbound trips only (i.e. into from Downtown)
2. 8 Bayshore, 30 Stockton, 30X Marina Express, 41 Union, 45 Union-Stockton
3. F Market & Wharves, 10 Townsend, 12 Folsom-Pacific
4. 38 Geary, 38R Geary, 38AX Geary 'A' Express, 38BX Geary 'B' Express
5. 1 California, 1AX California 'A' Express, 1AX California 'B' Express
6. 2 Clement, 3 Jackson
7. 5 Fulton, 5R Fulton Rapid, 21 Hayes
8. 31 Balboa, 31AX Balboa 'A' Express, 31BX Balboa 'B' Express
9. T Third Street
10. 14 Mission, 14R Mission Rapid, 14X Mission Express, 49 Van Ness-Mission
11. 8AX Bayshore 'A' Express, 8BX Bayshore 'B' Express, 8 Bayshore, 9 San Bruno, 9R San Bruno Rapid
12. J Church, 10 Townsend, 12 Folsom-Pacific (OB), 19 Polk, 27 Bryant
13. K Ingleside, L Taraval, M Ocean View, N Judah
14. 6 Parnassus, 71/71R Haight-Noriega/Rapid, 16X Noriega Express, NX Judah Express
15. F Market & Wharves

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015; Fehr & Peers, 2017.
Bold indicates capacity utilization of 85 percent or greater

Table D.5: Muni Downtown Screenlines – Cumulative PM Peak Hour

Outbound Screenline	Cumulative			Cumulative Plus Project		
	PM Peak Hour[1] Ridership	PM Peak Hour[1] Capacity	PM Peak Hour[1] Capacity Utilization	Project Trips	PM Peak Hour Ridership	PM Peak Hour Capacity Utilization
Kearny/Stockton[2]	6,295	8,329	76%	0	6,295	76%
Other lines[3]	1,229	2,065	60%	0	1,229	60%
Northeast Screenline Total	*7,524*	*10,394*	*72%*	*0*	*7,524*	*72%*
Geary[4]	3,031	3,621	84%	0	3,031	84%
California[5]	**1,811**	**2,021**	**90%**	**33**	**1,844**	**91%**
Sutter/Clement[6]	**776**	**756**	**103%**	**0**	**776**	**103%**
Fulton/Hayes[7]	**1,762**	**1,878**	**94%**	**0**	**1,762**	**94%**
Balboa[8]	776	974	80%	0	776	80%
Northwest Screenline Total	***8,156***	***9,250***	***88%***	***33***	***8,189***	***89%***
Third Street[9]	2,300	5,712	40%	2	2,302	40%
Mission[10]	**2,673**	**3,008**	**89%**	**0**	**2,673**	**89%**
San Bruno/Bayshore[11]	**1,817**	**2,134**	**85%**	**0**	**1,817**	**85%**
Other lines[12]	1,582	1,927	82%	0	1,582	82%
Southeast Screenline Total	*8,372*	*12,781*	*66%*	*2*	*8,374*	*66%*
Subway lines[13]	5,692	6,804	84%	0	5,692	84%
Haight/Noriega[14]	1,265	1,596	79%	0	1,265	79%
Other lines[15]	380	840	45%	0	380	45%
Southwest Screenline Total	*7,337*	*9,240*	*79%*	*0*	*7,337*	*79%*
Total All Screenlines	*31,389*	*41,665*	*75%*	*35*	*31,424*	*75%*

Notes:

1. PM peak hour includes outbound trips only (i.e. away from Downtown)
2. 8 Bayshore, 30 Stockton, 30X Marina Express, 41 Union, 45 Union-Stockton
3. F Market & Wharves, 10 Townsend, 12 Folsom-Pacific
4. 38 Geary, 38R Geary, 38AX Geary 'A' Express, 38BX Geary 'B' Express
5. 1 California, 1AX California 'A' Express, 1AX California 'B' Express
6. 2 Clement, 3 Jackson
7. 5 Fulton, 5R Fulton Rapid, 21 Hayes
8. 31 Balboa, 31AX Balboa 'A' Express, 31BX Balboa 'B' Express
9. T Third Street
10. 14 Mission, 14R Mission Rapid, 14X Mission Express, 49 Van Ness-Mission
11. 8AX Bayshore 'A' Express, 8BX Bayshore 'B' Express, 8 Bayshore, 9 San Bruno, 9R San Bruno Rapid
12. J Church, 10 Townsend, 12 Folsom-Pacific (OB), 19 Polk, 27 Bryant
13. K Ingleside, L Taraval, M Ocean View, N Judah
14. 6 Parnassus, 71/71R Haight-Noriega/Rapid, 16X Noriega Express, NX Judah Express
15. F Market & Wharves

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015; Fehr & Peers, 2017.

Bold indicates capacity utilization of 85 percent or greater

Appendix F.3 – Intersection Volumes, Counts , and Geometries

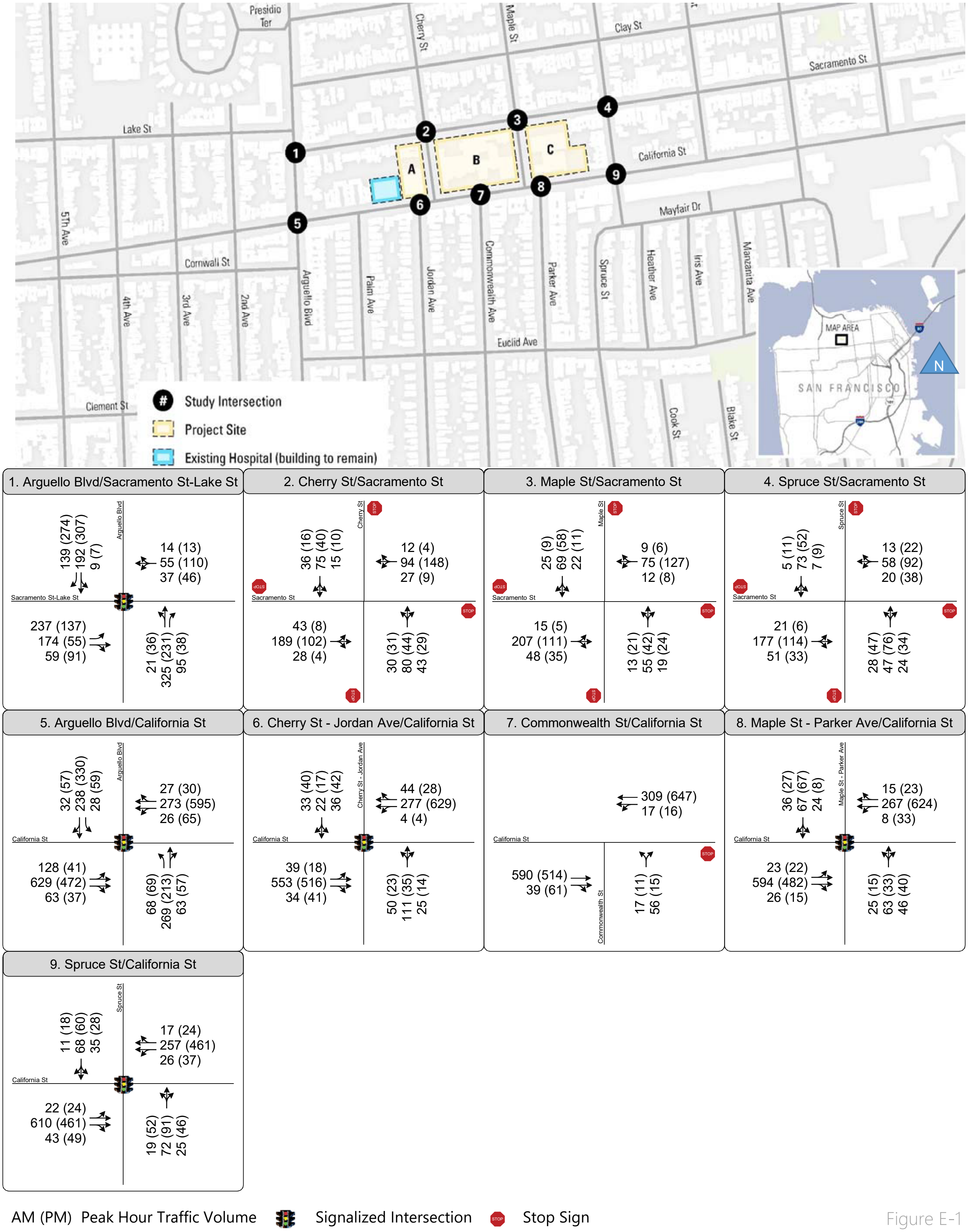
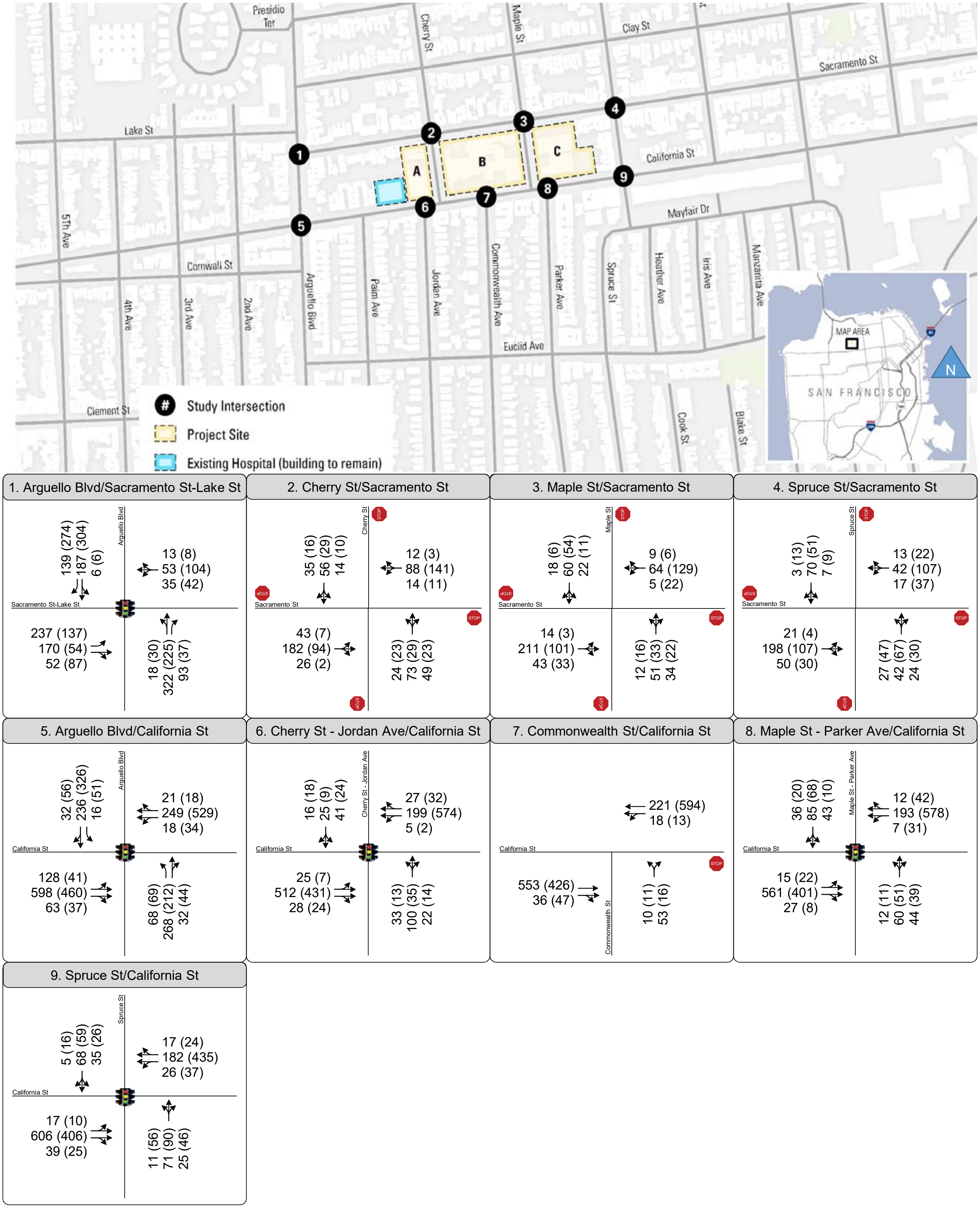


Figure E-1
Peak Hour Traffic Volumes
Existing Conditions



AM (PM) Peak Hour Traffic Volume — Signalized Intersection — STOP Stop Sign

Figure E-2

Peak Hour Traffic Volumes
Existing Plus Project

3700 California Transportation Study - Turning Movement Volumes

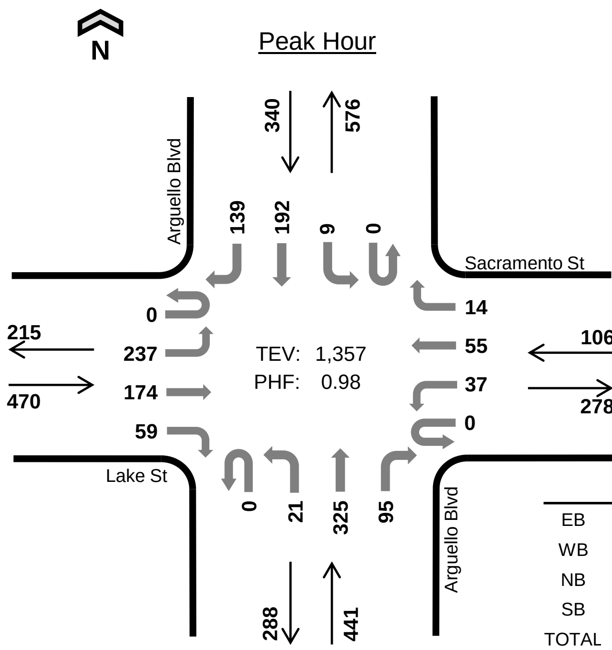
Intersection	Turning Movement		Existing Volumes		Net Change Project Trips		Existing + Project Trips		Cumulative Plus Project (2040)	
			AM	PM	AM	PM	AM	PM	AM	PM
1. Arguello Blvd - Lake St/Sacramento St	NB	LT	21	36	-3	-6	18	30	60	50
1. Arguello Blvd - Lake St/Sacramento St	NB	TH	325	231	-3	-6	322	225	340	240
1. Arguello Blvd - Lake St/Sacramento St	NB	RT	95	38	-2	-1	93	37	100	40
1. Arguello Blvd - Lake St/Sacramento St	SB	LT	9	7	-3	-1	6	6	10	10
1. Arguello Blvd - Lake St/Sacramento St	SB	TH	192	307	-5	-3	187	304	200	340
1. Arguello Blvd - Lake St/Sacramento St	SB	RT	139	274	0	0	139	274	140	280
1. Arguello Blvd - Lake St/Sacramento St	EB	LT	237	137	0	0	237	137	240	140
1. Arguello Blvd - Lake St/Sacramento St	EB	TH	174	55	-4	-1	170	54	200	70
1. Arguello Blvd - Lake St/Sacramento St	EB	RT	59	91	-7	-4	52	87	70	130
1. Arguello Blvd - Lake St/Sacramento St	WB	LT	37	46	-2	-4	35	42	40	50
1. Arguello Blvd - Lake St/Sacramento St	WB	TH	55	110	-2	-6	53	104	70	130
1. Arguello Blvd - Lake St/Sacramento St	WB	RT	14	13	-1	-5	13	8	20	20
2. Cherry St - Sacramento St	NB	LT	30	31	-6	-8	24	23	40	40
2. Cherry St - Sacramento St	NB	TH	80	44	-7	-15	73	29	90	50
2. Cherry St - Sacramento St	NB	RT	43	29	6	-6	49	23	50	40
2. Cherry St - Sacramento St	SB	LT	15	10	-1	0	14	10	20	20
2. Cherry St - Sacramento St	SB	TH	75	40	-19	-11	56	29	90	50
2. Cherry St - Sacramento St	SB	RT	36	16	-1	0	35	16	40	30
2. Cherry St - Sacramento St	EB	LT	43	8	0	-1	43	7	50	20
2. Cherry St - Sacramento St	EB	TH	189	102	-7	-8	182	94	200	120
2. Cherry St - Sacramento St	EB	RT	28	4	-2	-2	26	2	40	10
2. Cherry St - Sacramento St	WB	LT	27	9	-13	2	14	11	30	10
2. Cherry St - Sacramento St	WB	TH	94	148	-6	-7	88	141	100	180
2. Cherry St - Sacramento St	WB	RT	12	4	0	-1	12	3	20	10
3. Maple St - Sacramento St	NB	LT	13	21	-1	-5	12	16	20	30
3. Maple St - Sacramento St	NB	TH	55	42	-4	-9	51	33	60	50
3. Maple St - Sacramento St	NB	RT	19	24	15	-2	34	22	20	30
3. Maple St - Sacramento St	SB	LT	22	11	0	0	22	11	30	20
3. Maple St - Sacramento St	SB	TH	69	58	-9	-4	60	54	80	70
3. Maple St - Sacramento St	SB	RT	25	9	-7	-3	18	6	30	20
3. Maple St - Sacramento St	EB	LT	15	5	-1	-2	14	3	20	10
3. Maple St - Sacramento St	EB	TH	207	111	4	-10	211	101	220	120
3. Maple St - Sacramento St	EB	RT	48	35	-5	-2	43	33	60	50
3. Maple St - Sacramento St	WB	LT	12	8	-7	14	5	22	20	10
3. Maple St - Sacramento St	WB	TH	75	127	-11	2	64	129	80	140
3. Maple St - Sacramento St	WB	RT	9	6	0	0	9	6	10	10
4. Spruce St - Sacramento St	NB	LT	28	47	-1	0	27	47	40	60
4. Spruce St - Sacramento St	NB	TH	47	76	-5	-9	42	67	50	90
4. Spruce St - Sacramento St	NB	RT	24	34	0	-4	24	30	30	40
4. Spruce St - Sacramento St	SB	LT	7	9	0	0	7	9	10	10
4. Spruce St - Sacramento St	SB	TH	73	52	-3	-1	70	51	80	60
4. Spruce St - Sacramento St	SB	RT	5	11	-2	2	3	13	10	20
4. Spruce St - Sacramento St	EB	LT	21	6	0	-2	21	4	30	10
4. Spruce St - Sacramento St	EB	TH	177	114	21	-7	198	107	180	120
4. Spruce St - Sacramento St	EB	RT	51	33	-1	-3	50	30	60	50
4. Spruce St - Sacramento St	WB	LT	20	38	-3	-1	17	37	30	40
4. Spruce St - Sacramento St	WB	TH	58	92	-16	15	42	107	60	100
4. Spruce St - Sacramento St	WB	RT	13	22	0	0	13	22	20	30

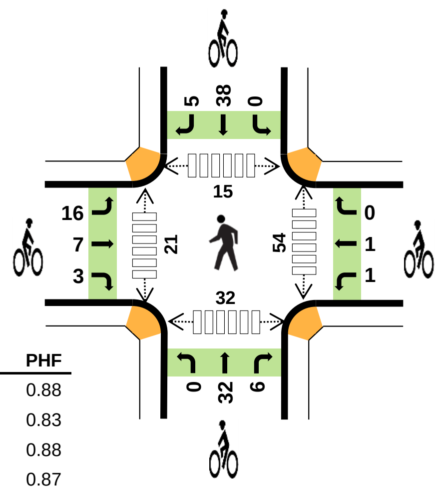
3700 California Transportation Study - Turning Movement Volumes										
Intersection	Turning Movement		Existing Volumes		Net Change Project Trips		Existing + Project Trips		Cumulative Plus Project (2040)	
			AM	PM	AM	PM	AM	PM	AM	PM
5. Arguello Blvd - California St	NB	LT	68	69	0	0	68	69	120	100
		TH	269	213	-1	-1	268	212	270	220
		RT	63	57	-31	-13	32	44	90	60
	SB	LT	28	59	-12	-8	16	51	50	130
		TH	238	330	-2	-4	236	326	240	330
		RT	32	57	0	-1	32	56	40	80
	EB	LT	128	41	0	0	128	41	130	60
		TH	629	472	-31	-12	598	460	660	520
		RT	63	37	0	0	63	37	110	50
	WB	LT	26	65	-8	-31	18	34	40	70
		TH	273	595	-24	-66	249	529	360	690
		RT	27	30	-6	-12	21	18	100	50
6. Jordan Ave/Cherry St - California St	NB	LT	50	23	-17	-10	33	13	60	30
		TH	111	35	-11	0	100	35	140	40
		RT	25	14	-3	0	22	14	30	20
	SB	LT	36	42	5	-18	41	24	40	50
		TH	22	17	3	-8	25	9	30	20
		RT	33	40	-17	-22	16	18	40	50
	EB	LT	39	18	-14	-11	25	7	50	20
		TH	553	516	-41	-85	512	431	600	660
		RT	34	41	-6	-17	28	24	40	50
	WB	LT	4	4	1	-2	5	2	10	10
		TH	277	629	-78	-55	199	574	430	690
		RT	44	28	-17	4	27	32	50	30
7. Commonwealth Ave - California St	NB	LT	17	11	-7	0	10	11	20	20
		TH	0	0	0	0	0	0	0	0
		RT	56	15	-3	1	53	16	60	20
	SB	LT	0	0	0	0	0	0	0	0
		TH	0	0	0	0	0	0	0	0
		RT	0	0	0	0	0	0	0	0
	EB	LT	0	0	0	0	0	0	0	0
		TH	590	514	-37	-88	553	426	660	680
		RT	39	61	-3	-14	36	47	50	70
	WB	LT	17	16	1	-3	18	13	20	20
		TH	309	647	-88	-53	221	594	450	690
		RT	0	0	0	0	0	0	0	0
8. Maple St/Parker Ave - California St	NB	LT	25	15	-13	-4	12	11	30	30
		TH	63	33	-3	18	60	51	80	40
		RT	46	40	-2	-1	44	39	50	50
	SB	LT	24	8	19	2	43	10	30	10
		TH	67	67	18	1	85	68	70	90
		RT	36	27	0	-7	36	20	40	30
	EB	LT	23	22	-8	0	15	22	30	30
		TH	594	482	-33	-81	561	401	650	620
		RT	26	15	1	-7	27	8	30	30
	WB	LT	8	33	-1	-2	7	31	10	40
		TH	267	624	-74	-46	193	578	420	670
		RT	15	23	-3	19	12	42	20	30

3700 California Transportation Study - Turning Movement Volumes										
Intersection	Turning Movement		Existing Volumes		Net Change Project Trips		Existing + Project Trips		Cumulative Plus Project (2040)	
			AM	PM	AM	PM	AM	PM	AM	PM
9. Spruce St - California St	NB	LT	19	52	-8	4	11	56	30	60
		TH	72	91	-1	-1	71	90	80	120
		RT	25	46	0	0	25	46	30	70
	SB	LT	35	28	0	-2	35	26	40	30
		TH	68	60	0	-1	68	59	80	90
		RT	11	18	-6	-2	5	16	20	20
	EB	LT	22	24	-5	-14	17	10	30	30
		TH	610	461	-4	-55	606	406	660	600
		RT	43	49	-4	-24	39	25	60	60
	WB	LT	26	37	0	0	26	37	40	50
		TH	257	461	-75	-26	182	435	410	500
		RT	17	24	0	0	17	24	20	30

Arguello Blvd
Lake St/Sacramento St

Date: 04/04/2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM





	HV %:	PHF
EB	0.6%	0.88
WB	1.9%	0.83
NB	2.7%	0.88
SB	1.2%	0.87
TOTAL	1.5%	0.98

Two-Hour Count Summaries

Interval Start		Lake St Eastbound				Sacramento St Westbound				Arguello Blvd Northbound				Arguello Blvd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	32	14	11	0	7	5	2	0	3	31	12	0	0	15	20	152	0
7:15 AM		0	39	21	11	0	11	9	3	0	2	35	7	0	0	27	15	180	0
7:30 AM		0	46	22	10	0	10	7	14	0	7	90	20	0	0	37	24	287	0
7:45 AM		0	53	40	7	0	19	13	15	0	1	86	21	0	5	40	46	346	965
8:00 AM		**0**	**53**	**38**	**15**	**0**	**9**	**15**	**8**	**0**	**4**	**77**	**27**	**0**	**2**	**52**	**44**	**344**	1,157
8:15 AM		**0**	**54**	**47**	**18**	**0**	**10**	**16**	**2**	**0**	**4**	**71**	**22**	**0**	**4**	**51**	**34**	**333**	1,310
8:30 AM		**0**	**62**	**34**	**15**	**0**	**9**	**16**	**2**	**0**	**8**	**86**	**16**	**0**	**2**	**48**	**35**	**333**	1,356
8:45 AM		**0**	**68**	**55**	**11**	**0**	**9**	**8**	**2**	**0**	**5**	**91**	**30**	**0**	**1**	**41**	**26**	**347**	**1,357**
Count Total		0	407	271	98	0	84	89	48	0	34	567	155	0	14	311	244	2,322	0
Peak Hour	**All**	**0**	**237**	**174**	**59**	**0**	**37**	**55**	**14**	**0**	**21**	**325**	**95**	**0**	**9**	**192**	**139**	**1,357**	**0**
	HV	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**2**	**3**	**7**	**0**	**0**	**3**	**1**	**21**	**0**
	HV%	**-**	**0%**	**0%**	**3%**	**-**	**0%**	**0%**	**14%**	**-**	**10%**	**1%**	**7%**	**-**	**0%**	**2%**	**1%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	1	2	*3*	4	1	12	1	*18*	6	3	2	4	*15*
7:15 AM	2	0	3	0	*5*	3	0	9	3	*15*	11	7	2	10	*30*
7:30 AM	0	3	3	4	*10*	2	0	4	7	*13*	21	5	10	12	*48*
7:45 AM	3	1	4	1	*9*	3	0	4	8	*15*	13	6	13	7	*39*
8:00 AM	**1**	**1**	**2**	**1**	***5***	**7**	**0**	**8**	**10**	***25***	**21**	**1**	**4**	**13**	*39*
8:15 AM	**2**	**0**	**1**	**0**	***3***	**7**	**2**	**13**	**17**	***39***	**10**	**7**	**2**	**6**	*25*
8:30 AM	**0**	**1**	**3**	**1**	***5***	**9**	**0**	**10**	**12**	***31***	**9**	**8**	**3**	**10**	*30*
8:45 AM	**0**	**0**	**6**	**2**	***8***	**3**	**0**	**7**	**4**	***14***	**14**	**5**	**6**	**3**	***28***
Count Total	8	6	23	11	*48*	38	3	67	62	*170*	105	42	42	65	*254*
Peak Hour	**3**	**2**	**12**	**4**	***21***	**26**	**2**	**38**	**43**	***109***	**54**	**21**	**15**	**32**	***122***

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Lake St				Sacramento St				Arguello Blvd				Arguello Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	3	0
7:15 AM	0	1	0	1	0	0	0	0	0	1	1	1	0	0	0	0	5	0
7:30 AM	0	0	0	0	0	2	0	1	0	0	2	1	0	0	1	3	10	0
7:45 AM	0	3	0	0	0	1	0	0	0	0	2	2	0	0	1	0	9	27
8:00 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**5**	29
8:15 AM	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	27
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2**	**0**	**0**	**0**	**1**	**0**	**5**	22
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**4**	**0**	**0**	**1**	**1**	**8**	**21**
Count Total	0	5	0	3	0	3	0	3	0	4	8	11	0	0	7	4	48	0
Peak Hour	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**2**	**3**	**7**	**0**	**0**	**3**	**1**	**21**	**0**

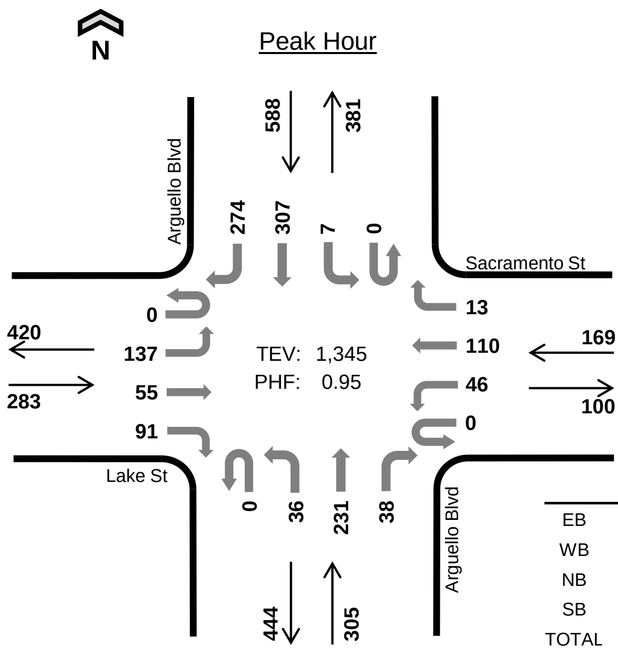
Two-Hour Count Summaries - Bikes

Interval Start	Lake St			Sacramento St			Arguello Blvd			Arguello Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	1	2	1	1	0	0	0	11	1	0	1	0	18	0
7:15 AM	1	2	0	0	0	0	0	8	1	0	3	0	15	0
7:30 AM	0	2	0	0	0	0	0	3	1	0	7	0	13	0
7:45 AM	0	0	3	0	0	0	0	3	1	0	8	0	15	61
8:00 AM	**5**	**2**	**0**	**0**	**0**	**0**	**0**	**6**	**2**	**0**	**8**	**2**	**25**	68
8:15 AM	**4**	**1**	**2**	**1**	**1**	**0**	**0**	**12**	**1**	**0**	**15**	**2**	**39**	92
8:30 AM	**5**	**4**	**0**	**0**	**0**	**0**	**0**	**8**	**2**	**0**	**11**	**1**	**31**	110
8:45 AM	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	**1**	**0**	**4**	**0**	**14**	**109**
Count Total	18	13	7	2	1	0	0	57	10	0	57	5	170	0
Peak Hour	**16**	**7**	**3**	**1**	**1**	**0**	**0**	**32**	**6**	**0**	**38**	**5**	**109**	**0**

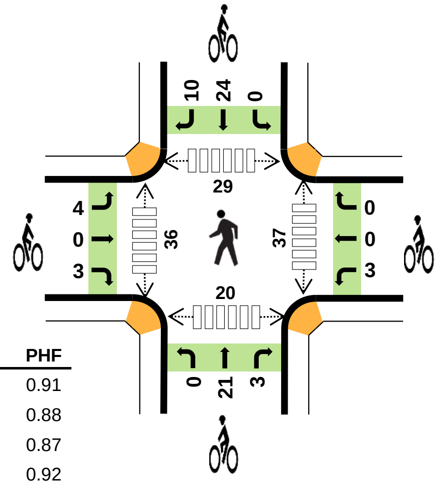
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Arguello Blvd
Lake St/Sacramento St

Date: 04/04/2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	0.4%	0.91
WB	0.6%	0.88
NB	2.6%	0.87
SB	0.3%	0.92
TOTAL	0.9%	0.95



Two-Hour Count Summaries

Interval Start	Lake St Eastbound UT	LT	TH	RT	Sacramento St Westbound UT	LT	TH	RT	Arguello Blvd Northbound UT	LT	TH	RT	Arguello Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	29	15	17	0	11	18	3	0	9	36	12	0	1	60	57	268	0
4:15 PM	0	40	15	18	0	14	16	4	0	16	44	17	0	0	66	51	301	0
4:30 PM	0	31	16	7	0	12	23	3	0	9	40	16	0	0	84	54	295	0
4:45 PM	**0**	**31**	**16**	**22**	**0**	**7**	**19**	**5**	**0**	**13**	**65**	**10**	**0**	**3**	**73**	**56**	**320**	1,184
5:00 PM	**0**	**36**	**11**	**20**	**0**	**21**	**22**	**5**	**0**	**11**	**49**	**7**	**0**	**3**	**68**	**68**	**321**	1,237
5:15 PM	**0**	**34**	**10**	**25**	**0**	**8**	**36**	**2**	**0**	**5**	**57**	**12**	**0**	**0**	**87**	**73**	**349**	1,285
5:30 PM	**0**	**36**	**18**	**24**	**0**	**10**	**33**	**1**	**0**	**7**	**60**	**9**	**0**	**1**	**79**	**77**	**355**	**1,345**
5:45 PM	0	43	17	17	0	19	22	1	0	18	48	9	0	2	67	49	312	1,337
Count Total	0	280	118	150	0	102	189	24	0	88	399	92	0	10	584	485	2,521	0
Peak Hour All	**0**	**137**	**55**	**91**	**0**	**46**	**110**	**13**	**0**	**36**	**231**	**38**	**0**	**7**	**307**	**274**	**1,345**	**0**
HV	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**6**	**0**	**0**	**1**	**1**	**12**	**0**
HV%	**-**	**1%**	**0%**	**0%**	**-**	**2%**	**0%**	**0%**	**-**	**0%**	**1%**	**16%**	**-**	**0%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	1	0	3	2	*6*	1	2	3	6	*12*	14	5	12	6	*37*
4:15 PM	0	0	2	0	*2*	2	3	3	4	*12*	7	9	4	5	*25*
4:30 PM	1	0	2	0	*3*	3	2	6	5	*16*	8	0	2	1	*11*
4:45 PM	**0**	**0**	**2**	**0**	***2***	**1**	**2**	**4**	**7**	***14***	**5**	**7**	**11**	**4**	*27*
5:00 PM	**1**	**1**	**2**	**0**	***4***	**1**	**1**	**8**	**7**	***17***	**16**	**7**	**7**	**8**	*38*
5:15 PM	**0**	**0**	**2**	**1**	***3***	**1**	**0**	**8**	**14**	***23***	**9**	**10**	**6**	**4**	*29*
5:30 PM	**0**	**0**	**2**	**1**	***3***	**4**	**0**	**4**	**6**	***14***	**7**	**12**	**5**	**4**	***28***
5:45 PM	0	0	0	0	*0*	3	1	5	15	*24*	5	11	6	2	*24*
Count Total	3	1	15	4	*23*	16	11	41	64	*132*	71	61	53	34	*219*
Peak Hour	**1**	**1**	**8**	**2**	***12***	**7**	**3**	**24**	**34**	***68***	**37**	**36**	**29**	**20**	***122***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Lake St				Sacramento St				Arguello Blvd				Arguello Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	1	0	0	0	0	0	0	2	1	0	0	1	1	6	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	3	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	13
5:00 PM	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**4**	11
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**3**	12
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**3**	**12**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Count Total	0	1	0	2	0	1	0	0	0	1	4	10	0	0	2	2	23	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**6**	**0**	**0**	**1**	**1**	**12**	**0**

Two-Hour Count Summaries - Bikes

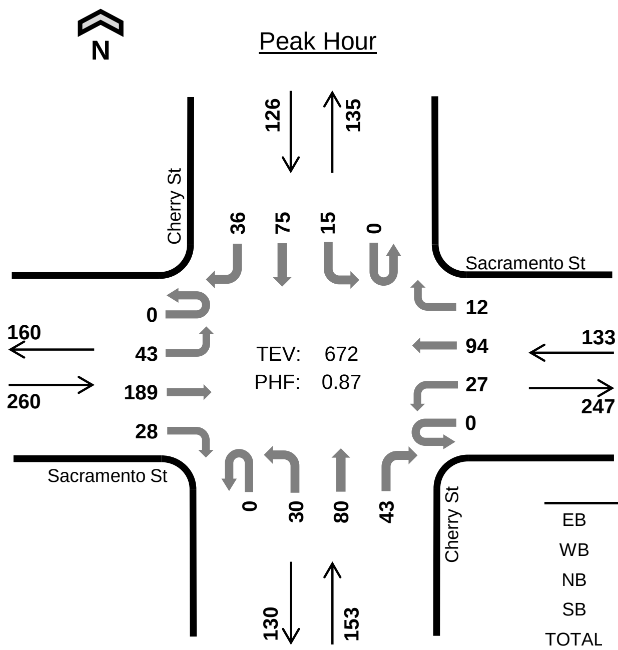
Interval Start	Lake St			Sacramento St			Arguello Blvd			Arguello Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	1	0	1	1	0	2	1	0	3	3	12	0
4:15 PM	2	0	0	1	2	0	0	3	0	0	4	0	12	0
4:30 PM	3	0	0	2	0	0	0	3	3	0	4	1	16	0
4:45 PM	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**2**	**0**	**6**	**1**	**14**	54
5:00 PM	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**8**	**0**	**0**	**3**	**4**	**17**	59
5:15 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**1**	**0**	**10**	**4**	**23**	70
5:30 PM	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**5**	**1**	**14**	**68**
5:45 PM	2	1	0	0	1	0	2	2	1	0	14	1	24	78
Count Total	11	1	4	6	4	1	2	31	8	0	49	15	132	0
Peak Hour	**4**	**0**	**3**	**3**	**0**	**0**	**0**	**21**	**3**	**0**	**24**	**10**	**68**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

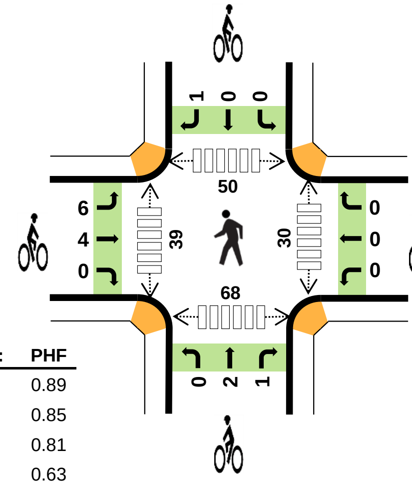
Cherry St
Sacramento St

Date: 04/04/2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM

Peak Hour



	HV %:	PHF
EB	2.3%	0.89
WB	4.5%	0.85
NB	3.3%	0.81
SB	2.4%	0.63
TOTAL	3.0%	0.87



Two-Hour Count Summaries

Interval Start	Sacramento St Eastbound UT	LT	TH	RT	Sacramento St Westbound UT	LT	TH	RT	Cherry St Northbound UT	LT	TH	RT	Cherry St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	5	16	9	0	1	8	1	0	9	4	6	1	3	2	7	72	0
7:15 AM	0	2	22	2	0	3	13	4	0	6	9	7	0	2	8	3	81	0
7:30 AM	**0**	**8**	**31**	**8**	**0**	**5**	**24**	**4**	**0**	**7**	**14**	**9**	**0**	**2**	**21**	**16**	**149**	0
7:45 AM	**0**	**12**	**51**	**10**	**0**	**11**	**26**	**2**	**0**	**13**	**10**	**8**	**0**	**5**	**33**	**12**	**193**	495
8:00 AM	**0**	**11**	**54**	**7**	**0**	**6**	**19**	**1**	**0**	**3**	**31**	**11**	**0**	**4**	**12**	**6**	**165**	588
8:15 AM	**0**	**12**	**53**	**3**	**0**	**5**	**25**	**5**	**0**	**7**	**25**	**15**	**0**	**4**	**9**	**2**	**165**	**672**
8:30 AM	0	6	44	5	0	4	20	3	0	7	12	7	0	5	13	1	127	650
8:45 AM	0	15	65	8	0	5	15	5	0	5	26	7	1	6	11	3	172	629
Count Total	0	71	336	52	0	40	150	25	0	57	131	70	2	31	109	50	1,124	0
Peak Hour All	**0**	**43**	**189**	**28**	**0**	**27**	**94**	**12**	**0**	**30**	**80**	**43**	**0**	**15**	**75**	**36**	**672**	**0**
Peak Hour HV	**0**	**0**	**6**	**0**	**0**	**0**	**5**	**1**	**0**	**1**	**1**	**3**	**0**	**0**	**2**	**1**	**20**	**0**
Peak Hour HV%	**-**	**0%**	**3%**	**0%**	**-**	**0%**	**5%**	**8%**	**-**	**3%**	**1%**	**7%**	**-**	**0%**	**3%**	**3%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	0	1	0	*1*	3	1	0	0	*4*	9	2	5	5	*21*
7:15 AM	1	2	0	0	*3*	2	0	0	0	*2*	7	5	6	9	*27*
7:30 AM	**1**	**2**	**4**	**2**	***9***	**4**	**0**	**1**	**0**	***5***	**6**	**20**	**16**	**25**	*67*
7:45 AM	**2**	**0**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**10**	**15**	**23**	**13**	*61*
8:00 AM	**2**	**2**	**1**	**0**	***5***	**4**	**0**	**2**	**0**	***6***	**5**	**2**	**11**	**13**	*31*
8:15 AM	**1**	**2**	**0**	**0**	***3***	**2**	**0**	**0**	**1**	***3***	**9**	**2**	**0**	**17**	***28***
8:30 AM	0	0	1	1	*2*	6	0	0	0	*6*	7	4	6	9	*26*
8:45 AM	3	0	1	0	*4*	2	0	0	0	*2*	4	0	4	6	*14*
Count Total	10	8	8	4	*30*	23	1	3	1	*28*	57	50	71	97	*275*
Peak Hour	**6**	**6**	**5**	**3**	***20***	**10**	**0**	**3**	**1**	***14***	**30**	**39**	**50**	**68**	***187***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Sacramento St Eastbound UT	LT	TH	RT	Sacramento St Westbound UT	LT	TH	RT	Cherry St Northbound UT	LT	TH	RT	Cherry St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
7:15 AM	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	3	0
7:30 AM	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**2**	**0**	**0**	**1**	**1**	**9**	0
7:45 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	16
8:00 AM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**5**	20
8:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**20**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	13
8:45 AM	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	4	14
Count Total	0	0	10	0	0	0	6	2	0	1	1	6	0	0	3	1	30	0
Peak Hour	**0**	**0**	**6**	**0**	**0**	**0**	**5**	**1**	**0**	**1**	**1**	**3**	**0**	**0**	**2**	**1**	**20**	**0**

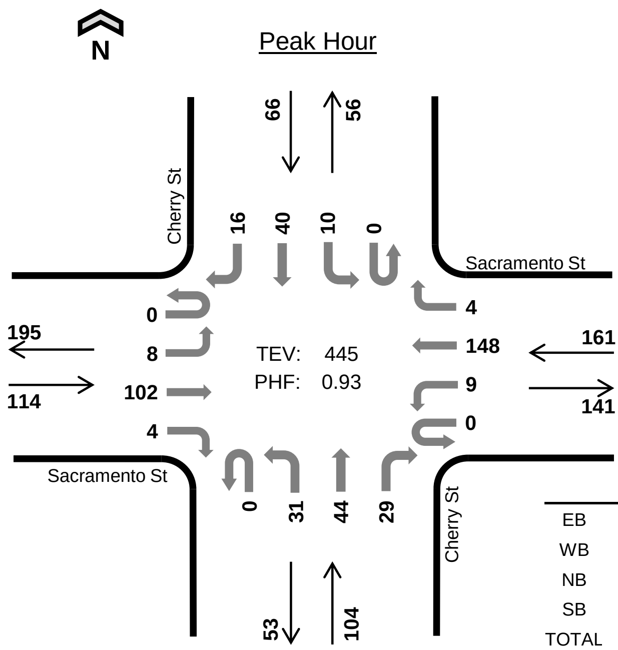
Two-Hour Count Summaries - Bikes

Interval Start	Sacramento St Eastbound LT	TH	RT	Sacramento St Westbound LT	TH	RT	Cherry St Northbound LT	TH	RT	Cherry St Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	1	0	2	0	1	0	0	0	0	0	0	0	4	0
7:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
7:30 AM	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**5**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	11
8:00 AM	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**6**	13
8:15 AM	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**14**
8:30 AM	2	4	0	0	0	0	0	0	0	0	0	0	6	15
8:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	17
Count Total	9	12	2	0	1	0	0	2	1	0	0	1	28	0
Peak Hour	**6**	**4**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**1**	**14**	**0**

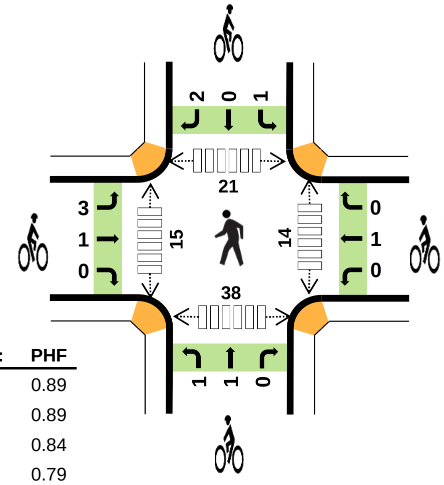
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Cherry St
Sacramento St

Date: 04/04/2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	3.5%	0.89
WB	0.6%	0.89
NB	1.9%	0.84
SB	0.0%	0.79
TOTAL	1.6%	0.93



Two-Hour Count Summaries

Interval Start	Sacramento St Eastbound UT	LT	TH	RT	Sacramento St Westbound UT	LT	TH	RT	Cherry St Northbound UT	LT	TH	RT	Cherry St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	3	25	6	0	6	24	2	0	9	10	15	0	2	5	2	109	0
4:15 PM	1	3	22	4	1	6	32	4	0	3	8	9	0	1	10	7	111	0
4:30 PM	0	2	29	3	0	3	34	2	0	2	7	7	0	2	8	0	99	0
4:45 PM	1	2	28	2	0	5	27	1	0	3	7	10	0	2	9	2	99	418
5:00 PM	**0**	**2**	**22**	**1**	**0**	**1**	**42**	**2**	**0**	**8**	**13**	**10**	**0**	**2**	**9**	**2**	**114**	423
5:15 PM	**0**	**0**	**22**	**3**	**0**	**2**	**33**	**1**	**0**	**12**	**10**	**5**	**0**	**4**	**9**	**3**	**104**	416
5:30 PM	**0**	**4**	**28**	**0**	**0**	**1**	**39**	**0**	**0**	**5**	**13**	**9**	**0**	**4**	**10**	**7**	**120**	437
5:45 PM	**0**	**2**	**30**	**0**	**0**	**5**	**34**	**1**	**0**	**6**	**8**	**5**	**0**	**0**	**12**	**4**	**107**	**445**
Count Total	2	18	206	19	1	29	265	13	0	48	76	70	0	17	72	27	863	0
Peak Hour All	**0**	**8**	**102**	**4**	**0**	**9**	**148**	**4**	**0**	**31**	**44**	**29**	**0**	**10**	**40**	**16**	**445**	**0**
Peak Hour HV	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**7**	**0**
Peak Hour HV%	**-**	**0%**	**4%**	**0%**	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**0%**	**7%**	**-**	**0%**	**0%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	1	0	1	0	*2*	2	0	1	1	*4*	9	5	4	27	*45*
4:15 PM	1	0	0	0	*1*	2	6	0	0	*8*	4	11	9	19	*43*
4:30 PM	2	0	1	0	*3*	3	0	0	2	*5*	13	6	18	10	*47*
4:45 PM	2	0	0	1	*3*	1	2	0	1	*4*	6	8	10	15	*39*
5:00 PM	**1**	**1**	**1**	**0**	***3***	**1**	**0**	**1**	**1**	***3***	**5**	**4**	**8**	**12**	*29*
5:15 PM	**2**	**0**	**0**	**0**	***2***	**1**	**0**	**0**	**0**	***1***	**2**	**4**	**4**	**12**	*22*
5:30 PM	**1**	**0**	**1**	**0**	***2***	**0**	**0**	**0**	**2**	***2***	**5**	**4**	**3**	**6**	*18*
5:45 PM	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**1**	**0**	***4***	**2**	**3**	**6**	**8**	***19***
Count Total	10	1	4	1	*16*	12	9	3	7	*31*	46	45	62	109	*262*
Peak Hour	**4**	**1**	**2**	**0**	***7***	**4**	**1**	**2**	**3**	***10***	**14**	**15**	**21**	**38**	***88***

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Sacramento St				Sacramento St				Cherry St				Cherry St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0
4:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	3	9
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	10
5:15 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	11
5:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	10
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
Count Total	0	0	10	0	0	0	1	0	0	0	0	4	0	1	0	0	16	0
Peak Hour	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**7**	**0**

Two-Hour Count Summaries - Bikes

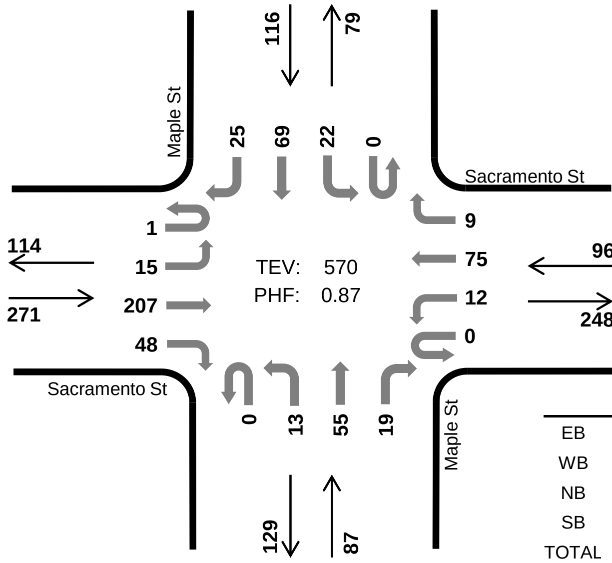
Interval Start	Sacramento St			Sacramento St			Cherry St			Cherry St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	1	1	0	0	0	0	0	1	0	1	0	0	4	0
4:15 PM	0	2	0	0	6	0	0	0	0	0	0	0	8	0
4:30 PM	2	1	0	0	0	0	0	0	0	0	0	2	5	0
4:45 PM	1	0	0	0	2	0	0	0	0	0	0	1	4	21
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**3**	20
5:15 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	13
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2**	10
5:45 PM	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**10**
Count Total	7	5	0	0	9	0	1	2	0	2	0	5	31	0
Peak Hour	**3**	**1**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**1**	**0**	**2**	**10**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

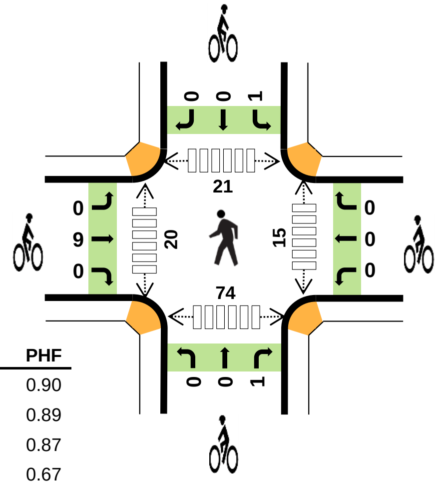
Maple St
Sacramento St

Date: 04/04/2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour



	HV %:	PHF
EB	3.3%	0.90
WB	2.1%	0.89
NB	1.1%	0.87
SB	3.4%	0.67
TOTAL	2.8%	0.87



Two-Hour Count Summaries

Interval Start		Sacramento St Eastbound				Sacramento St Westbound				Maple St Northbound				Maple St Southbound			15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	2	18	7	1	1	8	1	0	2	4	5	0	1	4	0	54	0
7:15 AM		1	2	24	7	0	1	13	2	0	4	3	4	0	1	3	1	66	0
7:30 AM		0	3	25	11	1	2	18	0	0	8	7	6	0	1	8	3	93	0
7:45 AM		0	7	43	8	0	3	21	0	0	13	12	4	0	2	17	4	134	347
8:00 AM		**0**	**2**	**53**	**14**	**0**	**4**	**20**	**3**	**0**	**2**	**17**	**4**	**0**	**6**	**20**	**5**	**150**	443
8:15 AM		**1**	**2**	**62**	**10**	**0**	**1**	**22**	**4**	**0**	**2**	**12**	**4**	**0**	**8**	**24**	**11**	**163**	540
8:30 AM		**0**	**3**	**38**	**16**	**0**	**4**	**16**	**1**	**0**	**5**	**10**	**6**	**0**	**6**	**9**	**3**	**117**	564
8:45 AM		**0**	**8**	**54**	**8**	**0**	**3**	**17**	**1**	**0**	**4**	**16**	**5**	**0**	**2**	**16**	**6**	**140**	**570**
Count Total		2	29	317	81	2	19	135	12	0	40	81	38	0	27	101	33	917	0
Peak Hour	**All**	**1**	**15**	**207**	**48**	**0**	**12**	**75**	**9**	**0**	**13**	**55**	**19**	**0**	**22**	**69**	**25**	**570**	**0**
	HV	**0**	**0**	**4**	**5**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**2**	**16**	**0**
	HV%	**0%**	**0%**	**2%**	**10%**	**-**	**0%**	**3%**	**0%**	**-**	**0%**	**2%**	**0%**	**-**	**0%**	**3%**	**8%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	1	0	0	*2*	0	1	0	0	*1*	1	1	7	6	*15*
7:15 AM	2	3	0	0	*5*	2	0	0	0	*2*	0	1	9	8	*18*
7:30 AM	2	1	1	1	*5*	2	0	0	0	*2*	4	4	14	16	*38*
7:45 AM	1	0	1	1	*3*	1	0	1	0	*2*	6	4	12	12	*34*
8:00 AM	**3**	**2**	**0**	**2**	***7***	**2**	**0**	**0**	**0**	***2***	**5**	**6**	**10**	**22**	*43*
8:15 AM	**1**	**0**	**0**	**1**	***2***	**1**	**0**	**0**	**0**	***1***	**3**	**3**	**3**	**14**	*23*
8:30 AM	**1**	**0**	**1**	**0**	***2***	**4**	**0**	**0**	**1**	***5***	**5**	**6**	**6**	**20**	*37*
8:45 AM	**4**	**0**	**0**	**1**	***5***	**2**	**0**	**1**	**0**	***3***	**2**	**5**	**2**	**18**	*27*
Count Total	15	7	3	6	*31*	14	1	2	1	*18*	26	30	63	116	*235*
Peak Hour	**9**	**2**	**1**	**4**	***16***	**9**	**0**	**1**	**1**	***11***	**15**	**20**	**21**	**74**	***130***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Sacramento St				Sacramento St				Maple St				Maple St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	5	0
7:30 AM	0	0	0	2	0	0	1	0	0	0	0	1	0	0	0	1	5	0
7:45 AM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	3	15
8:00 AM	**0**	**0**	**1**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**7**	20
8:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	17
8:30 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	14
8:45 AM	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**5**	**16**
Count Total	0	0	6	9	0	1	5	1	0	0	2	1	0	0	3	3	31	0
Peak Hour	**0**	**0**	**4**	**5**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**2**	**16**	**0**

Two-Hour Count Summaries - Bikes

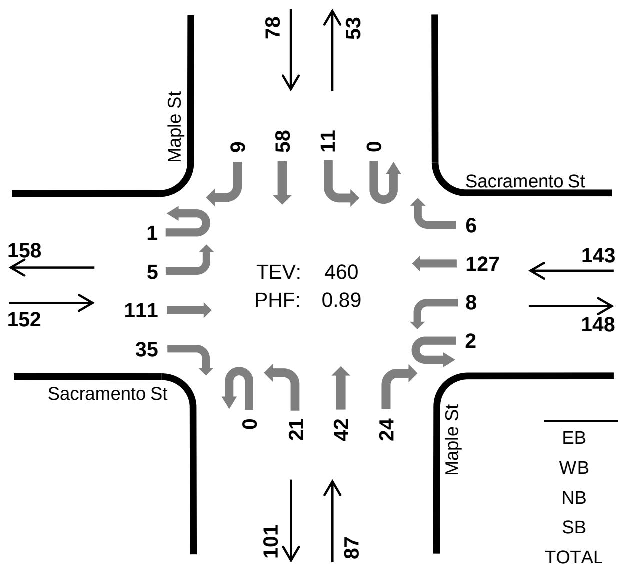
Interval Start	Sacramento St			Sacramento St			Maple St			Maple St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
7:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
7:45 AM	0	1	0	0	0	0	0	1	0	0	0	0	2	7
8:00 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	8
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	7
8:30 AM	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	10
8:45 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**11**
Count Total	0	14	0	0	1	0	0	1	1	1	0	0	18	0
Peak Hour	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**11**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

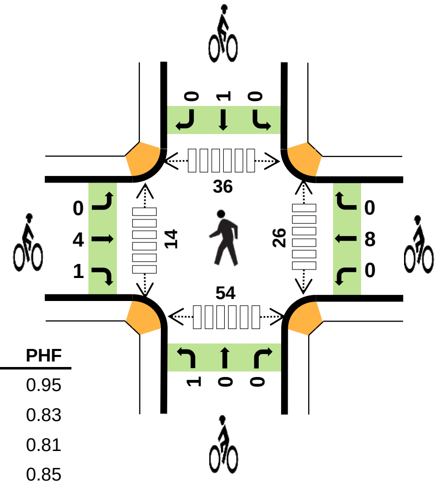
Maple St
Sacramento St

Date: 04/04/2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM

Peak Hour



	HV %:	PHF
EB	6.6%	0.95
WB	0.7%	0.83
NB	1.1%	0.81
SB	2.6%	0.85
TOTAL	3.0%	0.89



Two-Hour Count Summaries

Interval Start	Sacramento St Eastbound UT	LT	TH	RT	Sacramento St Westbound UT	LT	TH	RT	Maple St Northbound UT	LT	TH	RT	Maple St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	3	21	12	0	1	28	0	0	3	11	4	0	1	8	1	93	0
4:15 PM	**0**	**1**	**30**	**7**	**1**	**1**	**36**	**2**	**0**	**7**	**12**	**3**	**0**	**0**	**10**	**2**	**112**	0
4:30 PM	**1**	**3**	**25**	**11**	**0**	**1**	**31**	**0**	**0**	**3**	**9**	**6**	**0**	**1**	**19**	**3**	**113**	0
4:45 PM	**0**	**0**	**28**	**9**	**0**	**3**	**24**	**1**	**0**	**4**	**11**	**5**	**0**	**4**	**14**	**3**	**106**	424
5:00 PM	**0**	**1**	**28**	**8**	**1**	**3**	**36**	**3**	**0**	**7**	**10**	**10**	**0**	**6**	**15**	**1**	**129**	**460**
5:15 PM	0	0	25	7	0	6	34	6	0	8	9	1	0	1	15	0	112	460
5:30 PM	0	4	23	12	0	2	32	2	0	5	11	2	0	2	6	0	101	448
5:45 PM	0	0	32	7	0	2	30	1	0	5	5	9	0	1	17	2	111	453
Count Total	1	12	212	73	2	19	251	15	0	42	78	40	0	16	104	12	877	0
Peak Hour All	**1**	**5**	**111**	**35**	**2**	**8**	**127**	**6**	**0**	**21**	**42**	**24**	**0**	**11**	**58**	**9**	**460**	**0**
Peak Hour HV	**0**	**0**	**5**	**5**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**14**	**0**
Peak Hour HV%	**0%**	**0%**	**5%**	**14%**	**0%**	**0%**	**1%**	**0%**	**-**	**0%**	**0%**	**4%**	**-**	**0%**	**3%**	**0%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	1	0	1	0	*2*	2	0	0	0	*2*	5	5	8	17	*35*
4:15 PM	**3**	**0**	**0**	**0**	***3***	**3**	**6**	**0**	**1**	***10***	**5**	**5**	**10**	**14**	*34*
4:30 PM	**1**	**0**	**1**	**2**	***4***	**1**	**0**	**0**	**0**	***1***	**7**	**3**	**6**	**10**	*26*
4:45 PM	**4**	**0**	**0**	**0**	***4***	**0**	**2**	**0**	**0**	***2***	**5**	**2**	**11**	**18**	*36*
5:00 PM	**2**	**1**	**0**	**0**	***3***	**1**	**0**	**1**	**0**	***2***	**9**	**4**	**9**	**12**	***34***
5:15 PM	2	0	0	0	*2*	0	0	0	0	*0*	6	8	15	18	*47*
5:30 PM	1	0	0	0	*1*	1	0	0	0	*1*	3	4	6	13	*26*
5:45 PM	2	0	0	0	*2*	0	1	0	0	*1*	5	3	8	8	*24*
Count Total	16	1	2	2	*21*	8	9	1	1	*19*	45	34	73	110	*262*
Peak Hour	**10**	**1**	**1**	**2**	***14***	**5**	**8**	**1**	**1**	***15***	**26**	**14**	**36**	**54**	***130***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Sacramento St Eastbound UT	LT	TH	RT	Sacramento St Westbound UT	LT	TH	RT	Maple St Northbound UT	LT	TH	RT	Maple St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2	0
4:15 PM	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	0
4:30 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**4**	0
4:45 PM	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	13
5:00 PM	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**14**
5:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	13
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	10
5:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	8
Count Total	0	0	7	9	0	0	1	0	0	0	0	2	0	0	2	0	21	0
Peak Hour	**0**	**0**	**5**	**5**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**14**	**0**

Two-Hour Count Summaries - Bikes

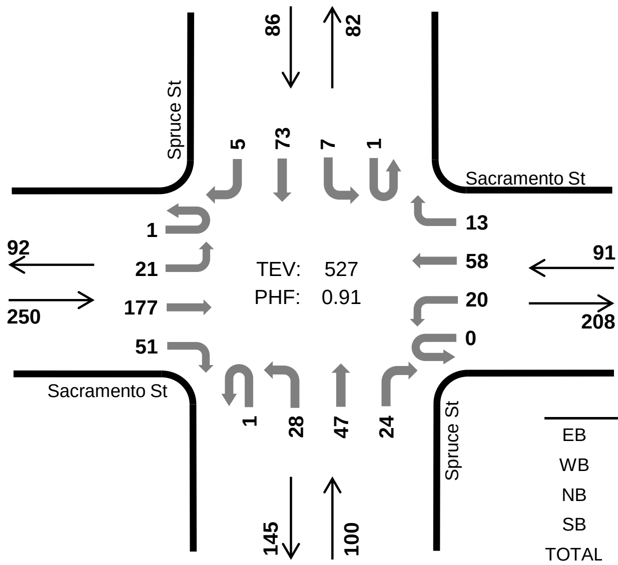
Interval Start	Sacramento St Eastbound LT	TH	RT	Sacramento St Westbound LT	TH	RT	Maple St Northbound LT	TH	RT	Maple St Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	**0**	**2**	**1**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**10**	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	15
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**15**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	5
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	4
Count Total	0	7	1	0	9	0	1	0	0	0	1	0	19	0
Peak Hour	**0**	**4**	**1**	**0**	**8**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**15**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

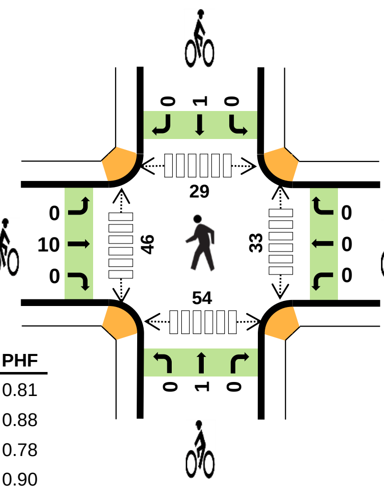
Spruce St
Sacramento St

Date: 04/04/2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour



	HV %:	PHF
EB	1.6%	0.81
WB	4.4%	0.88
NB	1.0%	0.78
SB	0.0%	0.90
TOTAL	1.7%	0.91



Two-Hour Count Summaries

Interval Start	Sacramento St Eastbound UT	LT	TH	RT	Sacramento St Westbound UT	LT	TH	RT	Spruce St Northbound UT	LT	TH	RT	Spruce St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	1	15	8	0	4	9	2	0	1	9	5	0	0	4	2	60	0
7:15 AM	0	3	17	11	0	9	14	3	0	0	13	4	0	1	7	1	83	0
7:30 AM	0	0	23	9	0	4	13	2	1	8	8	10	0	2	17	3	100	0
7:45 AM	0	3	28	16	0	4	12	3	0	10	11	11	0	1	19	2	120	363
8:00 AM	**0**	**4**	**41**	**16**	**0**	**5**	**17**	**3**	**0**	**6**	**12**	**4**	**0**	**0**	**22**	**2**	**132**	435
8:15 AM	**0**	**9**	**52**	**16**	**0**	**8**	**14**	**4**	**0**	**9**	**5**	**8**	**0**	**3**	**15**	**2**	**145**	497
8:30 AM	**0**	**7**	**33**	**11**	**0**	**6**	**14**	**3**	**0**	**8**	**13**	**3**	**1**	**3**	**20**	**0**	**122**	519
8:45 AM	**1**	**1**	**51**	**8**	**0**	**1**	**13**	**3**	**1**	**5**	**17**	**9**	**0**	**1**	**16**	**1**	**128**	**527**
Count Total	1	28	260	95	0	41	106	23	2	47	88	54	1	11	120	13	890	0
Peak Hour All	**1**	**21**	**177**	**51**	**0**	**20**	**58**	**13**	**1**	**28**	**47**	**24**	**1**	**7**	**73**	**5**	**527**	**0**
Peak Hour HV	**0**	**0**	**3**	**1**	**0**	**2**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**9**	**0**
Peak Hour HV%	**0%**	**0%**	**2%**	**2%**	**-**	**10%**	**3%**	**0%**	**0%**	**0%**	**2%**	**0%**	**0%**	**0%**	**0%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	1	0	1	*2*	0	1	0	0	*1*	10	3	16	8	*37*
7:15 AM	1	2	0	0	*3*	2	0	0	0	*2*	7	5	6	6	*24*
7:30 AM	0	2	0	1	*3*	1	0	1	1	*3*	11	3	8	12	*34*
7:45 AM	2	0	1	0	*3*	2	0	0	0	*2*	28	6	11	7	*52*
8:00 AM	**1**	**3**	**0**	**0**	***4***	**2**	**0**	**0**	**0**	***2***	**4**	**17**	**7**	**16**	*44*
8:15 AM	**1**	**1**	**0**	**0**	***2***	**1**	**0**	**1**	**0**	***2***	**7**	**15**	**10**	**13**	*45*
8:30 AM	**0**	**0**	**1**	**0**	***1***	**5**	**0**	**0**	**0**	***5***	**14**	**6**	**7**	**12**	*39*
8:45 AM	**2**	**0**	**0**	**0**	***2***	**2**	**0**	**0**	**1**	***3***	**8**	**8**	**5**	**13**	*34*
Count Total	7	9	2	2	*20*	15	1	2	2	*20*	89	63	70	87	*309*
Peak Hour	**4**	**4**	**1**	**0**	***9***	**10**	**0**	**1**	**1**	***12***	**33**	**46**	**29**	**54**	***162***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Sacramento St Eastbound UT	LT	TH	RT	Sacramento St Westbound UT	LT	TH	RT	Spruce St Northbound UT	LT	TH	RT	Spruce St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2	0
7:15 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
7:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	3	0
7:45 AM	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	3	11
8:00 AM	**0**	**0**	**0**	**1**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	13
8:15 AM	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	12
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	10
8:45 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**9**
Count Total	0	1	5	1	0	2	6	1	0	0	1	1	0	0	1	1	20	0
Peak Hour	**0**	**0**	**3**	**1**	**0**	**2**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**9**	**0**

Two-Hour Count Summaries - Bikes

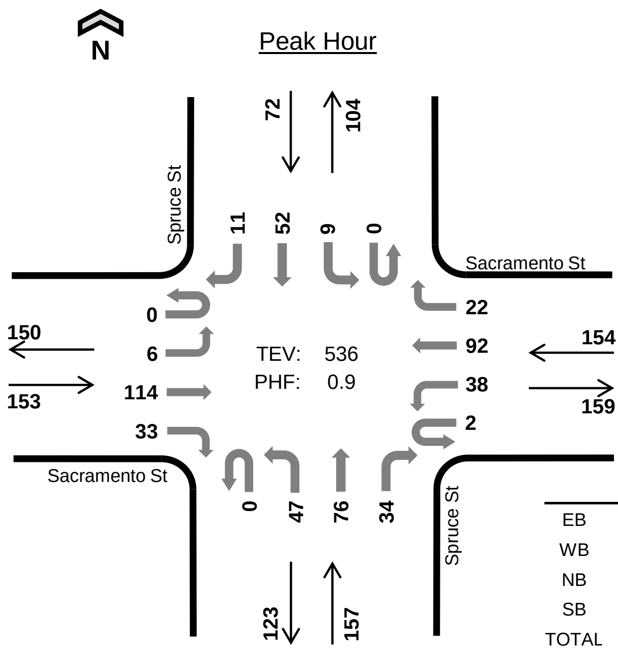
Interval Start	Sacramento St Eastbound LT	TH	RT	Sacramento St Westbound LT	TH	RT	Spruce St Northbound LT	TH	RT	Spruce St Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
7:30 AM	0	1	0	0	0	0	0	0	1	1	0	0	3	0
7:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	8
8:00 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	9
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	9
8:30 AM	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	11
8:45 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**12**
Count Total	0	15	0	0	1	0	0	1	1	1	1	0	20	0
Peak Hour	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**12**	**0**

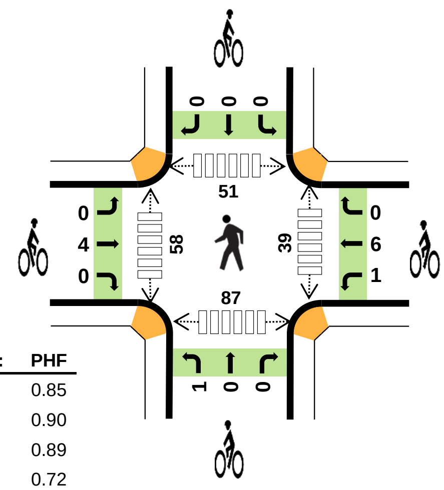
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Spruce St
Sacramento St

Date: 04/04/2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM

Peak Hour





	HV %:	PHF
EB	3.9%	0.85
WB	1.3%	0.90
NB	1.3%	0.89
SB	0.0%	0.72
TOTAL	1.9%	0.90

Two-Hour Count Summaries

Interval Start		Sacramento St Eastbound UT	LT	TH	RT	Sacramento St Westbound UT	LT	TH	RT	Spruce St Northbound UT	LT	TH	RT	Spruce St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	0	21	3	0	8	19	3	1	9	11	5	0	2	12	1	95	0
4:15 PM		**0**	**2**	**29**	**8**	**1**	**7**	**31**	**4**	**0**	**11**	**29**	**4**	**0**	**0**	**9**	**0**	**135**	0
4:30 PM		**0**	**1**	**23**	**8**	**0**	**11**	**20**	**6**	**0**	**9**	**16**	**7**	**0**	**1**	**10**	**5**	**117**	0
4:45 PM		**0**	**1**	**28**	**8**	**1**	**11**	**12**	**8**	**0**	**16**	**14**	**11**	**0**	**4**	**16**	**5**	**135**	482
5:00 PM		**0**	**2**	**34**	**9**	**0**	**9**	**29**	**4**	**0**	**11**	**17**	**12**	**0**	**4**	**17**	**1**	**149**	**536**
5:15 PM		0	2	18	7	0	13	26	5	1	13	13	8	0	4	11	4	125	526
5:30 PM		0	2	23	6	0	12	22	4	0	16	9	10	0	1	8	1	114	523
5:45 PM		0	1	32	4	1	9	23	6	0	7	11	9	0	2	18	0	123	511
Count Total		0	11	208	53	3	80	182	40	2	92	120	66	0	18	101	17	993	0
Peak Hour	**All**	**0**	**6**	**114**	**33**	**2**	**38**	**92**	**22**	**0**	**47**	**76**	**34**	**0**	**9**	**52**	**11**	**536**	**0**
	HV	**0**	**1**	**4**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**10**	**0**
	HV%	**-**	**17%**	**4%**	**3%**	**0%**	**3%**	**1%**	**0%**	**-**	**0%**	**3%**	**0%**	**-**	**0%**	**0%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	1	0	1	0	*2*	2	0	0	0	*2*	20	9	10	28	*67*
4:15 PM	**1**	**0**	**0**	**0**	***1***	**2**	**6**	**0**	**0**	***8***	**10**	**12**	**15**	**20**	*57*
4:30 PM	**0**	**1**	**1**	**0**	***2***	**1**	**0**	**0**	**0**	***1***	**5**	**15**	**9**	**11**	*40*
4:45 PM	**2**	**1**	**1**	**0**	***4***	**0**	**1**	**1**	**0**	***2***	**12**	**17**	**17**	**35**	*81*
5:00 PM	**3**	**0**	**0**	**0**	***3***	**1**	**0**	**0**	**0**	***1***	**12**	**14**	**10**	**21**	***57***
5:15 PM	1	0	1	0	*2*	0	0	0	1	*1*	14	5	9	16	*44*
5:30 PM	0	1	0	0	*1*	1	0	0	0	*1*	7	15	6	15	*43*
5:45 PM	1	2	0	0	*3*	1	2	0	0	*3*	13	5	13	14	*45*
Count Total	9	5	4	0	*18*	8	9	1	1	*19*	93	92	89	160	*434*
Peak Hour	**6**	**2**	**2**	**0**	***10***	**4**	**7**	**1**	**0**	***12***	**39**	**58**	**51**	**87**	***235***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Sacramento St Eastbound UT	LT	TH	RT	Sacramento St Westbound UT	LT	TH	RT	Spruce St Northbound UT	LT	TH	RT	Spruce St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0
4:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:45 PM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	9
5:00 PM	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**10**
5:15 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	11
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	10
5:45 PM	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3	9
Count Total	0	1	7	1	0	4	1	0	0	0	3	1	0	0	0	0	18	0
Peak Hour	**0**	**1**	**4**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**10**	**0**

Two-Hour Count Summaries - Bikes

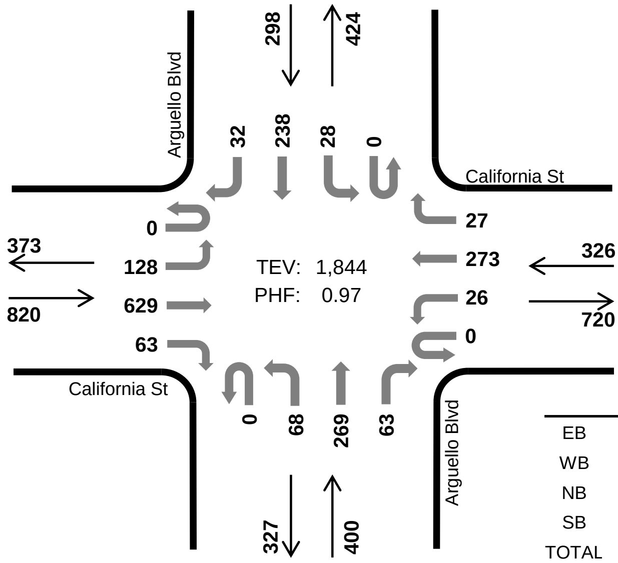
Interval Start	Sacramento St Eastbound LT	TH	RT	Sacramento St Westbound LT	TH	RT	Spruce St Northbound LT	TH	RT	Spruce St Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	**0**	**2**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	13
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**12**
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	5
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	5
5:45 PM	0	1	0	0	2	0	0	0	0	0	0	0	3	6
Count Total	0	8	0	1	8	0	1	0	0	0	1	0	19	0
Peak Hour	**0**	**4**	**0**	**1**	**6**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**12**	**0**

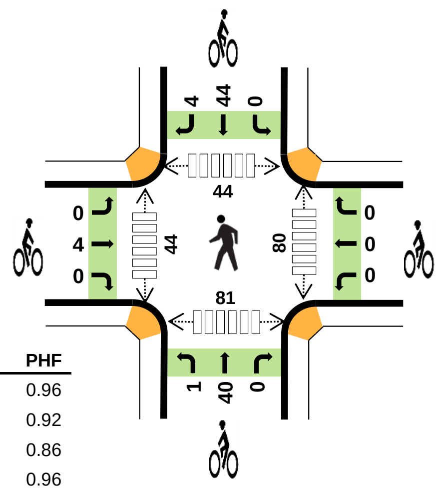
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Arguello Blvd
California St

Date: 04/04/2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

Peak Hour





	HV %:	PHF
EB	3.2%	0.96
WB	8.9%	0.92
NB	4.5%	0.86
SB	2.0%	0.96
TOTAL	4.3%	0.97

Two-Hour Count Summaries

Interval Start		California St				California St				Arguello Blvd				Arguello Blvd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	13	92	6	0	2	37	2	0	6	31	12	0	5	22	4	232	0
7:15 AM		0	11	117	7	0	3	50	3	0	7	29	14	0	9	36	8	294	0
7:30 AM		0	25	130	9	0	2	56	16	0	7	76	15	0	9	44	2	391	0
7:45 AM		**0**	**31**	**162**	**16**	**0**	**4**	**74**	**7**	**0**	**17**	**69**	**12**	**0**	**6**	**53**	**8**	**459**	1,376
8:00 AM		**0**	**38**	**150**	**12**	**0**	**9**	**72**	**8**	**0**	**14**	**61**	**16**	**0**	**5**	**67**	**5**	**457**	1,601
8:15 AM		**0**	**28**	**167**	**18**	**0**	**7**	**58**	**3**	**0**	**16**	**64**	**15**	**0**	**8**	**60**	**10**	**454**	1,761
8:30 AM		**0**	**31**	**150**	**17**	**0**	**6**	**69**	**9**	**0**	**21**	**75**	**20**	**0**	**9**	**58**	**9**	**474**	**1,844**
8:45 AM		0	29	154	11	0	5	54	11	0	5	81	18	0	10	43	6	427	1,812
Count Total		0	206	1,122	96	0	38	470	59	0	93	486	122	0	61	383	52	3,188	0
Peak Hour	**All**	**0**	**128**	**629**	**63**	**0**	**26**	**273**	**27**	**0**	**68**	**269**	**63**	**0**	**28**	**238**	**32**	**1,844**	**0**
	HV	**0**	**0**	**26**	**0**	**0**	**8**	**20**	**1**	**0**	**3**	**8**	**7**	**0**	**0**	**6**	**0**	**79**	**0**
	HV%	**-**	**0%**	**4%**	**0%**	**-**	**31%**	**7%**	**4%**	**-**	**4%**	**3%**	**11%**	**-**	**0%**	**3%**	**0%**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	8	6	1	2	*17*	0	0	13	3	*16*	8	7	4	11	*30*
7:15 AM	8	5	8	0	*21*	0	0	8	4	*12*	15	8	5	14	*42*
7:30 AM	6	4	4	4	*18*	0	0	7	6	*13*	17	9	5	17	*48*
7:45 AM	**6**	**6**	**4**	**2**	***18***	**0**	**0**	**5**	**10**	***15***	**24**	**12**	**4**	**16**	*56*
8:00 AM	**6**	**10**	**4**	**1**	***21***	**2**	**0**	**8**	**10**	***20***	**22**	**10**	**14**	**21**	*67*
8:15 AM	**7**	**6**	**3**	**2**	***18***	**2**	**0**	**14**	**17**	***33***	**15**	**12**	**17**	**21**	*65*
8:30 AM	**7**	**7**	**7**	**1**	***22***	**0**	**0**	**14**	**11**	***25***	**19**	**10**	**9**	**23**	***61***
8:45 AM	8	6	6	1	*21*	0	0	10	5	*15*	24	12	11	10	*57*
Count Total	56	50	37	13	*156*	4	0	79	66	*149*	144	80	69	133	*426*
Peak Hour	**26**	**29**	**18**	**6**	***79***	**4**	**0**	**41**	**48**	***93***	**80**	**44**	**44**	**81**	***249***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	California St				California St				Arguello Blvd				Arguello Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	8	0	0	1	5	0	0	0	0	1	0	0	2	0	17	0
7:15 AM	0	1	7	0	0	2	3	0	0	2	3	3	0	0	0	0	21	0
7:30 AM	0	0	6	0	0	1	3	0	0	0	3	1	0	1	3	0	18	0
7:45 AM	**0**	**0**	**6**	**0**	**0**	**1**	**4**	**1**	**0**	**1**	**2**	**1**	**0**	**0**	**2**	**0**	**18**	74
8:00 AM	**0**	**0**	**6**	**0**	**0**	**3**	**7**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**1**	**0**	**21**	78
8:15 AM	**0**	**0**	**7**	**0**	**0**	**2**	**4**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**2**	**0**	**18**	75
8:30 AM	**0**	**0**	**7**	**0**	**0**	**2**	**5**	**0**	**0**	**1**	**3**	**3**	**0**	**0**	**1**	**0**	**22**	**79**
8:45 AM	0	0	8	0	0	2	3	1	0	0	5	1	0	0	1	0	21	82
Count Total	0	1	55	0	0	14	34	2	0	5	19	13	0	1	12	0	156	0
Peak Hour	**0**	**0**	**26**	**0**	**0**	**8**	**20**	**1**	**0**	**3**	**8**	**7**	**0**	**0**	**6**	**0**	**79**	**0**

Two-Hour Count Summaries - Bikes

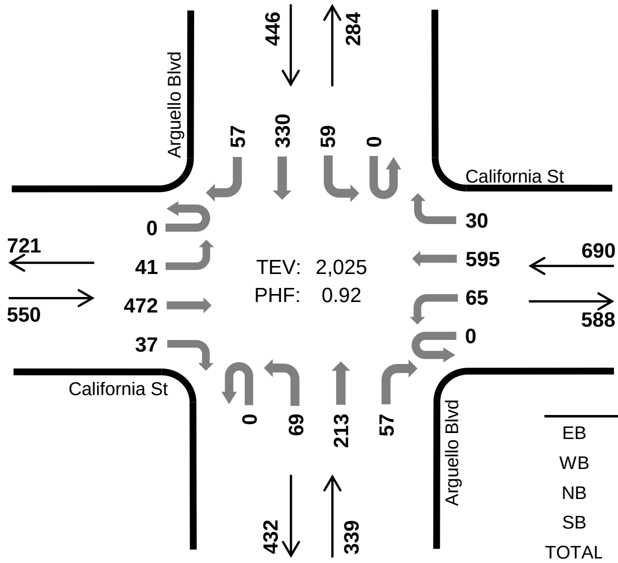
Interval Start	California St			California St			Arguello Blvd			Arguello Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	13	0	0	3	0	16	0
7:15 AM	0	0	0	0	0	0	0	8	0	0	4	0	12	0
7:30 AM	0	0	0	0	0	0	0	5	2	0	6	0	13	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**10**	**0**	**15**	56
8:00 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**8**	**2**	**20**	60
8:15 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**15**	**2**	**33**	81
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**13**	**0**	**0**	**11**	**0**	**25**	**93**
8:45 AM	0	0	0	0	0	0	0	10	0	0	5	0	15	93
Count Total	0	4	0	0	0	0	1	76	2	0	62	4	149	0
Peak Hour	**0**	**4**	**0**	**0**	**0**	**0**	**1**	**40**	**0**	**0**	**44**	**4**	**93**	**0**

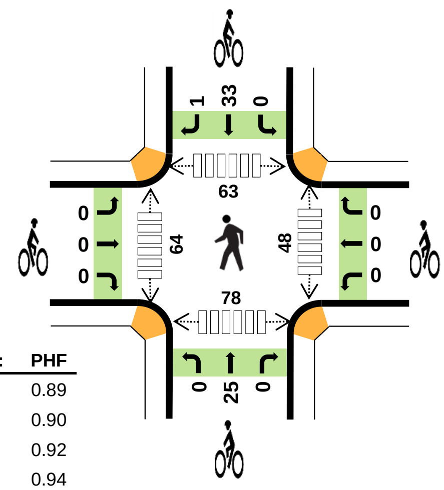
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Arguello Blvd
California St

Date: 04/04/2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Peak Hour





	HV %:	PHF
EB	3.8%	0.89
WB	4.6%	0.90
NB	2.9%	0.92
SB	0.4%	0.94
TOTAL	3.2%	0.92

Two-Hour Count Summaries

Interval Start		California St Eastbound				California St Westbound				Arguello Blvd Northbound				Arguello Blvd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	8	110	8	0	9	124	13	0	16	46	12	0	11	69	10	436	0
4:15 PM		0	8	92	9	0	20	107	10	0	15	52	11	0	17	73	7	421	0
4:30 PM		0	5	105	7	0	19	118	13	0	23	48	5	0	12	77	15	447	0
4:45 PM		0	12	109	5	0	9	134	15	0	14	61	15	0	15	80	11	480	1,784
5:00 PM		**0**	**11**	**96**	**6**	**0**	**24**	**148**	**7**	**0**	**11**	**47**	**16**	**0**	**13**	**86**	**8**	**473**	1,821
5:15 PM		**0**	**12**	**132**	**11**	**0**	**12**	**170**	**9**	**0**	**17**	**56**	**14**	**0**	**15**	**83**	**18**	**549**	1,949
5:30 PM		**0**	**11**	**123**	**8**	**0**	**13**	**142**	**6**	**0**	**24**	**57**	**11**	**0**	**13**	**89**	**16**	**513**	2,015
5:45 PM		**0**	**7**	**121**	**12**	**0**	**16**	**135**	**8**	**0**	**17**	**53**	**16**	**0**	**18**	**72**	**15**	**490**	**2,025**
Count Total		0	74	888	66	0	122	1,078	81	0	137	420	100	0	114	629	100	3,809	0
Peak Hour	**All**	**0**	**41**	**472**	**37**	**0**	**65**	**595**	**30**	**0**	**69**	**213**	**57**	**0**	**59**	**330**	**57**	**2,025**	**0**
	HV	**0**	**1**	**18**	**2**	**0**	**9**	**23**	**0**	**0**	**1**	**5**	**4**	**0**	**0**	**0**	**2**	**65**	**0**
	HV%	**-**	**2%**	**4%**	**5%**	**-**	**14%**	**4%**	**0%**	**-**	**1%**	**2%**	**7%**	**-**	**0%**	**0%**	**4%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	8	1	2	*16*	2	0	3	5	*10*	12	6	20	13	*51*
4:15 PM	3	9	3	0	*15*	0	0	2	6	*8*	13	8	6	14	*41*
4:30 PM	5	9	3	1	*18*	0	0	8	5	*13*	10	16	13	12	*51*
4:45 PM	5	6	2	0	*13*	2	2	2	8	*14*	10	6	6	13	*35*
5:00 PM	**2**	**8**	**3**	**1**	***14***	**0**	**0**	**8**	**4**	***12***	**12**	**10**	**11**	**14**	*47*
5:15 PM	**8**	**8**	**3**	**0**	***19***	**0**	**0**	**10**	**9**	***19***	**14**	**16**	**19**	**22**	*71*
5:30 PM	**7**	**5**	**2**	**1**	***15***	**0**	**0**	**3**	**7**	***10***	**18**	**18**	**22**	**22**	*80*
5:45 PM	**4**	**11**	**2**	**0**	***17***	**0**	**0**	**4**	**14**	***18***	**4**	**20**	**11**	**20**	*55*
Count Total	39	64	19	5	*127*	4	2	40	58	*104*	93	100	108	130	*431*
Peak Hour	**21**	**32**	**10**	**2**	***65***	**0**	**0**	**25**	**34**	***59***	**48**	**64**	**63**	**78**	***253***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	California St Eastbound UT	LT	TH	RT	California St Westbound UT	LT	TH	RT	Arguello Blvd Northbound UT	LT	TH	RT	Arguello Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	1	3	1	0	1	5	2	0	0	0	1	0	0	2	0	16	0
4:15 PM	0	0	3	0	0	4	5	0	0	0	2	1	0	0	0	0	15	0
4:30 PM	0	0	5	0	0	2	7	0	0	0	2	1	0	0	1	0	18	0
4:45 PM	0	1	4	0	0	3	3	0	0	0	1	1	0	0	0	0	13	62
5:00 PM	**0**	**0**	**2**	**0**	**0**	**3**	**5**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**1**	**14**	60
5:15 PM	**0**	**0**	**7**	**1**	**0**	**1**	**7**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**19**	64
5:30 PM	**0**	**1**	**5**	**1**	**0**	**1**	**4**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**15**	61
5:45 PM	**0**	**0**	**4**	**0**	**0**	**4**	**7**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**17**	**65**
Count Total	0	3	33	3	0	19	43	2	0	1	10	8	0	0	3	2	127	0
Peak Hour	**0**	**1**	**18**	**2**	**0**	**9**	**23**	**0**	**0**	**1**	**5**	**4**	**0**	**0**	**0**	**2**	**65**	**0**

Two-Hour Count Summaries - Bikes

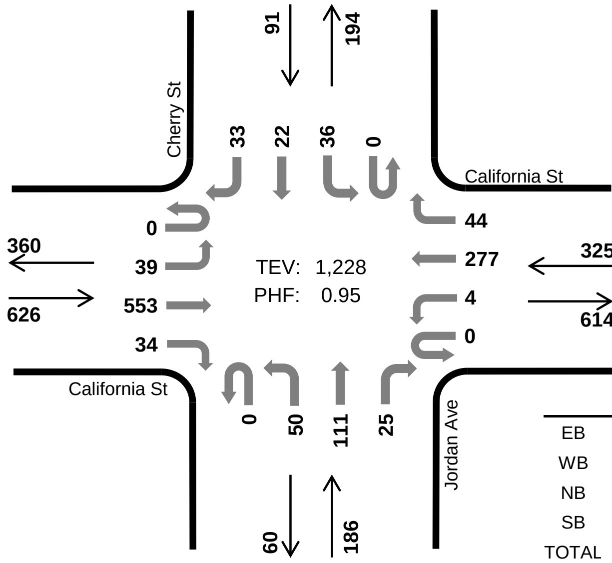
Interval Start	California St Eastbound LT	TH	RT	California St Westbound LT	TH	RT	Arguello Blvd Northbound LT	TH	RT	Arguello Blvd Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	2	0	0	0	0	0	3	0	0	5	0	10	0
4:15 PM	0	0	0	0	0	0	0	2	0	0	6	0	8	0
4:30 PM	0	0	0	0	0	0	0	8	0	0	4	1	13	0
4:45 PM	0	2	0	0	2	0	0	2	0	0	8	0	14	45
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**4**	**0**	**12**	47
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**9**	**0**	**19**	58
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**7**	**0**	**10**	55
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**13**	**1**	**18**	**59**
Count Total	0	4	0	0	2	0	0	40	0	0	56	2	104	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**0**	**0**	**33**	**1**	**59**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

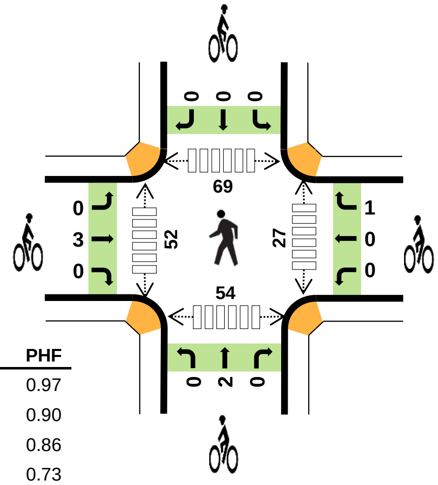
Jordan Ave/Cherry St
California St

Date: 04/04/2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM

Peak Hour



	HV %:	PHF
EB	5.4%	0.97
WB	9.5%	0.90
NB	0.0%	0.86
SB	1.1%	0.73
TOTAL	5.4%	0.95



Two-Hour Count Summaries

Interval Start	California St Eastbound UT	LT	TH	RT	California St Westbound UT	LT	TH	RT	Jordan Ave Northbound UT	LT	TH	RT	Cherry St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	**0**	**11**	**131**	**5**	**0**	**3**	**75**	**12**	**0**	**12**	**35**	**7**	**0**	**11**	**8**	**12**	**322**	0
7:15 AM	**0**	**8**	**144**	**8**	**0**	**0**	**68**	**17**	**0**	**8**	**29**	**5**	**0**	**5**	**7**	**8**	**307**	0
7:30 AM	**0**	**9**	**141**	**7**	**0**	**1**	**76**	**6**	**0**	**14**	**20**	**12**	**0**	**10**	**3**	**5**	**304**	0
7:45 AM	**0**	**11**	**137**	**14**	**0**	**0**	**58**	**9**	**0**	**16**	**27**	**1**	**0**	**10**	**4**	**8**	**295**	**1,228**
8:00 AM	0	6	143	13	0	3	64	13	0	19	18	9	0	5	6	10	309	1,215
8:15 AM	0	11	117	11	0	1	54	15	0	10	13	10	0	14	7	14	277	1,185
8:30 AM	0	6	132	17	0	2	81	12	0	13	8	2	0	6	3	3	285	1,166
8:45 AM	0	6	124	8	0	1	75	13	0	7	9	7	0	7	5	11	273	1,144
Count Total	0	68	1,069	83	0	11	551	97	0	99	159	53	0	68	43	71	2,372	0
Peak Hour All	**0**	**39**	**553**	**34**	**0**	**4**	**277**	**44**	**0**	**50**	**111**	**25**	**0**	**36**	**22**	**33**	**1,228**	**0**
Peak Hour HV	**0**	**1**	**33**	**0**	**0**	**0**	**29**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**66**	**0**
Peak Hour HV%	**-**	**3%**	**6%**	**0%**	**-**	**0%**	**10%**	**5%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**3%**	**5%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	**8**	**10**	**0**	**0**	***18***	**2**	**0**	**2**	**0**	***4***	**4**	**1**	**16**	**8**	*29*
7:15 AM	**9**	**7**	**0**	**0**	***16***	**1**	**1**	**0**	**0**	***2***	**11**	**9**	**24**	**12**	*56*
7:30 AM	**7**	**8**	**0**	**0**	***15***	**0**	**0**	**0**	**0**	***0***	**9**	**20**	**17**	**12**	*58*
7:45 AM	**10**	**6**	**0**	**1**	***17***	**0**	**0**	**0**	**0**	***0***	**3**	**22**	**12**	**22**	***59***
8:00 AM	14	8	0	1	*23*	0	2	0	0	*2*	9	27	31	14	*81*
8:15 AM	8	6	0	1	*15*	0	0	1	0	*1*	6	29	35	23	*93*
8:30 AM	9	8	0	0	*17*	1	0	2	1	*4*	8	15	28	14	*65*
8:45 AM	8	6	0	0	*14*	1	0	1	0	*2*	5	22	34	15	*76*
Count Total	73	59	0	3	*135*	5	3	6	1	*15*	55	145	197	120	*517*
Peak Hour	**34**	**31**	**0**	**1**	***66***	**3**	**1**	**2**	**0**	***6***	**27**	**52**	**69**	**54**	***202***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	California St Eastbound UT	LT	TH	RT	California St Westbound UT	LT	TH	RT	Jordan Ave Northbound UT	LT	TH	RT	Cherry St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	**0**	**0**	**8**	**0**	**0**	**0**	**9**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	0
7:15 AM	**0**	**0**	**9**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	0
7:30 AM	**0**	**0**	**7**	**0**	**0**	**0**	**7**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	0
7:45 AM	**0**	**1**	**9**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**17**	**66**
8:00 AM	0	0	14	0	0	0	6	2	0	0	0	0	0	0	0	1	23	71
8:15 AM	0	0	8	0	0	0	6	0	0	0	0	0	0	1	0	0	15	70
8:30 AM	0	0	9	0	0	0	7	1	0	0	0	0	0	0	0	0	17	72
8:45 AM	0	0	8	0	0	0	6	0	0	0	0	0	0	0	0	0	14	69
Count Total	0	1	72	0	0	0	54	5	0	0	0	0	0	1	0	2	135	0
Peak Hour	**0**	**1**	**33**	**0**	**0**	**0**	**29**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**66**	**0**

Two-Hour Count Summaries - Bikes

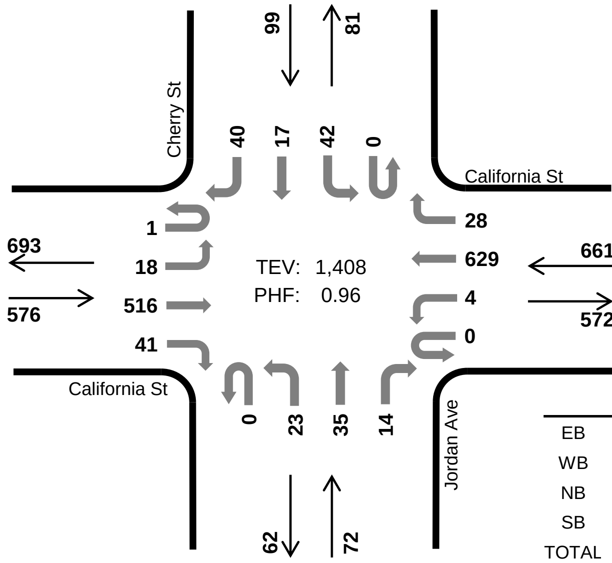
Interval Start	California St Eastbound LT	TH	RT	California St Westbound LT	TH	RT	Jordan Ave Northbound LT	TH	RT	Cherry St Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**4**	0
7:15 AM	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**
8:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	2	4
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	3
8:30 AM	0	0	1	0	0	0	0	2	0	0	1	0	4	7
8:45 AM	0	1	0	0	0	0	0	0	1	0	0	0	2	9
Count Total	0	4	1	0	2	1	0	5	1	0	1	0	15	0
Peak Hour	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**6**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

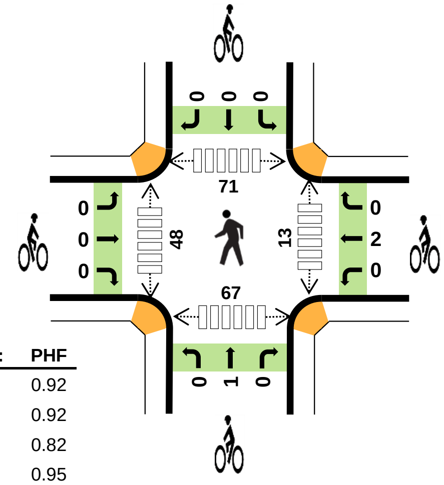
Jordan Ave/Cherry St
California St

Date: 04/04/2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM

Peak Hour



	HV %:	PHF
EB	3.5%	0.92
WB	4.8%	0.92
NB	1.4%	0.82
SB	1.0%	0.95
TOTAL	3.8%	0.96



Two-Hour Count Summaries

Interval Start	California St Eastbound UT	LT	TH	RT	California St Westbound UT	LT	TH	RT	Jordan Ave Northbound UT	LT	TH	RT	Cherry St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	6	109	4	0	2	154	5	0	6	14	2	0	9	0	16	327	0
4:15 PM	1	4	130	13	0	0	176	4	0	7	6	2	0	9	6	10	368	0
4:30 PM	0	4	137	15	0	0	141	9	0	7	9	6	0	9	5	9	351	0
4:45 PM	0	4	140	9	0	2	158	10	0	3	6	4	0	15	6	5	362	1,408
5:00 PM	0	7	133	8	0	0	130	10	0	5	4	2	0	9	0	8	316	1,397
5:15 PM	0	7	125	6	0	1	100	1	0	1	7	5	0	8	3	5	269	1,298
5:30 PM	0	0	120	8	1	2	115	4	0	5	8	4	0	6	1	4	278	1,225
5:45 PM	0	7	148	0	0	0	110	6	0	2	2	6	0	11	2	7	301	1,164
Count Total	1	39	1,042	63	1	7	1,084	49	0	36	56	31	0	76	23	64	2,572	0
Peak Hour All	1	18	516	41	0	4	629	28	0	23	35	14	0	42	17	40	1,408	0
Peak Hour HV	0	0	18	2	0	0	30	2	0	1	0	0	0	0	0	1	54	0
Peak Hour HV%	0%	0%	3%	5%	-	0%	5%	7%	-	4%	0%	0%	-	0%	0%	3%	4%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	3	8	1	0	*12*	0	1	0	0	*1*	4	16	21	20	*61*
4:15 PM	8	7	0	1	*16*	0	0	0	0	*0*	5	18	21	18	*62*
4:30 PM	6	6	0	0	*12*	0	1	0	0	*1*	2	6	14	15	*37*
4:45 PM	3	11	0	0	*14*	0	0	1	0	*1*	2	8	15	14	*39*
5:00 PM	4	9	0	0	*13*	0	1	0	2	*3*	4	8	13	15	*40*
5:15 PM	8	6	0	0	*14*	0	2	0	0	*2*	4	6	21	9	*40*
5:30 PM	8	9	1	0	*18*	0	1	0	0	*1*	8	4	19	9	*40*
5:45 PM	5	7	0	0	*12*	0	2	0	0	*2*	1	1	6	11	*19*
Count Total	45	63	2	1	*111*	0	8	1	2	*11*	30	67	130	111	*338*
Peak Hour	20	32	1	1	*54*	0	2	1	0	*3*	13	48	71	67	*199*

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	California St				California St				Jordan Ave				Cherry St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**7**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	0
4:15 PM	**0**	**0**	**7**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**16**	0
4:30 PM	**0**	**0**	**6**	**0**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	0
4:45 PM	**0**	**0**	**2**	**1**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**54**
5:00 PM	0	0	4	0	0	0	8	1	0	0	0	0	0	0	0	0	13	55
5:15 PM	0	0	8	0	0	0	6	0	0	0	0	0	0	0	0	0	14	53
5:30 PM	0	0	8	0	0	0	9	0	0	0	1	0	0	0	0	0	18	59
5:45 PM	0	0	5	0	0	0	7	0	0	0	0	0	0	0	0	0	12	57
Count Total	0	0	43	2	0	0	60	3	0	1	1	0	0	0	0	1	111	0
Peak Hour	**0**	**0**	**18**	**2**	**0**	**0**	**30**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**54**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	California St			California St			Jordan Ave			Cherry St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**3**
5:00 PM	0	0	0	0	0	1	0	0	0	0	1	1	3	5
5:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2	7
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	7
5:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	2	8
Count Total	0	0	0	0	7	1	0	1	0	0	1	1	11	0
Peak Hour	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**

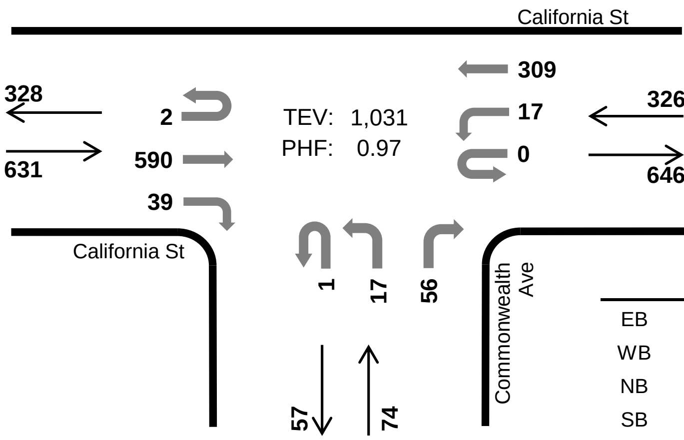
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

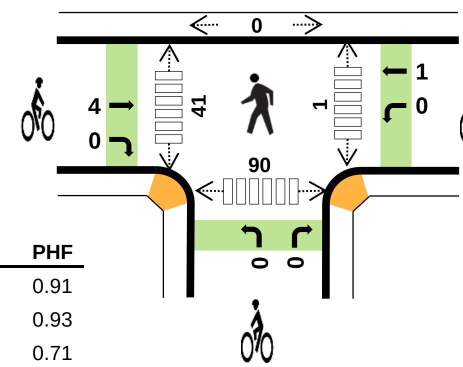
Commonwealth Ave
California St

N

Peak Hour

Date: 04/04/2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	4.8%	0.91
WB	8.9%	0.93
NB	0.0%	0.71
SB	-	-
TOTAL	5.7%	0.97

Two-Hour Count Summaries

Interval Start		California St				California St				Commonwealth Ave				0				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	98	3	0	3	57	0	0	3	0	6	0	0	0	0	170	0
7:15 AM		1	0	119	6	0	2	65	0	0	2	0	7	0	0	0	0	202	0
7:30 AM		0	0	149	10	0	2	64	0	0	4	0	8	0	0	0	0	237	0
7:45 AM		**0**	**0**	**164**	**9**	**0**	**3**	**73**	**0**	**0**	**1**	**0**	**11**	**0**	**0**	**0**	**0**	**261**	870
8:00 AM		**1**	**0**	**133**	**9**	**0**	**3**	**85**	**0**	**1**	**3**	**0**	**10**	**0**	**0**	**0**	**0**	**245**	945
8:15 AM		**1**	**0**	**142**	**13**	**0**	**7**	**75**	**0**	**0**	**6**	**0**	**16**	**0**	**0**	**0**	**0**	**260**	1,003
8:30 AM		**0**	**0**	**151**	**8**	**0**	**4**	**76**	**0**	**0**	**7**	**0**	**19**	**0**	**0**	**0**	**0**	**265**	**1,031**
8:45 AM		0	0	148	7	1	7	72	0	0	2	0	19	0	0	0	0	256	1,026
Count Total		3	0	1,104	65	1	31	567	0	1	28	0	96	0	0	0	0	1,896	0
Peak Hour	**All**	**2**	**0**	**590**	**39**	**0**	**17**	**309**	**0**	**1**	**17**	**0**	**56**	**0**	**0**	**0**	**0**	**1,031**	**0**
	HV	**0**	**0**	**30**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**59**	**0**
	HV%	**0%**	**-**	**5%**	**0%**	**-**	**0%**	**9%**	**-**	**0%**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**6%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	8	7	0	0	*15*	0	0	0	0	*0*	1	1	0	5	*7*
7:15 AM	11	6	1	0	*18*	0	0	0	0	*0*	1	4	0	11	*16*
7:30 AM	9	6	0	0	*15*	0	0	0	0	*0*	0	15	0	16	*31*
7:45 AM	**6**	**4**	**0**	**0**	***10***	**1**	**0**	**0**	**0**	***1***	**0**	**11**	**0**	**26**	*37*
8:00 AM	**8**	**11**	**0**	**0**	***19***	**2**	**0**	**0**	**0**	***2***	**0**	**10**	**0**	**16**	*26*
8:15 AM	**8**	**6**	**0**	**0**	***14***	**1**	**1**	**0**	**0**	***2***	**1**	**15**	**0**	**23**	*39*
8:30 AM	**8**	**8**	**0**	**0**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**5**	**0**	**25**	***30***
8:45 AM	9	6	0	0	*15*	0	0	0	0	*0*	0	5	0	14	*19*
Count Total	67	54	1	0	*122*	4	1	0	0	*5*	3	66	0	136	*205*
Peak Hr	**30**	**29**	**0**	**0**	***59***	**4**	**1**	**0**	**0**	***5***	**1**	**41**	**0**	**90**	***132***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	California St				California St				Commonwealth Ave				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	8	0	0	0	7	0	0	0	0	0	0	0	0	0	15	0
7:15 AM	0	0	11	0	0	0	6	0	0	0	0	1	0	0	0	0	18	0
7:30 AM	0	0	9	0	0	0	6	0	0	0	0	0	0	0	0	0	15	0
7:45 AM	**0**	**0**	**6**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	58
8:00 AM	**0**	**0**	**8**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	62
8:15 AM	**0**	**0**	**8**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	58
8:30 AM	**0**	**0**	**8**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**59**
8:45 AM	0	0	9	0	0	0	6	0	0	0	0	0	0	0	0	0	15	64
Count Total	0	0	67	0	0	0	54	0	0	0	0	1	0	0	0	0	122	0
Peak Hour	**0**	**0**	**30**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**59**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	California St			California St			Commonwealth Ave			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	1
8:00 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	3
8:15 AM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	5
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	4	0	0	1	0	0	0	0	0	0	0	5	0
Peak Hour	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

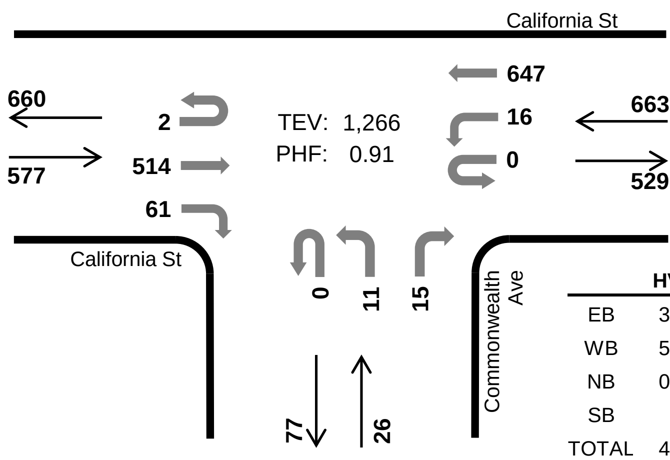
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Commonwealth Ave
California St

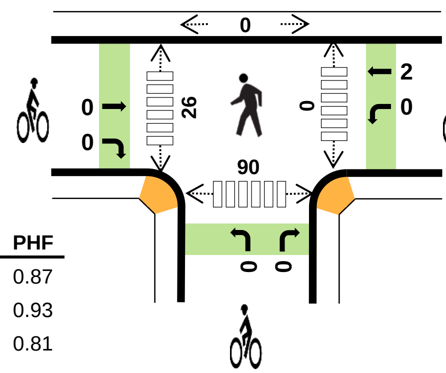
N

Peak Hour

Date: 04/04/2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	3.1%	0.87
WB	5.0%	0.93
NB	0.0%	0.81
SB	-	-
TOTAL	4.0%	0.91



Two-Hour Count Summaries

Interval Start		California St				California St				Commonwealth Ave				0				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		1	0	121	7	0	5	132	0	0	1	0	9	0	0	0	0	276	0
4:15 PM		0	0	111	18	0	6	133	0	0	1	0	11	0	0	0	0	280	0
4:30 PM		1	0	111	12	0	8	137	0	0	8	0	6	0	0	0	0	283	0
4:45 PM		0	0	118	12	0	5	140	0	0	2	0	10	0	0	0	0	287	1,126
5:00 PM		**0**	**0**	**114**	**10**	**0**	**4**	**155**	**0**	**0**	**1**	**0**	**5**	**0**	**0**	**0**	**0**	**289**	1,139
5:15 PM		**2**	**0**	**123**	**11**	**0**	**4**	**174**	**0**	**0**	**4**	**0**	**3**	**0**	**0**	**0**	**0**	**321**	1,180
5:30 PM		**0**	**0**	**136**	**15**	**0**	**6**	**145**	**0**	**0**	**3**	**0**	**2**	**0**	**0**	**0**	**0**	**307**	1,204
5:45 PM		**0**	**0**	**141**	**25**	**0**	**2**	**173**	**0**	**0**	**3**	**0**	**5**	**0**	**0**	**0**	**0**	**349**	**1,266**
Count Total		4	0	975	110	0	40	1,189	0	0	23	0	51	0	0	0	0	2,392	0
Peak Hour	**All**	**2**	**0**	**514**	**61**	**0**	**16**	**647**	**0**	**0**	**11**	**0**	**15**	**0**	**0**	**0**	**0**	**1,266**	**0**
	HV	**0**	**0**	**17**	**1**	**0**	**1**	**32**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**0**
	HV%	**0%**	**-**	**3%**	**2%**	**-**	**6%**	**5%**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	7	0	0	*10*	2	0	0	0	*2*	0	12	0	22	*34*
4:15 PM	5	6	0	0	*11*	0	0	0	0	*0*	0	16	0	27	*43*
4:30 PM	6	11	0	0	*17*	1	1	0	0	*2*	0	13	0	11	*24*
4:45 PM	5	6	0	0	*11*	2	2	0	0	*4*	0	9	0	18	*27*
5:00 PM	**3**	**8**	**0**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**5**	**0**	**28**	*33*
5:15 PM	**7**	**7**	**0**	**0**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**7**	**0**	**27**	*34*
5:30 PM	**6**	**7**	**0**	**0**	***13***	**0**	**1**	**0**	**0**	***1***	**0**	**8**	**0**	**19**	*27*
5:45 PM	**2**	**11**	**0**	**0**	***13***	**0**	**1**	**0**	**0**	***1***	**0**	**6**	**0**	**16**	***22***
Count Total	37	63	0	0	*100*	5	5	0	0	*10*	0	76	0	168	*244*
Peak Hr	**18**	**33**	**0**	**0**	***51***	**0**	**2**	**0**	**0**	***2***	**0**	**26**	**0**	**90**	***116***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	California St				California St				Commonwealth Ave				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	3	0	0	0	7	0	0	0	0	0	0	0	0	0	10	0
4:15 PM	0	0	5	0	0	0	6	0	0	0	0	0	0	0	0	0	11	0
4:30 PM	0	0	6	0	0	0	11	0	0	0	0	0	0	0	0	0	17	0
4:45 PM	0	0	5	0	0	0	6	0	0	0	0	0	0	0	0	0	11	49
5:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	50
5:15 PM	**0**	**0**	**6**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	53
5:30 PM	**0**	**0**	**6**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	49
5:45 PM	**0**	**0**	**2**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**51**
Count Total	0	0	36	1	0	1	62	0	0	0	0	0	0	0	0	0	100	0
Peak Hour	**0**	**0**	**17**	**1**	**0**	**1**	**32**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**0**

Two-Hour Count Summaries - Bikes

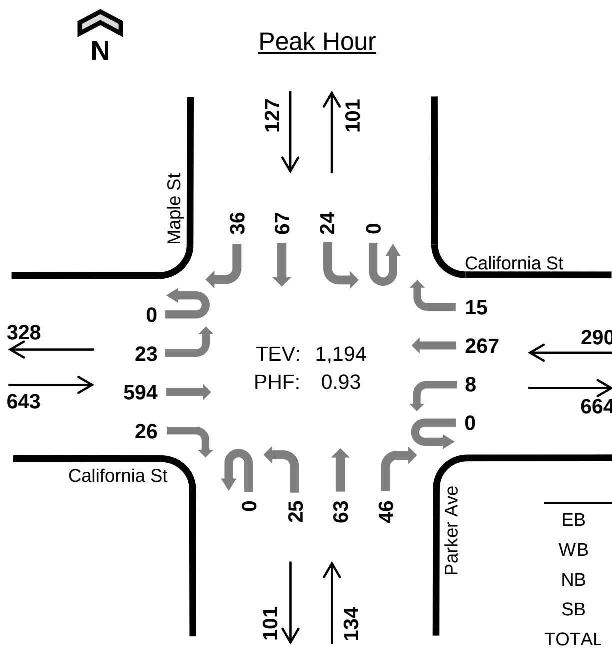
Interval Start	California St			California St			Commonwealth Ave			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	2	0
4:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	4	8
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
5:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
5:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
Count Total	0	5	0	1	4	0	0	0	0	0	0	0	10	0
Peak Hour	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

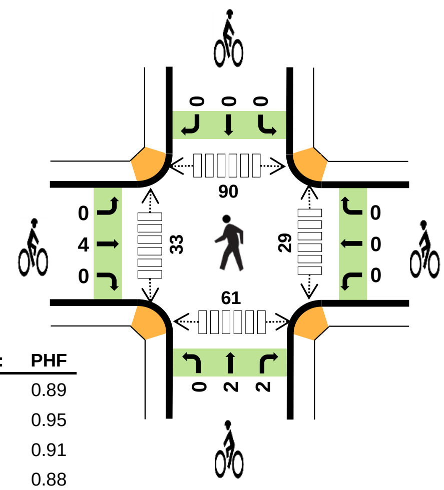
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Maple St/Parker Ave
California St

Date: 04/04/2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

Peak Hour





	HV %:	PHF
EB	5.0%	0.89
WB	8.6%	0.95
NB	1.5%	0.91
SB	5.5%	0.88
TOTAL	5.5%	0.93

Two-Hour Count Summaries

Interval Start		California St Eastbound				California St Westbound				Parker Ave Northbound				Maple St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	6	92	3	0	2	48	1	0	6	3	4	0	3	5	4	177	0
7:15 AM		0	3	125	3	0	1	54	5	0	9	6	11	0	6	5	3	231	0
7:30 AM		0	5	141	3	0	0	57	5	0	7	13	11	0	3	7	5	257	0
7:45 AM		**0**	**6**	**169**	**6**	**0**	**5**	**67**	**4**	**0**	**8**	**20**	**9**	**0**	**3**	**20**	**5**	**322**	987
8:00 AM		**0**	**7**	**127**	**10**	**0**	**1**	**69**	**2**	**0**	**5**	**18**	**12**	**0**	**4**	**17**	**14**	**286**	1,096
8:15 AM		**0**	**2**	**148**	**4**	**0**	**1**	**69**	**3**	**0**	**6**	**13**	**11**	**0**	**9**	**16**	**11**	**293**	1,158
8:30 AM		**0**	**8**	**150**	**6**	**0**	**1**	**62**	**6**	**0**	**6**	**12**	**14**	**0**	**8**	**14**	**6**	**293**	**1,194**
8:45 AM		0	9	156	4	0	7	62	4	0	8	13	11	0	8	11	9	302	1,174
Count Total		0	46	1,108	39	0	18	488	30	0	55	98	83	0	44	95	57	2,161	0
Peak Hour	**All**	**0**	**23**	**594**	**26**	**0**	**8**	**267**	**15**	**0**	**25**	**63**	**46**	**0**	**24**	**67**	**36**	**1,194**	**0**
	HV	**0**	**0**	**32**	**0**	**0**	**0**	**25**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**5**	**66**	**0**
	HV%	**-**	**0%**	**5%**	**0%**	**-**	**0%**	**9%**	**0%**	**-**	**0%**	**3%**	**0%**	**-**	**4%**	**1%**	**14%**	**6%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	7	7	0	1	*15*	0	0	0	0	*0*	0	5	22	5	*32*
7:15 AM	13	5	0	2	*20*	0	0	0	0	*0*	5	6	10	6	*27*
7:30 AM	8	6	1	1	*16*	1	0	0	0	*1*	2	4	19	10	*35*
7:45 AM	**7**	**5**	**1**	**2**	***15***	**1**	**0**	**2**	**0**	***3***	**5**	**2**	**15**	**9**	*31*
8:00 AM	**8**	**9**	**0**	**3**	***20***	**2**	**0**	**2**	**0**	***4***	**3**	**15**	**27**	**16**	*61*
8:15 AM	**8**	**6**	**0**	**1**	***15***	**1**	**0**	**0**	**0**	***1***	**9**	**7**	**27**	**20**	*63*
8:30 AM	**9**	**5**	**1**	**1**	***16***	**0**	**0**	**0**	**0**	***0***	**12**	**9**	**21**	**16**	***58***
8:45 AM	7	4	2	4	*17*	0	0	1	0	*1*	15	6	23	20	*64*
Count Total	67	47	5	15	*134*	5	0	5	0	*10*	51	54	164	102	*371*
Peak Hour	**32**	**25**	**2**	**7**	***66***	**4**	**0**	**4**	**0**	***8***	**29**	**33**	**90**	**61**	***213***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	California St Eastbound UT	LT	TH	RT	California St Westbound UT	LT	TH	RT	Parker Ave Northbound UT	LT	TH	RT	Maple St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	7	0	0	1	6	0	0	0	0	0	0	0	0	1	15	0
7:15 AM	0	0	13	0	0	0	5	0	0	0	0	0	0	0	1	1	20	0
7:30 AM	0	0	8	0	0	0	5	1	0	0	1	0	0	0	0	1	16	0
7:45 AM	**0**	**0**	**7**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**15**	66
8:00 AM	**0**	**0**	**8**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**20**	71
8:15 AM	**0**	**0**	**8**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**15**	66
8:30 AM	**0**	**0**	**9**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**16**	**66**
8:45 AM	0	0	7	0	0	0	4	0	0	0	1	1	0	0	2	2	17	68
Count Total	0	0	67	0	0	1	45	1	0	0	4	1	0	1	4	10	134	0
Peak Hour	**0**	**0**	**32**	**0**	**0**	**0**	**25**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**5**	**66**	**0**

Two-Hour Count Summaries - Bikes

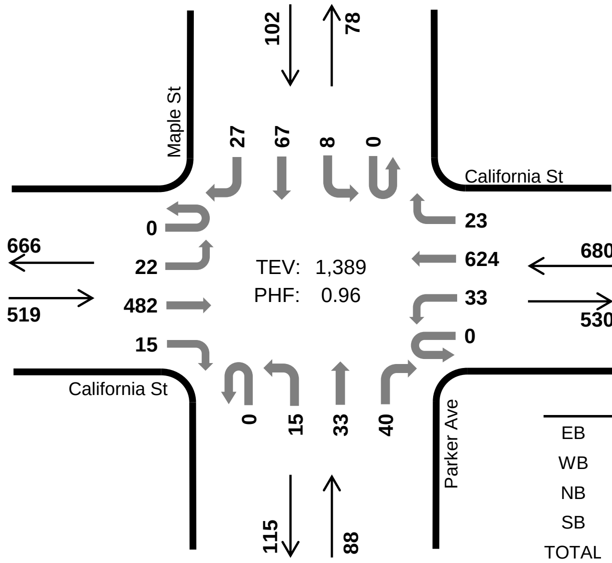
Interval Start	California St Eastbound LT	TH	RT	California St Westbound LT	TH	RT	Parker Ave Northbound LT	TH	RT	Maple St Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**3**	4
8:00 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**4**	8
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	9
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**
8:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	6
Count Total	0	5	0	0	0	0	0	2	3	0	0	0	10	0
Peak Hour	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**8**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

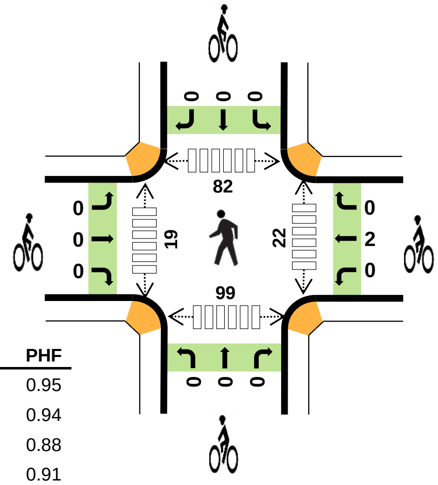
Maple St/Parker Ave
California St

Date: 04/04/2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Peak Hour



	HV %:	PHF
EB	3.3%	0.95
WB	4.1%	0.94
NB	1.1%	0.88
SB	3.9%	0.91
TOTAL	3.6%	0.96



Two-Hour Count Summaries

Interval Start	California St Eastbound UT	LT	TH	RT	California St Westbound UT	LT	TH	RT	Parker Ave Northbound UT	LT	TH	RT	Maple St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	5	121	6	0	7	126	2	0	6	9	5	0	3	8	11	309	0
4:15 PM	0	5	103	6	0	6	125	2	0	6	16	8	0	8	10	5	300	0
4:30 PM	0	4	106	9	0	8	131	4	0	3	8	12	0	6	14	11	316	0
4:45 PM	0	4	127	1	0	5	133	5	0	6	9	13	0	6	13	8	330	1,255
5:00 PM	**0**	**7**	**106**	**5**	**0**	**13**	**149**	**7**	**0**	**5**	**12**	**8**	**0**	**0**	**19**	**7**	**338**	1,284
5:15 PM	**0**	**4**	**120**	**4**	**0**	**7**	**168**	**5**	**0**	**2**	**8**	**15**	**0**	**4**	**14**	**10**	**361**	1,345
5:30 PM	**0**	**7**	**126**	**3**	**0**	**8**	**148**	**6**	**0**	**4**	**4**	**8**	**0**	**3**	**14**	**4**	**335**	1,364
5:45 PM	**0**	**4**	**130**	**3**	**0**	**5**	**159**	**5**	**0**	**4**	**9**	**9**	**0**	**1**	**20**	**6**	**355**	**1,389**
Count Total	0	40	939	37	0	59	1,139	36	0	36	75	78	0	31	112	62	2,644	0
Peak Hour All	**0**	**22**	**482**	**15**	**0**	**33**	**624**	**23**	**0**	**15**	**33**	**40**	**0**	**8**	**67**	**27**	**1,389**	**0**
Peak Hour HV	**0**	**0**	**17**	**0**	**0**	**0**	**28**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	**50**	**0**
Peak Hour HV%	**-**	**0%**	**4%**	**0%**	**-**	**0%**	**4%**	**0%**	**-**	**7%**	**0%**	**0%**	**-**	**0%**	**0%**	**15%**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	3	6	1	1	*11*	2	0	0	0	*2*	5	9	21	30	*65*
4:15 PM	4	5	0	2	*11*	0	0	1	1	*2*	7	9	21	24	*61*
4:30 PM	6	9	0	3	*18*	1	0	0	1	*2*	9	4	18	12	*43*
4:45 PM	6	5	0	1	*12*	2	2	0	0	*4*	16	7	26	17	*66*
5:00 PM	**3**	**8**	**0**	**1**	***12***	**0**	**0**	**0**	**0**	***0***	**8**	**4**	**23**	**21**	*56*
5:15 PM	**6**	**6**	**0**	**1**	***13***	**0**	**0**	**0**	**0**	***0***	**3**	**12**	**19**	**31**	*65*
5:30 PM	**6**	**5**	**1**	**1**	***13***	**0**	**1**	**0**	**0**	***1***	**3**	**0**	**26**	**22**	*51*
5:45 PM	**2**	**9**	**0**	**1**	***12***	**0**	**1**	**0**	**0**	***1***	**8**	**3**	**14**	**25**	***50***
Count Total	36	53	2	11	*102*	5	4	1	2	*12*	59	48	168	182	*457*
Peak Hour	**17**	**28**	**1**	**4**	***50***	**0**	**2**	**0**	**0**	***2***	**22**	**19**	**82**	**99**	***222***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	California St				California St				Parker Ave				Maple St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	3	0	0	0	6	0	0	0	1	0	0	0	0	1	11	0
4:15 PM	0	0	4	0	0	0	5	0	0	0	0	0	0	1	0	1	11	0
4:30 PM	0	1	5	0	0	0	9	0	0	0	0	0	0	0	1	2	18	0
4:45 PM	0	0	6	0	0	0	5	0	0	0	0	0	0	0	0	1	12	52
5:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**12**	53
5:15 PM	**0**	**0**	**6**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**13**	55
5:30 PM	**0**	**0**	**6**	**0**	**0**	**0**	**5**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**13**	50
5:45 PM	**0**	**0**	**2**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**12**	**50**
Count Total	0	1	35	0	0	0	53	0	0	1	1	0	0	1	1	9	102	0
Peak Hour	**0**	**0**	**17**	**0**	**0**	**0**	**28**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	**50**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	California St			California St			Parker Ave			Maple St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	0	0	0	0	0	0	0	0	1	0	1	0	2	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	1	2	0
4:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	4	10
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	8
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
5:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
5:45 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
Count Total	0	5	0	0	4	0	0	0	1	0	1	1	12	0
Peak Hour	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

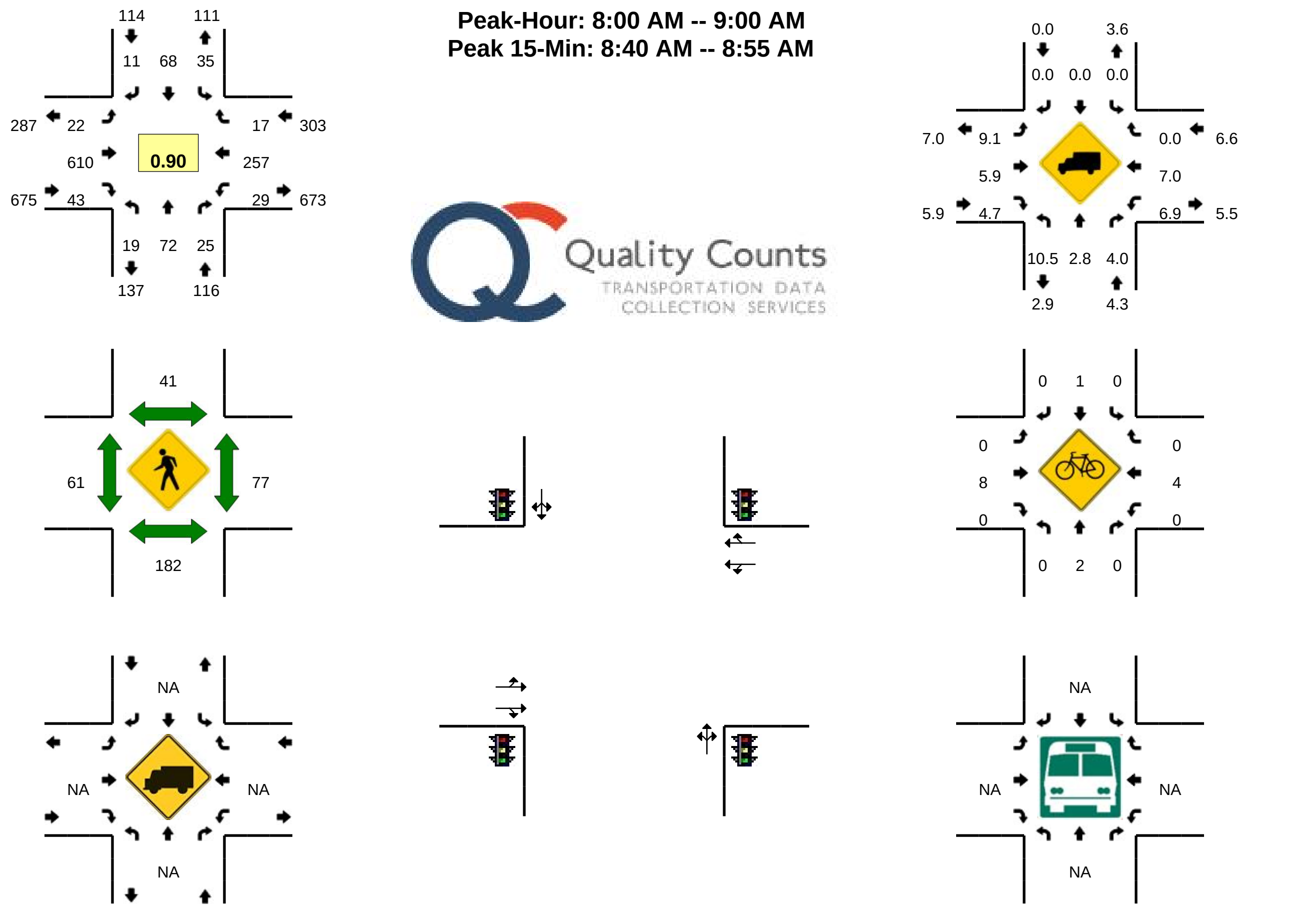
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Type of peak hour being reported: Intersection Peak — Method for determining peak hour: Total Entering Volume

LOCATION: Spruce St -- California St — **QC JOB #:** 14457005

CITY/STATE: San Francisco, CA — **DATE:** Thu, Jul 06 2017

Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:40 AM -- 8:55 AM



5-Min Count Period Beginning At	Spruce St (Northbound) Left	Thru	Right	U	Spruce St (Southbound) Left	Thru	Right	U	California St (Eastbound) Left	Thru	Right	U	California St (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	4	3	2	0	1	0	2	0	0	34	4	0	2	12	0	0	64	
7:05 AM	2	1	1	0	0	3	0	0	3	28	4	0	2	10	0	0	54	
7:10 AM	3	4	3	0	1	0	0	0	0	35	4	0	0	15	1	0	66	
7:15 AM	1	0	4	0	1	2	2	0	2	30	3	0	0	20	2	0	67	
7:20 AM	5	1	3	0	2	2	1	0	0	44	4	0	4	16	1	0	83	
7:25 AM	3	8	5	0	3	4	0	0	1	33	1	0	3	19	0	0	80	
7:30 AM	1	3	3	0	3	3	0	0	0	39	3	0	0	14	2	0	71	
7:35 AM	3	3	2	0	2	1	0	0	3	43	3	1	1	19	1	0	82	
7:40 AM	1	3	4	0	2	4	1	0	1	53	3	0	3	21	1	0	97	
7:45 AM	7	6	5	0	3	2	3	0	0	44	3	0	2	15	2	0	92	
7:50 AM	3	1	4	0	2	1	0	0	0	50	2	0	1	14	1	0	79	
7:55 AM	2	5	3	0	1	3	1	0	3	49	3	0	1	15	3	0	89	924
8:00 AM	0	5	2	0	1	7	0	0	0	50	3	0	2	15	2	0	87	947
8:05 AM	2	5	1	0	4	7	0	0	1	37	2	0	6	18	2	0	85	978
8:10 AM	2	6	1	0	5	7	1	0	1	49	5	0	2	19	2	0	100	1012
8:15 AM	1	5	3	0	2	9	0	0	1	49	3	0	2	21	1	2	99	1044
8:20 AM	0	9	1	0	2	1	2	0	4	48	2	0	3	18	2	0	92	1053
8:25 AM	0	10	4	0	4	5	2	0	3	51	0	0	1	19	1	0	100	1073
8:30 AM	4	7	1	0	3	10	3	0	4	65	3	0	3	20	1	0	124	1126
8:35 AM	2	4	2	0	0	3	0	0	0	52	5	0	0	15	2	0	85	1129
8:40 AM	5	4	2	0	5	7	1	0	1	44	5	0	0	26	3	0	103	1135
8:45 AM	1	5	0	0	6	6	0	0	4	58	2	0	1	24	0	1	108	1151
8:50 AM	2	4	5	0	1	3	2	0	3	63	4	0	3	32	1	0	123	1195
8:55 AM	0	8	3	0	2	3	0	0	0	44	9	0	3	30	0	0	102	1208

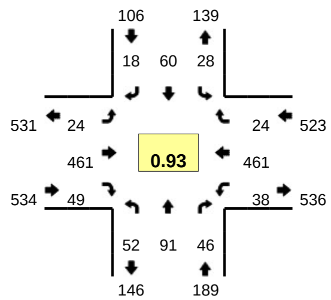
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	32	52	28	0	48	64	12	0	32	660	44	0	16	328	16	4	1336
Heavy Trucks	0	4	4		0	0	0		8	40	4		0	20	0		80
Pedestrians		172				36				72				84			364
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Railroad																	
Stopped Buses																	

Comments:

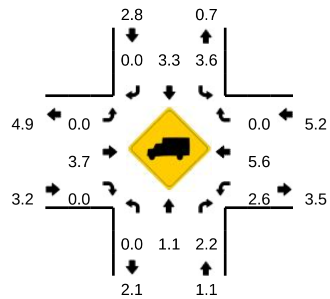
Report generated on 8/8/2017 10:49 AM — SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

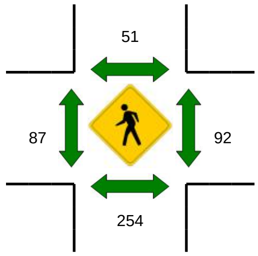
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

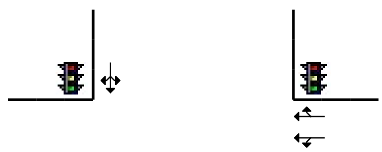
LOCATION: Spruce St -- California St | **QC JOB #:** 14457006
CITY/STATE: San Francisco, CA | **DATE:** Thu, Jul 06 2017

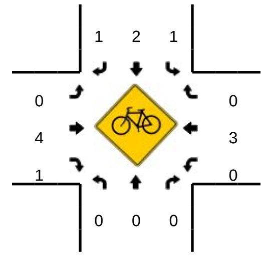


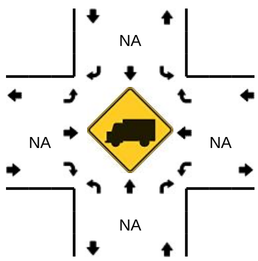
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

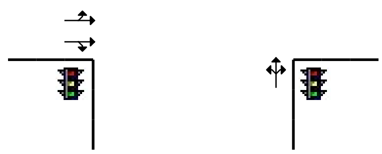


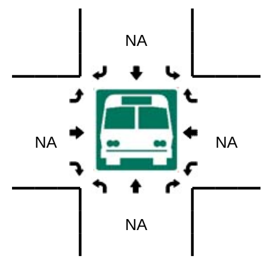












5-Min Count Period Beginning At	Spruce St (Northbound) Left	Thru	Right	U	Spruce St (Southbound) Left	Thru	Right	U	California St (Eastbound) Left	Thru	Right	U	California St (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	8	11	4	0	1	3	0	0	0	52	5	0	0	39	0	0	123	
4:05 PM	6	6	2	0	3	7	3	0	0	50	3	0	1	37	3	0	121	
4:10 PM	4	13	0	0	1	7	0	0	0	43	2	0	5	41	4	0	120	
4:15 PM	3	5	4	0	3	4	3	0	3	45	10	0	2	35	2	0	119	
4:20 PM	3	9	7	0	4	6	3	0	2	35	5	0	4	36	3	0	117	
4:25 PM	5	5	5	0	0	11	2	0	2	44	2	0	4	43	2	1	126	
4:30 PM	3	5	2	0	2	5	1	0	1	34	4	0	3	41	0	0	101	
4:35 PM	6	8	6	0	3	6	1	0	1	31	5	0	2	30	1	0	100	
4:40 PM	8	6	2	0	3	2	2	0	3	37	3	0	2	35	1	0	104	
4:45 PM	5	9	5	0	2	4	1	0	1	33	2	0	2	36	1	0	101	
4:50 PM	7	10	3	0	3	3	0	0	5	44	3	0	4	41	5	0	128	
4:55 PM	4	7	2	0	4	3	1	0	3	25	5	0	2	31	1	0	88	1348
5:00 PM	1	5	5	0	1	3	1	0	2	43	2	0	2	42	1	0	108	1333
5:05 PM	3	9	5	0	2	6	3	0	1	47	6	0	5	50	3	0	140	1352
5:10 PM	3	7	6	0	5	8	0	0	1	37	2	0	1	40	1	1	112	1344
5:15 PM	3	2	4	0	2	6	0	0	1	32	3	0	2	49	0	0	104	1329
5:20 PM	4	11	1	0	0	5	3	0	0	45	3	0	2	43	1	0	118	1330
5:25 PM	7	7	2	0	3	2	0	0	2	32	4	1	3	53	1	0	117	1321
5:30 PM	7	6	2	0	4	3	1	0	1	39	3	0	2	39	1	0	108	1328
5:35 PM	4	5	0	0	3	2	0	0	1	37	3	0	2	33	2	0	92	1320
5:40 PM	3	4	3	0	3	2	2	1	4	31	2	0	2	46	0	0	103	1319
5:45 PM	7	10	2	0	2	5	2	0	1	42	5	0	1	42	1	0	120	1338
5:50 PM	3	4	4	0	2	5	2	0	1	31	8	0	2	57	1	0	120	1330
5:55 PM	7	3	4	0	1	5	1	0	2	35	5	0	0	31	0	0	94	1336

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	44	76	64	0	28	84	32	0	28	496	68	0	40	456	28	4	1448
Heavy Trucks	0	0	0		0	0	0		0	24	0		4	28	0		56
Pedestrians		216				48				100				52			416
Bicycles	0	0	0		1	1	0		0	0	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 8/8/2017 10:49 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix F.4 – CPMC EIR Existing Parking

FEHR & PEERS

MEMORANDUM

Date: October 30, 2018

To: Lana Wong, San Francisco Planning Departmnet

From: Matt Goyne, Fehr & Peers

Subject: Existing Parking Conditions at CPMC California Campus

SF18-0966

This memorandum summarizes information on the existing parking supply and occupancy surrounding the California Pacific Medical Center (CPMC) California Campus located in the Laurel Heights neighborhood in San Francisco, CA. The parking supply is comprised of off-street parking facilities owned, managed, or leased by CPMC, as well as the on-street spaces in the area surrounding the campus. This information comes from the CPMC *Long Range Development Plan EIR*, 2010 ("CPMC EIR"), certified by the San Francisco Planning Commission in 2012 and approved by the San Francisco Board of Supervisors in 2013.

OFF STREET SPACES

The CPMC California Campus provides parking for staff, patients, and visitors in eight off-street parking facilities, totaling approximately 700 spaces. Six of the garages are managed by CPMC; a seventh garage is managed by a separate entity for use as a public parking garage. CPMC also leases 70 off-site spaces at the Geary Mall in the Central Richmond neighborhood and operates a shuttle from this parking facility to the California Campus. Each of the off-street parking facilities is open to the visiting public with the exception of the permit holder-only lot located at 3698 California Street. **Table 1** summarizes the off-street parking supply, and **Figure 2** depicts the location of these parking facilities.

Table 1. Off-Street Parking Supply

Facility	Address	Facility Type	Public/ Permit	CPMC Operated?	Supply (spaces)
A	3838 California	Garage	Both	Yes	183
B	460 Cherry	Garage	Both	Yes	290
C	3905 Sacramento	Lot	Both	Yes	25
D	3700 California	Lot	Both	Yes	7
E	3773 Sacramento	Garage	Both	Yes	26
F	3698 California	Lot	Permit	Yes	31
G	488 Locust	Garage	Public	No	66
H	5200 Geary (Mall)	Garage	Public	No	70
				Total	**698**

Note: Facility G and H not shown on Figure 1.
Source: CPMC EIR, 2008.

ON STREET

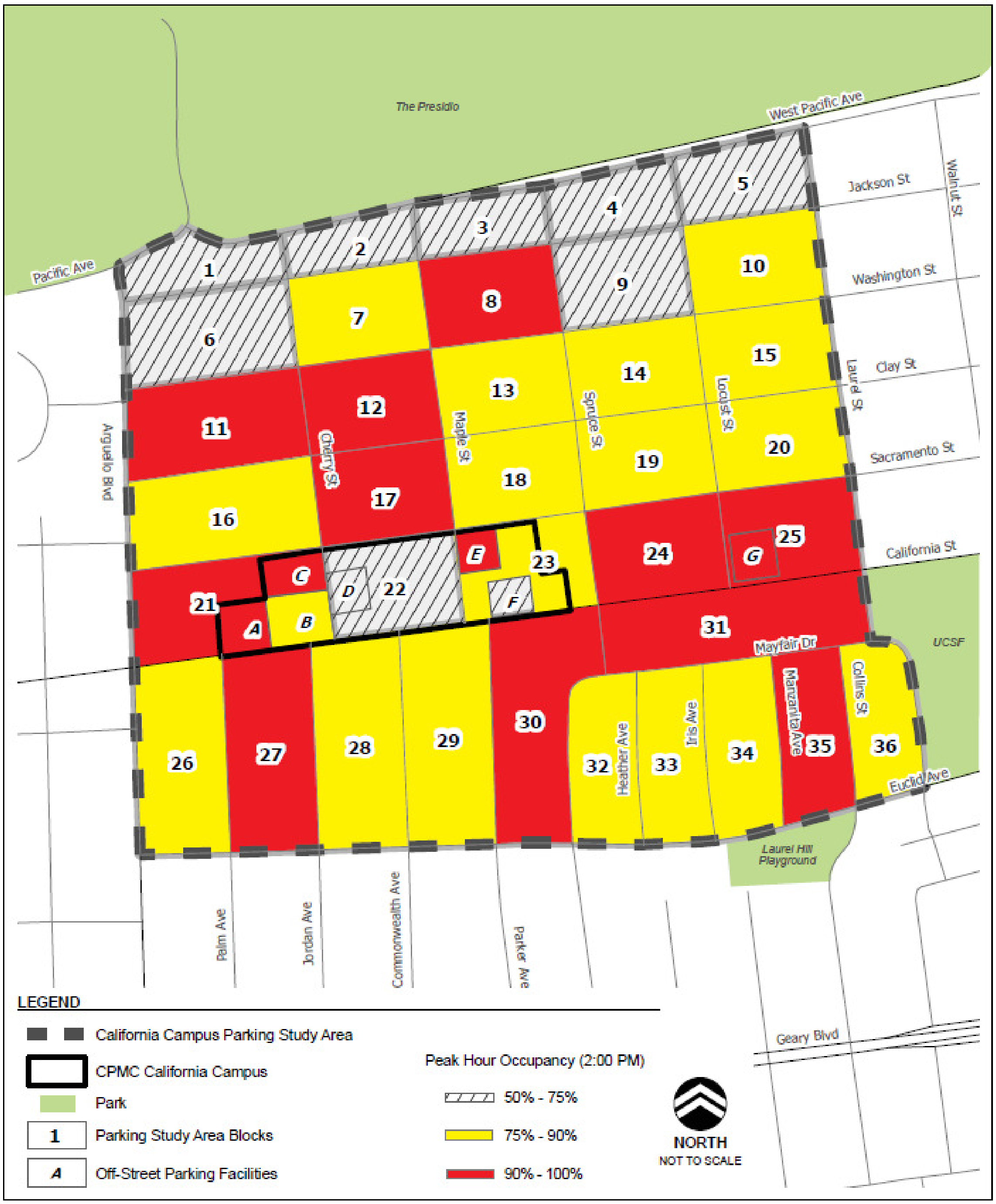
The CPMC EIR evaluated on-street parking supply for existing CMPC campuses. The study area for the California Campus included 36 blocks within the vicinity of the existing campus, representing a total of 1,904 spaces. These on-street spaces are predominantly (73%) two-hour time limit unmetered spaces; only 6% of spaces have no parking restrictions. The Project lies within the "Zone F" Residential Parking Permit (RPP) area; meaning vehicles displaying the appropriate RPP sticker are not subject to posted parking time limits for on-street parking spaces. The goal of the RPP program is to provide more parking spaces for residents by discouraging long-term parking demand by people whom do not live in the area. Within RPP Zone F, vehicles without a RPP sticker are allowed to park for two hours from Monday to Friday between 8:00 AM and 6:00 PM. There are 93 RPP spaces within the study area, which are included in the totals summarized in **Table 2**.

Table 2. On-Street Parking Supply

Time or Use Restriction	Spaces
2-Hour Time Limited Spaces (unmetered)	1,390
3-Hour Time Limited Spaces (unmetered)	187
1-Hour Time Limited Spaces (metered)	108
2-Hour Time Limited Spaces (metered)	75
15-minute Metered Space	1
Short-Term Parking/ADA/Loading	22
No Restrictions	121
Total	**1,904**

Source: CPMC EIR, 2008

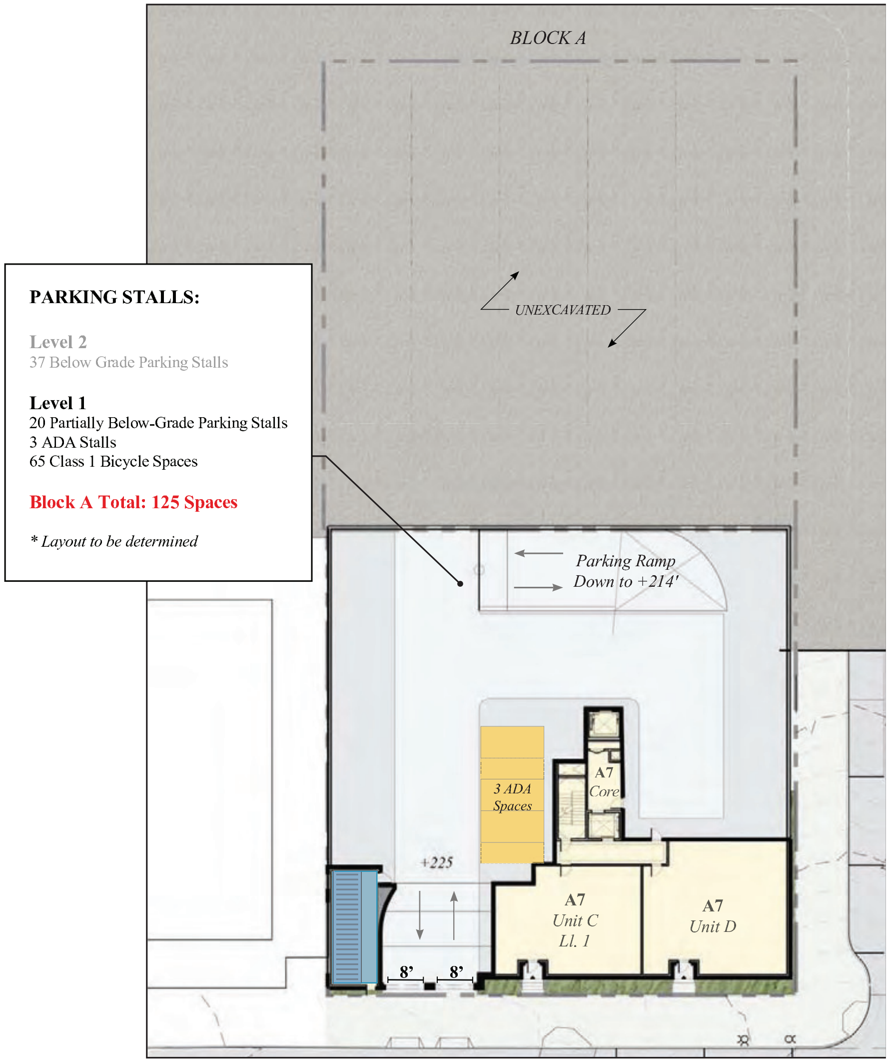
Figure 2. Existing Off-Street and On-Street Parking



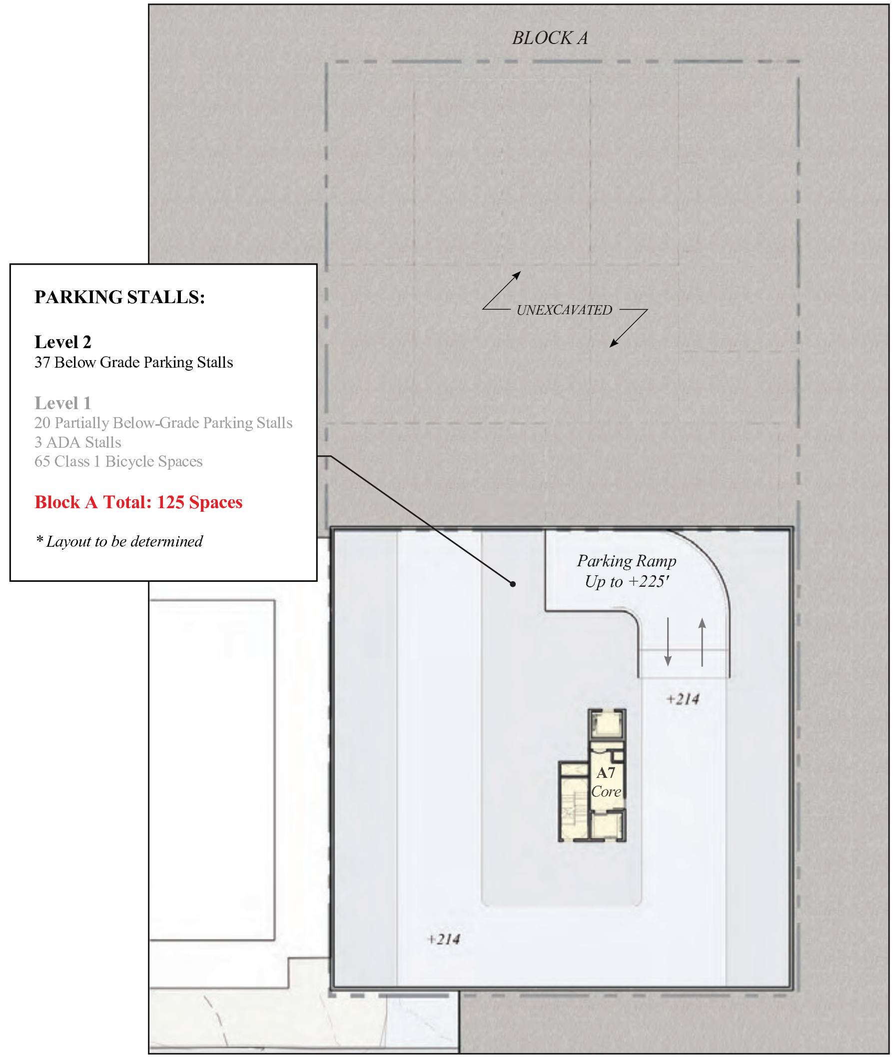
Source: CPMC EIR, 2008

Appendix F.5 – Project Designs

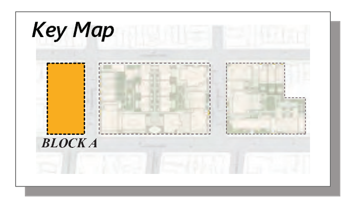
Proposed Project Garage Designs



Basement



Level 1

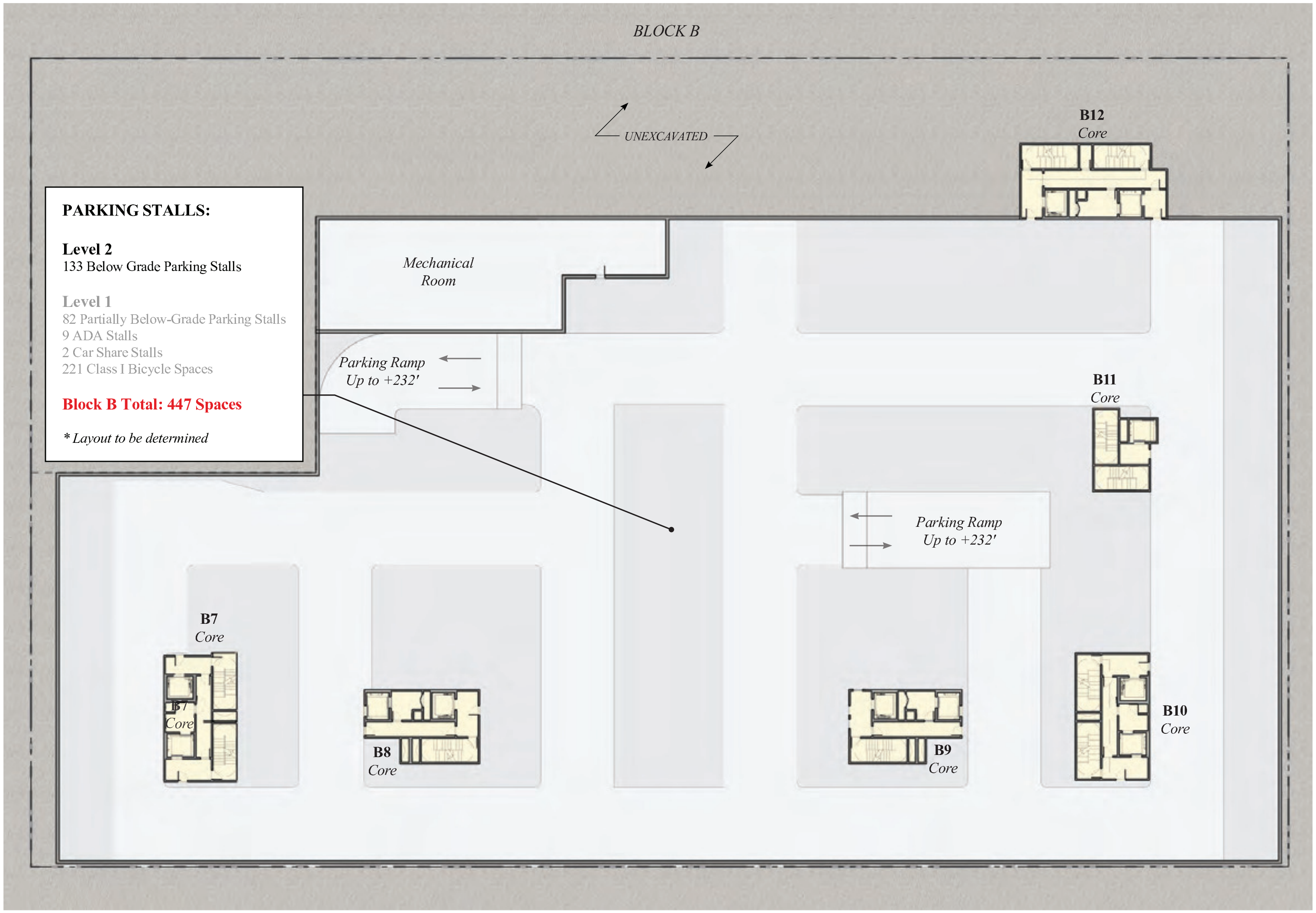


Parking
ADA Parking
Car Share
Bicycle Parking
Loading
Building

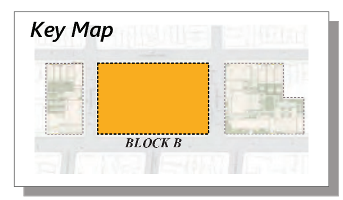
Figure B1-1

Proposed Project Site Plan (Block A)

SF18_0966_Fig0B_Proposed project basement floor site plan_Blocks



Basement



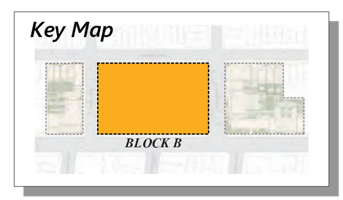
Parking
ADA Parking
Car Share
Bicycle Parking
Loading
Building

Figure B1-2

Proposed Project Basement Floor Site Plan (Block B)

SF18_0966_Fig0B_Proposed project basement floor site plan_Blocks

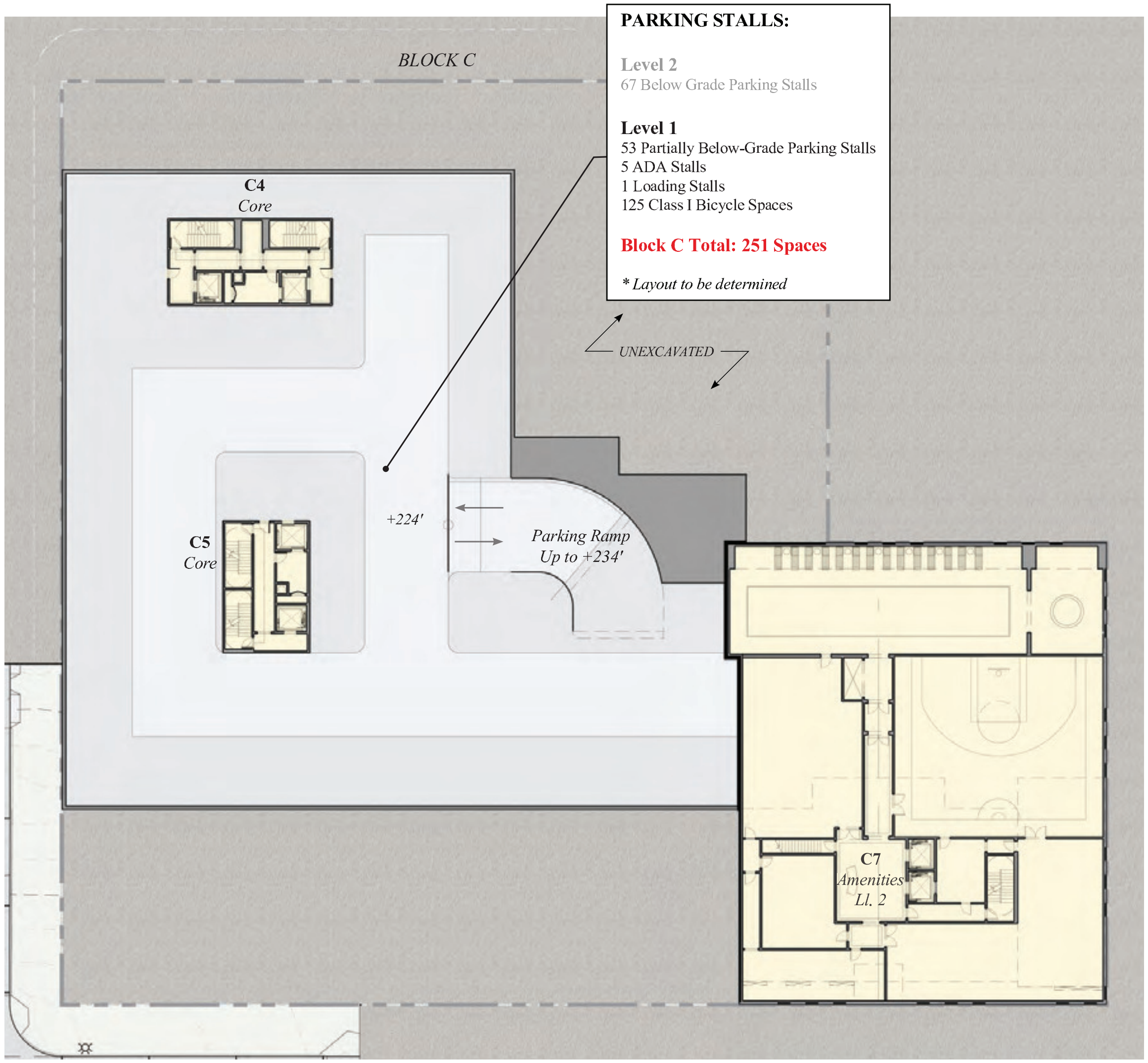
Level 1



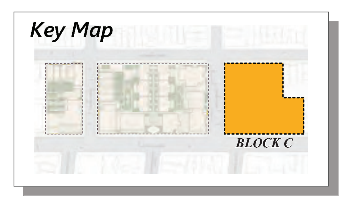
- Parking
- ADA Parking
- Car Share
- Bicycle Parking
- Loading
- Building

Figure B1-3

Proposed Project Level 1 Site Plan (Block B)



Basement

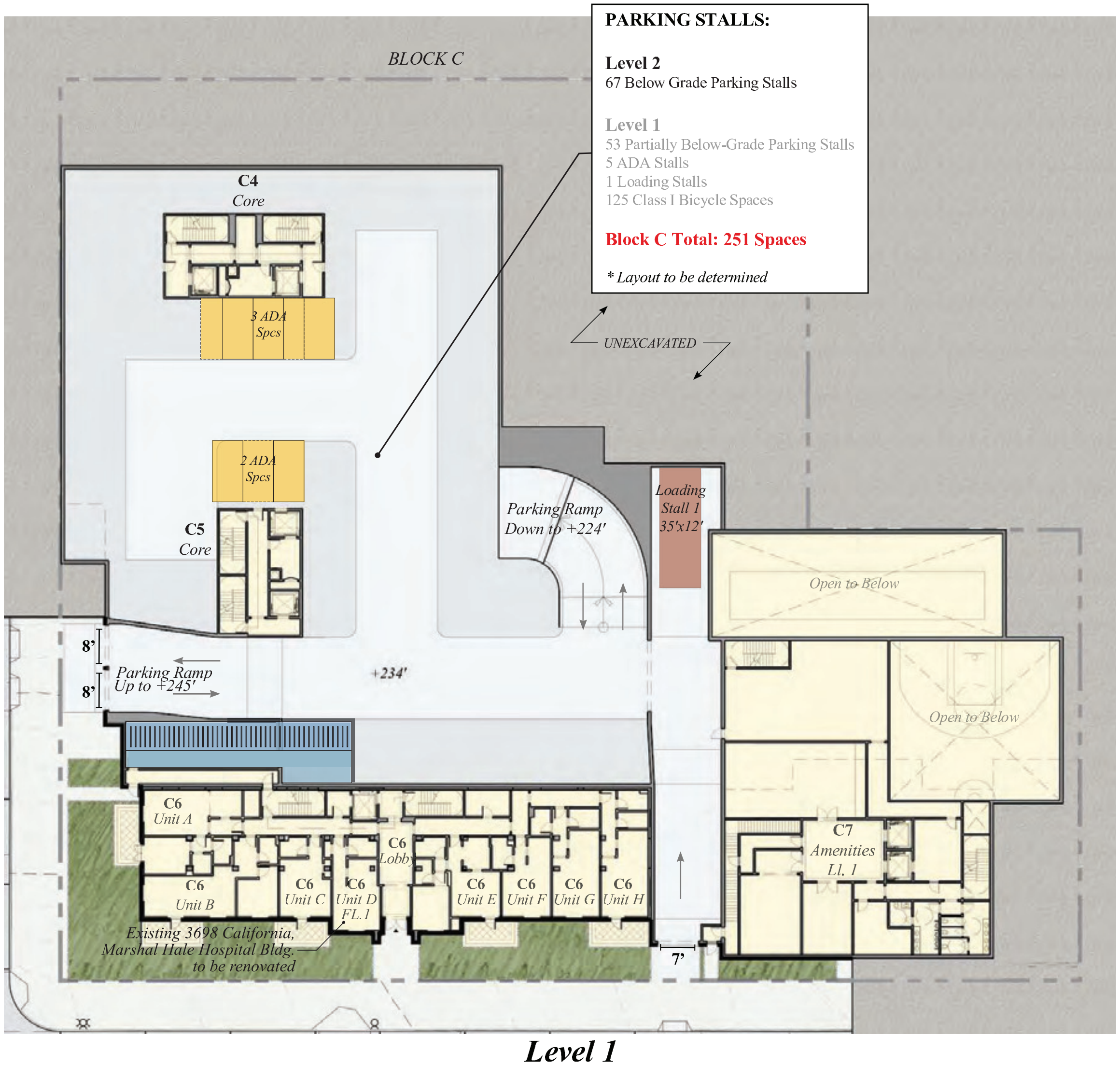


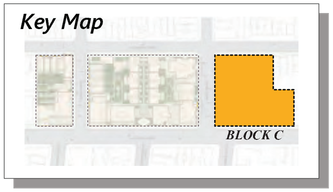
Parking
ADA Parking
Car Share
Bicycle Parking
Loading
Building

Figure B1-4

Proposed Project Basement Floor Site Plan (Block C)

SF18_0966_Fig0B_Proposed project basement floor site plan_Blocks





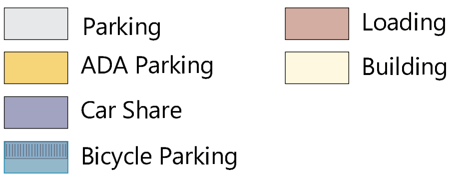


Figure B1-5

Proposed Project Level 1 Site Plan (Block C)

SF18_0966_Fig0B_Proposed project basement floor site plan_Blocks

Driveway and Curb Cut changes

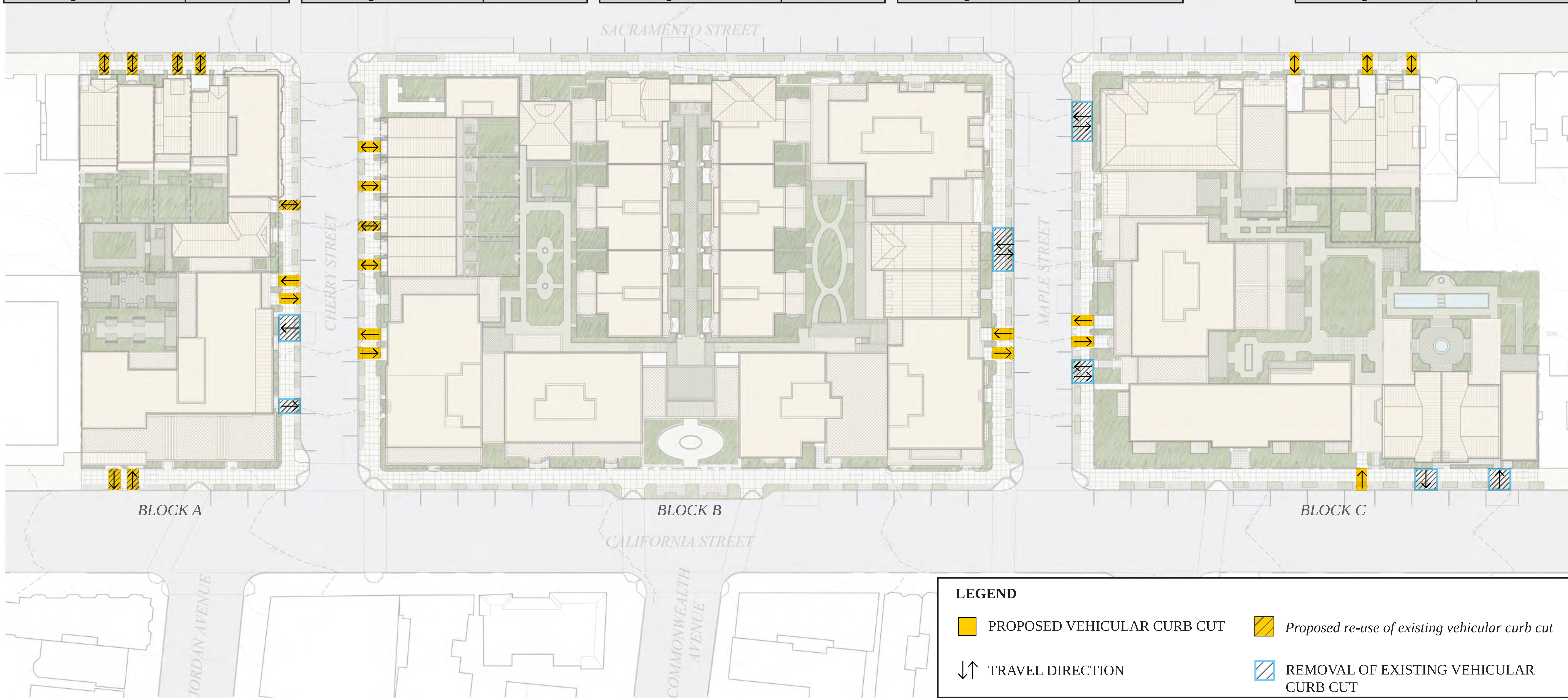
CALIFORNIA STREET	Vehicular Curb Cuts
EXISTING	3
To be re-used	2
To be removed	(2)
PROPOSED	3
Net Change	0

CHERRY STREET	Vehicular Curb Cuts
EXISTING	4
To be re-used	2
To be removed	(2)
PROPOSED	9
Net Change	+5

MAPLE STREET	Vehicular Curb Cuts
EXISTING	3
To be re-used	0
To be removed	(3)
PROPOSED	4
Net Change	+1

SACRAMENTO STREET	Vehicular Curb Cuts
EXISTING	4
To be re-used	4
To be removed	(0)
PROPOSED	7
Net Change	+3

OVERALL SITE	Vehicular Curb Cuts
EXISTING	14
To be re-used	8
To be removed	(7)
PROPOSED	23
Net Change	+9



LEGEND

- PROPOSED VEHICULAR CURB CUT
- *Proposed re-use of existing vehicular curb cut*
- TRAVEL DIRECTION
- REMOVAL OF EXISTING VEHICULAR CURB CUT

SCALE: 1/64" = 1'
0 16' 32' 64'
N

3700 CALIFORNIA STREET SAN FRANCISCO, CA

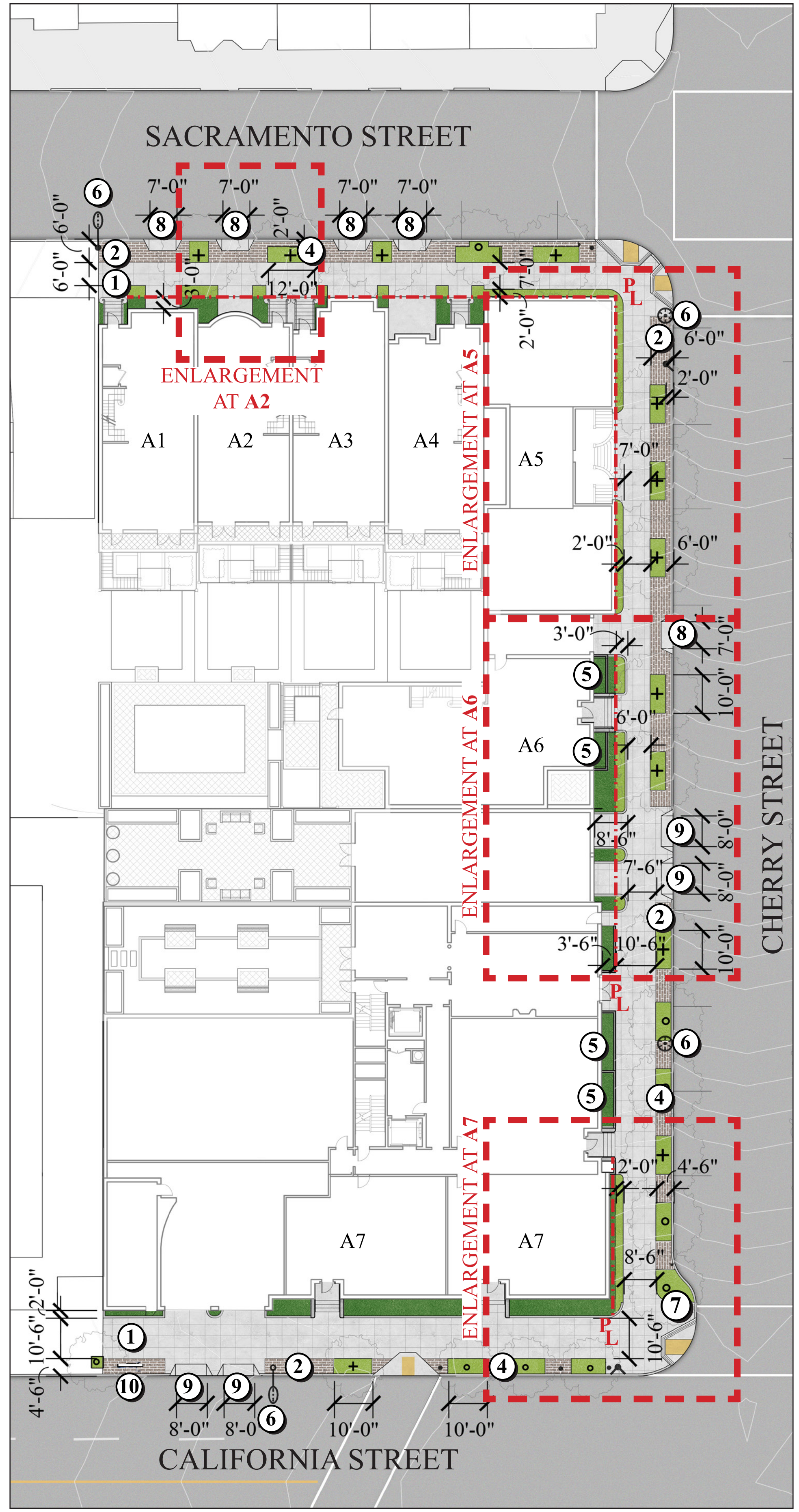
PROPOSED VEHICULAR CURB CUTS

PROPOSED SITE PLAN: DIAGRAMS

TMG PARTNERS | RAMSA ROBERT A.M. STERN ARCHITECTS | MILLER COMPANY landscape architects | BKF 100 YEARS ENGINEERS . SURVEYORS . PLANNERS

PUD/CU SUBMITTAL A-01.12
DECEMBER 2017 *(REVISED OCTOBER 2018)*
NOT INTENDED FOR CONSTRUCTION PURPOSES.

Sidewalk, Curb Cut Widths, and Furnishing Zones



LEGEND

1. CONCRETE SIDEWALK PAVING
2. ENHANCED PAVING AT STREET
3. PAVING AT PRIVATE ENTRIES
4. AT GRADE STREET PLANTING
5. LOW WALL AT STREET FRONTAGE PLANTING
6. LIGHT FIXTURE
7. SIDEWALK BULBOUT
8. SINGLE FAMILY HOME DRIVEWAY
9. 3838 CALIFORNIA GARAGE DRIVEWAY
10. BIKE RACKS

PL PROPERTY LINE

BUS SHELTER

ENHANCED SIDEWALK PAVING

STREET LIGHT AND MUNI POLE PEDESTRIAN

STREET LIGHT

FIRE HYDRANT

MUNI POLE OR PEDESTRIAN TRAFFIC LIGHT

EXISTING STREET TREE

PROPOSED STREET TREE

LANDSCAPING INSIDE PROPERTY LINE

LANDSCAPING OUTSIDE PROPERTY LINE

NOTES

SEE SHEET L-01.02 FOR ENLARGEMENTS OF SIDEWALK PLANTING ENCROACHMENTS AT BLOCK **A.**

N

SCALE: 1" = 40'

0 10' 20' 40'

KEY PLAN

3700 CALIFORNIA STREET SAN FRANCISCO, CA

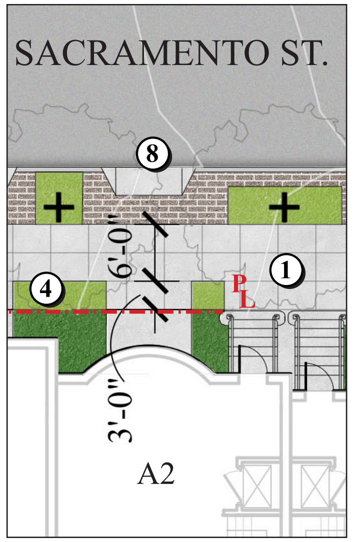
TMG PARTNERS | RAMSA ROBERT A.M. STERN ARCHITECTS | MILLER COMPANY landscape architects | BKF 100 YEARS ENGINEERS . SURVEYORS . PLANNERS

STREETSCAPE PLAN - BLOCK A

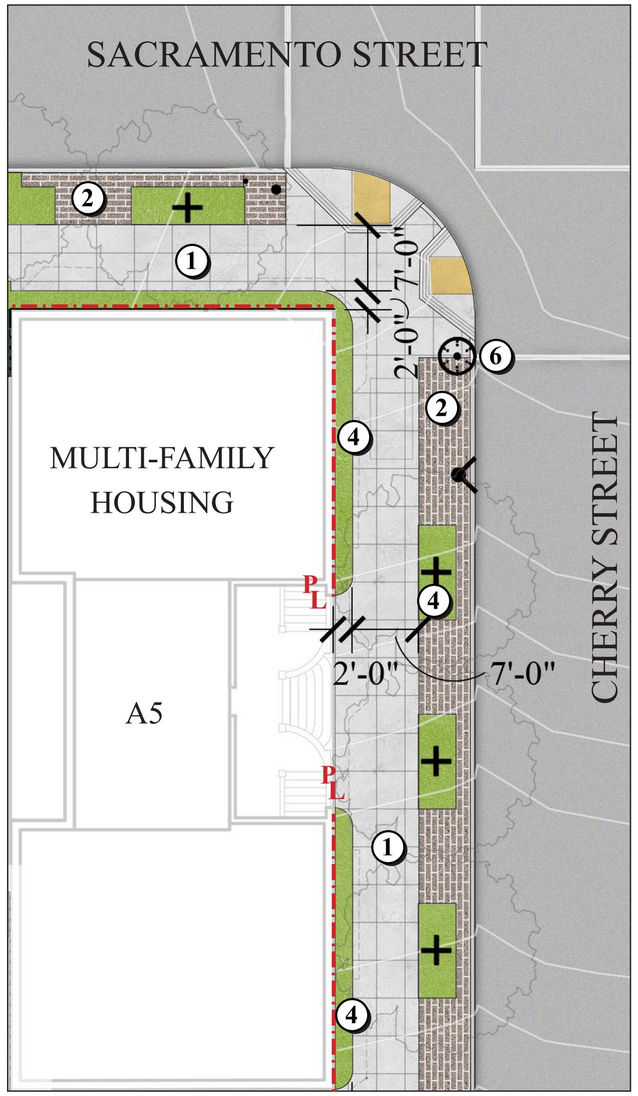
PUD/CU SUBMITTAL L-01.01

DECEMBER 2017

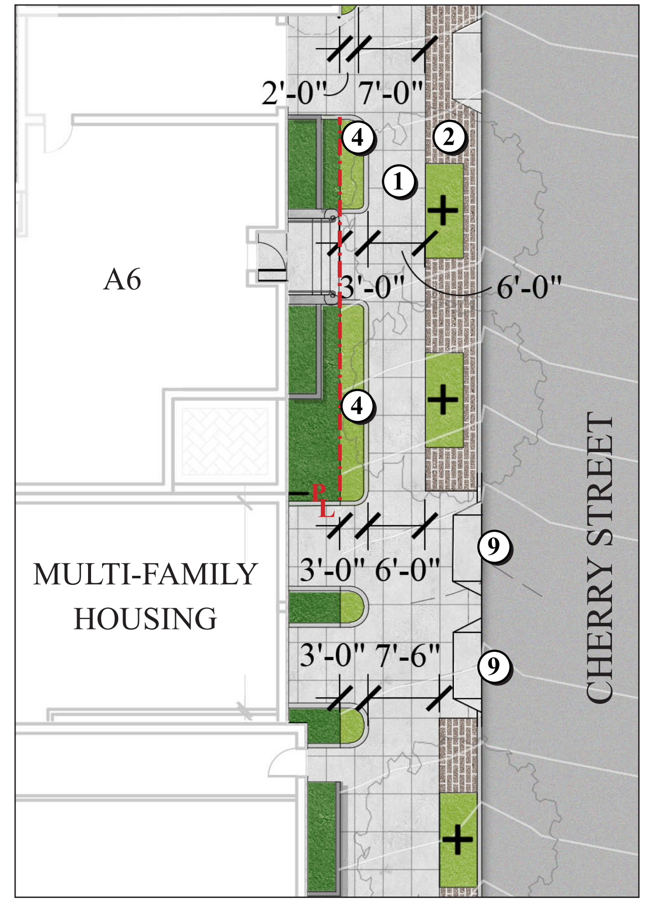
NOT INTENDED FOR CONSTRUCTION PURPOSES.



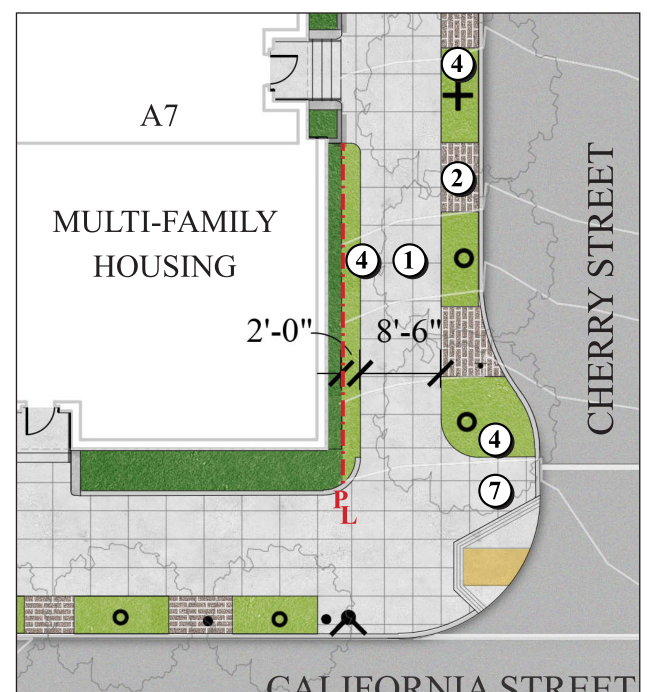
ENLARGEMENT AT **A2**, TYPICAL FOR SINGLE-FAMILY HOUSING
A1 - A4



ENLARGEMENT AT **A5**



ENLARGEMENT AT **A6**



ENLARGEMENT AT **A7**

LEGEND

1. CONCRETE SIDEWALK PAVING
2. ENHANCED PAVING AT STREET
3. PAVING AT PRIVATE ENTRIES
4. AT GRADE STREET PLANTING
5. LOW WALL AT STREET FRONTAGE PLANTING
6. LIGHT FIXTURE
7. SIDEWALK BULBOUT
8. SINGLE FAMILY HOME DRIVEWAY
9. MULTI-FAMILY HOUSING GARAGE DRIVEWAY
10. BIKE RACKS

- PL — PROPERTY LINE
- BUS SHELTER
- ENHANCED SIDEWALK PAVING
- STREET LIGHT AND MUNI POLE
- PEDESTRIAN STREET LIGHT
- FIRE HYDRANT
- MUNI POLE OR PEDESTRIAN TRAFFIC LIGHT
- EXISTING STREET TREE
- PROPOSED STREET TREE
- LANDSCAPING INSIDE PROPERTY LINE
- LANDSCAPING OUTSIDE PROPERTY LINE

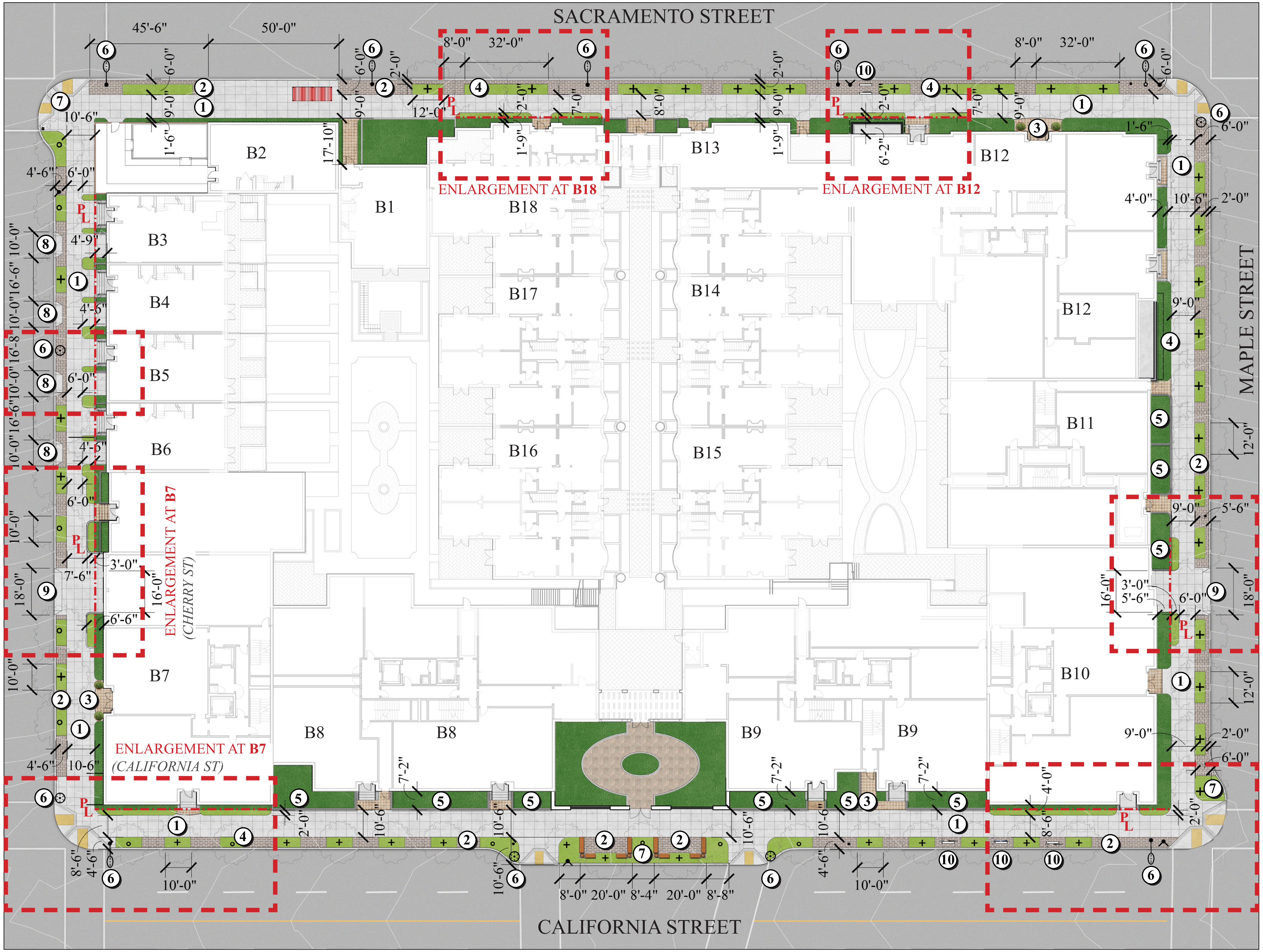
KEY PLAN

3700 CALIFORNIA STREET SAN FRANCISCO, CA

TMG PARTNERS | RAMSA ROBERT A.M. STERN ARCHITECTS | MILLER COMPANY landscape architects | BKF 100 YEARS ENGINEERS . SURVEYORS . PLANNERS

SIDEWALK ENCROACHMENT - BLOCK A

PUD/CU SUBMITTAL L-01.02
DECEMBER 2017 (REVISED NOV. 2018)
NOT INTENDED FOR CONSTRUCTION PURPOSES.



LEGEND

1. CONCRETE SIDEWALK PAVING
2. ENHANCED PAVING AT STREET
3. PAVING AT PRIVATE ENTRIES
4. AT GRADE STREET PLANTING
5. LOW WALL AT STREET FRONTAGE PLANTING
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- EXISTING STREET TREE
- PROPOSED STREET TREE
- LANDSCAPING INSIDE PROPERTY LINE
- LANDSCAPING OUTSIDE PROPERTY LINE

NOTES

SEE SHEET L-01.04 FOR ENLARGEMENTS OF SIDEWALK PLANTING ENCROACHMENTS AT BLOCK **A.**

SCALE: 1" = 40'
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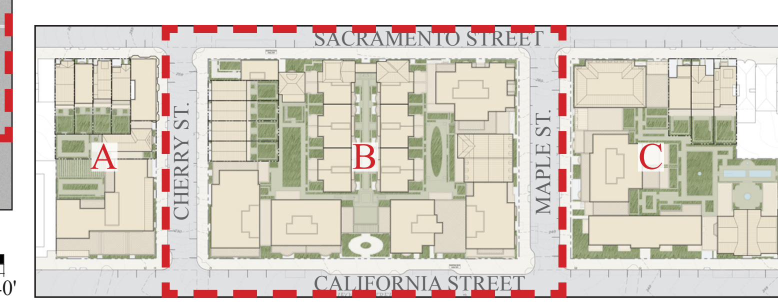


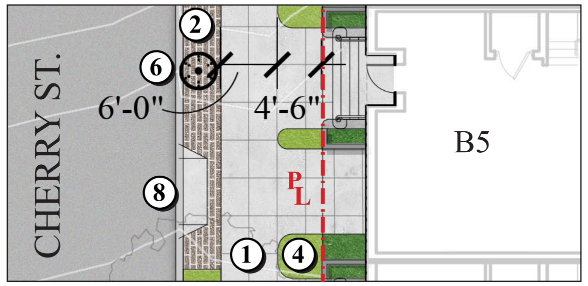
KEY PLAN

3700 CALIFORNIA STREET SAN FRANCISCO, CA

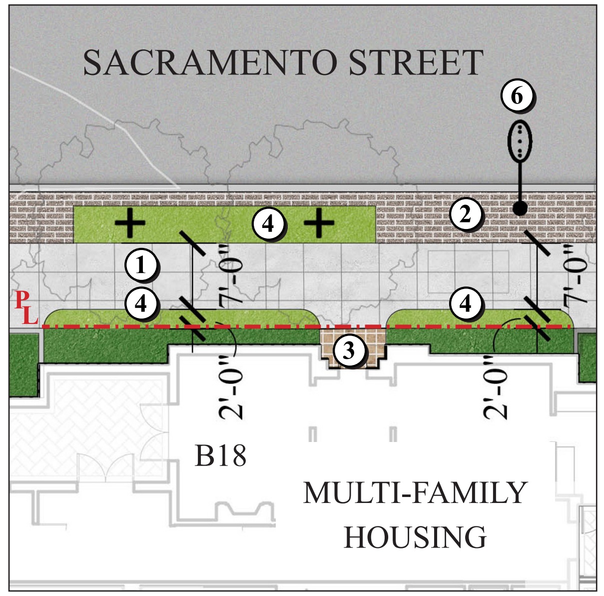
TMG PARTNERS | RAMSA ROBERT A.M. STERN ARCHITECTS | MILLER COMPANY landscape architects | BKF 100 YEARS ENGINEERS . SURVEYORS . PLANNERS

STREETSCAPE PLAN - BLOCK B

PUD/CU SUBMITTAL L-01.03
DECEMBER 2017 (REVISED NOV. 2018)
NOT INTENDED FOR CONSTRUCTION PURPOSES.



ENLARGEMENT AT **B5**,
TYPICAL FOR SINGLE-FAMILY
HOUSING **B3** - **B6**



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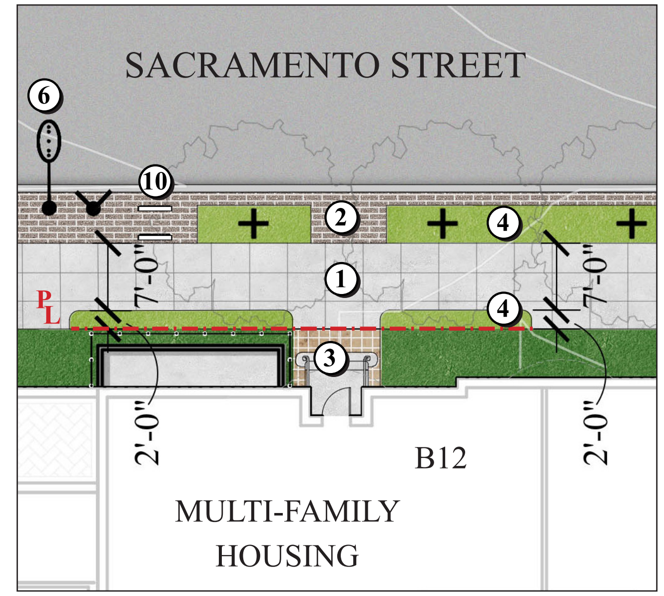
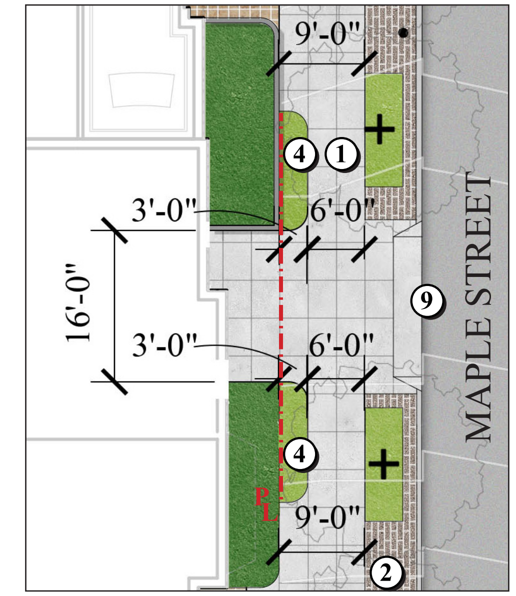
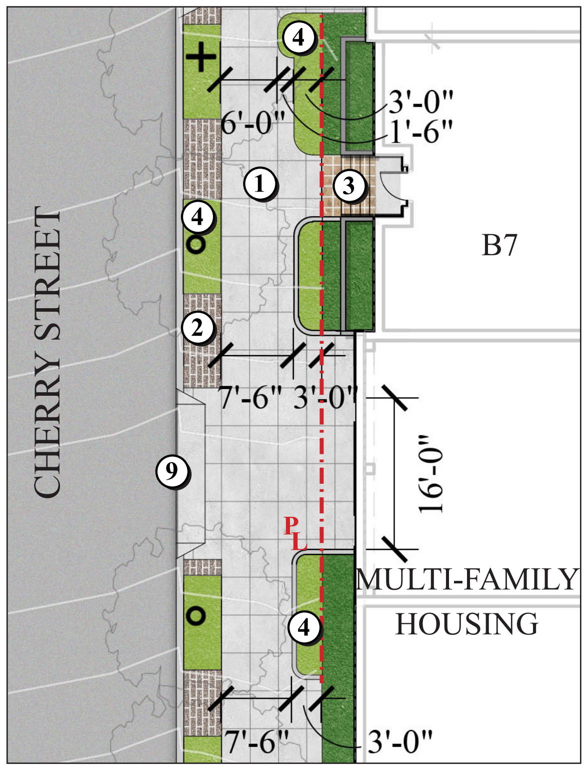


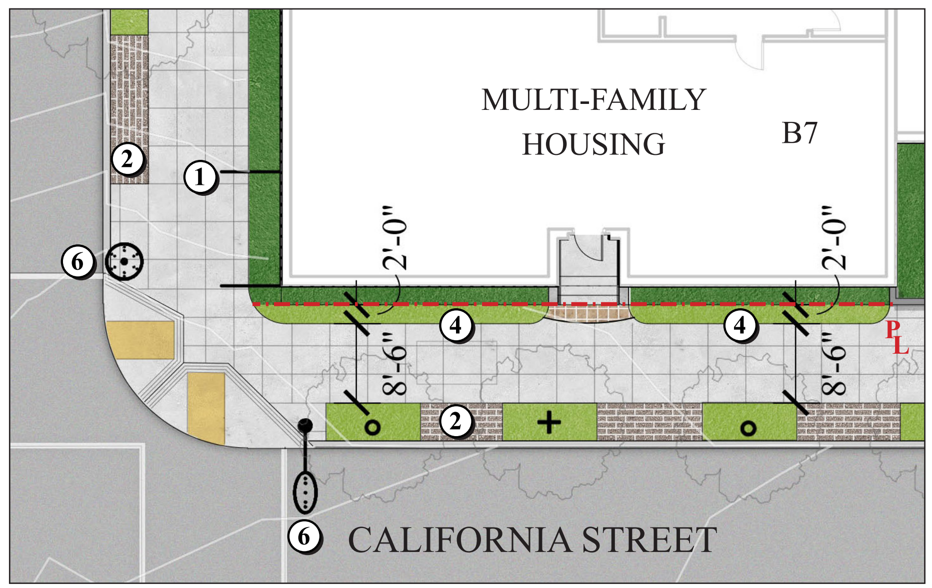
ENLARGEMENT AT **B12**



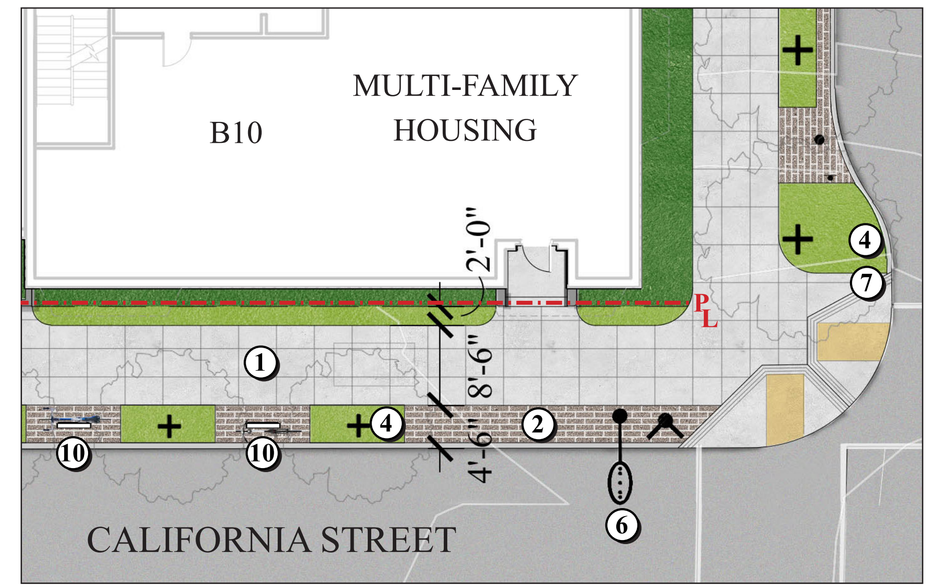
ENLARGEMENT AT **B11**



ENLARGEMENT AT **B7**
(*CHERRY STREET*)



ENLARGEMENT AT **B7**,
(*CALIFORNIA STREET*)



ENLARGEMENT AT **B10**
(*CALIFORNIA STREET*)

LEGEND

1. CONCRETE SIDEWALK PAVING
2. ENHANCED PAVING AT STREET
3. PAVING AT PRIVATE ENTRIES
4. AT GRADE STREET PLANTING
5. LOW WALL AT STREET FRONTAGE PLANTING
6. LIGHT FIXTURE
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8. SINGLE FAMILY HOME DRIVEWAY
9. MULTI-FAMILY HOUSING GARAGE DRIVEWAY
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- PROPERTY LINE
- BUS SHELTER
- ENHANCED SIDEWALK PAVING
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- EXISTING STREET TREE
- PROPOSED STREET TREE
- LANDSCAPING INSIDE PROPERTY LINE
- LANDSCAPING OUTSIDE PROPERTY LINE

N

SCALE: 1" = 20'
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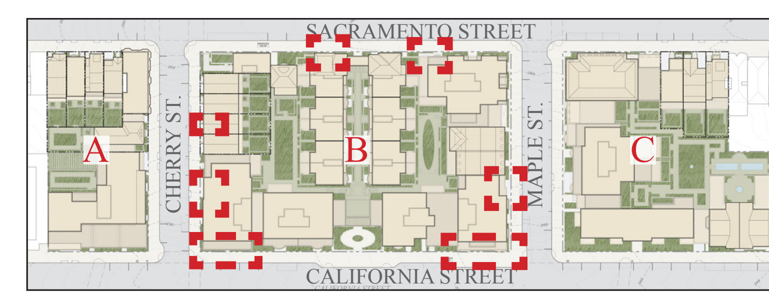


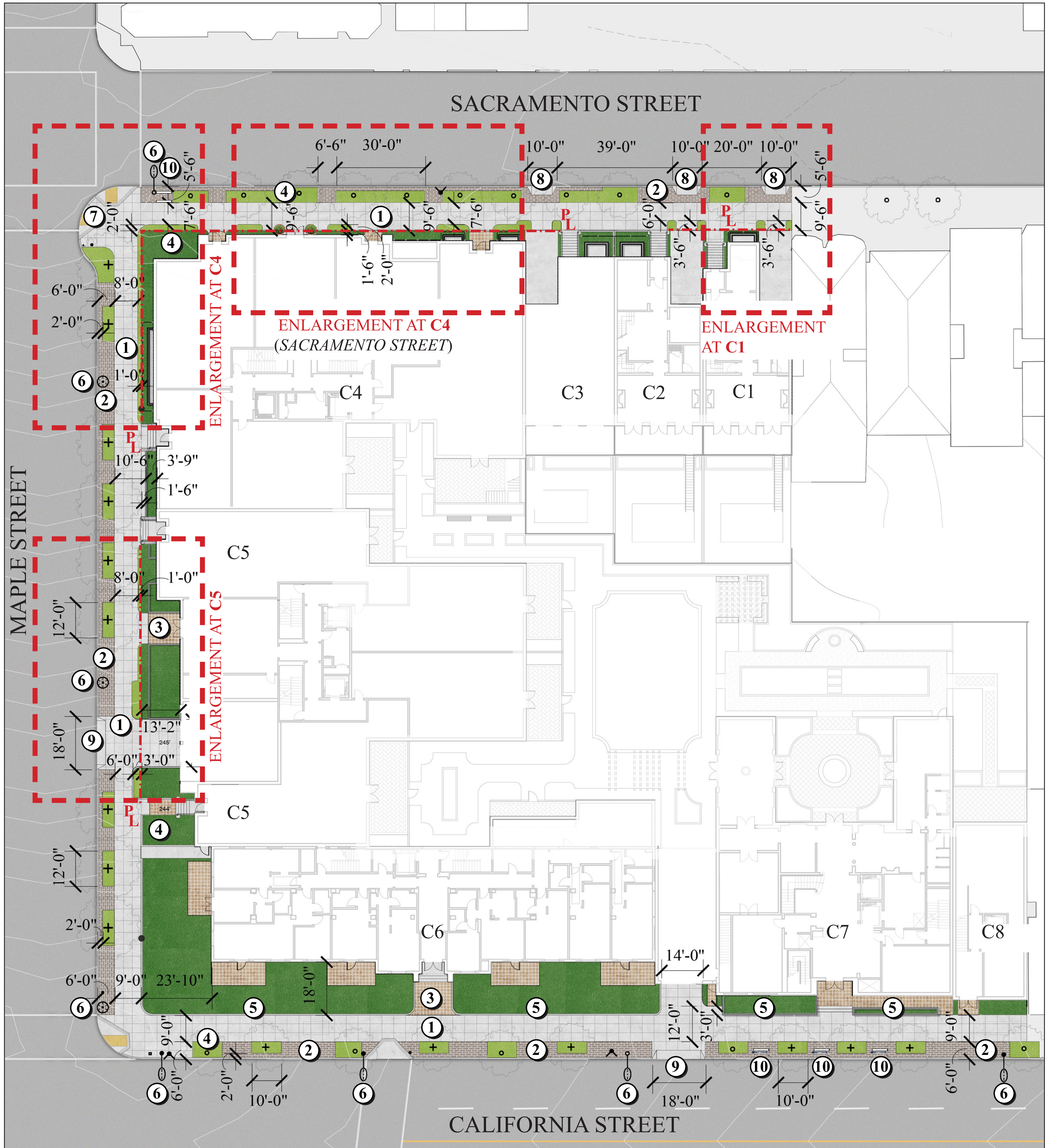
KEY PLAN

3700 CALIFORNIA STREET SAN FRANCISCO, CA

TMG PARTNERS | RAMSA ROBERT A.M. STERN ARCHITECTS | MILLER COMPANY landscape architects | BKF 100 YEARS ENGINEERS . SURVEYORS . PLANNERS

SIDEWALK ENCROACHMENT - BLOCK B

PUD/CU SUBMITTAL L-01.04
DECEMBER 2017 (REVISED NOV. 2018)
NOT INTENDED FOR CONSTRUCTION PURPOSES.



LEGEND

1. CONCRETE SIDEWALK PAVING
2. ENHANCED PAVING AT STREET
3. PAVING AT PRIVATE ENTRIES
4. AT GRADE STREET PLANTING
5. LOW WALL AT STREET FRONTAGE PLANTING
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- EXISTING STREET TREE
- PROPOSED STREET TREE
- LANDSCAPING INSIDE PROPERTY LINE
- LANDSCAPING OUTSIDE PROPERTY LINE

NOTES

SEE SHEET L-01.06 FOR ENLARGEMENTS OF SIDEWALK PLANTING ENCROACHMENTS AT BLOCK **A.**

N

SCALE: 1" = 40'
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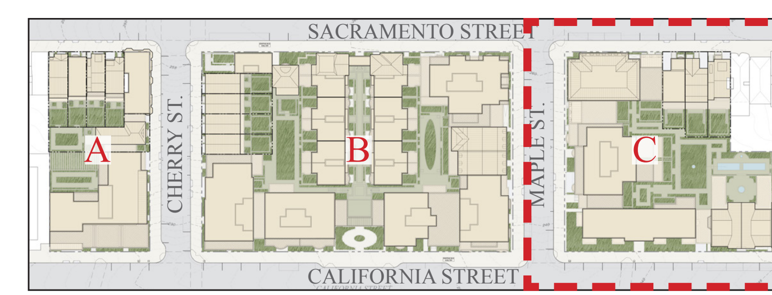


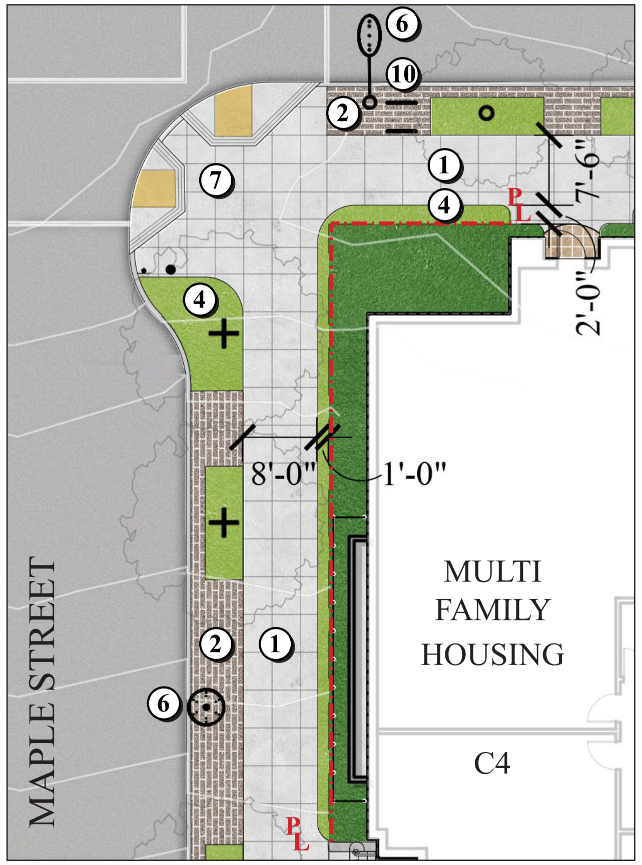
KEY PLAN

3700 CALIFORNIA STREET SAN FRANCISCO, CA

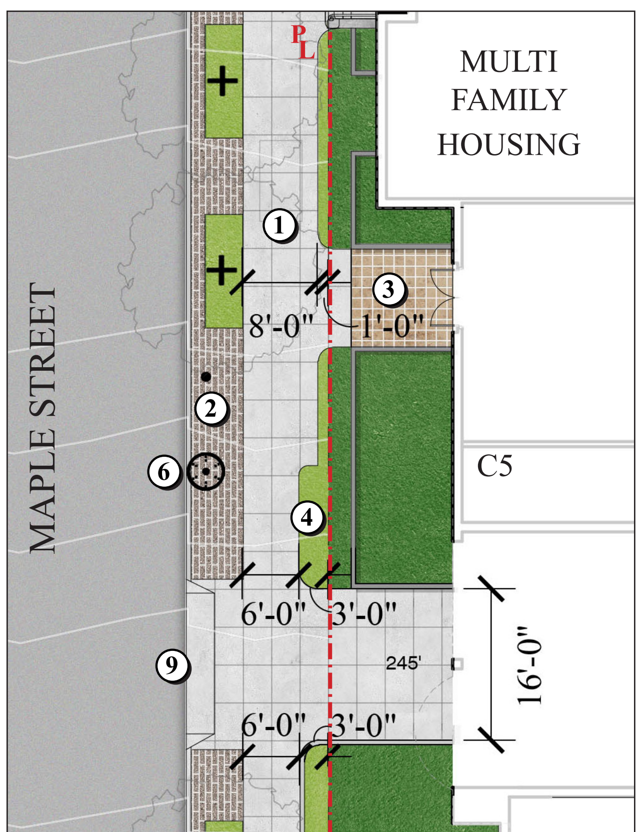
TMG PARTNERS | RAMSA ROBERT A.M. STERN ARCHITECTS | MILLER COMPANY landscape architects | BKF 100 YEARS ENGINEERS . SURVEYORS . PLANNERS

STREETSCAPE PLAN - BLOCK C

PUD/CU SUBMITTAL L-01.05
DECEMBER 2017 (REVISED NOV. 2018)
NOT INTENDED FOR CONSTRUCTION PURPOSES.



ENLARGEMENT AT **C4**



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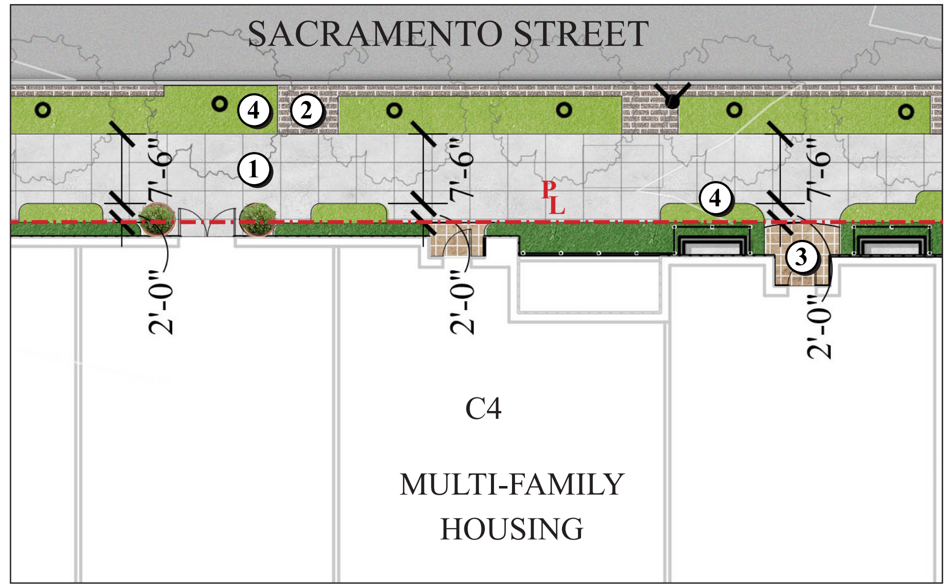
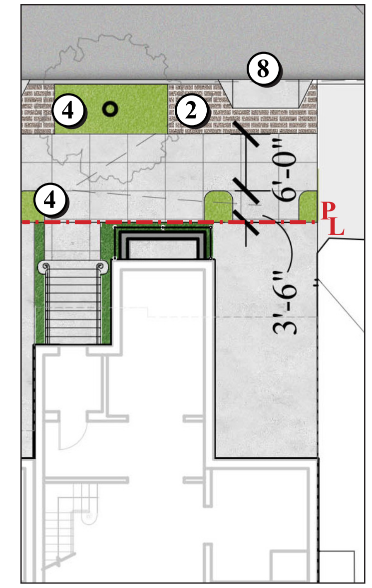


ENLARGEMENT AT **C4**
(*SACRAMENTO STREET*)



ENLARGEMENT AT **C1**, TYPICAL FOR SINGLE-FAMILY HOUSING
C1 - C3

LEGEND

1. CONCRETE SIDEWALK PAVING
2. ENHANCED PAVING AT STREET
3. PAVING AT PRIVATE ENTRIES
4. AT GRADE STREET PLANTING
5. LOW WALL AT STREET FRONTAGE PLANTING
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- LANDSCAPING INSIDE PROPERTY LINE
- LANDSCAPING OUTSIDE PROPERTY LINE

N
SCALE: 1" = 20'
0 5' 10' 20'

KEY PLAN

3700 CALIFORNIA STREET SAN FRANCISCO, CA

TMG PARTNERS | RAMSA ROBERT A.M. STERN ARCHITECTS | MILLER COMPANY landscape architects | BKF 100 YEARS ENGINEERS . SURVEYORS . PLANNERS

SIDEWALK ENCROACHMENT - BLOCK C

PUD/CU SUBMITTAL L-01.06
DECEMBER 2017 (REVISED NOV. 2018)
NOT INTENDED FOR CONSTRUCTION PURPOSES.

Appendix F.6 – Travel Demand Memorandum

MEMORANDUM

Date: October 2, 2018

To: Lana Wong, Planning Department, City and County of San Francisco

From: Matt Goyne and Teresa Whinery, Fehr & Peers

Subject: Memorandum #1: Final Travel Demand Estimates for 3700 California

SF18-0966

This memorandum presents the travel demand information for the proposed residential development at 3700 California Street Case No. 2017-003559ENV (herein "Proposed Project") in San Francisco, California. The purpose for this memorandum is to confirm the travel demand approach due to the complexity of the change from hospital to residential uses at this site. The first part of this memorandum presents the Proposed Project's travel demand and compares it to the travel demand for the existing California Pacific Medical Center (CPMC) California Campus. This comparison includes vehicle trips, transit trips, other trips (bicycle, motorcycle, and for-hire vehicles) and freight delivery and service vehicle loading demand. The second part of this memorandum presents the vehicle miles traveled (VMT) assessment for the Proposed Project. Upon review and approval of this memorandum, Fehr & Peers will prepare **Memorandum #2: Impact Analysis for 3700 California** that will include a full project description (elements pertaining to the travel demand are presented here), documentation of existing transportation conditions, and the remaining Travel Demand tasks such as trip distribution, mode split, passenger loading demand, and parking demand.

Summary

As presented in the *CPMC Long Range Development Plan EIR,* 2010 (2010 CPMC EIR), certified by the San Francisco Planning Commission in 2012 and approved by the San Francisco Board of Supervisors in 2013, a bulk of the hospital and medical services provided at the California Campus would be moved to other CPMC facilities by the year 2020, allowing the land to be developed for other uses.

The Proposed Project would demolish most of the hospital in order to construct 273 residential units, with one remaining medical office building continuing to operate beyond 2020. As presented in this memorandum, the Proposed Project would generally result in fewer person and vehicle trips on the surrounding transportation network, including the following:

- Lower total vehicle trip generation for daily, AM, and PM peak hours.
- Lower total transit trip generation for daily, AM, and PM peak hours, although the Proposed Project would generate slightly more outbound trips in the AM hour and slightly more inbound trips in the PM hour.
- Lower freight delivery and service loading demand for both daily and during the peak hour.
- In addition, this memorandum presents evidence that the travel demand estimates used in the 2010 CPMC EIR still reflect the current transportation context and that the project's VMT per capita would be more than 15 percent below the regional average.

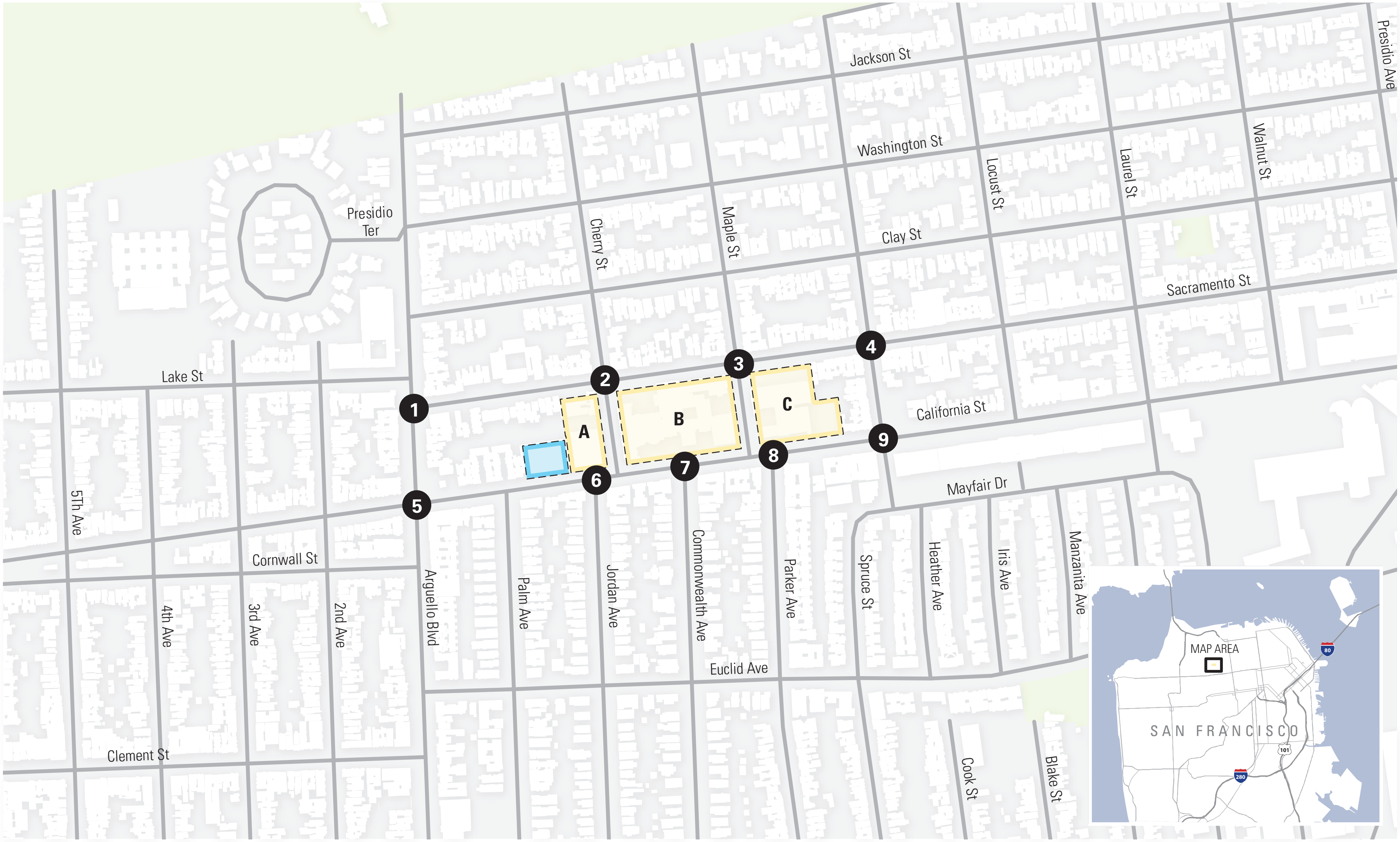
A description of the existing project site and the Proposed Project and the details of the analysis are presented in the following sections.

Project Site

Figure 1 shows the location of the Project Site and streets within the Proposed Project study area. The Proposed Project is located on an approximately 214,000 square-foot (4.9 acres) site on three blocks bordered by Sacramento Street to the north, California Street to the south, Spruce Street to the east, and Arguello Boulevard to the west. The Project Site consists of 14 parcels, eight of which are zoned RM-2 (Moderate Mixed Residential District) and six of which are zoned RH-2 (Two-Family Residential District).

The existing Project Site is presented in **Figure 2** and currently contains seven buildings, whose heights range from approximately 33 to 80 feet:

- The northwestern most structure of Block A at 3905 Sacramento Street (parcel lot 052) is a three-story medical office with an area of approximately 14,900 square feet. There are multiple driveways on Sacramento Street and an exit driveway on Cherry Street.
- Immediately east of the medical office is a four-story residential building with nine units on a 3,000 square foot parcel at 401 Cherry Street (lot 001). This building sits at the corner of Sacramento Street and Cherry Street and will be maintained as part of the Proposed Project.



Study Intersection

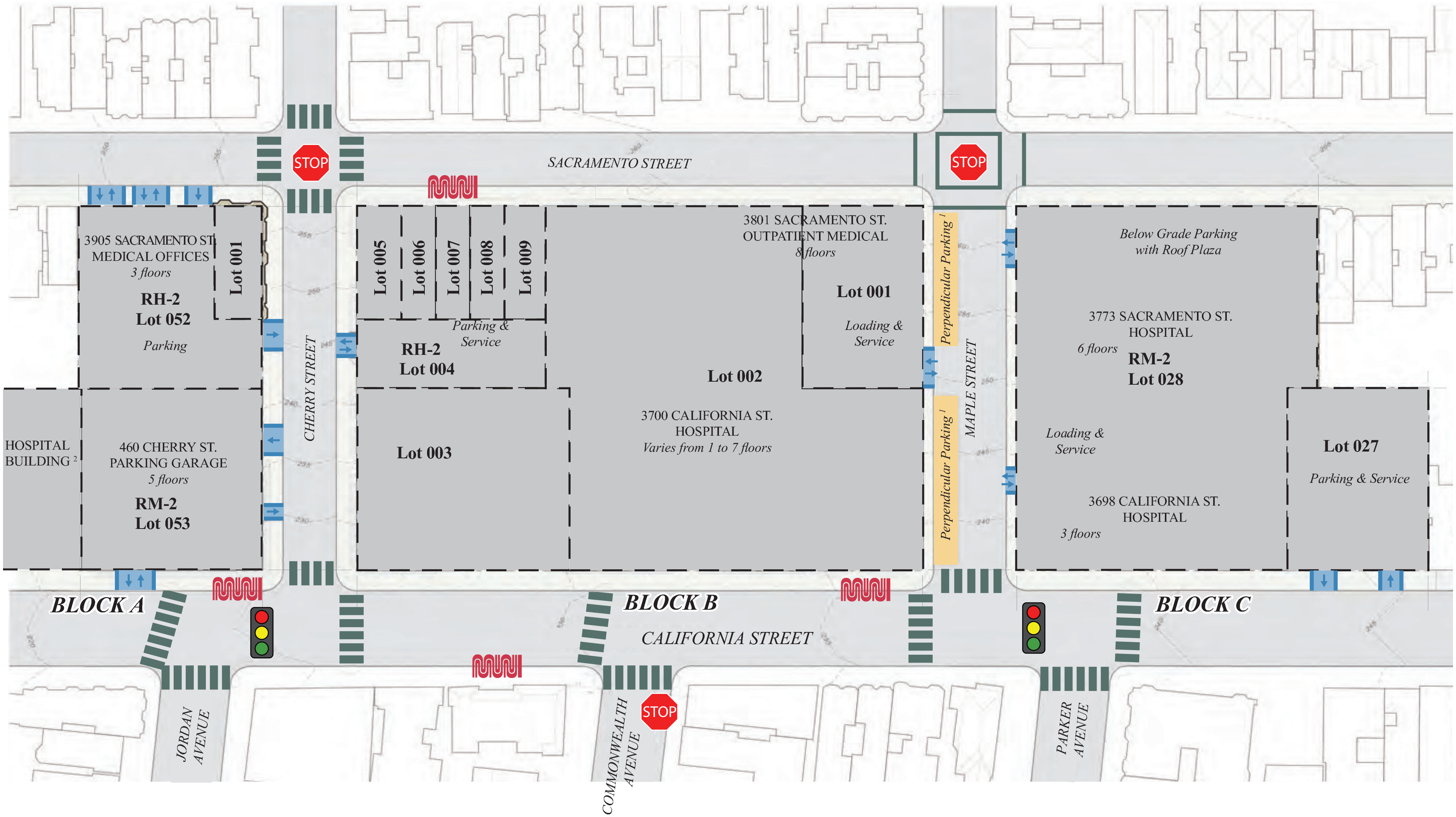
Project Site

Existing Hospital (building to remain)

Figure 1

Project Site

SF18_0966_Fig01_Site Plan



Driveway

MUNI Stop

Standard Crosswalk

Continental Crosswalk

Notes:

[1] The remainder of the curb space includes parallel access for parking or loading. The Project would change most curb space designations fronting the project site, and therefore the specific curb designations are not shown.

[2] Hospital building at 3838 California St. to remain with the Project.

Figure 2

Existing Site Plan

SF18_0966_Fig02_Existing Site Plan

- Immediately south of the medical office and residential building is a five-story parking garage on a 17,600 square foot parcel at 460 Cherry Street (lot 053). There are two driveways for this parking garage on Cherry Street and one on California Street.

- On the next block to the east, Block B includes the California Pacific Medical Center at 3700 California Street, which ranges from one to seven stories, and the eight-story outpatient medical building on the northeast corner at 3801 Sacramento Street. The hospital and outpatient building occupy the entire block of approximately 109,000 square feet on nine individual parcel lots. This block is accessed via two driveways on Cherry Street and Maple Street that provide access to surface and underground parking and loading.

- Finally, Block C is located east of the Block B and has two medical buildings, a six-story hospital to the north at 3773 Sacramento Street and a three-story hospital to the south at 3698 California Street. The buildings together serve on a 69,000 square foot parcel (lot 028). Driveway entrances to both hospitals exist on Maple Street, while there is a driveway to the existing surface parking lot on California Street (lot 027). The Proposed Project would maintain and renovate the existing three-story Marshall Hale Memorial Hospital Building at 3698 California Street.

The existing uses on-site are currently active and are anticipated to be occupied until 2019, after which construction of the Proposed Project could begin. Although the Proposed Project would maintain several buildings, the only land uses on the Project Site that would remain active under the Proposed Project is the existing nine-unit residential building at 401 Cherry Street. It is important to note that the Project Site does not include the CPMC medical office building at 3838, 3848, and 3850 California Street, which would remain and continue to operate with the Proposed Project.

Project Description

The Proposed Project would demolish five of the seven existing buildings on the fourteen parcels that currently house a three-story medical office (3905 Sacramento Street), a five-story parking garage with 290 parking spaces (460 Cherry Street), a one- to seven-story hospital (3700 California Street), an eight-story outpatient medical building (3801 Sacramento Street), and another six-story hospital (3773 Sacramento Street). The Proposed Project would retain the four-story nine-unit residential building (401 Cherry Street) and convert the three-story Marshall Hale Memorial Hospital into a 24-unit residential building (3698 California Street). The Proposed Project would construct 31 new buildings, including 12 separate single-family homes and 19 multi-family buildings containing studios, 1-, 2-, 3-, and 4-bedroom units (including two additional single-family homes on podium). Approximately 75% of the units would include two or more bedrooms. In total, the Proposed Project would consist of 33 buildings ranging from three to seven stories containing 273 residential units, 416 below-grade vehicle parking spaces, 411 Class 1 bicycle parking spaces, 22 Class 2 bicycle parking spaces, 13 cargo bicycle parking spaces, and one bicycle repair station. The Proposed Project land uses and parking supply are summarized in **Table 1.**

Table 1: Proposed Project Land Uses

Land Use Type	Proposed Project
Residential	273 units: 13 studios 56 one-bedroom 88 two-bedroom 96 three-bedroom 20 four-bedroom
Car Parking	416 spaces for residential use[1] plus 7 car-share spaces
Bike Parking	411 Class 1 spaces 22 Class 2 spaces 13 cargo bike spaces
Loading	4 off-street loading spaces 11 on-street passenger (white) loading spaces[2]

Notes:
1. Includes ADA parking spaces to fulfill the required amount.
2. Based on revised plans prepared subsequent to the 3700 California Street Environmental Evaluation Application Revision, Planning Department Case No. 2017-003559EEA (June 1, 2018). The revised drawings were prepared for the EIR in response to City comments in June through October 2018.

Source: TMG Partners and Ramsa, 2018; Fehr & Peers, 2018.

Additional information relating to the Proposed Project's streetscape elements and access will be presented in Memorandum #2: Impact Analysis for 3700 California.

Travel Demand Analysis

Project travel demand refers to the new vehicle, transit, walking, and bicycle trips that would be generated by the Proposed Project. The freight loading demand for the Proposed Project is also presented in this chapter, while parking and passenger loading demand will be presented in Memorandum #2. The travel demand and freight/service vehicle loading demand estimates were based on observed data and information contained in the San Francisco Planning Department's *Transportation Impact Analysis Guidelines for Environmental Review* (*SF Guidelines*), published in October 2002. The Project Site is in Superdistrict 2, which was used for the trip distribution and mode share per the *SF Guidelines*. **Appendix A** contains the travel demand calculations and assumptions, as well as the detailed freight loading demand calculations.

The Proposed Project would replace a variety of active uses at the CPMC Pacific Campus; therefore, a trip credit was applied for these existing land uses to determine the net new trips generated by the Proposed Project. The trip estimates prepared for the 2010 CPMC EIR were compared against existing data provided by CPMC to determine the applicability for this study.

Trip Generation

The daily and PM peak hour person-trip generation for the Proposed Project includes residents and visitors to the buildings and is based on rates provided in Table C-1 of the *SF Guidelines*. AM peak hour trips were estimated by applying a factor derived by comparing the AM peak hour trips to the PM peak hour trips for residential uses as presented in the *Institute of Transportation Engineers Trip Generation Handbook, 9th Edition*. **Table 2** presents the daily, AM, and PM peak hour person trip generation for the Proposed Project. The Proposed Project would generate 2,558-person trips on a daily basis, including 363 trips during the AM peak hour and 442 trips during the PM peak hour.

Table 2: Project Person Trip Generation

Land Use	Unit Size	Daily Trip Rate	PM Peak Hour %	AM Peak Hour (% of PM)[1]	Daily	AM Peak Hour	PM Peak Hour
Residential Land Use	13 studio units	7.5 per unit	17%	82%	98	14	17
	56 1-bedroom units	7.5 per unit	17%	82%	420	60	73
	204 2+ bedroom units	10 per unit	17%	82%	2,040	289	352
Total	**273 units**	**--**	**--**	**--**	**2,558**	**363**	**442**

Notes:
1. AM peak hour vehicle and transit trips were estimated by applying a factor derived from comparing the AM peak hour trips to the PM peak hour trips for residential uses as presented in the *Institute of Transportation Engineers Trip Generation Handbook*, 9th Edition.

Source: Transportation Impact Analysis Guidelines for Environmental Review, 2002, SF Planning Department; Fehr & Peers, 2018.

Existing Site Trip Estimate Validation

Travel demand estimates for CPMC California Campus and the entire CPMC hospital system were developed by Adavant Consulting as part of the 2010 CPMC EIR.[1] Based on discussions with the

[1] *Final Report CPMC LRDP Travel Demand Estimation for the SF Campuses*, Adavant Consulting, April 2010

transportation manager for the CPMC system, the CPMC California Campus currently operates in a similar manner to how it operated in 2010, with similar facilities, services, and total service population (e.g., employees, patients, and visitors). Fehr & Peers reviewed available travel data to confirm that conditions have not changed substantially since 2010 and validate the data for this study. The available travel data included results from 2016 patient and visitor travel surveys (included in **Appendix B**), 2018 parking data from the CPMC California Campus, and 2018 intersection turning movement counts surrounding the hospital (included in **Appendix C**). Fehr & Peers also requested other sources of information, such as total population data, but found that this was not readily available for the CPMC California Campus in isolation due to the constant flow of staff between campuses. A review of the three available data sets are presented below.

Patient and Visitor Surveys

Patient and visitor surveys show that 75 percent of patients and visitors arrived by private car (driving alone or with others), with an additional 9 percent arriving via for-hire vehicles. The travel demand methodology used for the 2010 CPMC EIR estimated that 72 percent of patients and 85 percent of visitors would arrive via private car, with an additional 3 to 11 percent of trips by each group arriving by "other" means (which includes for-hire vehicle trips). These estimates are slightly lower than findings from recent surveys; however, they indicate that the 2010 CPMC EIR travel demand numbers are reasonable for patients and visitors.

Table 3: Patient & Visitor Mode Split

Source and Date	Auto Mode Share	Other Mode Share	Transit Mode Share
2010 CPMC EIR Assumption (Patients)	72%	11%	17%
2010 CPMC EIR Assumption (Visitors)[1]	85%	3%	11%
2016 Survey Data (*Patients and Visitors*)	75%	15%	10%
Difference between 2016 Survey Data and 2010 CPMC EIR	+3% / -10%	+4% / -12%	-7% / -1%

Notes:
1. Due to rounding, numbers may not add up to 100%.

Source: Final Report CPMC LRDP Travel Demand Estimation for the SF Campuses, Adavant Consulting, April 2010; 2016 Patient/Visitor Survey Report, Mobility & Walkability Consulting, March 2017.

Parking Garage Entries

Garage entry data were collected for one-month ticket entries for 2015, 2017 and 2018, in two different times of the year (March and September). As shown in **Table 4**, total monthly entrances remained stable over this period plus or minus two percent. There were some changes in volumes at individual garages but similar total entrances across the campus. This indicates that driving trips to the campus over the past three years have remained consistent.

Table 4: Garage Entry Data

Garage	2015 One-Month Entrances (Sept 2015)	2017 One-Month Entrances (March 2018)	2018 One-Month Entrances (March 2018)
460 Cherry Street	8,068	6,483	8,097
3838 California Street Garage	5,167	6,516	5,671
3905 Sacramento Street	1,161	1,081	819
3773 Sacramento Street	1,154	1,295	1,266
Total	**15,550**	**15,375**	**15,853**

Source: California Pacific Medical Centers, 2018; Fehr & Peers, 2018; *CPMC EIR*, 2010

Intersection Turning Movement Counts

Intersection turning movement counts were collected in April 2018 and compared to counts collected for the 2010 CPMC EIR in 2006. As shown in **Table 5**, total vehicle volumes in the study area have decreased by 13 percent, although a large proportion of this decrease is due to lower volumes on the through movements of California Street. Given that California Street is a major thoroughfare connecting the Richmond District to Downtown San Francisco and the minimal development and infrastructure changes that has occurred in the Richmond District between 2006 and 2018, this change is likely due to broader changes to travel patterns than local changes. Therefore, Fehr & Peers reviewed the volumes on the blocks of Maple and Cherry streets adjacent to the CPMC Hospital between California and Sacramento streets. It is reasonable to assume that many of the vehicles on these blocks are hospital related trips since they are minor local roadways that provide access to a majority of the hospital parking facilities. As shown in **Table 5**, total traffic volumes on these streets is substantially lower than on California Street. Between 2006 and 2018, the total traffic volumes decreased by a total of 15 vehicles, or four percent, during the PM peak period. This is well below the average daily fluctuation of traffic volumes (typically around 5 to 10 percent), indicating that this change would be imperceptible to the average driver.[2] This data indicates that while overall traffic volumes appear to have decreased in recent years, it is unlikely that driving trips to the campus have changed substantially.

[2] *Variability in Traffic Monitoring Data Final Summary Report;* Center for Transportation Analysis of Oak Ridge National Laboratory for the Federal Highway Administration; August 1997

Table 5: Intersection Count Comparison

Intersection	2006	2018	Net Change	Percent Change
Overall Study Area Comparison				
Total Volumes	11,693	10,217	-1,476	-13%
Through California Volumes	6,493	5,401	-1,092	-17%
Remaining Volumes	5,200	4,816	-384	-7%
Cherry and Maple Street Volumes[1]				
Cherry Street	206	169	-37	-18%
Maple Street	162	184	22	14%
Total	**368**	**353**	**-15**	**-4%**

Notes:
1. Average of the vehicles turning onto Cherry or Maple streets from California or Sacramento streets.

Source: *CPMC Long Range Development Plan EIR,* 2010; Fehr & Peers, 2018.

Conclusion

Based on these three data sets, substantial evidence indicates that travel behavior at the CPMC California Campus in 2018 is similar to the travel behavior documented in the 2010 CPMC EIR. Therefore, the trip generation information prepared for the CPMC hospital remains valid for the purposes of this study.

Existing Site Trip Credit

An existing trip credit was applied for the existing land uses that the Proposed Project would replace. Consistent with the 2010 CPMC EIR, the existing medical office building at 3838, 3848, and 3850 California Street would remain beyond 2020; therefore, trips associated with this use were not applied as a trip credit. Trips associated with the existing CPMC land uses and remaining CPMC land uses are shown in **Table 6**, along with the resulting trip credit used to analyze the Proposed Project's effect on the transportation network.

Table 6: Existing Land Use Person Trip Credit

Land Use	Daily Trips			AM Peak Hour			PM Peak Hour		
	Total	In	Out	Total	In	Out	Total	In	Out
CPMC 2010 EIR Trips	9,102	4,551	4,551	750	540	210	912	255	657
Remaining Medical Office Building	2,840	1,420	1,420	234	216	18	305	36	269
Trip Credit	**6,262**	**3,131**	**3,131**	**516**	**324**	**192**	**607**	**219**	**388**

Source: Transportation Impact Analysis Guidelines for Environmental Review, 2002, SF Planning Department; Fehr & Peers, 2018; *CPMC Long Range Development Plan EIR,* 2010

Mode Split

The person trips generated by the Proposed Project were allocated among different travel modes in order to determine the number of auto, transit, walk and other trips going to and from the Project Site; the results are shown in **Table 7**. The "Other" category includes bicycle, motorcycle, and additional modes. The additional modes include for-hire vehicles, although a portion of vehicle trips may be for-hire vehicle trips too. Mode split assumptions for work and non-work trips were based on the methods contained in the *SF Guidelines,* such as the 2009-2013 American Community Survey (ACS) estimates for Census Tract 133 for residential trips at the project location.

Table 7: Person and Vehicle Trip Generation by Mode

Trip Mode	Daily Trips			AM Peak Hour			PM Peak Hour		
	Total	In	Out	Total	In	Out	Total	In	Out
Person Trips in Vehicles	1,448	724	724	205	41	164	250	166	84
Other Trips	272	136	136	39	8	31	47	31	16
Transit Trips	732	366	366	104	21	83	126	84	42
Walk Trips	108	54	54	15	3	12	18	12	6
Total Person Trips	***2,560***	***1,280***	***1,280***	***363***	***73***	***290***	***442***	***294***	***148***
Vehicle Trips	*1,389*	*694*	*694*	*198*	*40*	*158*	*240*	*160*	*80*

Note: Trips by mode may not sum to total person trips due to rounding.
Source: *Transportation Impact Analysis Guidelines for Environmental Review*, 2002, SF Planning Department; Fehr & Peers, 2018.

The number of vehicle, transit, and other trips are important for assessing the Proposed Project's impact on the surrounding transportation network with respect to hazards, accessibility, and transit capacity. A comparison between the existing removed land uses and the Proposed Project are presented for each of these three modes below.

Vehicle Trips

The results of the vehicle trip generation are presented in **Table 8**. The net change in vehicle trips was calculated by subtracting the existing trip credit from the vehicle trips generated by the Proposed Project. On a daily basis, the Proposed Project is estimated to generate nearly 5,000 fewer vehicle trips than the existing CPMC California Campus. During the PM peak hour, the Proposed Project is estimated to generate approximately 370 fewer vehicle trips than the existing CPMC California Campus, with fewer trips in both the inbound and outbound direction. During the AM peak hour, the Proposed Project is estimated to generate approximately 320 fewer vehicle trips than the existing CPMC California Campus, with fewer trips in both the inbound and outbound direction.

Table 8: Vehicle Trip Generation

Land Use	Daily Trips			AM Peak Hour			PM Peak Hour		
	Total	In	Out	Total	In	Out	Total	In	Out
Proposed Project	1,389	694	694	198	40	158	240	160	80
CPMC Trip Credit	-6,262	-3,131	-3,131	-516	-324	-192	-607	-219	-388
Net Trips	**-4,873**	**-2,437**	**-2,437**	**-318**	**-284**	**-34**	**-367**	**-59**	**-308**

Source: *Transportation Impact Analysis Guidelines for Environmental Review*, 2002, SF Planning Department; *CPMC Long Range Development Plan EIR, 2010.* Adavant Consulting, 2010; ITE *Trip Generation*, *9th Edition*; Fehr & Peers, 2018.

Transit Trips

The transit trip generation is presented in **Table 9**. The Proposed Project would generate approximately 760 fewer daily transit trips than the existing CPMC California Campus. During the AM and PM peak hours, the Proposed Project would generate slightly more transit trips in the peak direction for a residential land use (outbound in the AM peak hour and inbound in the PM peak hour), with a slight decrease in total transit trips during each period. This directionality shift between inbound and outbound trips occurs due to residents leaving home to go to work in the AM peak hour and returning home from work in the PM peak hour.

Table 9: Transit Trip Generation

Land Use	Daily Trips			AM Peak Hour			PM Peak Hour		
	Total	In	Out	Total	In	Out	Total	In	Out
Proposed Project	732	366	366	104	21	83	126	84	42
CPMC Trip Credit	-1,494	-747	-747	-121	-78	-43	-140	-50	-90
Net Trips	**-762**	**-381**	**-381**	**-17**	**-57**	**40**	**-14**	**34**	**-48**

Source: *Transportation Impact Analysis Guidelines for Environmental Review*, 2002, SF Planning Department; *CPMC Long Range Development Plan EIR, 2010.* Adavant Consulting, 2010; ITE *Trip Generation*, *9th Edition*; Fehr & Peers, 2018.

Walk Trips

The walk trip generation is presented in **Table 10**. The Proposed Project would generate 108 more daily walking trips than the existing CPMC California Campus. During the AM peak hour the proposed project would generate up to 8 new walk trips and up to 6 new walk trips in the PM peak hour. This assessment indicates that the number of peak hour trips by walking would not noticeably change with the Proposed Project.

Table 10: Walk Trip Generation

Land Use	Daily Trips	AM Peak Hour	PM Peak Hour
Proposed Project	108	15	18
CPMC Trip Credit	--[1]	-7	-12
Net Trips	**108**	**8**	**6**

Notes:

1. Daily external walk trips are not available from the CPMC EIR, therefore no credit taken.

Source: *Transportation Impact Analysis Guidelines for Environmental Review*, 2002, SF Planning Department; *CPMC Long Range Development Plan EIR*, 2010. Adavant Consulting, 2010; ITE *Trip Generation*, 9th Edition; Fehr & Peers, 2018.

Other Trips

The other trip generation is presented in **Table 11**. The Proposed Project would generate 183 fewer daily trips by other modes than the existing CPMC California Campus. During the AM peak hour the proposed project would generate up to 7 new other trips and up to 6 new other trips in the PM peak hour This slight increase would be split between bicycle, motorcycle, and for-hire vehicles, resulting in approximately one new trip by these other modes every 10 minutes and across the whole project site. Therefore, the number of peak hour trips by other modes would not noticeably change with the Proposed Project.

Table 11: Other Trip Generation

Land Use	Daily Trips	AM Peak Hour	PM Peak Hour
Proposed Project	272	39	47
CPMC Trip Credit	-455	-32	-41
Net Trips	**-183**	**7**	**6**

Source: *Transportation Impact Analysis Guidelines for Environmental Review*, 2002, SF Planning Department; *CPMC Long Range Development Plan EIR, 2010.* Adavant Consulting, 2010; ITE *Trip Generation*, *9th Edition*; Fehr & Peers, 2018.

Freight Delivery and Service Vehicle Demand

Freight delivery and service vehicle loading demand was estimated in terms of daily total trips and number of required loading spaces during peak hour truck trip generation (which typically occurs between 10:00 A.M. and 1:00 P.M., unrelated to PM peak hour for other transportation analyses).

Freight delivery and service vehicle demand was not analyzed in the 2010 CPMC EIR; thus, the methodology from the Guidelines to estimate the level of daily and peak hour truck trip generation was used to estimate them for the existing condition for comparison purposes. As noted above, travel behavior has not changed substantially since the 2010 CPMC EIR. Therefore, the information presented in the Guidelines remains valid for the purposes of this study.

The freight delivery and service vehicle loading demand is presented in **Table 12**. The Proposed Project would generate approximately 55 fewer truck trips than existing conditions each day and would require three fewer loading spaces to accommodate peak hour truck loading demand.

Table 12: Freight Delivery and Service Vehicle Loading Demand

Land Use	Daily Truck Trips	Peak Hour Loading Demand (Spaces)[1]
Proposed Project[2]	*19*	*1*
CPMC Trip Credit	*-73*	*-4*
Net Loading Demand	**-54**	**-3**

Notes:

1. Peak hour of truck trip generation generally occurs between 10:00 A.M and 1:00 P.M. and is unrelated to P.M. peak hour used in other transportation analyses.
2. Includes 476,088 gross square feet of residential space per June 1, 2018 project application.

Source: *Transportation Impact Analysis Guidelines for Environmental Review*, 2002, SF Planning Department;
Fehr & Peers, 2018.

VMT Analysis

Many factors affect travel behavior. These factors include density, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. Typically, low-density development at great distance from other land uses, located in areas with poor access to non-private vehicular modes of travel, generate more automobile travel compared to development located in urban areas, where a higher density, mix of land uses, and travel options other than private vehicles are available.

Given these travel behavior factors, San Francisco has a lower VMT ratio than the nine-county San Francisco Bay Area region. In addition, some areas of the City have lower VMT ratios than other areas of the City. These areas of the City can be expressed geographically through transportation analysis zones (TAZ). Transportation analysis zones are used in transportation planning models for transportation analysis and other planning purposes. The zones vary in size from single city blocks in the downtown core, multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas like the Hunters Point Shipyard.

The San Francisco County Transportation Authority (Transportation Authority) uses the San Francisco Chained Activity Model Process (SF-CHAMP) to estimate VMT by private automobiles and for hire vehicles for different land use types. Travel behavior in SF-CHAMP is calibrated based on observed behavior from the California Household Travel Survey 2010-2012, Census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings. SF-CHAMP uses a synthetic population, which is a set of individual actors that represents the Bay Area's actual population, who make simulated travel decisions for a complete day. The Transportation Authority uses tour-based analysis for office and residential uses, which examines the entire chain of trips over the course of a day, not just trips to and from the project. For retail uses, the Transportation Authority uses trip-based analysis, which counts VMT from individual trips to and from the project (as opposed to entire chain of trips). A trip-based approach, as opposed to a tour-based approach, is necessary for retail projects because a tour is likely to consist of trips stopping in multiple locations, and the summarizing of tour VMT to each location would over-estimate VMT[3,4]. **Table 13** presents the VMT per capita for residents in the

[3] To state another way: a tour-based assessment of VMT at a retail site would consider the VMT for all trips in the tour, for any tour with a stop at the retail site. If a single tour stops at two retail locations, for example, a coffee shop on the way to work and a restaurant on the way back home, then both retail locations would be allotted the total tour VMT. A trip-based approach allows us to apportion all retail-related VMT to retail sites without double-counting.

[4] San Francisco Planning Department, Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A, March 3, 2016.

transportation analysis zone in which the project site is located, 323, and compares it to the Bay Area regional average and the established threshold of 15% below that regional average.

Table 13: Daily Vehicle Miles Traveled per Capita for Residential Land Use

VMT per Capita	Existing	Cumulative 2040
Bay Area Regional Average	17.2	16.1
Significance Threshold (Regional Average minus 15%)	14.6	13.7
TAZ 323	7.9	7.5
Increase required to VMT per Capita in TAZ 323 to reach Regional Significance Threshold	**85%**	**83%**

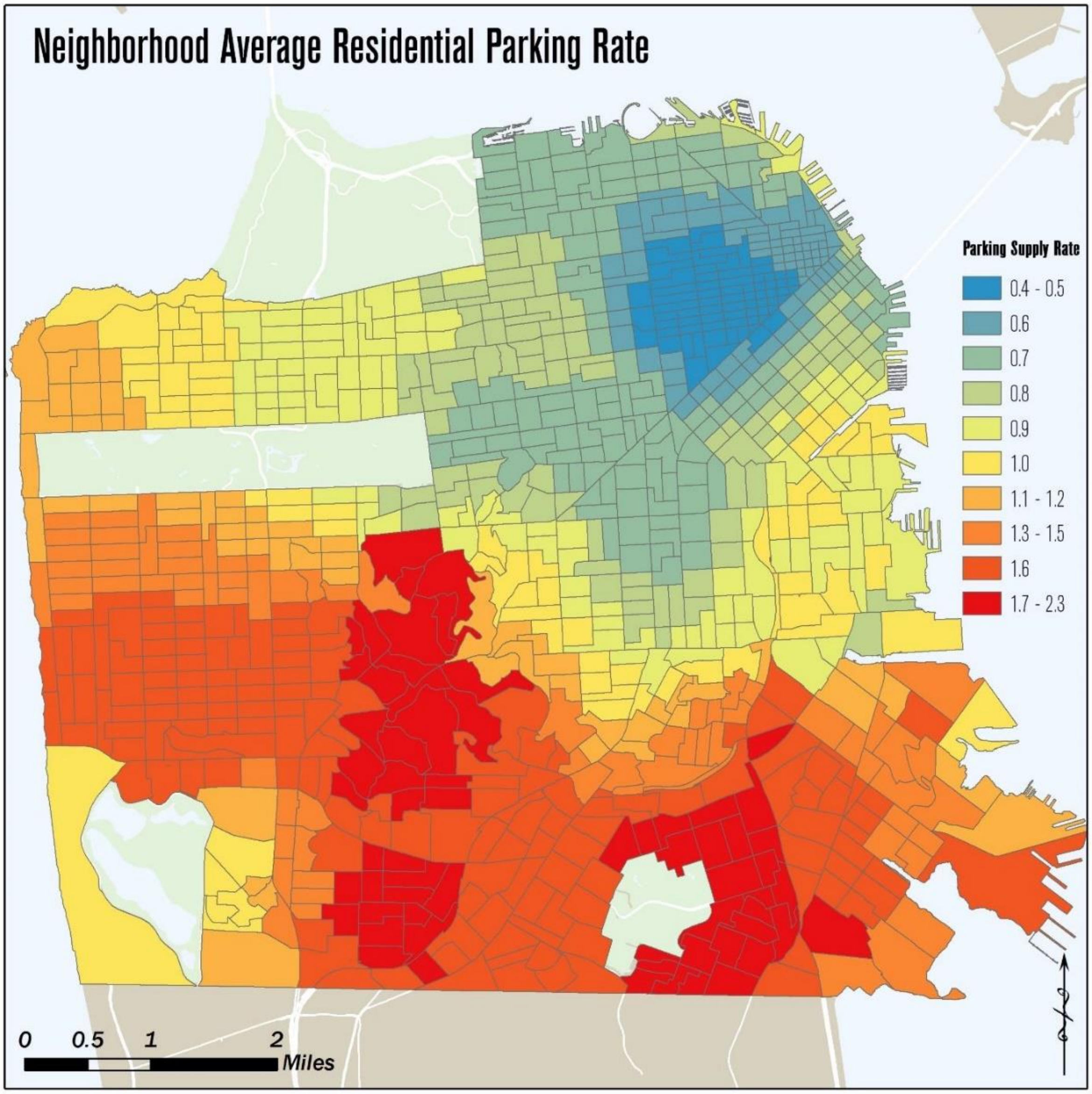
Source: San Francisco Planning Department, 2018

However, high rates of parking provision have been shown to increase both vehicle ownership and total VMT associated with a project, although the direct connection is inconclusive with respect to total amounts of VMT. As shown in **Figure 3,** the surrounding neighborhood has an average parking supply of around 0.9 parking spaces per dwelling unit. Because the Proposed Project provides more parking than is typical for the surrounding neighborhood, at a rate of around 1.5 parking spaces per dwelling unit, additional analysis is required to determine whether the Proposed Project would be expected to generate higher VMT per capita than the established significance threshold.

Fehr & Peers performed a series of three checks to determine whether it would be reasonable to conclude that the proposed parking ratio could cause the project to generate VMT at a per capita rate above the significance threshold shown in **Table 13**. The current residents of the neighborhood surrounding the Project Site generate nearly half as much VMT per capita compared to the established threshold. As shown in **Table 13**, residents of the Proposed Project would need to generate approximately 85 percent more VMT per capita than current residents of TAZ 323 in order to trigger a significant impact related to VMT.

The first check involves using auto availability per household as a proxy for the VMT per capita. **Table 14** shows that if auto availability and VMT per capital were correlated, the expected increase in VMT per capita would be around 69 percent above the neighborhood baseline. While this would represent a substantial increase in VMT per capita above the neighborhood baseline, it would not reach the established threshold for a significant VMT impact.

Figure 3: Neighborhood Parking Rates in San Francisco



Source: San Francisco County Transportation Authority; SF-CHAMP 2012 Parking Supply Rate Inputs.

Table 14: Estimated Per Capita VMT, Adjusted for Parking Supply Check

Subject Area	Parking Rate	Expected VMT, Existing	Expected VMT, 2040
TAZ 323	0.9	7.9	7.5
Proposed Project	1.5	13.4[1]	12.7[1]
Ratio, Project / TAZ 323 Average	*1.69*	*1.69*	*1.69*
Bay Area Regional Average minus 15%	*n/a*	14.6	13.7
Does Project exceed Regional Average minus 15%?	*n/a*	No	No

Notes:

1. VMT per capita conservatively assumed to scale linearly with vehicle availability, as measured through parking supply

Source: *Transportation Sustainability Program – Shift: Amendments to the TDM Program Standards, January 19, 2017,* SF Planning Department; Fehr & Peers, 2018.

The second check involves comparing the neighborhood auto availability to the proposed parking rates at the Proposed Project. As shown in **Table 15**, most households have at least one vehicle available, with an average of 1.29 vehicles available per household. While auto availability is not a direct measure for vehicles parked in the neighborhood, because vehicles available may be available through sharing a vehicle or other services, or parked on the street, the two measures are related. The parking provision of 1.5 spaces per unit is a 16 percent increase above the baseline auto availability rate for the neighborhood, and within the range of the auto availability for nearby households. This supports that the analysis shown in **Table 14** is likely a conservative measure of how new residents will compare to existing neighborhood residents in terms of vehicle ownership and driving behaviors.

Table 15: Vehicle Availability by Household, Census Tract 133

Vehicles	Owners	Renters	All Households
1 vehicle available	290	489	779
2 vehicles available	380	165	545
3 vehicles available	131	25	156
4 vehicles available	16	0	16
5 or more vehicles available	8	0	8
No vehicle available	59	329	388
Total Households	884	1,008	1,892
Average Vehicles Available	**1.75**	**0.89**	**1.29**
Project Parking Ratio (1.5) / Neighborhood Baseline	*0.86*	*1.69*	*1.16*

Source: American Community Survey 5-Year Averages, 2012 - 2016; Fehr & Peers, 2018.

As a final check of how vehicle ownership may affect driving behavior from project residents, Fehr & Peers analyzed existing commute mode share by vehicles available for the surrounding neighborhood. As shown in **Table 16**, the average auto mode share for nearby residents' commutes is 46 percent; this varies depending on each household's available automobiles. As shown in **Table 17**, if project residents travel in a similar manner to existing neighborhood households with similar levels of vehicle availability, we would expect an auto mode share of around 57 percent. This is 13 percent higher than the neighborhood average auto mode share of 50 percent, and below the threshold for an increase in VMT that would result in a significant impact.

Table 16: Commute Mode Share by Household Vehicle Availability, Census Tract 133

Vehicles Available	Auto	Transit	Walk	Work from Home	Other	Total
1 vehicle available[1]	45%	25%	3%	12%	16%	100%
2 vehicles available	67%	10%	3%	6%	14%	100%
3 or more vehicles available	62%	4%	0%	4%	30%	100%
No vehicle available	10%	61%	2%	18%	9%	100%
Average Total	46%	25%	2%	10%	17%	100%

Notes:
1. Due to rounding, numbers may not add up to 100%.

Source: American Community Survey 5-Year Averages, 2012 – 2016, Table B08141

Table 17: Expected Commute Auto Mode Share Based on Vehicle Availability

Project Parking Provision	Share of Units	Expected Commute-by-Auto
2 spaces	52%	67%
1 space	48%	45%
Total Estimated Project Auto Mode Share		57%
Neighborhood Auto Mode Share		50%
% Difference (Estimated Project Auto Mode Share above Neighborhood Auto Mode Share)		14%

Source: Fehr & Peers, 2018; American Community Survey 5-Year Averages, 2012 – 2016, Table B08141

In conclusion, the available data indicates that the Proposed Project would not generate VMT per capita at a level that would cause a significant impact.

Appendix A – Travel Demand Calculations

Proposed Project

Project Land Use Inputs

Land Use Inputs

Type	Residential Qty
Studio	13
1 BR	56
2 BR	88
3+ BR	116
Senior Housing	
Total	273

User inputs land use data

Daily Trip Generation Calcs

Daily Trip Generation, Trip Type, Trip Direction

Residential	Quantity	Rate
Studio	97.5	7.5
1 BR	420	7.5
2 BR	880	10
3+ BR	1160	10
Senior Housing	0	-
Total	2558	

	Inbound	Outbound
	50%	50%

	IN	OUT
Work Trips	422	422
Non-Work Trips	857	857

Generate total person trips based on land use type * lookup of the daily rate from SFG_Tables tab.

Total person trips is split into work/non-work and in/out matrix: e.g., work trip inbound = total trips*split of work trips*split of inbound trips
Work/non-work split is based on a lookup of the daily split according to land use from SFG Table C-1
In/out distribution for daily is assumed at 50/50

PM Peak Hour Trip Generation Calcs

PM Peak Trip Generation, Trip Type, Trip Direction

Residential		% of Trips in PM Peak Hour
Studio	17	17%
1 BR	73	17%
2 BR	152	17%
3+ BR	201	17%
Senior Housing	0	17%
Total	442	

	Inbound	Outbound
Work Trips	100%	0%
Non-Work Trips	33%	67%

	IN	OUT
Work Trips	221	0
Non-Work Trips	73	148

Generate total person trips based on land use type * lookup of the PM peak rate from SFG_Tables tab.

Total person trips is split into work/non-work and in/out matrix. e.g., work trip inbound = total trips*split of work trips*split of inbound trips
Work/non-work split is based on a lookup of the PM Peak split according to land use from SFG_Tables tab.
In/out distribution for PM Peak is based on text from Table C-2. Can be modified if need be.

Proposed Project

Trip Distribution Inputs

Work Trip Distribution

Origin	Residential %
SD-1	50.8%
SD-2	11.3%
SD-3	11.3%
SD-4	11.3%
East Bay	4.0%
North Bay	1.4%
South Bay	9.4%
Other	0.6%
Source/Tract:	see 'ACS Dist Notes'

* based on data for project census tract

Trip distributions based on share of residents working inside and outside San Francisco

Residential distribution informed by census or journey-to-work data; applied to both work and non-work residential distributions. Work-related retail, office, and other taken from SFG WORK TRIPS distribution.

Non-Work Trip Distribution

Origin	Residential %
SD-1	50.8%
SD-2	11.3%
SD-3	11.3%
SD-4	11.3%
East Bay	4.0%
North Bay	1.4%
South Bay	9.4%
Other	0.6%
Source/Tract:	see 'ACS Dist Notes'

* same as work trips (above)

Residential non-work distribution same as above.

Non-work retail taken from VISITOR-RETAIL distribution. Non-work Office and Other taken from VISITOR-ALL OTHER distribution.

Mode Split Inputs

	Mode Split for Residential Land Use
Auto	56.6%
Transit	28.6%
Walk	4.2%
Other	10.6%
Total	100.0%
Average Veh Occ	1.042
Source:	see 'ACS Mode Notes'

* based on recent US Census journey-to-work data for census tract 133.

Proposed Project

Applies distribution and mode share to person trips.

Daily Person Trip Origins/Destinations by Mode - WORK TRIPS			
	Residential		
Daily Person Trips by Auto	Auto	IN	OUT
	SD-1	121	121
	SD-2	27	27
	SD-3	27	27
	SD-4	27	27
	East Bay	10	10
	North Bay	3	3
	South Bay	22	22
	Other	1	1
	TOTAL	239	239
Daily Person Trips by Transit	Transit	IN	OUT
	SD-1	61	61
	SD-2	14	14
	SD-3	14	14
	SD-4	14	14
	East Bay	5	5
	North Bay	2	2
	South Bay	11	11
	Other	1	1
	TOTAL	121	121
Daily Person Trips by Walk	Walk	IN	OUT
	SD-1	9	9
	SD-2	2	2
	SD-3	2	2
	SD-4	2	2
	East Bay	1	1
	North Bay	0	0
	South Bay	2	2
	Other	0	0
	TOTAL	18	18
Daily Person Trips by Other	Other	IN	OUT
	SD-1	23	23
	SD-2	5	5
	SD-3	5	5
	SD-4	5	5
	East Bay	2	2
	North Bay	1	1
	South Bay	4	4
	Other	0	0
	TOTAL	45	45

Proposed Project

Daily Person Trip Origins/Destinations by Mode - NON-WORK TRIPS

Applies distribution and mode share to person trips.

		Residential	
Daily Person Trips by Auto	Auto	IN	OUT
	SD-1	246	246
	SD-2	55	55
	SD-3	55	55
	SD-4	55	55
	East Bay	20	20
	North Bay	7	7
	South Bay	45	45
	Other	3	3
	TOTAL	485	485
Daily Person Trips by Transit	Transit	IN	OUT
	SD-1	124	124
	SD-2	28	28
	SD-3	28	28
	SD-4	28	28
	East Bay	10	10
	North Bay	3	3
	South Bay	23	23
	Other	1	1
	TOTAL	245	245
Daily Person Trips by Walk	Walk	IN	OUT
	SD-1	18	18
	SD-2	4	4
	SD-3	4	4
	SD-4	4	4
	East Bay	1	1
	North Bay	1	1
	South Bay	3	3
	Other	0	0
	TOTAL	36	36
Daily Person Trips by Other	Other	IN	OUT
	SD-1	46	46
	SD-2	10	10
	SD-3	10	10
	SD-4	10	10
	East Bay	4	4
	North Bay	1	1
	South Bay	9	9
	Other	1	1
	TOTAL	91	91

Proposed Project

PM Peak Hour Person Trip Origins/Destinations by Mode

Applies distribution and mode share to person trips.

Residential

PM Peak Person Trips by Auto

Auto	IN	OUT
SD-1	85	43
SD-2	19	9
SD-3	19	9
SD-4	19	9
East Bay	7	3
North Bay	2	1
South Bay	16	8
Other	1	1
TOTAL	166	84

PM Peak Person Trips by Transi

Transit	IN	OUT
SD-1	43	22
SD-2	9	5
SD-3	9	5
SD-4	9	5
East Bay	3	2
North Bay	1	1
South Bay	8	4
Other	1	0
TOTAL	84	42

PM Peak Person Trips by Walk

Walk	IN	OUT
SD-1	6	3
SD-2	1	1
SD-3	1	1
SD-4	1	1
East Bay	0	0
North Bay	0	0
South Bay	1	1
Other	0	0
TOTAL	12	6

PM Peak Person Trips by Other

Other	IN	OUT
SD-1	16	8
SD-2	4	2
SD-3	4	2
SD-4	4	2
East Bay	1	1
North Bay	0	0
South Bay	3	1
Other	0	0
TOTAL	31	16

Proposed Project

Daily Vehicle Trips Summary

Applies vehicle occupancy factor.
Combines work and non-work trips.

	All Trips	
Auto	IN	OUT
SD-1	352	352
SD-2	78	78
SD-3	78	78
SD-4	78	78
East Bay	28	28
North Bay	10	10
South Bay	65	65
Other	4	4
TOTAL	694	694

Daily Transit Trips Summary

Combines work and non-work trips.

	All Trips	
Auto	IN	OUT
SD-1	186	186
SD-2	41	41
SD-3	41	41
SD-4	41	41
East Bay	15	15
North Bay	5	5
South Bay	34	34
Other	2	2
TOTAL	366	366

PM Peak Hour Vehicle Trips Summary

Applies vehicle occupancy factor.
Combines work and non-work trips.

	All Trips	
Auto	IN	OUT
SD-1	81	41
SD-2	18	9
SD-3	18	9
SD-4	18	9
East Bay	6	3
North Bay	2	1
South Bay	15	8
Other	1	0
TOTAL	160	80

PM Peak Hour PERSON Trips in Vehicle Summary

Combines work and non-work trips.

	All Trips	
Auto	IN	OUT
SD-1	85	43
SD-2	19	9
SD-3	19	9
SD-4	19	9
East Bay	7	3
North Bay	2	1
South Bay	16	8
Other	1	1
TOTAL	166	84

Proposed Project

PM Peak Hour Transit Trips Summary — Combines work and non-work trips.

	All Trips	
Auto	IN	OUT
SD-1	43	22
SD-2	9	5
SD-3	9	5
SD-4	9	5
East Bay	3	2
North Bay	1	1
South Bay	8	4
Other	1	0
TOTAL	84	42

PM Peak Hour Walking Trips Summary — Combines work and non-work trips.

	All Trips	
Auto	IN	OUT
SD-1	6	3
SD-2	1	1
SD-3	1	1
SD-4	1	1
East Bay	0	0
North Bay	0	0
South Bay	1	1
Other	0	0
TOTAL	12	6

PM Peak Hour Other Trips Summary — Combines work and non-work trips.

	All Trips	
Auto	IN	OUT
SD-1	16	8
SD-2	4	2
SD-3	4	2
SD-4	4	2
East Bay	1	1
North Bay	0	0
South Bay	3	1
Other	0	0
TOTAL	31	16

PM Peak Hour Mode Split Summary

	All Trips	
	In	Out
Auto	166	84
Transit	84	42
Walking	12	6
Other	31	16
Total	294	148

Proposed Project

DAILY PERSON Trips in Vehicle Summary			Combines work and non-work trips.
	All Trips		
Auto	IN	OUT	
SD-1	367	367	
SD-2	82	82	
SD-3	82	82	
SD-4	82	82	
East Bay	29	29	
North Bay	10	10	
South Bay	68	68	
Other	4	4	
TOTAL	724	724	

DAILY Transit Trips Summary			Combines work and non-work trips.
	All Trips		
Auto	IN	OUT	
SD-1	186	186	
SD-2	41	41	
SD-3	41	41	
SD-4	41	41	
East Bay	15	15	
North Bay	5	5	
South Bay	34	34	
Other	2	2	
TOTAL	366	366	

DAILY Walking Trips Summary			Combines work and non-work trips.
	All Trips		
Auto	IN	OUT	
SD-1	27	27	
SD-2	6	6	
SD-3	6	6	
SD-4	6	6	
East Bay	2	2	
North Bay	1	1	
South Bay	5	5	
Other	0	0	
TOTAL	54	54	

DAILY Other Trips Summary			Combines work and non-work trips.
	All Trips		
Auto	IN	OUT	
SD-1	69	69	
SD-2	15	15	
SD-3	15	15	
SD-4	15	15	
East Bay	5	5	
North Bay	2	2	
South Bay	13	13	
Other	1	1	
TOTAL	136	136	

AM Peak Hour Summary

AM Trips as % of PM	
Peak Hour	82%
% of Trips Inbound	20%

Trips by Mode				
	Out	In	Total	% by mode
Person in Veh	164	41	205	57%
Vehicle	158	40	198	
Transit	83	21	104	29%
Walking	12	3	15	4%
Other	31	8	39	11%
Total	290	73	363	100%

Loading Calculations

Proposed Land Use		
Type	SF	Daily Truck Trip Generation (Table H-1, SF Guidelines)
Office	0	0.21
Institutional	0	0.1
Residential	618,200	0.03
Office - Remaining	0	0.21

Peak Hour Truck Trip Generation

# of spaces:

ksf * (1.25R/9)/2.4

0.00	Office
0.00	Institutional
1.07	Residential
0.00	Office - Remaining
1.07	**Total**

Average Hour Truck Trip Generation

# of spaces:

ksf * (R/9)/2.4

0.00	Office
0.00	Institutional
0.86	Residential
0.00	Office - Remaining
0.86	**Total**

Daily Truck Trip Generation per Use

per use:

ksf * R

0.00	Office
0.00	Institutional
18.55	Residential
0.00	Office - Remaining
18.55	**Total**

Appendix B – Visitor Survey Results

2016 Patient/Visitor Survey Report

California Pacific Medical Center – Sutter Health

Prepared by

Mobility & Walkability Consulting

March 24, 2017

Table of Contents

Survey Results Highlights 1

1. Overall Summary 3

1.1. Survey Methodology 3

1.2. Comparative Analysis (Major Findings) 4

2. Pacific Campus Survey Results 8

2.1. Pacific Campus Summary 8

2.2. Survey Frequency Results 8

2.3. Selected Crosstabs Results 15

3. California Campus Survey Results 19

3.1. California Campus Summary 19

3.2. Survey Frequency Results 19

3.3. Selected Crosstabs Results 26

4. Davies Campus Survey Results 30

4.1. Davies Campus Summary 30

4.2. Survey Frequency Results 30

4.3. Selected Crosstabs Results 37

5. St. Luke's Campus Survey Results 41

5.1. St. Luke's Campus Summary 41

5.2. Survey Frequency Results 41

5.3. Selected Crosstabs Results 48

Appendix: Survey Questionnaires 52

2016 Patient/Visitor Survey Results Summary

The 2016 Patient/Visitor Survey was conducted on Wednesday, May 18th and Thursday, May 19th of 2016, from 9:00 a.m. to 4:00 p.m. at each of the four campus complexes that comprise the California Pacific Medical Center – Pacific, California, Davies and St. Luke's. The survey collected 200 valid responses from each campus and achieved a 95% confidence interval for statistical analysis. Major highlights of the analysis of survey responses include:

1. The majority of visitors to CPMC are patients that come to get medical care or see a doctor, except for Pacific Campus, which receives more visitors accompanying someone else or visiting a patient in the hospital.
2. The majority of visitors get to campus in a car either driving alone, carpooling or by being dropped off.
3. Visitors that drove to campus split equally between parking in a garage and paying for parking, and parking on the street for free, or in a meter for a lower price.
4. Visitors' public transit use was highest on St. Luke's and Davies Campuses where there is regional transit service nearby (BART and Muni light rail respectively). These results show there is a direct relationship between public transit's mode share at CPMC campuses and availability of regional transit service.
5. Visitors come mostly from surrounding cities in the City and County of San Francisco, and generally they spent less than 30 minutes to get to campus. The Pacific Campus has the largest share of visitors from other parts of the Bay Area and rest of California, due to the regional draw of its specialty services.
6. Ride hailing services (taxi, Uber, Lyft), public transit and other modes (walking, biking, and other) are more common among visitors that live near CPMC and spend less than 30 minutes getting there.
7. Visitors that came to CPMC on a ride hailing service or public transit were also more likely to stay on campus for a short period of time (less than 1 hour). Visitors that came in a car were more likely to stay longer than 1 hour.
8. The analysis of parking versus length of stay shows that people make rational decisions with regards to the price of parking. Although a slight majority of visitors parked in a garage and paid for parking (either in full or discounted), close to 50 percent of visitors parked on the street or used a different mode of transportation.
9. Visitors that parked and spent less than 1 hour on campus split equally between parking in a garage and paying for parking, and parking on the street. Meanwhile visitors that parked and spent between 1 and 3 hours on campus have a higher proportion of parking on the street.

10. In contrast, visitors that spent between 3 and 24 hours on campus were more likely to park in a garage with a discount or pay full price. While those that stayed in the hospital for more than a day mostly parked in a garage at a discount or with validation.

The major takeaway from the survey findings is that the majority of visitors to CPMC campuses come from within the City and County of San Francisco. They drive to campus and park in a garage for a fee or park on the street for free, in about equal proportions. Those that park in a garage for a fee typically stay in the hospital for less than 1 hour or for an extended time (more than 3 hours and more than a day). While those that park on the street for free typically stay in the hospital for more than 1 hour, but less than 3 hours.

These findings suggest that the pricing structure of CPMC garages and street parking regulations around CPMC campuses (either time limits or cost) are not well aligned, creating an incentive for people to drive and park in the neighborhood streets surrounding CPMC campuses. This is perhaps an area where both CPMC and the City of San Francisco can work together to develop a policy framework and regulation strategy that minimizes the use of street parking, mitigates traffic impacts to surrounding residential neighborhoods, and reduces patient and visitors' vehicle trips to CPMC campuses.

The analysis also shows that CPMC campuses that are near a regional transit service (subway or light rail) experience a higher share of visitor trips in public transit. This finding suggests that both proximity to regional transit service (i.e. walking distance to a station) and a direct connection to regional transit service (i.e. a last mile shuttle connection) can be effective in attracting a larger share of trips in alternative modes, and reducing patient and visitor's vehicle trips to CPMC campuses.

1. Overall Summary

1.1. Survey Methodology

As part of the development agreement with the City of San Francisco, California Pacific Medical Center – Sutter Health is required to conduct a patient/visitor survey every three years, until year 2023, to track the transportation mode share of those that visit the hospital. The survey was conducted for the first time in 2013.

The survey consists of on-site personal interviews conducted by a trained surveyor that interacts with patients and visitors entering or leaving the hospital. The 2016 survey was conducted on Wednesday, May 18th and Thursday, May 19th of 2016, from 9:00 a.m. to 4:00 p.m. at each of the four campus complexes that comprise the California Pacific Medical Center – Pacific, California, Davies and ST. Luke's. The intercept surveys had a goal of collecting 200 valid responses from each campus or 800 in total.

The survey questionnaire was developed in SurveyMonkey. Interviewers carried a tablet connected to the Internet where they could enter responses online. Surveyors intercepted and interviewed visitors at designated locations in each campus such as the main building entrance and lobby and the cafeteria. Surveyors were not allowed to contact interviewees in the ER and on unit floors.

Survey Questionnaires

The survey questionnaire included 10 questions and was identical for all four campuses with except of one question (Question #2) which asked about specific buildings visited during the date of the interview. The 10 questions that were asked to all visitors and patients that responded the survey included: reasons for their visit to campus, buildings visited during their visit, duration of their visit, the mode of transportation they used to come to campus, where they parked if drove to campus, how long was their trip to campus, location of residence, age and gender. All four questionnaires and their possible responses (multiple-choice) are included in a technical appendix at the end of this report.

Response Analysis and Grouping

Responses to questions related to mode of travel, age and location of residence, were grouped into larger categories to facilitate the analysis of results, comparisons across campuses and cross-tabulations between questions related to mode of travel and parking. In particular, responses to Question #3 (mode of travel to campus) were regrouped into four categories: drive alone/carpool, public transit, ride hailing and other. Individual zip code responses to Question #8 (home zip code) were regrouped into larger geographic areas (San Francisco County, rest of Bay Area, rest of California and out of state) utilizing GIS analysis software. Responses to Question #9 (what is your age) were also regrouped into four categories: youth, young adults, middle-age adults and seniors.

1.2. Comparative Analysis (Major Findings)

Q1. Why did you come to campus today?

The majority of visitors to the four campuses that comprise the California Pacific Medical Center (CPMC) are patients that come to get medical care or see a doctor. This finding is true for all campuses except the Pacific Campus, which includes a hospital of regional importance and receives more visitors accompanying someone else or visiting a patient in the hospital.

Q1. Why did you come to campus today?	Pacific		California		Davies		St Lukes		Overall	
	N	%	N	%	N	%	N	%	N	%
To get medical care/see a doctor	88	43.3	135	66.5	138	67.0	141	69.1	502	61.5
As a visitor/to accompany someone	115	56.7	68	33.5	68	33.0	63	30.9	314	38.5
Total	**203**	**100.0**	**203**	**100.0**	**206**	**100.0**	**204**	**100.0**	**816**	**100.0**

Q2. Which buildings did you visit today?

Campus	Which buildings did you visit today?	Response Frequency	Percent
Pacific	2333 Buchanan - Hospital	134	65.7
St Lukes	Monteagle MOB -1580 Valencia	129	62.6
Davies	Hospital	128	61.5
Davies	Medical Office Building/45 Castro/Doctor's Office	87	41.8
California	Children's/West Campus Hospital - 3700 California	82	40.0
California	Medical Office Building/Doctor's Office - 3838 California	69	33.7
St Lukes	Hospital	65	31.6
California	Marshall Hale/East Campus Hospital - 3698 California	52	25.4
Pacific	2100 Webster - Pacific Professional Building	45	22.1
Pacific	2351 Clay - Stanford Building	33	16.2
St Lukes	Diagnostic MRI Center	11	5.3
Davies	Other	9	4.3
California	Other	7	3.4
Pacific	2340/60 Clay - Clay Building	6	2.9
Pacific	2300 California - Medical Office Building/Institute for Heal	5	2.5
California	Medical Office Building/Doctor's Office - 3905 Sacramento	4	2.0
St Lukes	Other	3	1.5
Pacific	2220 Webster - Gerbode Research Building	1	0.5
Pacific	2300 Sacramento - Emergency room	1	0.5
Pacific	2200 Webster - SKERI - Eye Researach Institute	0	0.0
Pacific	2330 Clay - Stem Building	0	0.0
Pacific	2323 Sacramento - Mental Health Center	0	0.0
Pacific	2324 Sacramento	0	0.0
Pacific	2329 Sacramento - Residence	0	0.0

About 50 percent of visitors responding the survey came to three buildings in the California Pacific Medical Center: the Pacific Hospital, Monteagle Medical Office Building in St. Luke's Campus and the Davies Hospital.

Q3. How did you get here today?

The majority of visitors to CPMC got to campus on a car either driving alone, carpooling or by being dropped off. In terms of mode share, driving was highest on the California Campus and lowest on the St. Luke's Campus. Results show there is a direct relationship between availability of regional transit service and the mode share of public transit for those visiting CPMC. Public transit was highest on St. Luke's and Davies Campuses where there is regional transit service nearby (BART and Muni light rail respectively), and lowest on California and Pacific Campuses where there is only Muni bus service available.

Q3. How did you get here today?	Pacific		California		Davies		St Lukes		Overall	
	N	%	N	%	N	%	N	%	N	%
Car	138	68.0	153	74.6	125	60.7	104	50.5	520	63.4
Taxi, Uber or Lift	15	7.4	18	8.8	22	10.7	14	6.8	69	8.4
Shuttle, bus, BART, paratransit	27	13.3	21	10.2	42	20.4	67	32.5	157	19.1
Other	23	11.3	13	6.3	17	8.3	21	10.2	74	9.0
Total	**203**	**100.0**	**205**	**100.0**	**206**	**100.0**	**206**	**100.0**	**820**	**100.0**

Q4. If you drove today, where did you park?

Of those that drove to campus, they split equally between parking in a garage and paying for parking, and parking on the street for free or in a meter for a lower price. There were more visitors parking in a garage at Pacific Campus than at any other campus. Street parking was highest around St. Luke's and California Campuses.

Q4. If you drive today, where did you park?	Pacific		California		Davies		St Lukes		Overall	
	N	%	N	%	N	%	N	%	N	%
Parking garage paid	54	39.7	51	33.8	59	47.2	39	40.2	203	39.9
Parking garage discounted	20	14.7	10	6.6	1	0.8	2	2.1	33	6.5
Parking garage complimentary	18	13.2	4	2.6	2	1.6	0	0	24	4.7
Street	24	17.6	72	47.7	53	42.4	53	54.6	202	39.7
Other	20	14.7	14	9.3	10	8.0	3	3.1	47	9.2
Total	**136**	**100.0**	**151**	**100**	**125**	**100.0**	**97**	**100**	**509**	**100.0**

Q5. Where did you come from before your visit here?

The large majority of survey respondents stated that they were coming from home on their trip to campus. Pacific Campus has more people coming from nearby hotels than any other campus, while California, Davies and St. Luke's Campuses had about 10 percent of visitors coming from work.

Q5. Where did you come from immediately before your visit here?	Pacific		California		Davies		St Lukes		Overall	
	N	%	N	%	N	%	N	%	N	%
Home	170	83.7	165	80.5	164	79.6	170	84.2	669	82.0
Work	11	5.4	22	10.7	19	9.2	20	9.9	72	8.8
School	0	.0	0	0	1	0.5	4	2.0	5	0.6
Other appt or medical facility	4	2.0	3	1.5	11	5.3	4	2.0	22	2.7
Hotel	13	6.4	4	2.0	4	1.9	0	.0	21	2.6
Other	5	2.5	11	5.4	7	3.4	4	2.0	27	3.3
Total	**203**	**100.0**	**205**	**100**	**206**	**100.0**	**202**	**100**	**816**	**100.0**

Q6. How much time did it take to get here today?

The majority of visitors to CPMC spent less than 30 minutes to get to campus. Visitors of Davies Campus spent less time getting there than visitors of other campuses, on average. Pacific Campus has the highest share of visitors spending more than 30 minutes and more than 60 minutes getting to campus; most likely due to the regional importance of the Pacific Hospital.

Q6. How much time did it take to get here today?	Pacific		California		Davies		St Lukes		Overall	
	N	%	N	%	N	%	N	%	N	%
Less than 30 minutes	100	51.0	124	60.8	153	76.1	130	64.0	507	63.1
35 - 60 minutes	54	27.6	68	33.3	28	13.9	61	30.0	211	26.2
More than 60 minutes	42	21.4	12	5.9	20	10.0	12	5.9	86	10.7
Total	**196**	**100.0**	**204**	**100.0**	**201**	**100.0**	**203**	**100.0**	**804**	**100.0**

Q7. How long were/will you be on campus this trip?

The majority of visitors to CPMC spend no more than 3 hours in the hospital. About 50 percent of visitors to Davies Campus said they would spend no more than 1 hour on campus. In contrast, about 50 percent of visitors to Pacific Campus said they would spend more than 3 hours and even more than a day at the hospital.

Q7. How long were you/will you be on campus this trip?	Pacific		California		Davies		St Lukes		Overall	
	N	%	N	%	N	%	N	%	N	%
Less than 1 hour	35	17.3	73	36.1	102	49.5	91	44.2	301	36.9
1-3 hours	75	37.1	95	47.0	72	35.0	100	48.5	342	41.9
3-23 hours	65	32.2	30	14.9	27	13.1	15	7.3	137	16.8
More than 24 hours	27	13.4	4	2.0	5	2.4	0	0	36	4.4
Total	**202**	**100.0**	**202**	**100.0**	**206**	**100.0**	**206**	**100**	**816**	**100.0**

Q8. In what zip code is your home located?

Responses to this question were grouped into larger regional areas to understand the relationship between location of residence, time spent traveling and mode of transportation. The large majority of visitors to CPMC campuses come from zip codes in San Francisco County. St. Luke's has the highest concentration of visitors from within San Francisco County, while Pacific Campus has the largest share of visitors from zip codes in other parts of the Bay Area and the rest of California, again showing the regional importance of Pacific Hospital.

Q8. In what zip code is your home located?	Pacific		California		Davies		St Lukes		Overall	
	N	%	N	%	N	%	N	%	N	%
San Francisco County	103	52.3	131	68.2	140	72.9	159	87.4	533	69.9
Rest of Bay Area	49	24.9	50	26.0	34	17.7	18	9.9	151	19.8
Rest of California	43	21.8	5	2.6	12	6.3	4	2.2	64	8.4
Out of State	2	1.0	6	3.1	6	3.1	1	.5	15	2.0
Total	**197**	**100.0**	**192**	**100.0**	**192**	**100.0**	**182**	**100.0**	**763**	**100.0**

Q9. What is your age?

Visitors of CPMC campuses are about equally distributed across age groups with St. Luke's Campus receiving the largest share of young adults and youth due to the maternity unit, and Pacific Campus getting the largest share of seniors and middle-age adults.

Q9. What is your age	Pacific		California		Davies		St Lukes		Overall	
	N	%	N	%	N	%	N	%	N	%
20 or younger	8	4.0	6	3.0	2	1.0	51	24.9	67	8.2
21-39	26	12.9	66	32.7	47	22.8	91	44.4	230	28.2
40-59	70	34.7	69	34.2	84	40.8	57	27.8	280	34.4
60 or older	98	48.5	61	30.2	73	35.4	6	2.9	238	29.2
Total	**202**	**100.0**	**202**	**100.0**	**206**	**100.0**	**205**	**100.0**	**815**	**100.0**

Q10. Are you male or female?

Finally, most visitors to CPMC campuses are female. This is also true across all campuses except Davies which receives a larger proportion of male visitors.

Q10. Are you male or female?	Pacific		California		Davies		St Lukes		Overall	
	N	%	N	%	N	%	N	%	N	%
Male	91	45.0	65	31.7	112	54.1	87	42.9	355	43.5
Female	111	55.0	140	68.3	95	45.9	116	57.1	462	56.5
Total	**202**	**100.0**	**205**	**100.0**	**207**	**100.0**	**203**	**100**	**817**	**100.0**

2. Pacific Campus Survey Results

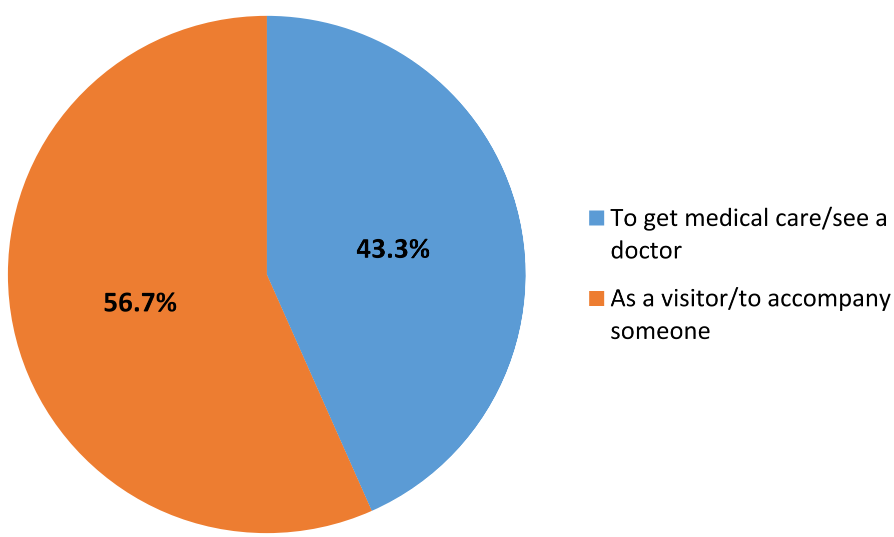
2.1. Pacific Campus Summary

- There were a total of 204 valid responses. The analysis of Pacific Campus Survey results show that the majority of visitors are persons accompanying other people that need medical treatment or are visiting patients in the Pacific Hospital.
- Over two-thirds of visitors got to Pacific Campus on a car – either driving alone, carpooling or being dropped-off. Among those that got to campus on a car, about 40 percent parked in a parking garage and paid full price for their stay.
- The overwhelming majority of visitors came from home before their trip to campus. The majority said they spent less than 30 minutes to get to campus, and came from within San Francisco County.
- Over 50 percent of visitors stay no longer than 3 hours at Pacific Campus. Most visitors responding the survey were middle-age and senior adults, and female.

2.2. Survey Frequency Results

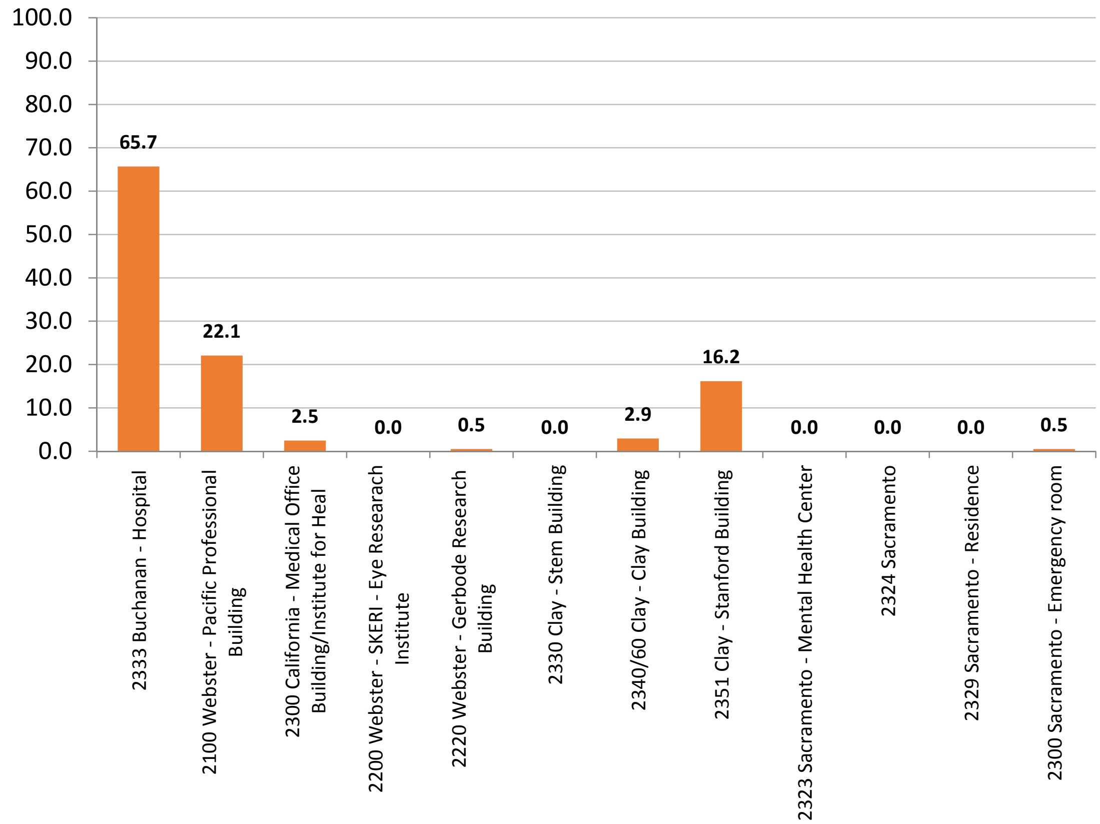
Q1. Why did you come to campus today?

The majority of people visitors to Pacific Campus, during the survey period, were visitors accompanying patients (56.7%)



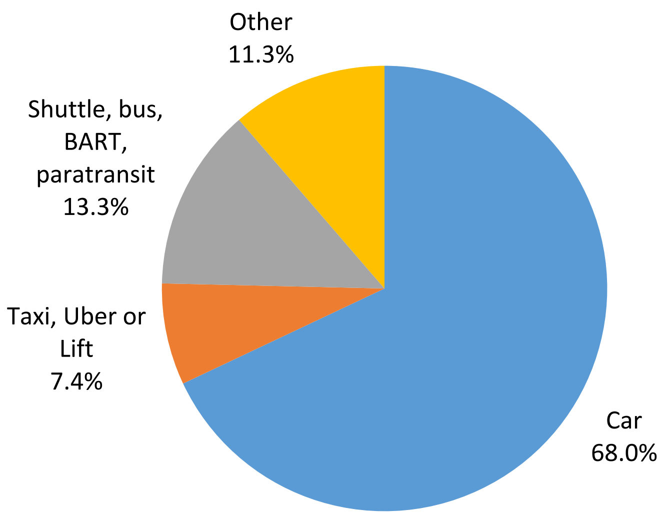
Q2. Which buildings did you visit today?

The majority of people that came to campus visited the Pacific Hospital on Buchanan Street (65.7%), and two additional buildings, the Pacific Professional Building on Webster Street (22.1%), and the Stanford Building on Clay Street (16.2%).



Q3. How did you get here today?

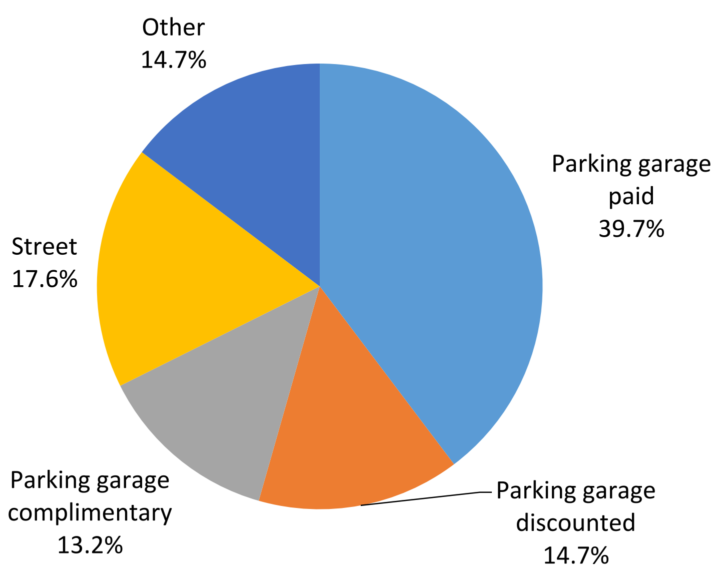
In relation to mode of travel, over two-thirds (68%) of patients and visitors got to Pacific Campus on a car – either driving alone, carpooling or being dropped-off. Just over 13 percent arrived in some form of public transportation (the hospital shuttle service, Muni bus/rail, BART or paratransit services).



Slightly over 7 percent arrived on a ride hailing service such as taxi, Uber or Lyft. The remaining 11 percent of visitors and patients arrived through other modes (walking, biking riding a motorcycle, or other).

Q4. If you drove today, where did you park?

For those that drove to Pacific Campus, about 40 percent parked in a parking garage and paid full price for their stay, about 15 percent parked in a parking garage but received a discounted price, while 13 percent parked in a parking garage and got free or complimentary parking.

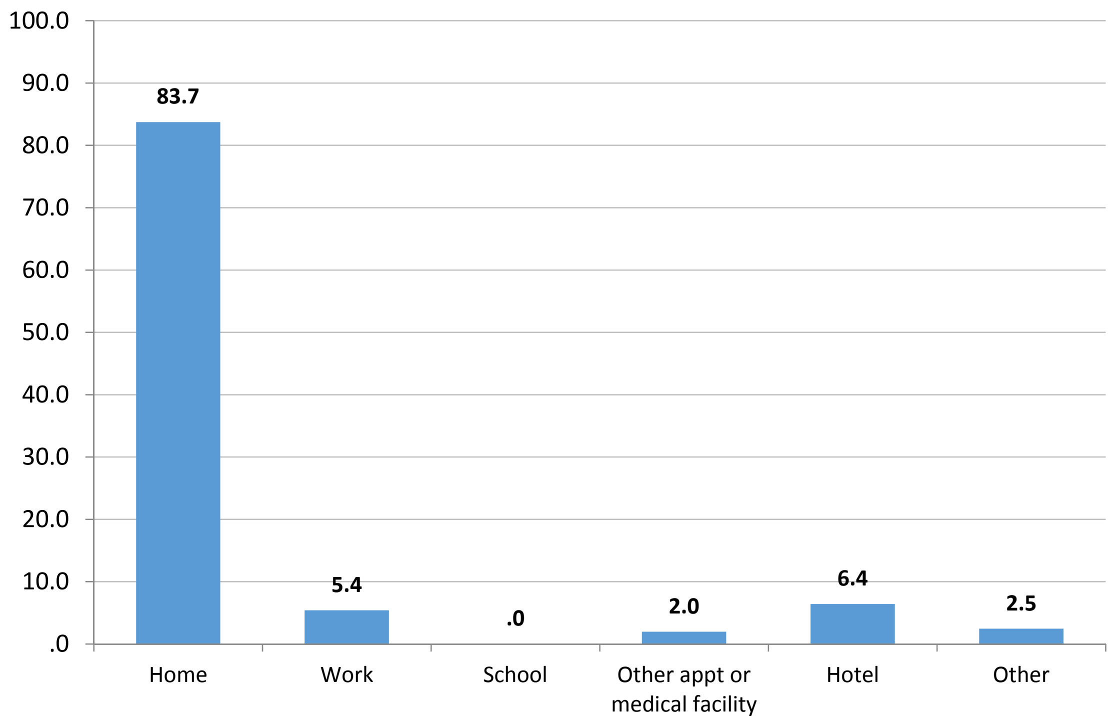


Almost 18 percent of visitors and patients parked on the streets around campus for free, while almost 15 percent of visitors that parked on or around campus said “other” but did not specify.

Q5. Where did you come from before your visit here?

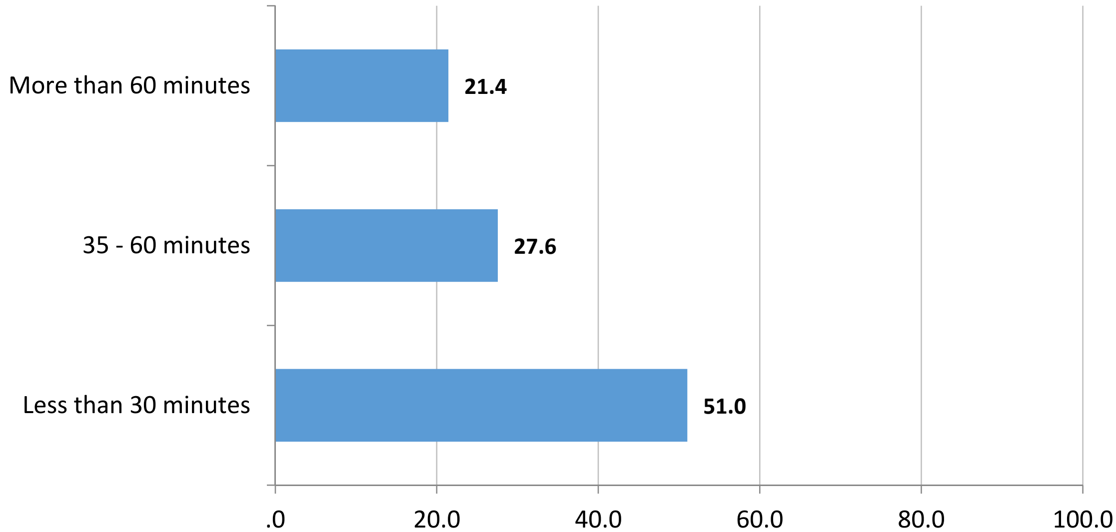
The overwhelming majority of patients and visitors (83.7%) came from home before their trip to campus. However a few came from hotels nearby (Sutter Health has agreements with Hotel Kabuki and the Holiday Inn nearby, which get a direct connection to the hospital via the shuttle service).

A small percentage (5.4%) of patients and visitors came directly from work before their visit to Pacific Campus, and only 2 percent came from other medical appointment or facility.



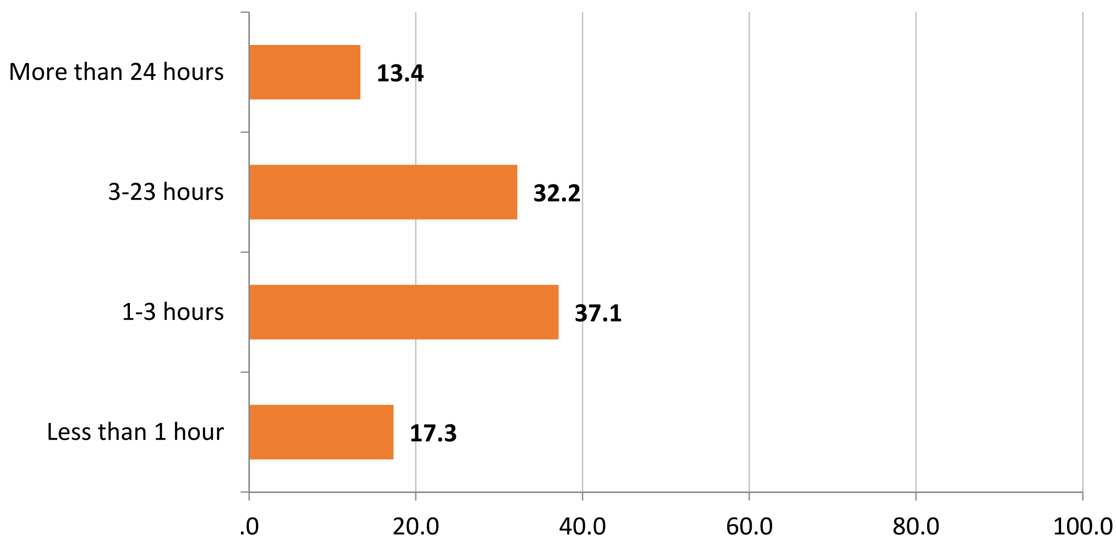
Q6. How much time did it take to get here today?

Just over 50 percent of patients and visitors said they spent less than 30 minutes to get to campus. Almost 28 percent of visitors spent 30 to 60 minutes to get to campus, and slightly over 21 percent declared spending more than 60 minutes traveling to campus.



Q7. How long were/will you be on campus this trip?

Over 50 percent of visitors to Pacific Campus stay no longer than 3 hours with 37 percent of visitors staying between 1 to 3 hours, and about 17 percent staying for less than 1 hour.



On the other hand, those that visit Pacific Campus for a longer time period mostly stay between 3 to 23 hours (32.2%), with slightly over 13 percent of visitors staying for more than 24 hours.

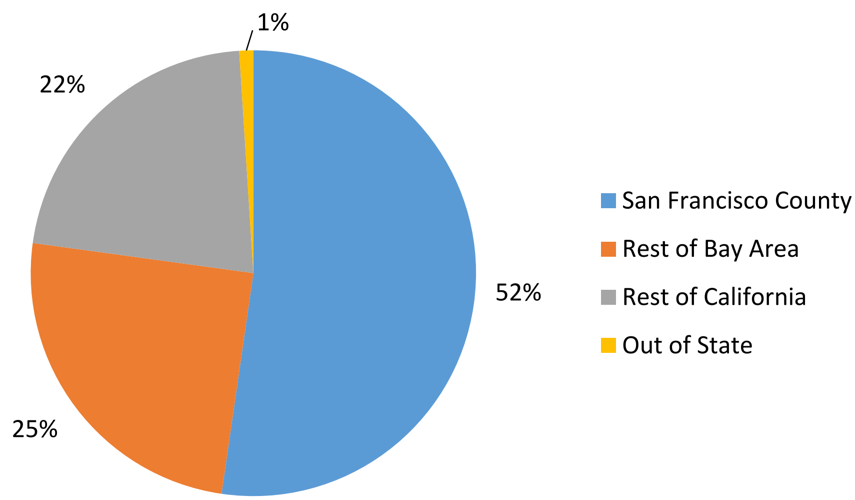
In general, these results are in line with Question 1 where the majority of visitors to Pacific Campus are accompanying or visiting others (and likely staying for short time).

Q8. In what zip code is your home located?

The respondent's home location zip codes were grouped into four regional location categories – San Francisco County, Rest of the Bay Area, Rest of California and Out of State.

More than 50 percent of visitors to Pacific Campus came from within San Francisco County and another 25 percent came from other parts in the Bay Area.

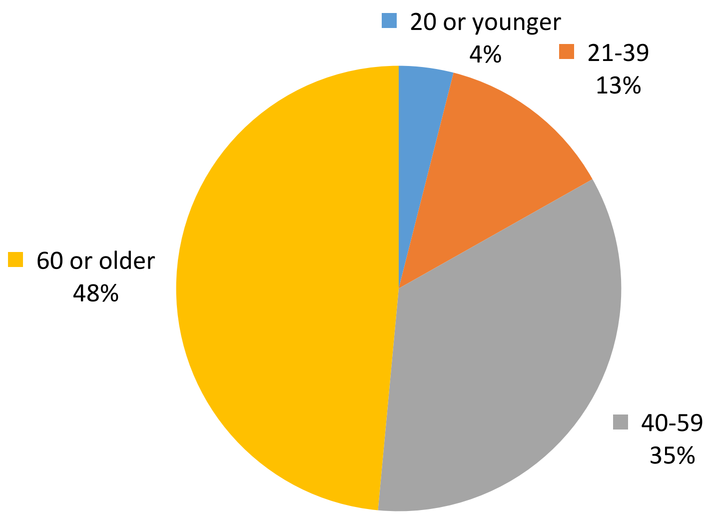
Close to one-quarter of visitors reported zip codes in California but outside of the Bay Area counties. These results show the wide extent of the Pacific Campus Hospital's regional pull.



Q9. What is your age?

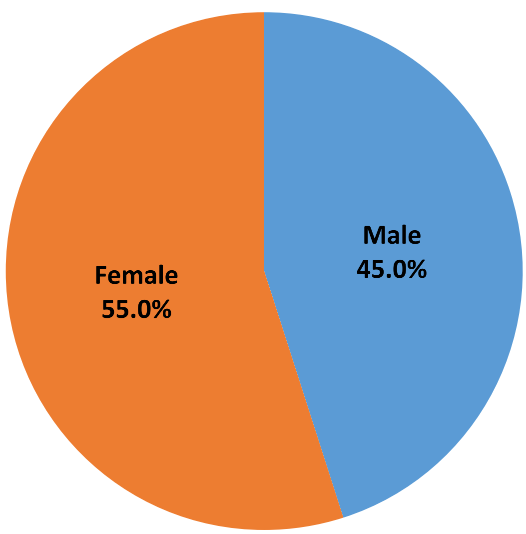
Survey responses were grouped into 4 age group categories: 20 years old or younger (youth), 21 to 39 years old (young adults), 40 to 59 years old (middle age adults), and 60 years old or older (senior adults).

Patient and visitors of Pacific Campus are overwhelmingly middle-aged and senior adults (almost 85%). Survey results show that almost 50 percent of respondents are 60 years old or older, and that 35 percent of respondents are 40 to 59 years old.



Q10. Are you male or female?

In relation to gender, 55 percent of people responding the survey at Pacific Campus were women.



2.3. Selected Crosstabs Results

Based on response frequency results the following crosstabs were produced to understand the relationship between mode of travel, travel time, length of stay, place of residence, age group and parking.

1. Mode of Travel versus Travel Time (Q3 vs. Q6)

The majority of people visiting Pacific Campus drove alone, carpooled or was dropped-off. At the same time most visitors (51%) spent less than 30 minutes to get to Pacific Campus.

Travel Time vs. Mode of Travel	Drive Alone, Drop-Off (n=133)	Taxi, Uber & Lyft (n=15)	Shuttle Bus, BART, Paratransit (n=26)	Other (Walking & Biking) (n=22)	Total (n=196)
Less than 30 minutes	39.8%	80.0%	57.7%	90.9%	51.0%
35 - 60 minutes	33.1%	20.0%	19.2%	9.1%	27.6%
More than 60 minutes	27.1%	0.0%	23.1%	0.0%	21.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

The crosstab between mode of travel and travel time shows that in relative terms ride hailing services (taxi, Uber, Lyft), public transit and other modes (walking, biking and other) are more common among visitors/patients that spent less than 30 minutes getting to Pacific Campus.

Visitors and patients that spent between 30 to 60 minutes to get to campus did so more predominantly on a car. For those that spent more than 60 minutes to get to campus, they arrive predominantly on a car or on public transit (most likely on BART).

2. Mode of Travel versus Length of Stay (Q3 vs. Q7)

People that visited Pacific Campus for more than 1 hour and especially those that stood longer than 3 hours were more likely to come on a car than on other mode of travel.

Patients and visitors that came to Pacific Campus on a ride hailing service or public transit were more likely to stay on campus for a short period of time (less than 1 hour). Those that came on other means of transportation were more likely to stay for more than 1 hour and up to 24 hours.

Mode of Travel vs. Length of Stay	Less than 1 hour (n=35)	1 to 3 hours (n=75)	3 to 23 hours (n=65)	More than 24 hours (n=27)	Total (n=202)
Drive Alone, Drop-Off	54.3%	68.0%	72.3%	74.1%	67.8%
Taxi, Uber & Lyft	11.4%	8.0%	6.2%	3.7%	7.4%
Shuttle Bus, BART, Paratransit	25.7%	12.0%	9.2%	11.1%	13.4%
Other (Walking & Biking)	8.6%	12.0%	12.3%	11.1%	11.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

3. Mode of Travel versus Respondent's Place of Residence (Q3 vs. Q8)

The relationship between mode of travel and place of residence shows that those that got to campus on alternative modes of transportation are more likely to live closest to campus, within San Francisco County.

Patients and visitors that live in the rest of the Bay Area are more likely to arrive on a car or via public transit (likely transferring from BART or on a paratransit vehicle). People visiting from outside the Bay Area arrive primarily on a car.

Mode of Travel vs. Place of Residence	Drive Alone, Drop-Off (n=136)	Taxi, Uber & Lyft (n=15)	Shuttle Bus, BART, Paratransit (n=25)	Other (Walking & Biking) (n=21)	Total (n=197)
San Francisco County	44.1%	73.3%	60.0%	81.0%	52.3%
Rest of Bay Area	27.9%	13.3%	28.0%	9.5%	24.9%
Rest of California	27.2%	13.3%	8.0%	9.5%	21.8%
Out of State	0.7%	0.0%	4.0%	0.0%	1.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

4. Mode of Travel versus Age Group (Q3 vs. Q9)

Driving to campus was more prevalent among youth, young adults and middle-age adults. Seniors were more likely to get to campus on public transit or by other means. Middle-age adults were also more likely to use ride hailing services for their trip to campus than other groups.

Mode of Travel vs. Age Group	Drive Alone, Drop-Off (n=137)	Taxi, Uber & Lyft (n=15)	Shuttle Bus, BART, Paratransit (n=27)	Other (Walking & Biking) (n=23)	Total (n=202)
20 years old or younger	4.4%	0.0%	3.7%	4.3%	4.0%
21 to 39 years old	15.3%	6.7%	11.1%	4.3%	12.9%
40 to 59 years old	35.0%	46.7%	25.9%	34.8%	34.7%
60 years old or older	45.3%	46.7%	59.3%	56.5%	48.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

5. Parking Location versus Length of Stay (Q4 vs. Q7)

The analysis of parking versus length of stay shows that people make rational decisions with regards to the price of parking. Although a slight majority of visitors parked at the garage and paid for parking (either in full or discounted), a good number of visitors parked on the street or used a different mode of transportation.

Visitors that parked and spent less than 1 hour on campus have generally the same proportional distribution that the total. In contrast, those that spent between 1 – 3 hours on campus had a higher proportion of respondents parking on the street.

Visitors that spent between 3 – 24 hours on campus were more likely to park at the garage with a discount or pay full price. While those that stayed in the hospital for more than a day mostly parked in the garage at a discount or with validation.

Parking Location vs. Length of Stay	Parking Garage (paid) (n=53)	Parking Garage (discount) (n=20)	Parking Garage (validation) (n=18)	On the Street (n=24)	Other (n=20)	Total (n=135)
Less than 1 hour	17.0%	15.0%	0.0%	12.5%	15.0%	13.3%
1 to 3 hours	37.7%	5.0%	38.9%	58.3%	35.0%	36.3%
3 to 23 hours	37.7%	40.0%	27.8%	29.2%	35.0%	34.8%
More than 24 hours	7.5%	40.0%	33.3%	0.0%	15.0%	15.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

3. California Campus Survey Results

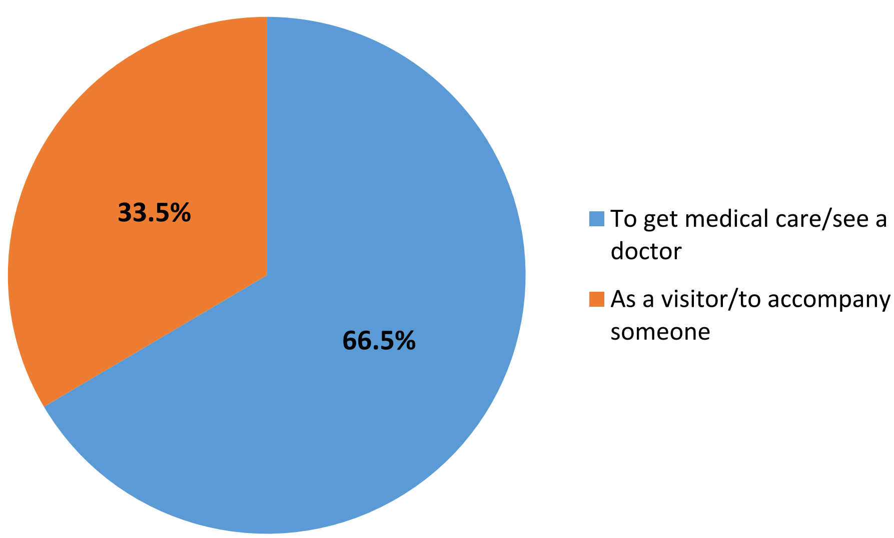
3.1. California Campus Summary

- There were a total of 205 valid responses. Two-thirds of people visiting the California Campus, during the survey period, were patients looking to get medical care or see a doctor. They visited the three main buildings in about equal numbers.
- Almost three-quarters visitors got to California Campus on a car – either driving alone, carpooling or being dropped-off. Among those that drove, about one-half parked on the street for free, instead of in a paid parking garage.
- Most visitors came from home before their trip to campus and they spent less than 30 minutes to get to campus, as two-thirds of visitors to California Campus came from within San Francisco County.
- Most visitors did not stay longer than 3 hours on campus. They were equally distributed across age group – young adults, middle –age adults and senior adults, and the majority of them were women.

3.2. Survey Frequency Results

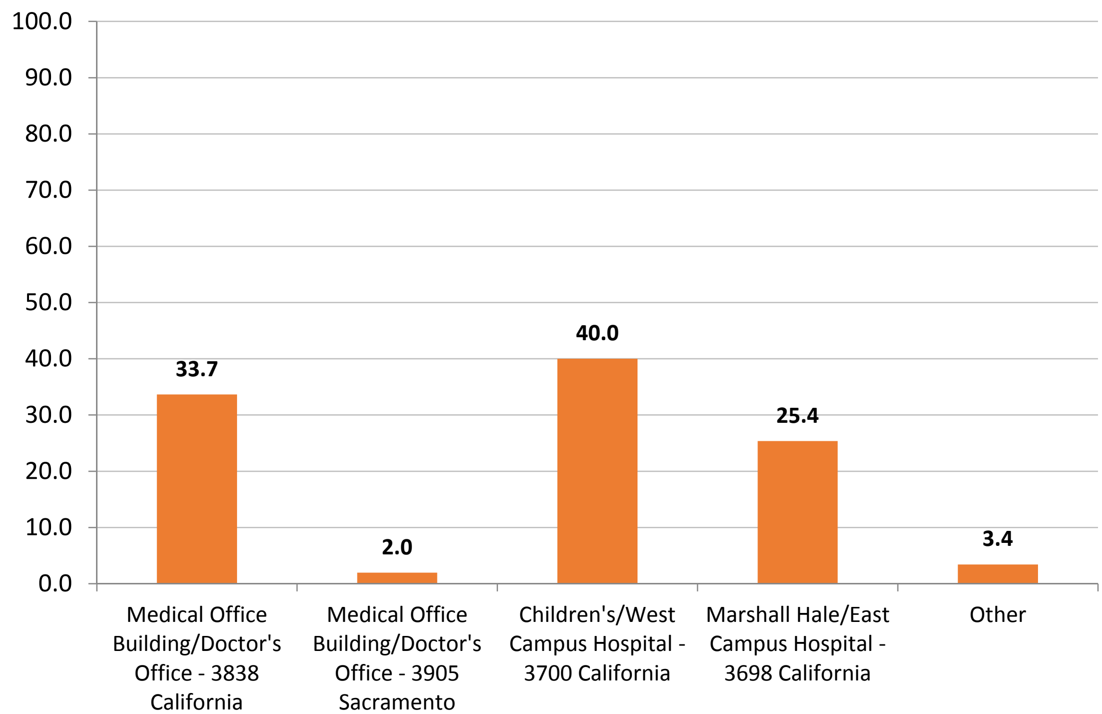
Q1. Why did you come to campus today?

The majority (two-thirds) of people visiting the California Campus, during the survey period, were patients looking to get medical care or see a doctor (66.5%)



Q2. Which buildings did you visit today?

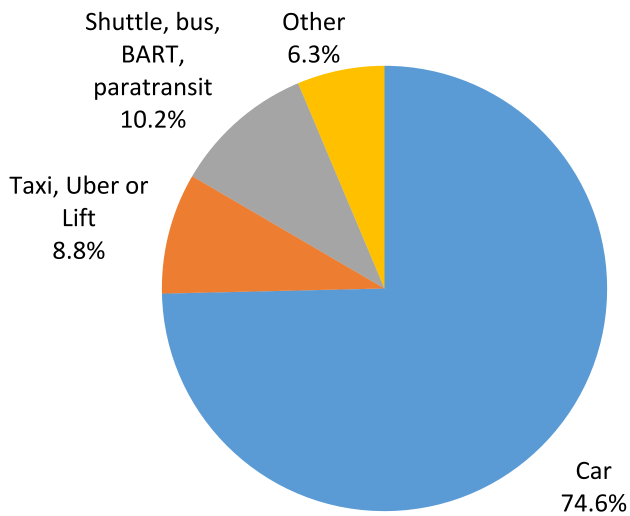
The majority of people that came to campus visited three buildings: the Children's Hospital/West Campus on 3700 California Street (40.0%), the Medical Office Building on 3888 California Street (33.7%), and the Marshall Hale/East Campus Hospital on 3698 California Street (25.4%).



Q3. How did you get here today?

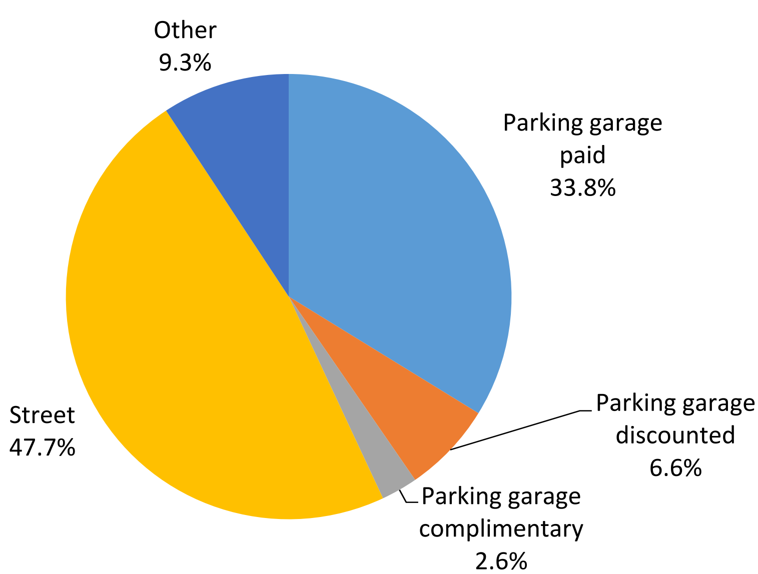
In relation to mode of travel, almost three-quarters (74.6%) of patients and visitors got to California Campus on a car – either driving alone, carpooling or being dropped-off. Ten percent of visitors arrived in some form of public transportation (the hospital shuttle service, Muni bus/rail, BART or paratransit services).

Close to nine percent (8.8%) of visitors arrived on a ride hailing service such as taxi, Uber or Lyft. A small percentage of visitors and patients (6.3%) arrived through other modes (walking, biking, riding a motorcycle or other).



Q4. If you drove today, where did you park?

For those that drove to California Campus, about one-half (47.7%) parked on the street for free and about one-third (33.8%) parked in a parking garage and paid full price for their stay. An additional seven percent of visitors (6.6%) got discounted parking in the garage and another three percent (2.6%) got complimentary parking. Altogether, those that parked in the garage made over 40 percent of visitors to campus.

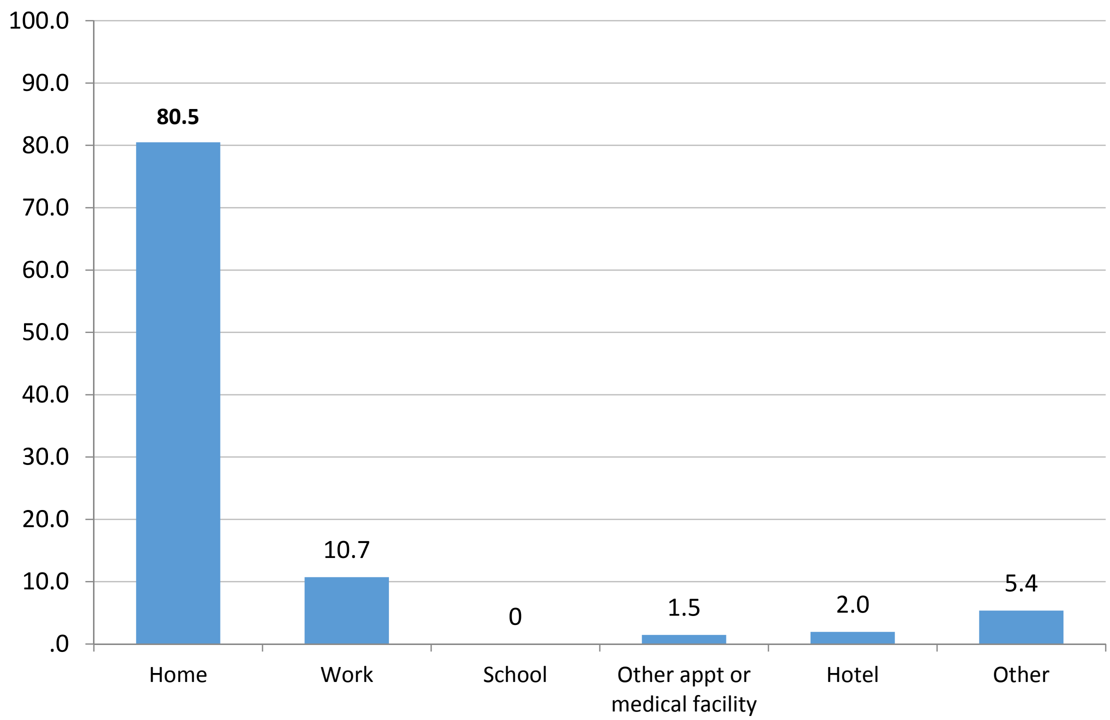


Almost ten percent of respondents that said drove to campus and parked (those that marked other) did something different than parking on the street or in a parking garage d but did not specify.

Q5. Where did you come from before your visit here?

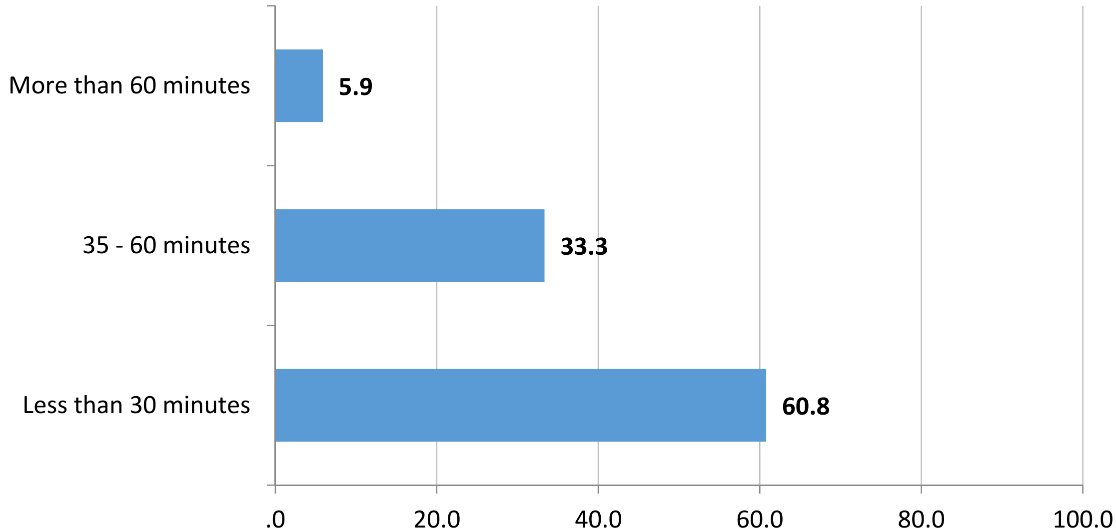
The overwhelming majority of patients and visitors (80.5%) came from home before their trip to campus. However a few came from work (10.7%). Those that came from nearby hotels or from another medical appointment or facility were a small percentage (2.0% and 1.5% respectively).

A small percentage (5.4%) of patients and visitors came directly from an unspecified location before their visit to the California Campus.



Q6. How much time did it take to get here today?

Over 60 percent of patients and visitors said they spent less than 30 minutes to get to campus. About one-third of visitors (33.3%) spent 30 to 60 minutes to get to campus, and small percentage (5.9%) said they spent more than 60 minutes traveling to campus.

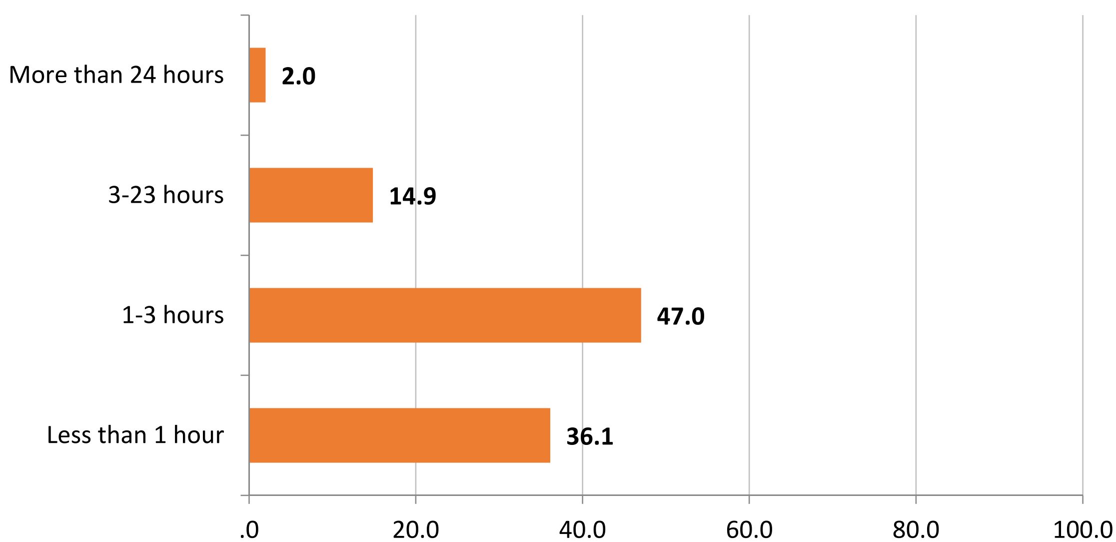


Q7. How long were/will you be on campus this trip?

Close to 85 percent of visitors to the California Campus stay no longer than 3 hours with 47 percent of visitors staying between 1 to 3 hours, and about 36 percent staying for less than 1 hour.

On the other hand, those that visit the California Campus for a longer time period mostly stay between 3 to 23 hours (14.9%), with only a small percentage of visitors (2.0%) staying for more than 24 hours.

In general, these results appear to indicate that people visiting the California Campus come for doctor appointments or exams and do not stay for a long period of time in the hospital..

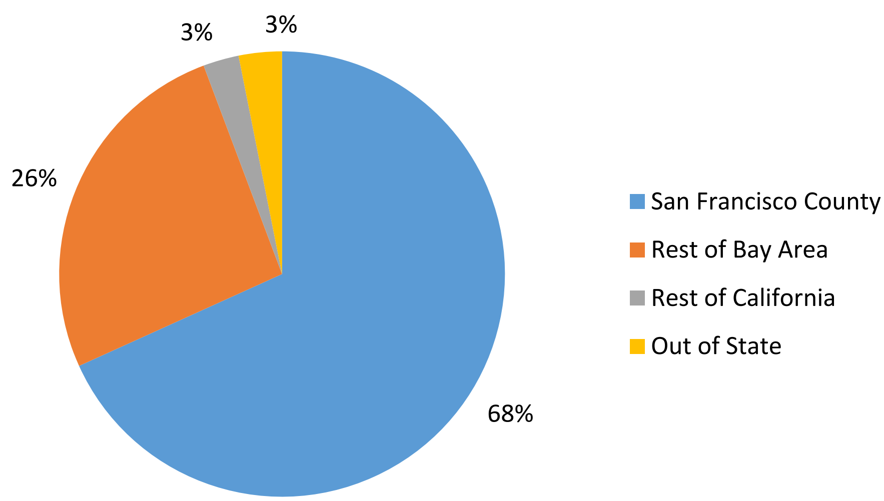


Q8. In what zip code is your home located?

The respondent's home location zip codes were grouped into four regional location categories – San Francisco County, Rest of the Bay Area, Rest of California and Out of State.

More than two-thirds (68.0%) of visitors to California Campus came from within San Francisco County and another 26 percent came from other parts of the Bay Area. A small percentage of visitors (3.0%) reported zip codes in California but outside of the Bay Area counties. While another three percent reported zipcodes outside of the state.

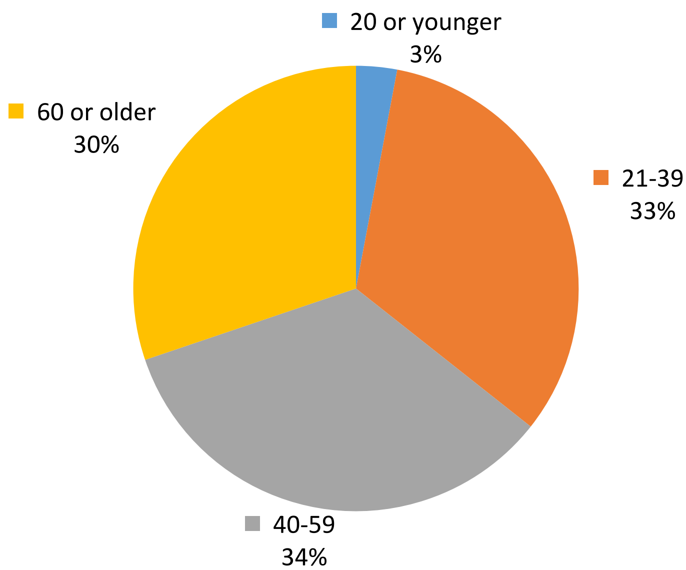
These results show that the overwhelming majority of visitors to California Campus are locals living in San Francisco County and the rest of the Bay Area.



Q9. What is your age?

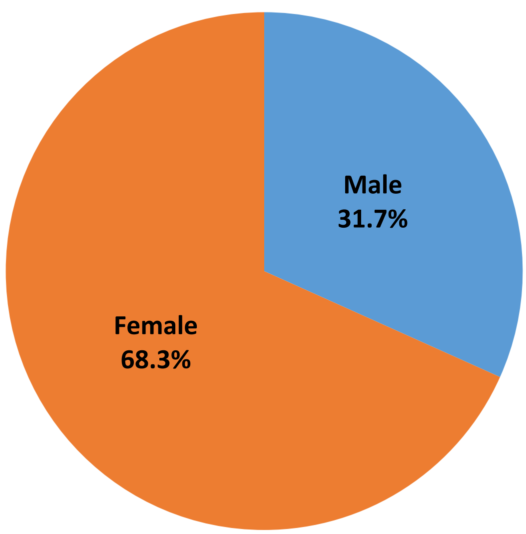
Survey responses were grouped into 4 age group categories: 20 years old or younger (youth), 21 to 39 years old (young adults), 40 to 59 years old (middle age adults), and 60 years old or older (senior adults).

Patient and visitors of California Campus were very equally distributes across age groups with middle-aged adults making one-third (34%), young adults another one-third (33%) and senior adults making 30 percent. Youth and children patients made only 3 percent of those responding the survey.



Q10. Are you male or female?

In relation to gender, over two-thirds of visitors (68.3%) that responded the survey at California Campus were women.



3.3. Selected Crosstabs Results

Based on response frequency results the following crosstabs were produced to understand the relationship between mode of travel, travel time, length of stay, place of residence, age group and parking.

1. Mode of Travel versus Travel Time (Q3 vs. Q6)

The large majority of people (74.6%) visiting California Campus drove alone, carpooled or were dropped-off. At the same time most visitors (60.8%) spent less than 30 minutes to get to California Campus.

The crosstab between mode of travel and travel time shows that in relative terms ride hailing services (taxi, Uber, Lyft) and other modes (walking, biking and other) are more common among visitors/patients that spent less than 30 minutes getting to California Campus.

Travel Time vs. Mode of Travel	Drive Alone, Drop-Off (n=153)	Taxi, Uber & Lyft (n=18)	Shuttle Bus, BART, Paratransit (n=21)	Other (Walking & Biking) (n=12)	Total (n=204)
Less than 30 minutes	56.9%	100.0%	42.9%	83.3%	60.8%
35 to 60 minutes	37.3%	0.0%	47.6%	8.3%	33.3%
More than 60 minutes	5.9%	0.0%	9.5%	8.3%	5.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Visitors and patients that spent between 30 to 60 minutes to get to campus did so more predominantly on a car or on public transit. For those that spent more than 60 minutes to get to campus, they arrive predominantly on public transit (most likely on a MUNI bus).

2. Mode of Travel versus Length of Stay (Q3 vs. Q7)

People that visited the California Campus for less than 1 hour arrived mostly driving alone, carpooling or were dropped off. Those that spent between 1-3 hours on campus also arrived predominantly on a car but with a higher proportion of visitors also using ride hailing services and public transit.

Walking, biking and other modes of transportation were more common the small percentage of visitors that stayed for more than 24 hours and more than 3 hours on campus. Ride hailing services (Taxi, Uber and Lyft) were also more common among the small group of visitors that stayed more than 24 hours on campus.

Mode of Travel vs. Length of Stay	Less than 1 hour (n=73)	1 to 3 hours (n=95)	3 to 23 hours (n=30)	More than 24 hours (n=4)	Total (n=202)
Drive Alone, Drop-Off	80.8%	72.6%	76.7%	25.0%	75.2%
Taxi, Uber & Lyft	5.5%	11.6%	6.7%	25.0%	8.9%
Shuttle Bus, BART, Paratransit	9.6%	11.6%	6.7%	0.0%	9.9%
Other (Walking & Biking)	4.1%	4.2%	10.0%	50.0%	5.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

3. Mode of Travel versus Respondent's Place of Residence (Q3 vs. Q8)

The relationship between mode of travel and place of residence shows that those that got to campus on alternative modes of transportation are more likely to live closest to campus, within San Francisco County.

Mode of Travel vs. Place of Residence	Drive Alone, Drop-Off (n=145)	Taxi, Uber & Lyft (n=16)	Shuttle Bus, BART, Paratransit (n=19)	Other (Walking & Biking) (n=12)	Total (n=192)
San Francisco County	66.2%	75.0%	73.7%	75.0%	68.2%
Rest of Bay Area	29.0%	6.3%	21.1%	25.0%	26.0%
Rest of California	2.8%	0.0%	5.3%	0.0%	2.6%
Out of State	2.1%	18.8%	0.0%	0.0%	3.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Patients and visitors that live in the rest of the Bay Area are more likely to arrive on a car, while those visiting from other parts of California were more likely to arrive via public transit (on a Muni bus or on a paratransit vehicle). People visiting from outside the Bay Area arrive primarily via ride hailing services.

4. Mode of Travel versus Age Group (Q3 vs. Q9)

Senior adults were more likely to drive alone or take some form of public transit to get to the California Campus. Middle-aged adults were proportionally more likely to arrive via ride hailing services or public transit. While on the other hand young adults were more likely to arrive on a ride hailing service or other mode of transportation (walking, biking or other).

Mode of Travel vs. Age Group	Drive Alone, Drop-Off (n=150)	Taxi, Uber & Lyft (n=18)	Shuttle Bus, BART, Paratransit (n=21)	Other (Walking & Biking) (n=13)	Total (n=202)
20 years old or younger	2.0%	5.6%	9.5%	0.0%	3.0%
21 to 39 years old	32.0%	44.4%	14.3%	53.8%	32.7%
40 to 59 years old	32.7%	44.4%	42.9%	23.1%	34.2%
60 years old or older	33.3%	5.6%	33.3%	23.1%	30.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

5. Parking Location versus Length of Stay (Q4 vs. Q7)

The analysis of parking versus length of stay shows that visitors of California Campus also make rational decisions with regards to the price of parking. Close to 50 percent of visitors parked on the street and they did so for less than 3 hours. Those that stayed for less than 1 hour parked on the street or other. Those that stayed for 1- 3 hours parked on the street or in the parking garage with validation (free of charge)

California Campus visitors that drove alone and stayed for more than 3 hours were more likely to park in the garage with a discount or validation, but also paying full price, and likely avoid the street due to time limitations or price.

Parking Location vs. Length of Stay	Parking Garage (paid) (n=51)	Parking Garage (discount) (n=9)	Parking Garage (validation) (n=4)	On the Street (n=72)	Other (n=13)	Total (n=149)
Less than 1 hour	27.5%	11.1%	25.0%	41.7%	46.2%	34.9%
1 to 3 hours	47.1%	44.4%	50.0%	48.6%	30.8%	46.3%
3 to 23 hours	23.5%	44.4%	25.0%	9.7%	23.1%	18.1%
More than 24 hours	2.0%	0.0%	0.0%	0.0%	0.0%	0.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

4. Davies Campus Survey Results

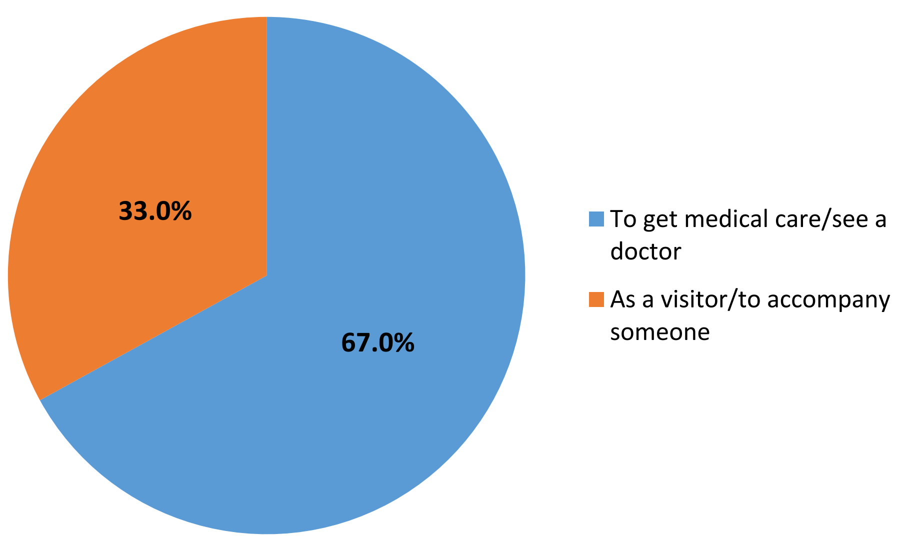
4.1. Davies Campus Summary

- There were a total of 207 valid responses. Two-thirds of people visiting the Davies Campus were patients looking to get medical care or see a doctor, and the majority of them visited the hospital building.
- Over 60 percent visitors got to Davies Campus on a car either, driving alone, carpooling or being dropped-off. Of those, about 50 percent parked in a parking garage and paid full price for their stay, and another 40 percent parked on the street presumably for free.
- The majority of visitors came from home before their trip to campus. Three-quarters of visitors said they spent less than 30 minutes to get to campus, as most of them came from within San Francisco County.
- The large majority of visitors to Davies Campus stay no longer than 3 hours. They are largely male adults of middle-age or seniors.

4.2. Survey Frequency Results

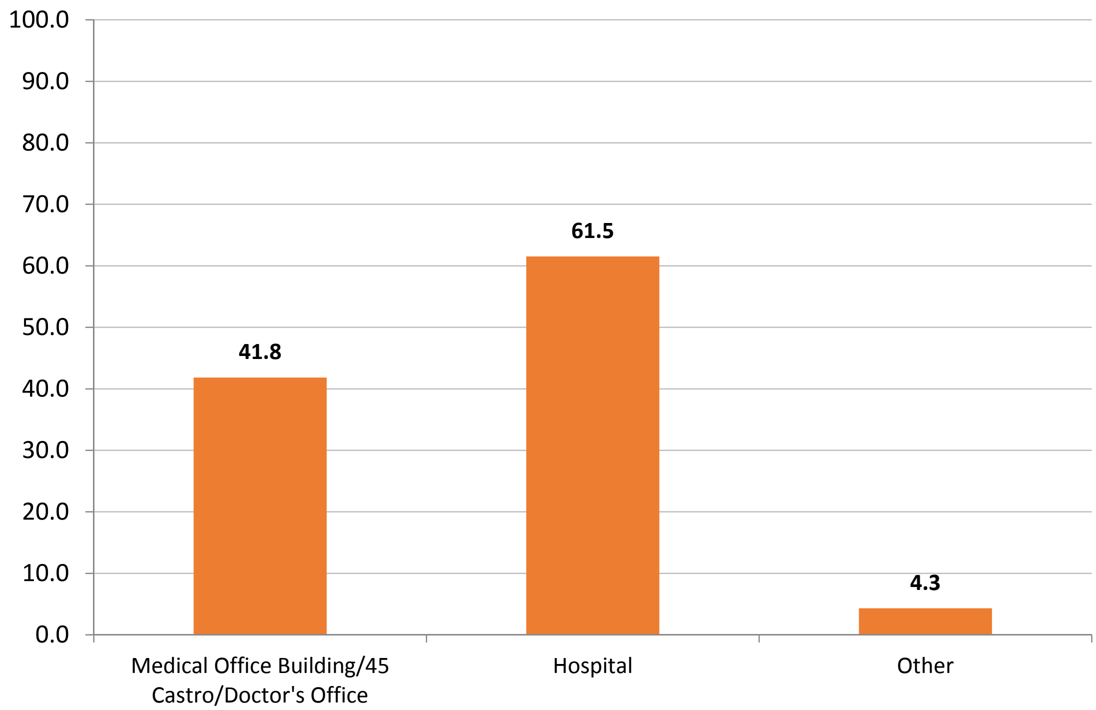
Q1. Why did you come to campus today?

Two-thirds of people visiting the Davies Campus, during the survey period, were patients looking to get medical care or see a doctor (67.0%)



Q2. Which buildings did you visit today?

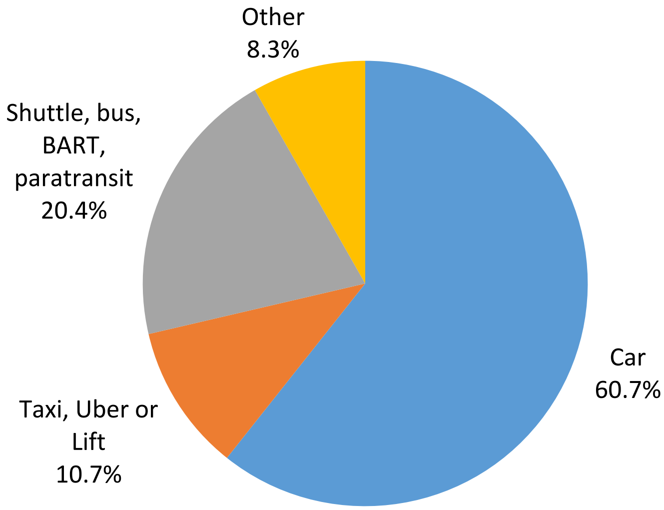
The majority of people that came to Davies Campus visited the hospital building (61.5%) and the Medical Office building (41.8%).



Q3. How did you get here today?

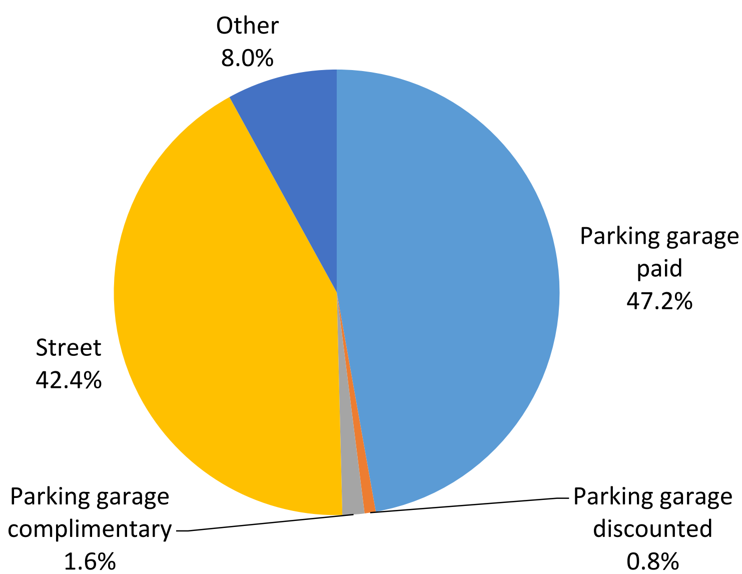
In relation to mode of travel, over 60 percent (60.7%) of patients and visitors got to Davies Campus on a car either driving alone, carpooling or being dropped-off. Another 20 percent (20.4%) arrived on some form of public transportation (the hospital shuttle service, Muni bus/rail, BART or paratransit services).

Close to 11 percent arrived on a ride hailing service such as taxi, Uber or Lyft. The remaining 8 percent of visitors and patients arrived through other modes (walking, biking riding a motorcycle, or other).



Q4. If you drove today, where did you park?

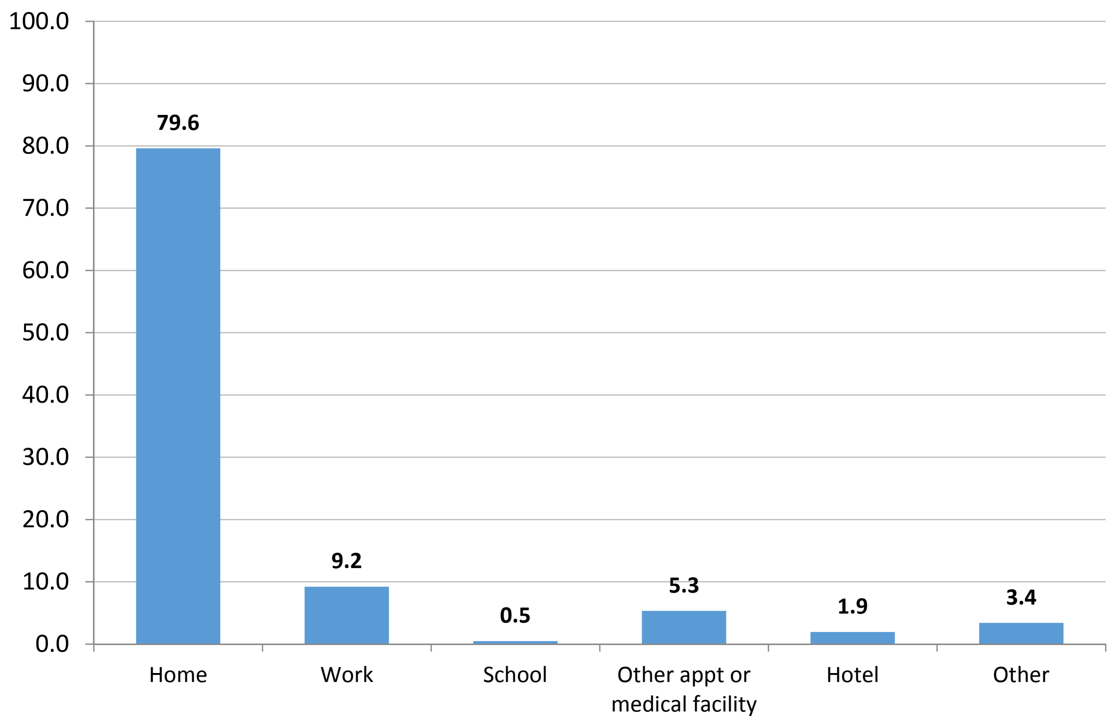
For those that drove to Davies Campus, about 47 percent parked in a parking garage and paid full price for their stay. In contrast over 42 percent parked on the street presumably for free. Those that parked in the parking garage for a discount (0.8%) or complimentary (1.6%) were a very small proportion as compared to Pacific and California campuses. Eight percent of visitors that parked on or around campus said "other" but did not specify.



Q5. Where did you come from before your visit here?

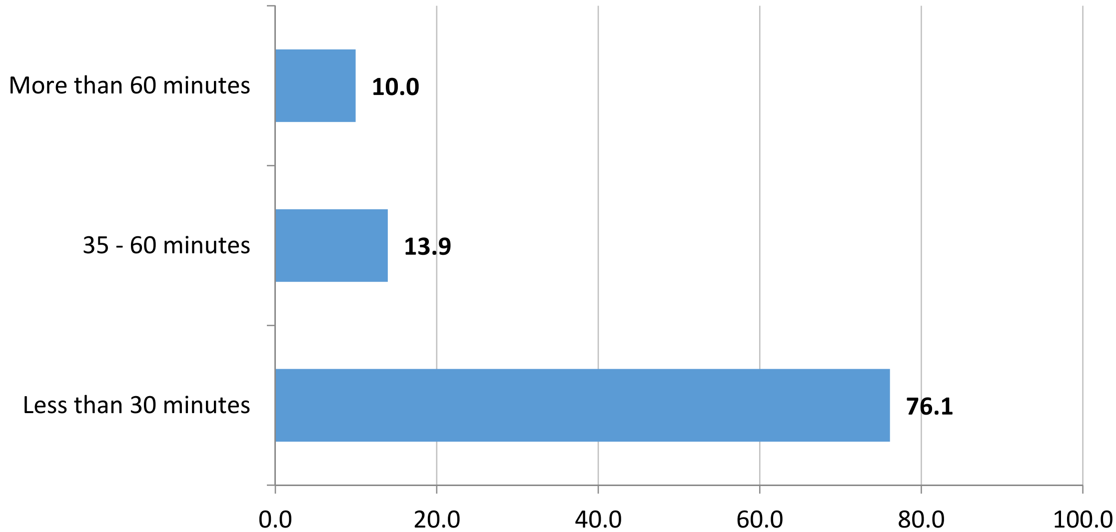
The overwhelming majority of patients and visitors (79.6%) came from home before their trip to campus. About 10 percent of patients (9.2%) came directly from work before their visit to Davies Campus, and just over 5 percent (5.3%) came from other medical appointment or facility.

A very small percentage of patients and visitors (1.9%) came from hotels nearby (Sutter Health has agreements with Hotel Kabuki and the Holiday Inn nearby, which get a connection to the hospital via the shuttle service).



Q6. How much time did it take to get here today?

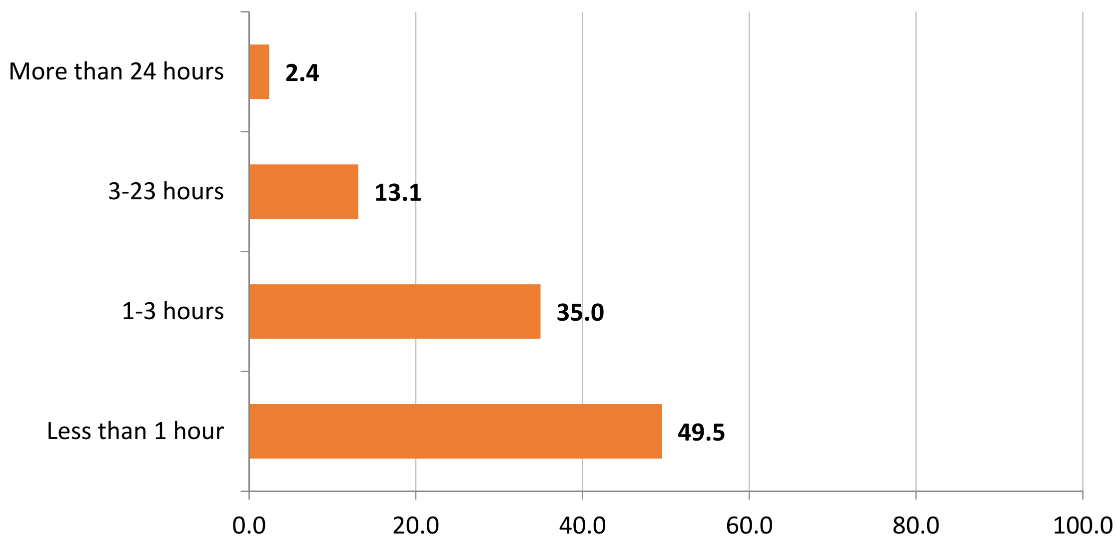
Over three-quarters (76.1%) of patients and visitors said they spent less than 30 minutes to get to campus. Almost 14 percent of visitors spent 30 to 60 minutes to get to campus, and the remaining ten percent declared spending more than 60 minutes traveling to campus.



Q7. How long were/will you be on campus this trip?

Almost 85 percent of visitors to Davies Campus stay no longer than 3 hours with roughly 50 percent of visitors staying for less than 1 hour and 35 percent staying between 1-3 hours.

On the other hand, those that visit Davies Campus for a longer time period mostly stay between 3 to 23 hours (13.1%), with a small percentage of visitors (2.4%) staying for more than 24 hours.

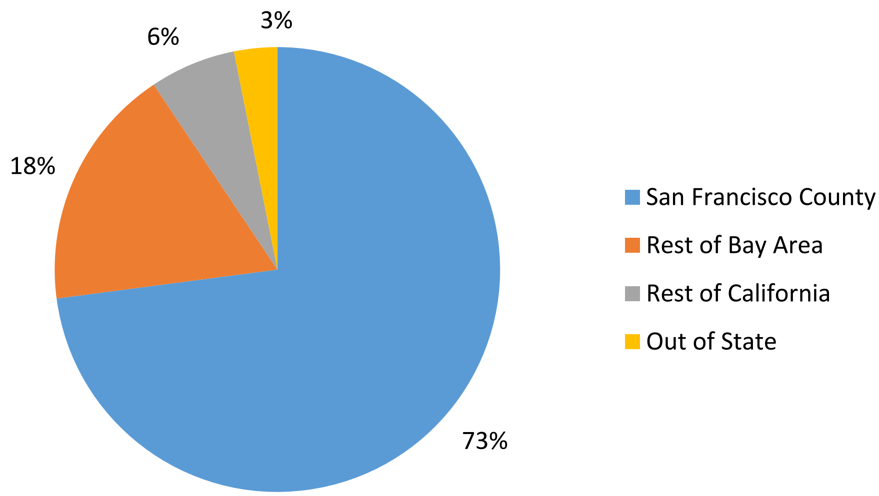


Q8. In what zip code is your home located?

The respondent's home location zip codes were grouped into four regional location categories – San Francisco County, Rest of the Bay Area, Rest of California and Out of State.

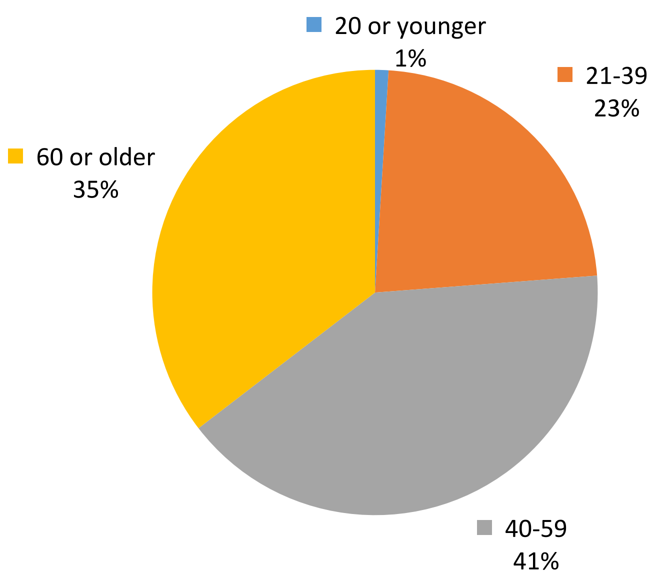
Close to three-quarters (73%) of visitors to Davies Campus came from within San Francisco County and another 18 percent came from other parts of the Bay Area.

Another 6 percent of visitors reported zip codes in California but outside of the Bay Area counties, and 3 percent reported out of state zipcodes. These results show that most visitors of Davies Campus are locals from within San Francisco County.



Q9. What is your age?

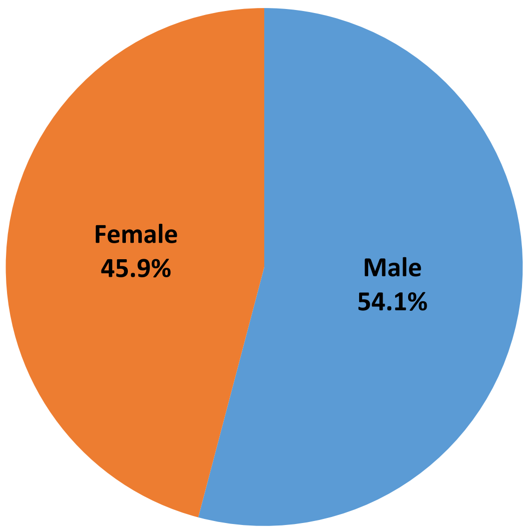
Survey responses were grouped into 4 age group categories: 20 years old or younger (youth), 21 to 39 years old (young adults), 40 to 59 years old (middle age adults), and 60 years old or older (senior adults).



Patient and visitors of Davies Campus are overwhelmingly middle-aged and senior adults (over 75%). Survey results show that 35 percent of respondents are 60 years old or older, and that 41 percent of respondents are 40 to 59 years old. About one-quarter of visitors responding the survey were young adults between 21 and 39 years of age.

Q10. Are you male or female?

In relation to gender, 54 percent of people responding the survey at Davies Campus were male, which as compared to Pacific and California campuses shows that the Davies Hospital and medical office building may specialize in illnesses affecting males more than females.



4.3. Selected Crosstabs Results

Based on response frequency results the following crosstabs were produced to understand the relationship between mode of travel, travel time, length of stay, place of residence, age group and parking.

1. Mode of Travel versus Travel Time (Q3 vs. Q6)

The large majority of people visiting Davies Campus drove alone, carpooled or were dropped-off. At the same time, the large majority of those visiting the Davies Campus spent less than 30 minutes getting there, and proportionally were more likely to take a ride hailing service, walk, ride a bicycle or take another mode of transportation.

Among those that spent between 30 – 60 minutes getting to the Davies Campus, they were proportionally more likely to ride a form of public transit to get there either Muni bus/rail, paratransit or the hospital shuttle system.

Visitors and patients that spent between more than 60 minutes to get to campus did so more predominantly on a car or on public transit (likely on a Muni bus or the N light rail line that stops less than one block away from Davies Campus.

Travel Time vs. Mode of Travel	Drive Alone, Drop-Off (n=121)	Taxi, Uber & Lyft (n=21)	Shuttle Bus, BART, Paratransit (n=42)	Other (Walking & Biking) (n=16)	Total (n=200)
Less than 30 minutes	77.7%	95.2%	59.5%	87.5%	76.5%
35 - 60 minutes	10.7%	4.8%	28.6%	6.3%	13.5%
More than 60 minutes	11.6%	0.0%	11.9%	6.3%	10.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

2. Mode of Travel versus Length of Stay (Q3 vs. Q7)

In general, patients and visitors that drove alone, carpooled or were dropped off, stayed on campus for more than 3 hours and also for more than 24 hours. Patients and visitors that took a ride hailing service to get to campus, generally stayed for less than 1 hour or no more than 3 hours. Those that took some form of public transit (Muni, paratransit or the hospital shuttles) were more likely to stay for more than 1 hour and less than 24 hours. Finally, those that reported other mode of transportation (walk, bicycle or other) were more likely to stay for more than 3 hours and less than 24 hours.

Mode of Travel vs. Length of Stay	Less than 1 hour (n=101)	1 to 3 hours (n=71)	3 to 23 hours (n=27)	More than 24 hours (n=5)	Total (n=204)
Drive Alone, Drop-Off	62.4%	56.3%	63.0%	80.0%	60.8%
Taxi, Uber & Lyft	12.9%	11.3%	3.7%	0.0%	10.8%
Shuttle Bus, BART, Paratransit	16.8%	25.4%	22.2%	20.0%	20.6%
Other (Walking & Biking)	7.9%	7.0%	11.1%	0.0%	7.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

3. Mode of Travel versus Respondent's Place of Residence (Q3 vs. Q8)

The relationship between mode of travel and place of residence shows that those that got to campus on alternative modes of transportation are more likely to live closest to campus, within San Francisco County.

Mode of Travel vs. Place of Residence	Drive Alone, Drop-Off (n=115)	Taxi, Uber & Lyft (n=21)	Shuttle Bus, BART, Paratransit (n=40)	Other (Walking & Biking) (n=15)	Total (n=191)
San Francisco County	67.8%	85.7%	72.5%	93.3%	72.8%
Rest of Bay Area	20.9%	9.5%	17.5%	6.7%	17.8%
Rest of California	9.6%	0.0%	2.5%	0.0%	6.3%
Out of State	1.7%	4.8%	7.5%	0.0%	3.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Patients and visitors that live in the rest of the Bay Area are more likely to arrive on a car or via public transit (likely transferring from BART or on a paratransit vehicle). People visiting from outside the Bay Area arrive primarily on a car. While people visiting from out of state arrive to campus mostly through a taxi service or through BART and Muni.

4. Mode of Travel versus Age Group (Q3 vs. Q9)

The relationship between mode of travel and age group shows that seniors arrived to campus mostly driving alone or riding public transit. Middle-aged adults on the other hand were proportionally more likely to arrive on a private car or a ride hailing service.

In contrast, young adults were proportionally more likely to arrive on alternative modes of transportation either by public transit, taxi service or other form (walking, biking or other).

Mode of Travel vs. Age Group	Drive Alone, Drop-Off (n=124)	Taxi, Uber & Lyft (n=22)	Shuttle Bus, BART, Paratransit (n=42)	Other (Walking & Biking) (n=16)	Total (n=204)
20 years old or younger	0.0%	0.0%	4.8%	0.0%	1.0%
21 to 39 years old	18.5%	31.8%	23.8%	37.5%	22.5%
40 to 59 years old	45.2%	45.5%	26.2%	37.5%	40.7%
60 years old or older	36.3%	22.7%	45.2%	25.0%	35.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

5. Parking Location versus Length of Stay (Q4 vs. Q7)

The analysis of parking versus length of stay shows a similar pattern to that of Pacific and California campuses, were patient and visitors that stayed for less than 1 hour generally parked on the street free of charge.

Visitors that drove and parked and spent between 1 – 3 hours on campus had a relatively higher proportion of parking in the parking garage and paying full cost or other not specified parking.

Visitors that spent between 3 – 24 hours on campus were more likely to park at the garage and pay full cost or obtain a discount and validation. While those that stayed in the hospital for more than a day mostly parked in the garage and payed full cost or other not specified parking.

Parking Location vs. Length of Stay	Parking Garage (paid) (n=58)	Parking Garage (discount) (n=1)	Parking Garage (validation) (n=2)	On the Street (n=53)	Other (n=10)	Total (n=124)
Less than 1 hour	39.7%	0.0%	0.0%	66.0%	50.0%	50.8%
1 to 3 hours	36.2%	0.0%	0.0%	28.3%	40.0%	32.3%
3 to 23 hours	19.0%	100.0%	100.0%	5.7%	0.0%	13.7%
More than 24 hours	5.2%	0.0%	0.0%	0.0%	10.0%	3.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

5. St. Luke's Campus Survey Results

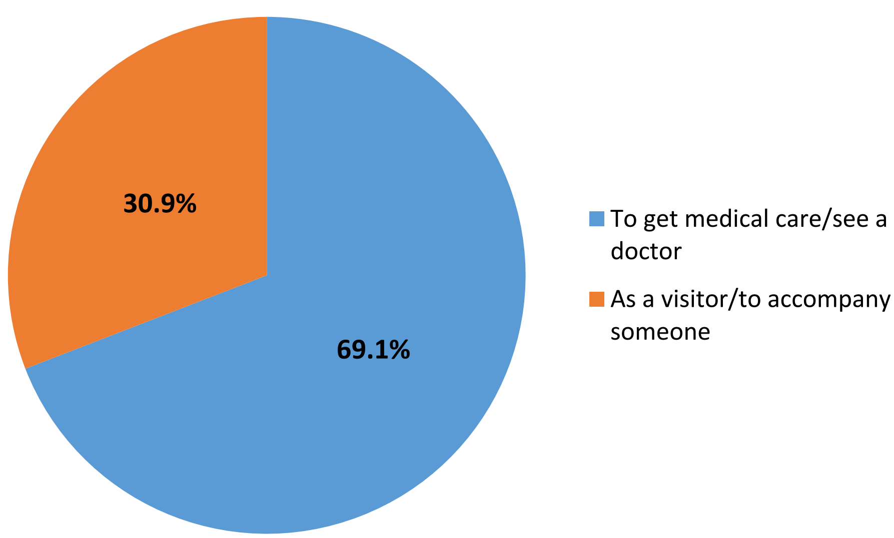
5.1. St. Luke's Campus Summary

- There were a total of 207 valid responses. The large majority of people visiting the St. Luke's Campus were patients looking to get medical care or see a doctor. Most of them visited the Monteagle medical office building and the main hospital.
- Just over 50 percent of visitors got to St. Luke's on a car either driving alone, carpooling or being dropped-off. Of those that drove, just over 50 percent parked on the street and another 40 percent parked in a paid parking garage.
- The large majority of visitors came from home before their trip to campus. About 90 percent came from within San Francisco County. Most of them spent less than 30 minutes to get to St. Luke's campus.
- About 50 percent of visitors said they would stay between 1 – 3 hours on campus, and another 40 percent said they would stay less than 1 hour on campus. Visitors were mostly female and largely young adults, followed by middle-age adults and youth.

5.2. Survey Frequency Results

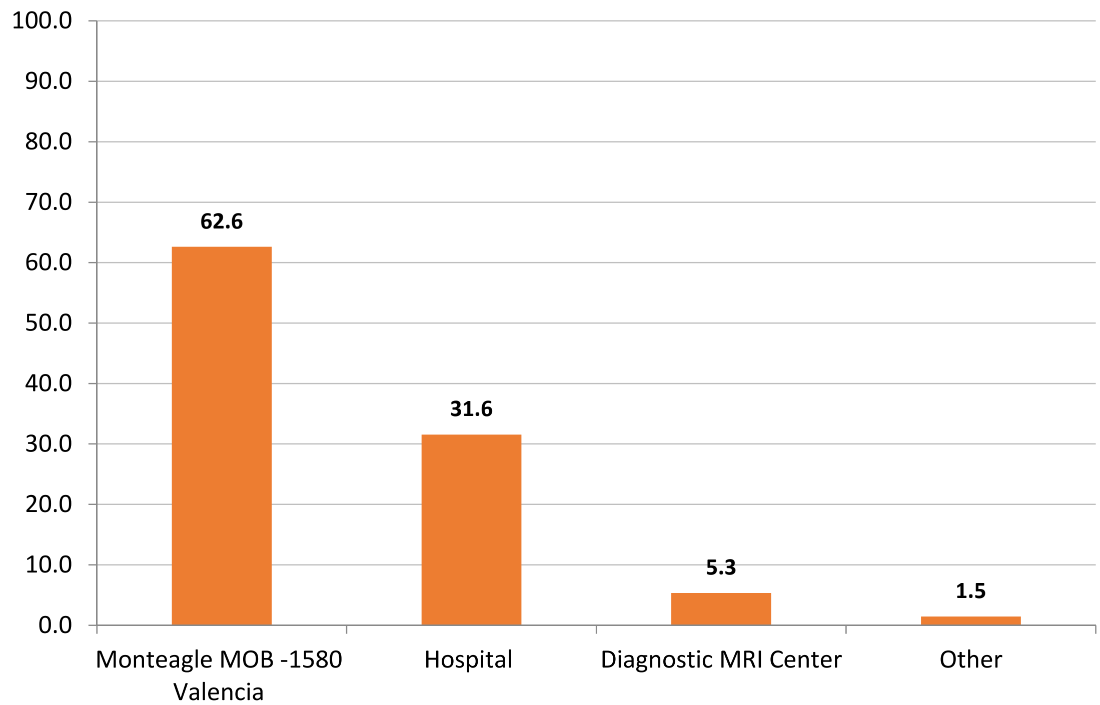
Q1. Why did you come to campus today?

The large majority of people visiting the St. Luke's Campus, during the survey period, were patients looking to get medical care or see a doctor (69.1%)



Q2. Which buildings did you visit today?

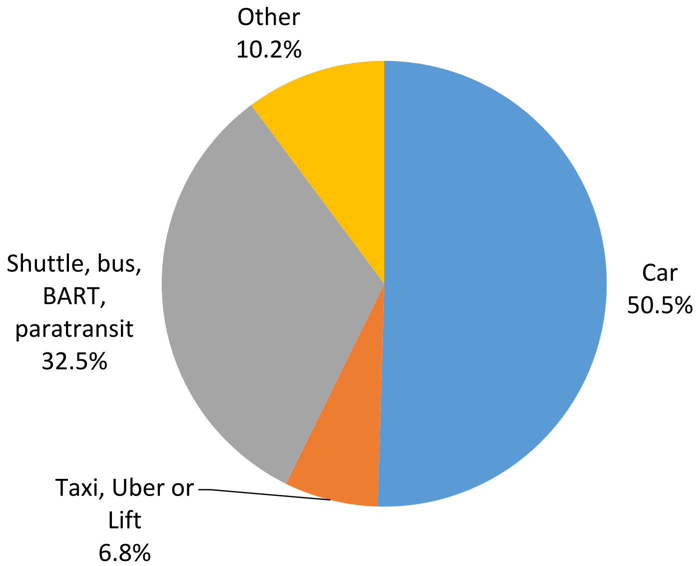
The majority of people that came to the St. Luke's Campus visited the Monteagle medical office building on Valencia Street (62.6%) and the main hospital (31.6%). A smaller percentage (5.3%) of people also visited the Diagnostic MRI Center.



Q3. How did you get here today?

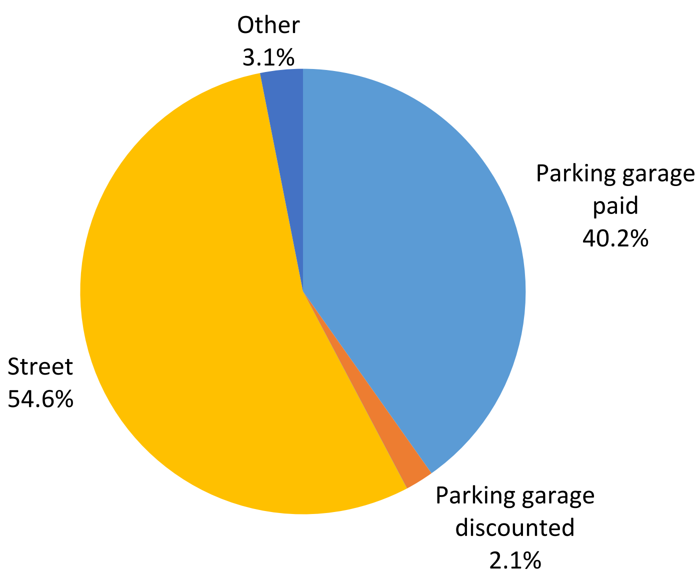
In relation to mode of travel, just over 50 percent of patients and visitors (50.5%) got to St. Luke's Campus on a car either driving alone, carpooling or being dropped-off. About one-third or 32.5 percent arrived in some form of public transportation (BART, Muni bus, paratransit or the hospital shuttle service).

Close to 7 percent arrived on a ride hailing service such as taxi, Uber or Lyft. While the remaining 10 percent of visitors and patients arrived through other modes (walking, biking riding a motorcycle, or other).



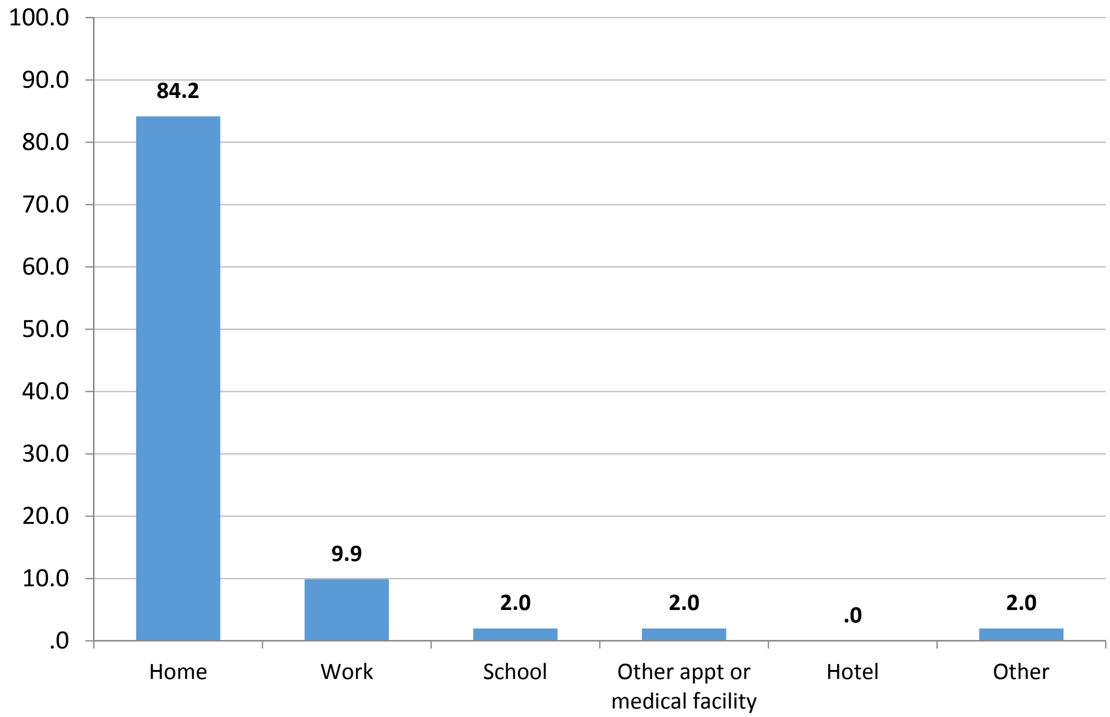
Q4. If you drove today, where did you park?

For those that drove to St. Luke's Campus, close to 55 percent (54.6%) parked on the street and another 40 percent (40.2%) parked in a parking garage and paid full price for their stay. A small percent of visitors (2.1%) parked in the parking garage with a discount. The remaining 3 percent of respondents declared other parking but did not specify.



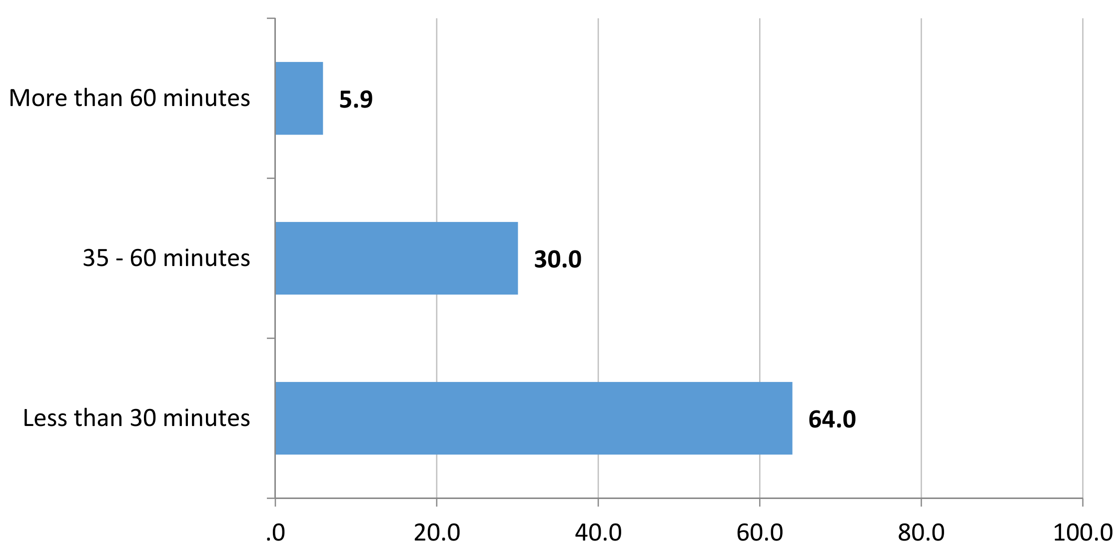
Q5. Where did you come from before your visit here?

The overwhelming majority of patients and visitors (84.2%) came from home before their trip to campus. About 10 percent (9.9%) came directly from work before their visit to St. Luke's Campus. A smaller proportion of visitors came from school (2.0%), another appointment or medical facility (2.0%), or other not specified origin.



Q6. How much time did it take to get here today?

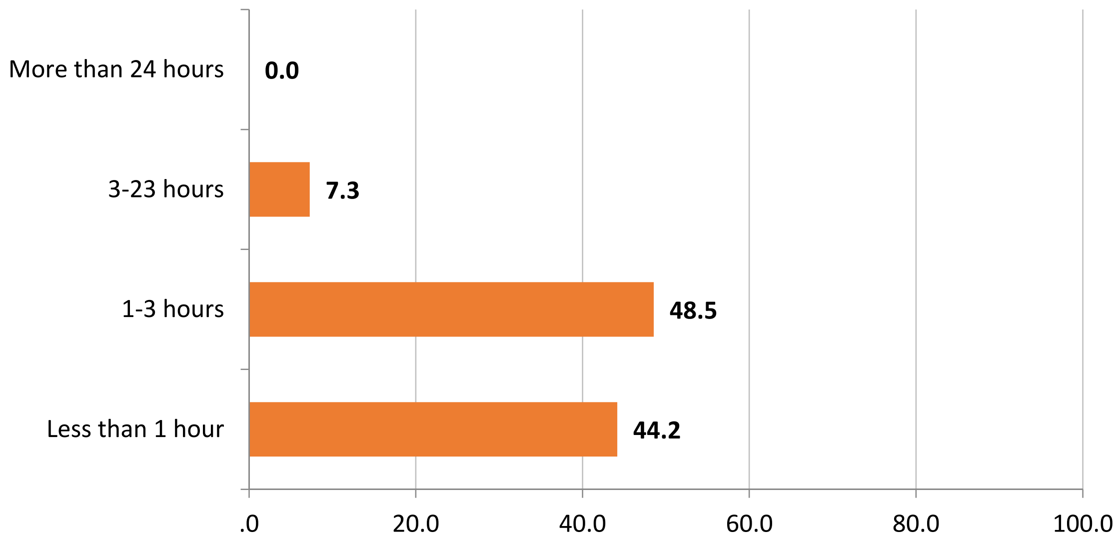
About two-thirds (64%) of patients and visitors said they spent less than 30 minutes to get to campus, with another 30 percent of visitors saying they spent 30 to 60 minutes to get to campus. Only 6 percent of respondents (5.9%) declared spending more than 60 minutes traveling to campus.



Q7. How long were/will you be on campus this trip?

Close to 50 percent (48.5%) of visitors to St. Luke's Campus said they would stay between 1 – 3 hours on campus. Another 44.2 percent said they would stay less than 1 hour on campus. In other words, over 90 percent of visitors said they were in for a short visit and would stay less than 3 hours on campus.

About 7 percent of respondents said they would stay for more than 3 hours on campus, and no survey respondent said would stay for more than a day or 24 hours.

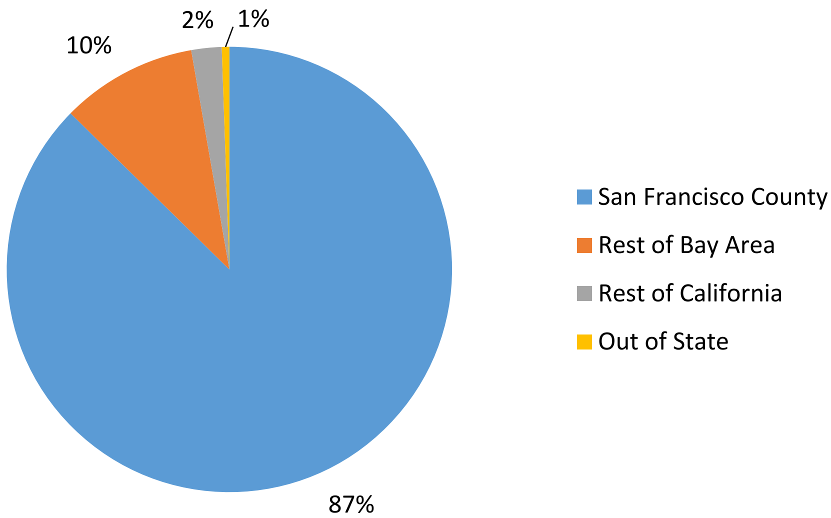


Q8. In what zip code is your home located?

The respondent's home location zip codes were grouped into four regional location categories – San Francisco County, Rest of the Bay Area, Rest of California and Out of State.

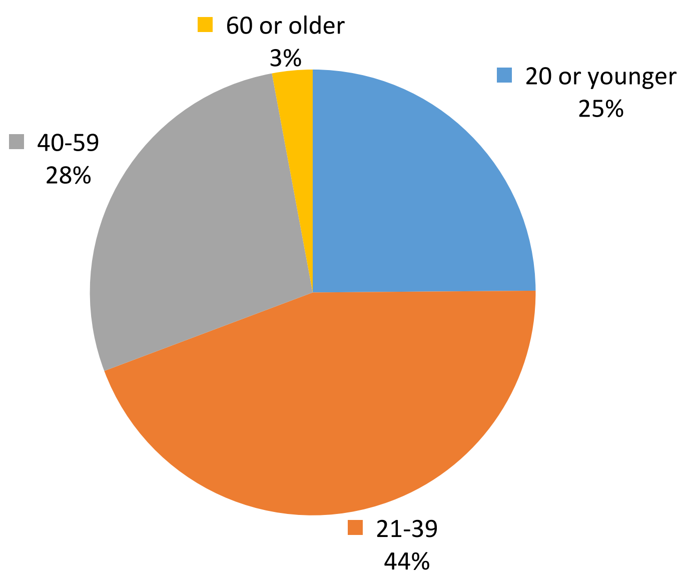
Close to 90 percent (87%) of visitors to St. Luke's Campus said they came from within San Francisco County, and another 10 percent said they came from other cities in the Bay Area.

A very small percent of visitors and patients of St. Luke's Campus said they were coming from the other parts of California (2%) or out of state (1%). These results show that St Luke's Campus and hospital is mostly visited by San Francisco County residents.



Q9. What is your age?

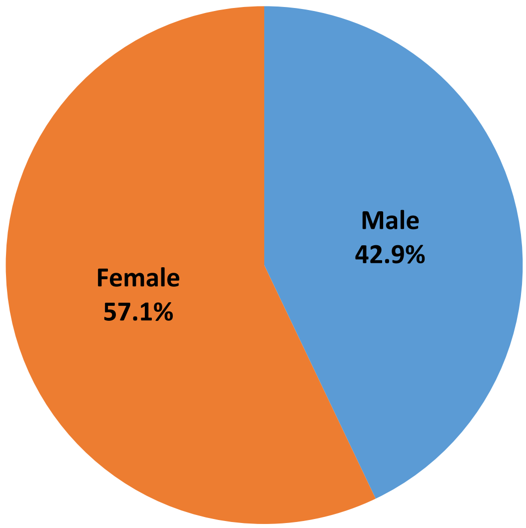
Survey responses were grouped into 4 age group categories: 20 years old or younger (youth), 21 to 39 years old (young adults), 40 to 59 years old (middle age adults), and 60 years old or older (senior adults).



Patient and visitors of St. Luke's Campus are largely young adults between 21 – 39 years of age (44%). Middle-aged adults (40-59 years old) and youth (20 years old or younger) are roughly one-quarter of visitors each (285 and 25% respectively), while seniors (60 years old or older) are only a small percent of visitors (3%). These results are in line with St.Luke's Hospital health care specialties (maternity and children well-being).

Q10. Are you male or female?

In relation to gender, 57 percent of people visiting St. Luke's Campus and responding the survey were women.



5.3. Selected Crosstabs Results

Based on response frequency results the following crosstabs were produced to understand the relationship between mode of travel, travel time, length of stay, place of residence, age group and parking.

1. Mode of Travel versus Travel Time (Q3 vs. Q6)

Slightly over 50 percent of people visiting St. Luke's Campus drove alone, carpooled or were dropped-off. Among visitors that stated it took them less than 30 minutes to get to campus, the use of ride hailing services and other forms of travel (walking, biking and other) were proportionally higher.

Visitors and patients that spent between 30 to 60 minutes getting to campus did so more predominantly via some form of public transit (BART, Muni, paratransit or the hospital shuttle service). Patients and visitors that said spent more than 60 minutes getting to campus, did so predominantly on a car (driving alone, carpooling or being dropped off).

Travel Time vs. Mode of Travel	Drive Alone, Drop-Off (n=102)	Taxi, Uber & Lyft (n=14)	Shuttle Bus, BART, Paratransit (n=66)	Other (Walking & Biking) (n=21)	Total (n=203)
Less than 30 minutes	62.7%	85.7%	51.5%	95.2%	64.0%
35 - 60 minutes	28.4%	14.3%	43.9%	4.8%	30.0%
More than 60 minutes	8.8%	0.0%	4.5%	0.0%	5.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

2. Mode of Travel versus Length of Stay (Q3 vs. Q7)

Patients and visitors that drove alone or were dropped off at St. Luke's Campus were more likely to stay between 1-3 hours in the hospital. In contrast, patients and visitors that rode a ride hailing service (taxi, Uber or Lyft) were more likely to stay for less than 1 hour on campus, while those that rode public transit (BART, Muni, paratransit or the hospital shuttle service) were more likely to stay for more than 3 hours.

Patients and visitors that came to St. Luke's Campus on other modes of transportation (walking, biking or other) were more likely to do a short visit and stay for less than 1 hour.

Mode of Travel vs. Length of Stay	Less than 1 hour (n=91)	1 to 3 hours (n=100)	3 to 23 hours (n=15)	More than 24 hours (n=0)	Total (n=206)
Drive Alone, Drop-Off	44.0%	58.0%	40.0%	0.0%	50.5%
Taxi, Uber & Lyft	9.9%	5.0%	0.0%	0.0%	6.8%
Shuttle Bus, BART, Paratransit	29.7%	32.0%	53.3%	0.0%	32.5%
Other (Walking & Biking)	16.5%	5.0%	6.7%	0.0%	10.2%
Total	100.0%	100.0%	100.0%	0.0%	100.0%

3. Mode of Travel versus Respondent's Place of Residence (Q3 vs. Q8)

The relationship between mode of travel and place of residence shows that those that got to campus on alternative modes of transportation are more likely to live closest to campus, within San Francisco County.

Patients and visitors that live in the rest of the Bay Area, rest of California and out of state are more likely to arrive on a car, driving alone or carpooling.

Mode of Travel vs. Place of Residence	Drive Alone, Drop-Off (n=92)	Taxi, Uber & Lyft (n=12)	Shuttle Bus, BART, Paratransit (n=59)	Other (Walking & Biking) (n=19)	Total (n=182)
San Francisco County	78.3%	100.0%	96.6%	94.7%	87.4%
Rest of Bay Area	16.3%	0.0%	3.4%	5.3%	9.9%
Rest of California	4.3%	0.0%	0.0%	0.0%	2.2%
Out of State	1.1%	0.0%	0.0%	0.0%	0.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

4. Mode of Travel versus Age Group (Q3 vs. Q9)

Generally youth and children patients were more likely to arrive via public transit or other modes of transportation. Young adults (21-39 years old) were more likely to drive, possibly due to maternity related trips or trips with infants. In contrast, middle age adults (40 – 59 years old) were more likely to arrive on campus via a ride hailing or public transit service, while seniors were more likely to get to campus on a ride hailing service or other mode of transportation.

Mode of Travel vs. Age Group	Drive Alone, Drop-Off (n=103)	Taxi, Uber & Lyft (n=14)	Shuttle Bus, BART, Paratransit (n=67)	Other (Walking & Biking) (n=21)	Total (n=205)
20 years old or younger	23.3%	21.4%	26.9%	28.6%	24.9%
21 to 39 years old	50.5%	28.6%	38.8%	42.9%	44.4%
40 to 59 years old	24.3%	42.9%	32.8%	19.0%	27.8%
60 years old or older	1.9%	7.1%	1.5%	9.5%	2.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

5. Parking Location versus Length of Stay (Q4 vs. Q7)

The analysis of parking versus length of stay shows that patients and visitors making short visits to campus park on the street in a higher proportion than other groups. Visitors staying longer than 1 hour but less than 3 hours parked in a parking garage and paid full or discounted cost in higher proportion than other groups.

Finally, those that spent between 3 – 24 hours on campus were more likely to park at other locations or facilities not specified.

Parking Location vs. Length of Stay	Parking Garage (paid) (n=39)	Parking Garage (discount) (n=2)	Parking Garage (validation) (n=0)	On the Street (n=53)	Other (n=3)	Total (n=97)
Less than 1 hour	35.9%	0.0%	0.0%	43.4%	33.3%	39.2%
1 to 3 hours	61.5%	100.0%	0.0%	52.8%	0.0%	55.7%
3 to 23 hours	2.6%	0.0%	0.0%	3.8%	66.7%	5.2%
More than 24 hours	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	0.0%	100.0%	100.0%	100.0%

Appendix C – Intersection Volume Comparison and Parking Data

FEHR PEERS

Existing Volume Comparison - PM Peak Hour

Intersection	Turning Movement		Intersection	Turning Movement	2010 Existing Volumes PM	2018 Existing Volumes PM	Net Change	% Change	
Arguello Blvd - Lake St/Sacramento St	NB	LT	1	NBL	80	36	-44		3%
		TH	1	NBT	170	231	61		
		RT	1	NBR	48	38	-10	2%	
	SB	LT	1	SBL	4	7	3		
		TH	1	SBT	293	307	14		
		RT	1	SBR	206	274	68	14%	
	EB	LT	1	EBL	135	137	2		
		TH	1	EBT	74	55	-19		
		RT	1	EBR	76	91	15	-1%	
	WB	LT	1	WBL	61	46	-15		
		TH	1	WBT	139	110	-29		
		RT	1	WBR	12	13	1	-25%	
Cherry St - Sacramento St	NB	LT	2	NBL	30	31	1		-21%
		TH	2	NBT	30	44	14		
		RT	2	NBR	41	29	-12	3%	
	SB	LT	2	SBL	13	10	-3		
		TH	2	SBT	35	40	5		
		RT	2	SBR	19	16	-3	-2%	
	EB	LT	2	EBL	13	8	-5		
		TH	2	EBT	115	102	-13		
		RT	2	EBR	26	4	-22	-35%	
	WB	LT	2	WBL	24	9	-15		
		TH	2	WBT	175	148	-27		
		RT	2	WBR	16	4	-12	-34%	
Maple St - Sacramento St	NB	LT	3	NBL	27	21	-6		1%
		TH	3	NBT	29	42	13		
		RT	3	NBR	25	24	-1	7%	
	SB	LT	3	SBL	8	11	3		
		TH	3	SBT	31	58	27		
		RT	3	SBR	9	9	0	38%	
	EB	LT	3	EBL	13	5	-8		
		TH	3	EBT	119	111	-8		
		RT	3	EBR	32	35	3	-9%	
	WB	LT	3	WBL	18	8	-10		
		TH	3	WBT	127	127	0		
		RT	3	WBR	13	6	-7	-12%	

Existing Volume Comparison - PM Peak Hour

Intersection	Turning Movement		Intersection	Turning Movement	2010 Existing Volumes PM	2018 Existing Volumes PM	Net Change	% Change	
Spruce St - Sacramento St	NB	LT	4	NBL	82	47	-35		
		TH	4	NBT	55	76	21		
		RT	4	NBR	33	34	1	-8%	
	SB	LT	4	SBL	17	9	-8		
		TH	4	SBT	64	52	-12		
		RT	4	SBR	25	11	-14	-47%	-12%
	EB	LT	4	EBL	9	6	-3		
		TH	4	EBT	102	114	12		
		RT	4	EBR	52	33	-19	-7%	
	WB	LT	4	WBL	27	38	11		
		TH	4	WBT	103	92	-11		
		RT	4	WBR	29	22	-7	-5%	
Arguello Blvd - California St	NB	LT	5	NBL	71	69	-2		
		TH	5	NBT	263	213	-50		
		RT	5	NBR	59	57	-2	-16%	
	SB	LT	5	SBL	87	59	-28		
		TH	5	SBT	309	330	21		
		RT	5	SBR	43	57	14	2%	-12%
	EB	LT	5	EBL	37	41	4		
		TH	5	EBT	550	472	-78		
		RT	5	EBR	50	37	-13	-16%	
	WB	LT	5	WBL	68	65	-3		
		TH	5	WBT	658	595	-63		
		RT	5	WBR	67	30	-37	-15%	
Jordan Ave/Cherry St - California St	NB	LT	6	NBL	42	23	-19		
		TH	6	NBT	32	35	3		
		RT	6	NBR	20	14	-6	-31%	
	SB	LT	6	SBL	60	42	-18		
		TH	6	SBT	12	17	5		
		RT	6	SBR	72	40	-32	-45%	-20%
	EB	LT	6	EBL	10	18	8		
		TH	6	EBT	661	516	-145		
		RT	6	EBR	28	41	13	-22%	
	WB	LT	6	WBL	14	4	-10		
		TH	6	WBT	699	629	-70		
		RT	6	WBR	39	28	-11	-14%	

Existing Volume Comparison - PM Peak Hour

Intersection	Turning Movement		Intersection	Turning Movement	2010 Existing Volumes PM	2018 Existing Volumes PM	Net Change	% Change	
Commonwealth Ave - California St	NB	LT	7	NBL	4	11	7		
		TH	7	NBT	0	0	0		
		RT	7	NBR	23	15	-8	-4%	
	SB	LT	7	SBL	0	0	0		
		TH	7	SBT	0	0	0		
		RT	7	SBR	0	0	0		-23%
	EB	LT	7	EBL	0	0	0		
		TH	7	EBT	674	514	-160		
		RT	7	EBR	45	61	16	-25%	
	WB	LT	7	WBL	20	16	-4		
		TH	7	WBT	793	647	-146		
		RT	7	WBR	0	0	0	-23%	
Maple St/Parker Ave - California St	NB	LT	8	NBL	31	15	-16		
		TH	8	NBT	32	33	1		
		RT	8	NBR	26	40	14	-1%	
	SB	LT	8	SBL	25	8	-17		
		TH	8	SBT	44	67	23		
		RT	8	SBR	29	27	-2	4%	-8%
	EB	LT	8	EBL	12	22	10		
		TH	8	EBT	551	482	-69		
		RT	8	EBR	28	15	-13	-14%	
	WB	LT	8	WBL	36	33	-3		
		TH	8	WBT	673	624	-49		
		RT	8	WBR	20	23	3	-7%	
Spruce St - California St	NB	LT	9	NBL	84	52	-32		
		TH	9	NBT	86	91	5		
		RT	9	NBR	61	46	-15	-22%	
	SB	LT	9	SBL	51	28	-23		
		TH	9	SBT	66	60	-6		
		RT	9	SBR	24	18	-6	-33%	-33%
	EB	LT	9	EBL	18	24	6		
		TH	9	EBT	523	461	-62		
		RT	9	EBR	76	49	-27	-16%	
	WB	LT	9	WBL	48	37	-11		
		TH	9	WBT	711	461	-250		
		RT	9	WBR	44	24	-20	-54%	

Existing Volume Comparison - PM Peak Hour

Intersection	Turning Movement	Intersection	Turning Movement	2010 Existing Volumes	2018 Existing Volumes	Net Change	% Change
				PM	PM		

Summary of Intersection Volumes

	2010	2018	Net chang	% change
Total Study Area Intersection Volumes	11,693	10,217	-1,476	-13%
Through California Movements	6,493	5,401	-1,092	-17%
Remaining Movements	5,200	4,816	-384	-7%

Summary of Turning Movements to/from Hospital to capture garages/street parking on Maple and Cherry

	2010	2018	Net chang	% change
Cherry St - Sacramento St	186	157	-29	-16%
Maple St - Sacramento St	162	188	26	16%
Jordan Ave/Cherry St - California St	225	180	-45	-20%
Maple St/Parker Ave - California St	162	180	18	11%
Total Turning Movements to/from Hospital	**735**	**705**	**-30**	**-4%**

Average volumes on Each Street (because many of the vehicles would be counted twice in above)

Cherry Street	206	169	-37	-18%
Maple Street	162	184	22	14%
Total	**368**	**353**	**-15**	-4%

Notes:
2010 CPMC EIR counts were collected on June 13, 2006, for the PM peak period only
All 2018 intersections were counted on Wednesday April 4, 2018, except for Spruce/California, which were collected on Thursday, July 6, 2017 for the 3333 California EIR.

1s Quarter

	2017	2018		

460 Cherry

Tickets Issued	20234	14119	-6115	-25%
Access Card Entries	4625	8444	3819.5	15%
Total	24859	22563	-2296	-9%

3838

Tickets Issued	17015	15733	-1282	-6%
Access Card Entries	3393	2887	-506.5	-2%
Total	20408	18620	-1789	-9%

3905

Tickets Issued	2753	2195	-558	-17%
Access Card Entries	466	445	-21	-1%
Total	3219	2640	-579	-18%

3773

Tickets Issued	2538	3079	541	14%
Access Card Entries	1224	646	-578	-15%
Total	3762	3725	-37	-1%

All Locations

Tickets Issued	42540	35126	-7414	-14%
Access Card Entries	9708	12422	2714	5%
Total	52248	47548	-4700	-9%

January

	2017	2018		

460 Cherry

Tickets Issued	7441	4955	-2486	-28%
Access Card Entries	1539	1829	290	3%
Total	8980	6784	-2196	-24%

3838

Tickets Issued	6015	5993	-22	0%
Access Card Entries	1155	1030	-125	-2%
Total	7170	7023	-147	-2%

3905

Tickets Issued	885	758	-127	-12%
Access Card Entries	161	154	-7	-1%
Total	1046	912	-134	-13%

3773

Tickets Issued	879	1164	285	22%
Access Card Entries	426	89	-337	-26%
Total	1305	1253	-52	-4%

FEBRUARY

460 Cherry

	2017	2018		
Tickets Issued	6596	4409	-2187	-23%
Access Card Entries	2800	3274	474	5%
Total	9396	7683	-1713	-18%

3838

Tickets Issued	5592	4985	-607	-9%
Access Card Entries	1131	941	-190	-3%
Total	6723	5926	-797	-12%

3905

Tickets Issued	939	758	-181	-17%
Access Card Entries	154	152	-2.5	0%
Total	1093	910	-183.5	-17%

3773

Tickets Issued	780	969	189	16%
Access Card Entries	382	237	-145	-12%
Total	1162	1206	44	4%

MARCH

	2017	2018		

460 Cherry

Tickets Issued 3/27	6197	4755	-1442	-22%
Access Card Entries	286	3342	3055.5	47%
Total	6483	8097	1613.5	25%

3838

Tickets Issued	5408	4755	-653	-10%
Access Card Entries	1108	916	-191.5	-3%
Total	6516	5671	-844.5	-13%

3905

Tickets Issued	929	679	-250	-23%
Access Card Entries	152	140	-11.5	-1%
Total	1081	819	-261.5	-24%

3773

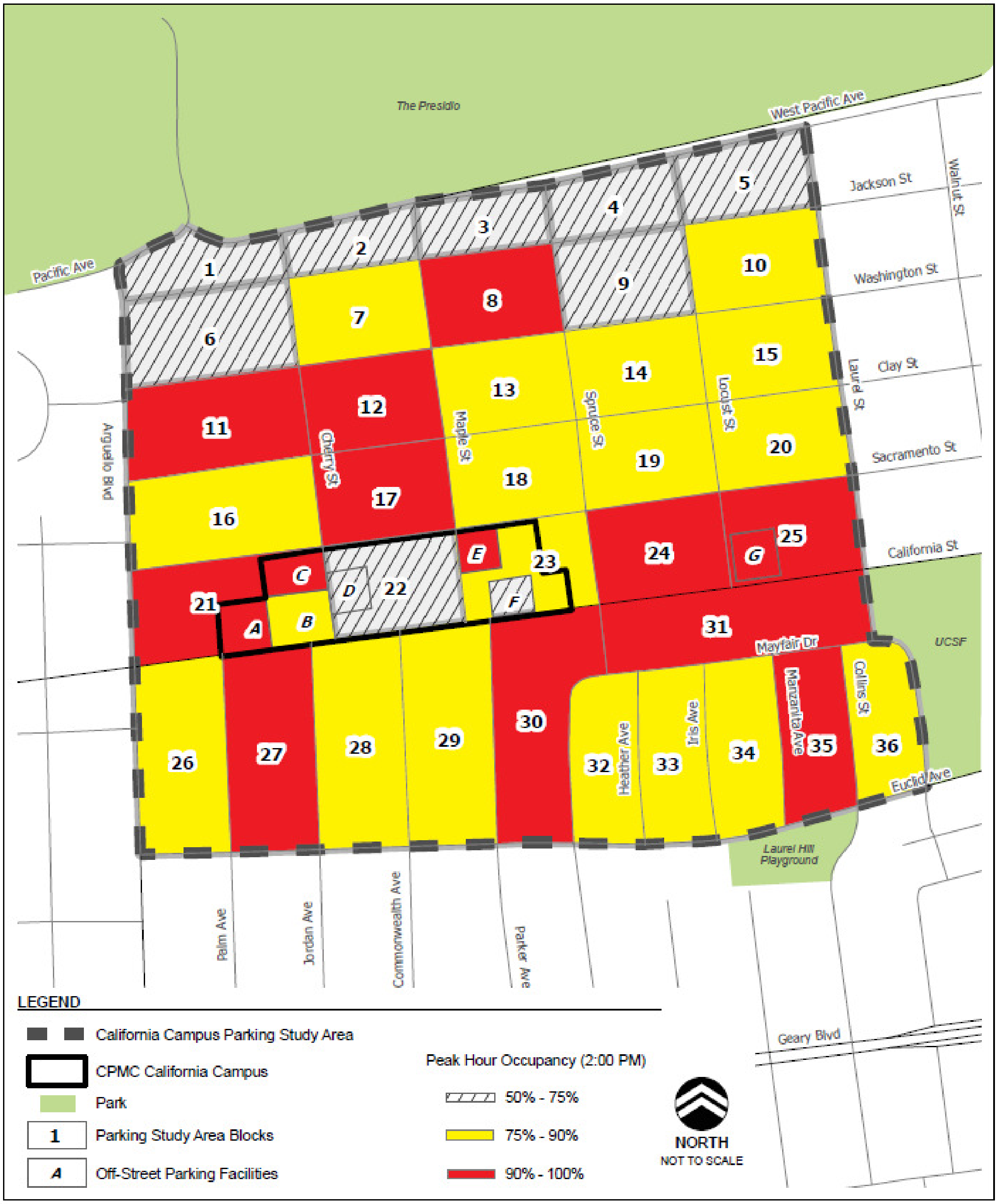
Tickets Issued	879	946	67	5%
Access Card Entries	416	320	-96	-7%
Total	1295	1266	-29	-2%

ent Ticket Analysis, September 2015

Car Per Day	3773	3905	460	3838	Tickets Campus Wide	3773	3905	460	3838
Tue,Sep,01	48	45	366	216	675	7%	7%	54%	32%
Wed,Sep,02	47	64	334	236	681	7%	9%	49%	35%
Thu,Sep,03	46	49	296	251	642	7%	8%	46%	39%
Fri,Sep,04	35	48	314	186	583	6%	8%	54%	32%
Sat,Sep,05	13	4	112	0	129	10%	3%	87%	0%
Sun,Sep,06	8	1	92	0	101	8%	1%	91%	0%
Mon,Sep,07	7	3	111	246	367	2%	1%	30%	67%
Tue,Sep,08	63	35	340	281	719	9%	5%	47%	39%
Wed,Sep,09	40	56	327	214	637	6%	9%	51%	34%
Thu,Sep,10	55	66	346	228	695	8%	9%	50%	33%
Fri,Sep,11	46	39	307	183	575	8%	7%	53%	32%
Sat,Sep,12	17	1	110	0	128	13%	1%	86%	0%
Sun,Sep,13	5	2	94	0	101	5%	2%	93%	0%
Mon,Sep,14	46	67	341	256	710	6%	9%	48%	36%
Tue,Sep,15	46	49	353	262	710	6%	7%	50%	37%
Wed,Sep,16	55	70	308	294	727	8%	10%	42%	40%
Thu,Sep,17	51	63	329	236	679	8%	9%	48%	35%
Fri,Sep,18	48	43	292	185	568	8%	8%	51%	33%
Sat,Sep,19	18	4	124	0	146	12%	3%	85%	0%
Sun,Sep,20	9	1	99	0	109	8%	1%	91%	0%
Mon,Sep,21	53	51	375	213	692	8%	7%	54%	31%
Tue,Sep,22	49	57	370	253	729	7%	8%	51%	35%
Wed,Sep,23	57	67	392	248	764	7%	9%	51%	32%
Thu,Sep,24	61	65	346	238	710	9%	9%	49%	34%
Fri,Sep,25	47	43	344	185	619	8%	7%	56%	30%
Sat,Sep,26	19	1	116	0	136	14%	1%	85%	0%
Sun,Sep,27	5	2	148	0	155	3%	1%	95%	0%
Mon,Sep,28	60	55	377	238	730	8%	8%	52%	33%
Tue,Sep,29	49	44	299	265	657	7%	7%	45%	40%
Wed,Sep,30	51	66	306	252	675	8%	10%	45%	37%
	1154	1161	8068	5167	15550				

Average	Tickets	3773	3905	460	3838	Transient Traffic
Monday		53	58	364	245	720
Tuesday		64	58	432	252	805
Wednesday		63	81	417	248	808
Thursday		53	61	329	238	681
Friday		44	43	314	184	586
Saturday		17	3	116	1	136
Sunday		7	2	108	0	117

Existing Off-Street and On-Street Parking



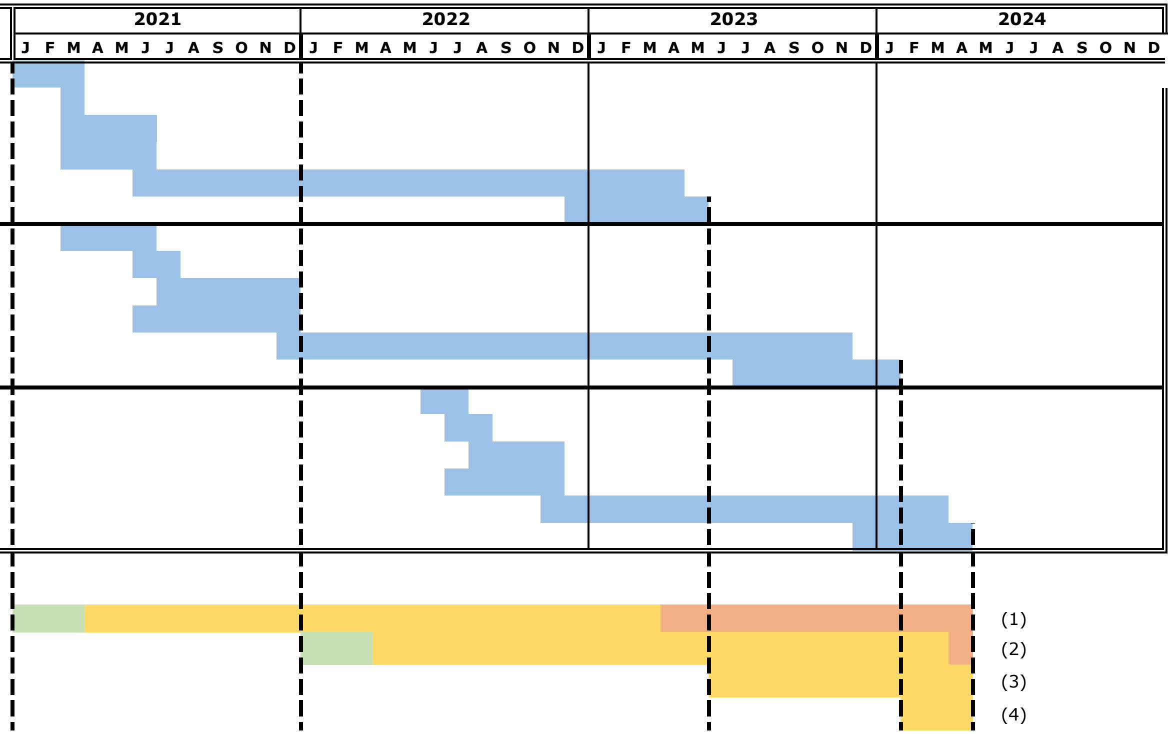
Source: CPMC EIR, 2008

Appendix F.7 – Construction Information

Figure 2
Phasing Schedule
3700 California Street
San Francisco, California

Detailed Construction Schedule

Construction Phase	Construction Subphase	Number of Days	Operational Year
Block C	Demolition	51	2023
	Site Preparation & Grading	11	
	Excavation & Shoring	62	
	Drainage, Utilities, & Subgrade	73	
	Building Construction	473	
	Sitework	100	
Block B	Demolition	79	2024
	Site Preparation & Grading	23	
	Excavation & Shoring	103	
	Drainage, Utilities, & Subgrade	126	
	Building Construction	495	
	Sitework	120	
Block A	Demolition	39	2024
	Site Preparation & Grading	23	
	Excavation & Shoring	56	
	Drainage, Utilities, & Subgrade	79	
	Building Construction	355	
	Sitework	70	



Scenarios

Off-site Resident born in 2021 (exposed to Construction Phases A-C) (1)

Off-site Resident born in 2022 (exposed to Construction Phases A-C) (2)

Phase C Residents (exposed to Phase A and B construction) (3)

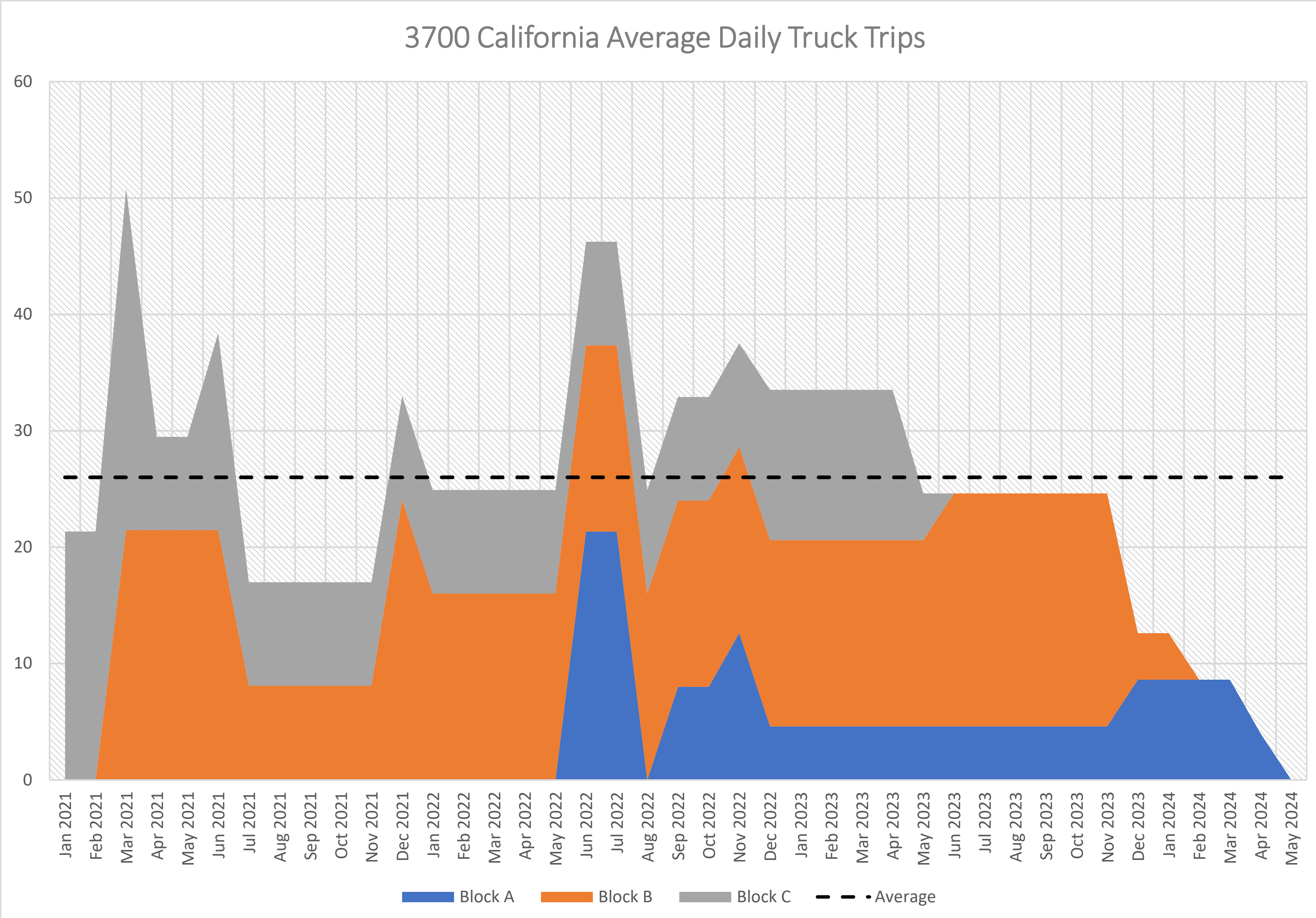
Phase B Residents (exposed to Phase A construction) (4)

Table 4
Construction Trips
3700 California Street
San Francisco, California

Block	Construction Subphase	Construction Round Trips[1]		
		Average Worker Trips [trips/day]	Average Material Trips [trips/day]	Hauling Trips [trips/phase]
C	Demolition	48	0	1,088
	Site Preparation & Grading	38	0	0
	Excavation & Shoring	28	0	496
	Drainage/Utilities/ Subgrade	38	0	0
	Building Construction	59	8.9	0
	Sitework	30	0	400
B	Demolition	48	0	1,696
	Site Preparation & Grading	38	0	0
	Excavation & Shoring	28	0	832
	Drainage/Utilities/ Subgrade	38	0	0
	Building Construction	104	16	0
	Sitework	30	0	480
A	Demolition	48	0	832
	Site Preparation & Grading	38	0	0
	Excavation & Shoring	28	0	448
	Drainage/Utilities/ Subgrade	38	0	0
	Building Construction	29	4.6	0
	Sitework	30	0	280

Notes:

1. Construction trip rates were provided by the project sponsor for each block of construction. The number of trips was doubled for use in the model to represent the number of one-way trips.


3700 California Average Daily Truck Trips
60
50
40
30
20
10
0
Jan 2021
Feb 2021
Mar 2021
Apr 2021
May 2021
Jun 2021
Jul 2021
Aug 2021
Sep 2021
Oct 2021
Nov 2021
Dec 2021
Jan 2022
Feb 2022
Mar 2022
Apr 2022
May 2022
Jun 2022
Jul 2022
Aug 2022
Sep 2022
Oct 2022
Nov 2022
Dec 2022
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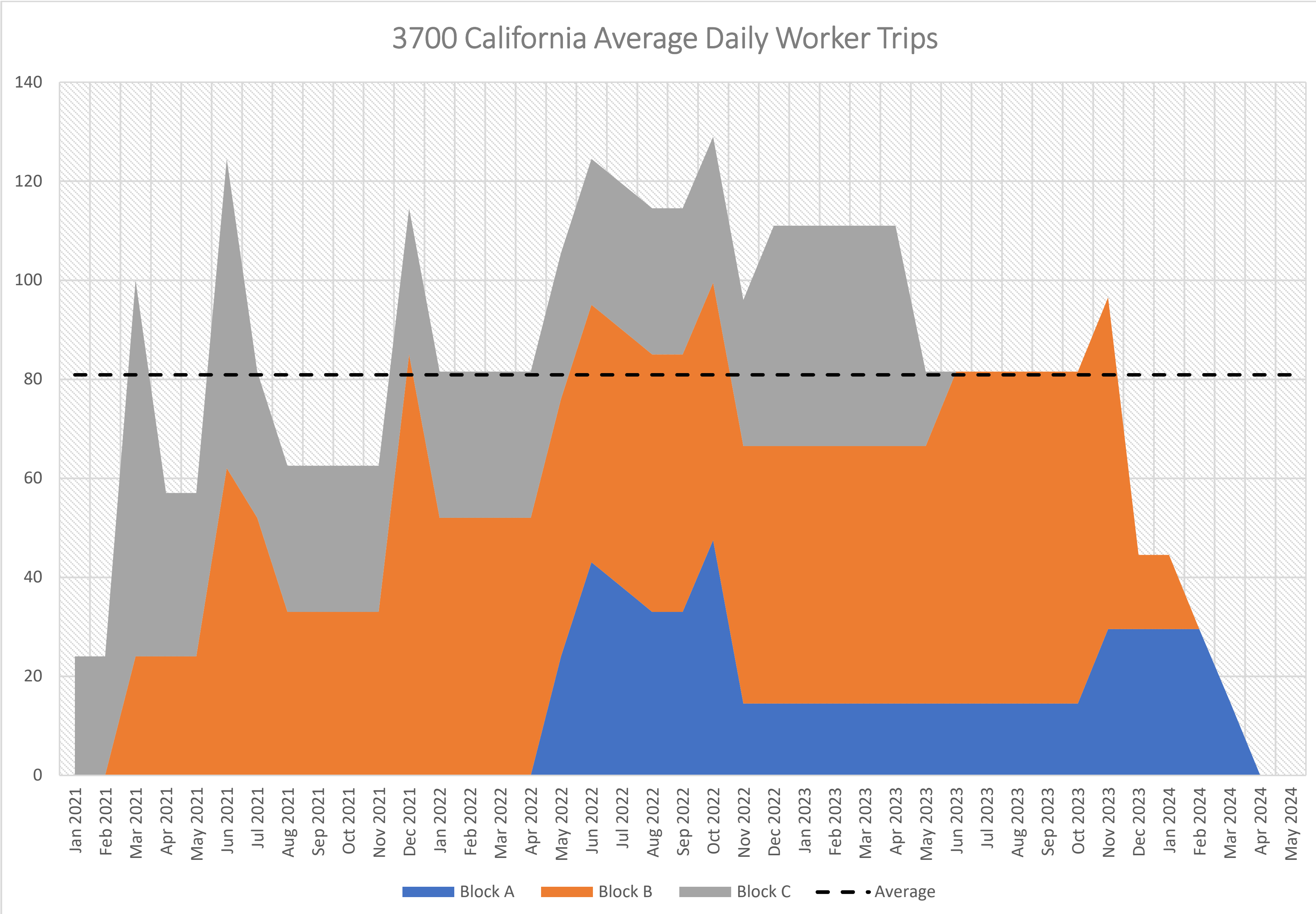
May 2023
Jun 2023
Jul 2023
Aug 2023
Sep 2023
Oct 2023
Nov 2023
Dec 2023
Jan 2024
Feb 2024
Mar 2024
Apr 2024
May 2024
Block A
Block B
Block C
Average



3700 California Average Daily Worker Trips
140
120
100
80
60
40
20
0
Jan 2021
Feb 2021
Mar 2021
Apr 2021
May 2021
Jun 2021
Jul 2021
Aug 2021
Sep 2021
Oct 2021
Nov 2021
Dec 2021
Jan 2022
Feb 2022
Mar 2022
Apr 2022
May 2022
Jun 2022
Jul 2022
Aug 2022
Sep 2022
Oct 2022
Nov 2022
Dec 2022
Jan 2023
Feb 2023
Mar 2023
Apr 2023
May 2023
Jun 2023
Jul 2023
Aug 2023
Sep 2023
Oct 2023
Nov 2023
Dec 2023
Jan 2024
Feb 2024
Mar 2024
Apr 2024
May 2024
Block A
Block B
Block C
Average

APPENDIX G NOISE MODEL OUTPUTS

- Long-Term Noise Monitoring Data – LT-1, LT-2, LT-3, and LT-4
- Short-Term Noise Monitoring Data – ST-1, ST-2, ST-3, and ST-4
- Construction Data
- Construction Noise Calculation Sheets by Activity
- Hourly Turning Movement Volumes

Long-Term Noise Monitoring Data – LT-1, LT-2, LT-3, and LT-4

LT-1

Rec 1 to 27 | Slow Response | dBA weighting | 2.0 dB resolution stats

Date hh:mm:ss	LeqPeriod	Leq	SEL	Lmax	Lmin	L1%	L5%	L10%	L50%	L90%	L95%	L99%	Lmedian	Lmean	StdDev	L2%	L8%	L25%
10/3/2018 09:59	1.0 hour	69.7	105.3	91.6	50.1	81	73	71	63	53	53	51	63	62.6	6.64	77	71	67
10/3/2018 10:59	1.0 hour	67.5	103.1	88	48.7	81	71	67	59	53	51	49	59	59.6	6.24	75	69	63
10/3/2018 11:59	1.0 hour	65.6	101.2	81.4	55.6	73	71	67	61	57	57	55	61	62	4.25	73	69	65
10/3/2018 12:59	1.0 hour	66.7	102.3	86.3	49.6	77	71	69	61	55	53	51	61	61.5	5.62	73	69	65
10/3/2018 13:59	1.0 hour	68.6	104.2	84.9	50.9	79	73	71	63	55	53	51	63	62.6	6.22	77	71	67
10/3/2018 14:59	1.0 hour	65.3	100.9	83.2	49.5	73	69	67	59	53	53	51	59	60.6	5.43	71	69	65
10/3/2018 15:59	1.0 hour	65.1	100.7	82.8	51.1	73	69	67	59	53	53	51	59	60.4	5.46	73	69	65
10/3/2018 16:59	1.0 hour	66	101.6	85.7	50.2	73	71	69	61	53	53	51	61	60.8	5.74	73	69	65
10/3/2018 17:59	1.0 hour	63.1	98.7	81.5	46.3	71	69	67	55	49	49	47	55	57.1	6.51	71	67	63
10/3/2018 18:59	1.0 hour	61.5	97.1	82.8	44.8	71	67	65	53	47	45	45	53	54.2	6.99	69	65	59
10/3/2018 19:59	1.0 hour	61.9	97.5	84.4	44.7	71	67	63	51	45	45	45	51	52.6	6.82	69	65	55
10/3/2018 20:59	1.0 hour	60.3	95.9	84.6	45.2	69	67	63	49	45	45	45	49	51.6	6.44	69	63	55
10/3/2018 21:59	1.0 hour	57.4	93	81.2	43.7	69	61	55	45	43	43	43	45	48.2	5.72	67	57	49
10/3/2018 22:59	1.0 hour	57.6	93.2	83.8	43.2	69	59	53	45	43	43	43	45	46.4	5.6	67	55	47
10/3/2018 23:59	1.0 hour	55.1	90.7	79.1	43.1	67	59	53	45	43	43	43	45	46.8	5.11	65	55	47
10/4/2018 00:59	1.0 hour	47.6	83.2	70.2	42.8	55	45	45	43	43	43	43	43	43.6	2.26	49	45	43
10/4/2018 01:59	1.0 hour	49.9	85.5	72.8	42.7	59	49	45	43	43	43	43	43	43.9	3.12	55	47	43
10/4/2018 02:59	1.0 hour	56.7	92.3	82.9	42.8	65	53	49	43	43	43	43	43	44.5	4.33	59	51	43
10/4/2018 03:59	1.0 hour	61.1	96.7	89.4	43.3	69	55	47	43	43	43	43	43	44.8	5.1	65	49	43
10/4/2018 04:59	1.0 hour	54.7	90.3	76.6	43.4	69	57	51	45	43	43	43	45	46.1	4.74	63	53	45
10/4/2018 05:59	1.0 hour	59.1	94.7	78.3	44.4	71	65	61	49	45	45	43	49	51.5	6.03	69	63	53
10/4/2018 06:59	1.0 hour	67.3	102.9	90.3	48.4	77	71	69	61	51	51	49	61	60.4	6.59	73	69	65
10/4/2018 07:59	1.0 hour	72.9	108.5	83.8	51.1	79	77	75	71	57	55	51	71	68.5	7.03	77	77	73
10/4/2018 08:59	1.0 hour	72.4	108	91.4	49.5	79	77	75	67	55	53	51	67	66.1	8.19	77	77	73
10/4/2018 09:59	1.0 hour	68.5	104.1	86.1	50.1	79	75	73	57	51	51	51	57	59.9	7.67	77	73	65
10/4/2018 10:59	1.0 hour	65.6	101.2	89	49.4	75	69	67	57	51	51	49	57	58.9	6.36	73	69	63
10/4/2018 11:59	18 sec	79	91.6	86.5	64.7	85	83	83	75	67	65	65	75	74.6	6.02	85	83	79

LT-2

Rec 1 to 26 | Slow Response | dBA weighting | 2.0 dB resolution stats

Date hh:mm:ss	LeqPeriod	Leq	SEL	Lmax	Lmin	L1%	L5%	L10%	L50%	L90%	L95%	L99%	Lmedian	Lmean	StdDev	L2%	L8%	L25%
10/3/2018 10:16	1.0 hour	67.8	103.4	94.8	55.4	77	71	69	59	55	55	55	59	60.6	5.48	73	69	63
10/3/2018 11:16	1.0 hour	64.4	100	82.2	55.8	73	69	67	57	55	55	55	57	60.1	4.93	71	69	63
10/3/2018 12:16	1.0 hour	64.9	100.5	81.4	55.6	73	71	69	59	55	55	55	59	60.5	4.94	71	69	65
10/3/2018 13:16	1.0 hour	66.1	101.7	89.8	55.7	73	71	69	61	57	55	55	61	61.7	5.03	73	69	65
10/3/2018 14:16	1.0 hour	65.9	101.5	84.2	55.7	75	71	69	61	57	55	55	61	61.4	4.93	73	69	65
10/3/2018 15:16	1.0 hour	65.8	101.4	82.4	56	75	71	69	59	57	57	55	59	61.2	5	73	69	65
10/3/2018 16:16	1.0 hour	65.5	101.1	79.6	56.3	73	71	69	59	57	57	57	59	61.4	4.79	73	69	65
10/3/2018 17:16	1.0 hour	65.5	101.1	77.8	56.2	73	71	69	59	57	57	55	59	61.4	4.81	73	69	65
10/3/2018 18:16	1.0 hour	63.7	99.3	77.4	55.9	73	69	67	57	57	55	55	57	59.7	4.43	71	69	61
10/3/2018 19:16	1.0 hour	63.2	98.8	79	56.1	71	69	67	57	57	55	55	57	59.3	4.22	71	67	61
10/3/2018 20:16	1.0 hour	62	97.6	77.5	56.1	71	67	65	57	55	55	55	57	58.5	3.71	71	65	59
10/3/2018 21:16	1.0 hour	61.1	96.7	78.9	55.7	71	65	61	57	55	55	55	57	57.5	3.42	69	63	57
10/3/2018 22:16	1.0 hour	59.2	94.8	76.6	55.8	69	61	57	55	55	55	55	55	56.1	2.73	67	59	57
10/3/2018 23:16	1.0 hour	59.5	95.1	77.2	55.5	69	61	57	55	55	55	55	55	56.1	2.78	67	59	57
10/4/2018 00:16	1.0 hour	57.4	93	75	55.7	63	57	57	55	55	55	55	55	55.4	1.5	59	57	55
10/4/2018 01:16	1.0 hour	57	92.6	72.6	55.6	59	57	57	55	55	55	55	55	55.3	1.17	57	57	55

10/4/2018 02:16	1.0 hour	57.1	92.7	74.1	55.6	61	57	55	55	55	55	55	55	55.3	1.23	57	57	55
10/4/2018 03:16	1.0 hour	57.8	93.4	75.6	55.6	65	57	57	55	55	55	55	55	55.5	1.8	61	57	55
10/4/2018 04:16	1.0 hour	62.3	97.9	85.4	55.6	73	61	57	55	55	55	55	55	56.3	3.24	69	59	57
10/4/2018 05:16	1.0 hour	60.4	96	81.8	56	71	63	57	55	55	55	55	55	56.6	3.01	69	59	57
10/4/2018 06:16	1.0 hour	63.4	99	77.8	56.1	73	69	67	57	55	55	55	57	59	4.37	71	67	59
10/4/2018 07:16	1.0 hour	70.2	105.8	96.2	56.7	77	73	71	61	57	57	57	61	63.1	5.64	75	71	67
10/4/2018 08:16	1.0 hour	66.4	102	80.8	56.3	73	71	69	61	57	57	57	61	62.3	5.06	73	71	67
10/4/2018 09:16	1.0 hour	65.4	101	81.9	56.3	73	71	69	59	57	57	55	59	61.3	4.76	73	69	65
10/4/2018 10:16	1.0 hour	65	100.6	80.7	56.1	75	71	67	59	55	55	55	59	60.4	4.87	73	69	63
10/4/2018 11:16	46.7 min	65.7	100.2	88.4	56.3	75	71	69	59	57	57	55	59	61	4.82	73	69	65

LT-3

Rec 1 to 26 Slow Response dBA weighting 2.0 dB resolution stats

Date hh:mm:ss	LeqPeriod	Leq	SEL	Lmax	Lmin	L1%	L5%	L10%	L50%	L90%	L95%	L99%	Lmedian	Lmean	StdDev	L2%	L8%	L25%
10/3/2018 10:31	1.0 hour	70	105.6	91	57.8	81	73	71	65	59	59	57	65	65.1	4.77	77	71	67
10/3/2018 11:31	1.0 hour	71.1	106.7	99.8	57.9	77	73	71	65	59	59	57	65	64.6	4.74	75	71	67
10/3/2018 12:31	1.0 hour	68	103.6	82.1	58.3	75	71	71	65	59	59	59	65	65.1	4.04	73	71	67
10/3/2018 13:31	1.0 hour	69	104.6	91.7	58.6	77	73	71	65	59	59	59	65	65.2	4.31	75	71	69
10/3/2018 14:31	1.0 hour	68.2	103.8	86	58.9	75	71	71	65	59	59	59	65	65.3	4.01	73	71	69
10/3/2018 15:31	1.0 hour	68.5	104.1	83.8	58.2	75	73	71	65	59	59	59	65	65.4	4.29	73	71	69
10/3/2018 16:31	1.0 hour	69.3	104.9	83	59.1	75	73	73	65	59	59	59	65	65.8	4.85	75	73	71
10/3/2018 17:31	1.0 hour	69.4	105	84.3	59.1	75	73	73	67	61	59	59	67	66.2	4.52	75	73	69
10/3/2018 18:31	1.0 hour	67.9	103.5	83.8	58.6	75	71	71	65	59	59	59	65	65.1	4.03	73	71	67
10/3/2018 19:31	1.0 hour	67	102.6	85	58.4	75	71	69	63	59	59	57	63	63.7	4.14	73	69	67
10/3/2018 20:31	1.0 hour	67.1	102.7	93	58.3	73	71	69	63	59	59	57	63	63.2	4.06	73	69	67
10/3/2018 21:31	1.0 hour	65.2	100.8	80.2	58	73	69	67	61	59	57	57	61	62	4	71	69	65
10/3/2018 22:31	1.0 hour	63.5	99.1	78.2	57.7	71	67	67	59	57	57	57	59	60.6	3.71	69	67	63
10/3/2018 23:31	1.0 hour	62	97.6	74.2	57.8	69	67	65	59	57	57	57	59	59.5	3.07	69	65	61
10/4/2018 00:31	1.0 hour	62	97.6	78.2	57.7	71	67	63	57	57	57	57	57	58.9	3.13	69	65	59
10/4/2018 01:31	1.0 hour	60.8	96.4	74.7	57.5	69	65	61	57	57	57	57	57	58.2	2.59	67	61	59
10/4/2018 02:31	1.0 hour	60.7	96.3	78.8	57.7	69	63	61	57	57	57	57	57	58.1	2.45	67	61	59
10/4/2018 03:31	1.0 hour	61.2	96.8	87	56.8	69	63	59	57	57	57	57	57	58	2.47	67	61	59
10/4/2018 04:31	1.0 hour	63.7	99.3	86.7	56.7	73	69	65	57	57	57	57	57	59.3	3.92	71	67	61
10/4/2018 05:31	1.0 hour	65.4	101	81.5	56.7	73	69	69	59	57	57	57	59	61.2	4.68	73	69	65
10/4/2018 06:31	1.0 hour	73.3	108.9	97.4	57	83	73	71	65	57	57	57	65	64.4	5.95	77	73	69
10/4/2018 07:31	1.0 hour	69.8	105.4	84.2	57.5	77	73	73	67	59	59	57	67	66.1	5.1	75	73	71
10/4/2018 08:31	1.0 hour	69.6	105.2	86.1	58.1	77	73	71	67	59	59	59	67	66.2	4.54	75	73	69
10/4/2018 09:31	1.0 hour	68.6	104.2	89.3	58.5	75	73	71	65	59	59	59	65	65.6	4.14	73	71	69
10/4/2018 10:31	1.0 hour	68.3	103.9	83.5	58.4	75	71	71	65	59	59	57	65	65.3	4.2	73	71	69
10/4/2018 11:31	38.1 min	72.2	105.8	101.3	58	77	71	71	65	59	59	57	65	64.8	4.66	73	71	67

LT-4

Rec 1 to 26 Slow Response dBA weighting 2.0 dB resolution stats

Date hh:mm:ss	LeqPeriod	Leq	SEL	Lmax	Lmin	L1%	L5%	L10%	L50%	L90%	L95%	L99%	Lmedian	Lmean	StdDev	L2%	L8%	L25%
10/3/2018 10:53	1.0 hour	72.5	108.1	99.6	51.9	81	75	73	65	57	57	53	65	65.4	6.24	77	75	71
10/3/2018 11:53	1.0 hour	70.8	106.4	93.2	52.2	79	75	73	65	57	57	55	65	65.6	5.94	77	73	71
10/3/2018 12:53	1.0 hour	69.8	105.4	84.5	53.5	77	75	73	65	59	57	55	65	65.4	5.55	77	73	69
10/3/2018 13:53	1.0 hour	70.2	105.8	84	55.1	77	75	73	65	59	59	57	65	66.1	5.26	77	73	71
10/3/2018 14:53	1.0 hour	70.1	105.7	88.7	53.5	79	75	73	65	59	57	55	65	65.5	5.41	77	73	69
10/3/2018 15:53	1.0 hour	70.6	106.2	86	52.2	79	75	73	67	59	59	55	67	66.5	5.23	77	73	71

10/3/2018 16:53	1.0 hour	71.3	106.9	86.9	53.7	79	75	75	67	61	59	57	67	67.5	5.2	77	75	71
10/3/2018 17:53	1.0 hour	71.3	106.9	87.3	52.3	79	75	75	65	57	55	53	65	66.1	6.43	77	75	71
10/3/2018 18:53	1.0 hour	70.2	105.8	86	50.5	77	75	73	65	55	53	51	65	64.4	6.97	77	75	71
10/3/2018 19:53	1.0 hour	68.8	104.4	89.7	49.9	77	73	73	61	53	53	51	61	62.4	6.99	75	73	67
10/3/2018 20:53	1.0 hour	67.1	102.7	83.7	50.9	75	73	71	61	53	53	51	61	61.3	6.54	75	71	67
10/3/2018 21:53	1.0 hour	66.5	102.1	89.3	48	75	73	71	57	51	49	49	57	58.8	7.7	75	71	65
10/3/2018 22:53	1.0 hour	64.4	100	82.9	47.4	75	71	67	55	49	47	47	55	56.3	7.56	73	69	61
10/3/2018 23:53	1.0 hour	61.4	97	79.5	47.9	71	67	65	51	49	49	47	51	54.1	6.31	71	65	57
10/4/2018 00:53	1.0 hour	62.4	98	82.9	47.7	73	69	63	49	49	47	47	49	52.8	6.54	73	65	55
10/4/2018 01:53	1.0 hour	62	97.6	83.4	47.6	73	67	63	49	47	47	47	49	51.9	6.85	71	63	55
10/4/2018 02:53	1.0 hour	59.1	94.7	80.1	47.3	71	65	63	47	47	47	47	47	50.5	6.22	69	63	51
10/4/2018 03:53	1.0 hour	61.7	97.3	81.2	47.2	73	67	63	49	47	47	47	49	52	6.94	71	65	55
10/4/2018 04:53	1.0 hour	66.8	102.4	91.3	48.2	77	73	69	55	49	49	47	55	57.1	7.8	75	71	61
10/4/2018 05:53	1.0 hour	69	104.6	91.7	48.4	77	75	71	61	51	51	49	61	61.1	7.74	77	73	67
10/4/2018 06:53	1.0 hour	70.9	106.5	86	51.1	79	75	73	65	59	57	53	65	66	5.98	77	75	71
10/4/2018 07:53	1.0 hour	72	107.6	91.9	56.9	81	77	75	67	59	59	57	67	66.8	5.85	79	75	71
10/4/2018 08:53	1.0 hour	71.6	107.2	85.1	54.3	79	75	75	67	59	57	55	67	67.1	5.86	79	75	71
10/4/2018 09:53	1.0 hour	70.7	106.3	89.6	54.5	79	75	73	65	59	57	55	65	66	5.59	77	73	71
10/4/2018 10:53	1.0 hour	70.2	105.8	95	52.9	77	75	73	65	59	57	55	65	65.2	5.61	77	73	69
10/4/2018 11:53	22.8 min	76.3	107.7	100.1	52.9	85	75	73	65	57	55	53	65	65.1	6.55	79	73	69

Short-Term Noise Monitoring Data – ST-1, ST-2, ST-3, and ST-4

Summary			
File Name	LxT_Data.011		
Serial Number	0004004		
Model	SoundTrack LxT®		
Firmware Version	2.302		
User			
Location			
Job Description			
Note			

Measurement Description	
Start	2018-10-09 11:01:02
Stop	2018-10-09 11:16:03
Duration	00:15:01.1
Run Time	00:15:01.1
Pause	00:00:00.0
Pre Calibration	2018-10-09 10:59:08
Post Calibration	None
Calibration Deviation	---

Overall Settings			
RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamp	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
Overload	123.3 dB		
	A	**C**	**Z**
Under Range Peak	**79.5**	76.5	81.5 dB
Under Range Limit	**27.5**	26.8	32.2 dB
Noise Floor	17.2	17.6	23.0 dB

Results							
LAeq	58.6 dB						
LAE	88.2 dB						
EA	73.212 µPa²h						
EA8	2.340 mPa²h						
EA40	11.700 mPa²h						
LApeak (max)	2018-10-09 11:05:52	94.5 dB					
LASmax	2018-10-09 11:01:48	73.9 dB					
LASmin	2018-10-09 11:06:45	51.4 dB					
SEA	-99.9 dB						
LAS > 75.0 dB (Exceedance Counts / Duration)	0	0.0 s					
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s					
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s					
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s					
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s					
Community Noise	**Ldn**	**7:00-23:00**	**3:00-07:00**	**Lden**	**7:00-19:00**	**9:00-23:00**	**3:00-07:00**
	58.6	58.6	-99.9	58.6	58.6	-99.9	-99.9
LCeq	69.9 dB						
LAeq	58.6 dB						
LCeq - LAeq	11.3 dB						
LAIeq	61.8 dB						
LAeq	58.6 dB						
LAIeq - LAeq	3.1 dB						
# Overloads	0						
Overload Duration	0.0 s						

Dose Settings		
Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results		
Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	43.6	43.6 dB

Statistics	
LAS5.00	63.6 dB
LAS10.00	62.1 dB
LAS33.30	57.4 dB
LAS50.00	55.5 dB
LAS66.60	53.9 dB
LAS90.00	52.5 dB

Summary

File Name	LxT_Data.013		
Serial Number	0004004		
Model	SoundTrack LxT®		
Firmware Version	2.302		
User			
Location			
Job Description			
Note			

Measurement Description

Start	2018-10-09 11:49:58		
Stop	2018-10-09 12:04:59		
Duration	00:15:01.1		
Run Time	00:14:54.4		
Pause	00:00:06.7		
Pre Calibration	2018-10-09 11:48:37		
Post Calibration	None		
Calibration Deviation	---		

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamp	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
Overload	123.2 dB		
	A	**C**	**Z**
Under Range Peak	**79.5**	76.5	81.5 dB
Under Range Limit	**27.5**	26.8	32.1 dB
Noise Floor	17.2	17.6	23.0 dB

Results

LAeq	64.4 dB						
LAE	93.9 dB						
EA	273.598 µPa²h						
EA8	8.810 mPa²h						
EA40	44.050 mPa²h						
LApeak (max)	2018-10-09 11:58:18	96.2 dB					
LASmax	2018-10-09 12:02:13	77.2 dB					
LASmin	2018-10-09 12:01:03	48.5 dB					
SEA	-99.9 dB						
LAS > 75.0 dB (Exceedance Counts / Duration)	1	1.4 s					
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s					
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s					
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s					
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s					
Community Noise	**Ldn**	**7:00-23:00**	**3:00-07:00**	**Lden**	**7:00-19:00**	**9:00-23:00**	**3:00-07:00**
	64.4	64.4	-99.9	64.4	64.4	-99.9	-99.9
LCeq	75.9 dB						
LAeq	64.4 dB						
LCeq - LAeq	11.5 dB						
LAIeq	67.7 dB						
LAeq	64.4 dB						
LAIeq - LAeq	3.3 dB						
# Overloads	0						
Overload Duration	0.0 s						

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	49.3	49.3 dB

Statistics

LAS5.00	69.9 dB
LAS10.00	68.0 dB
LAS33.30	63.9 dB
LAS50.00	61.6 dB
LAS66.60	59.9 dB
LAS90.00	55.5 dB

Summary

File Name	LxT_Data.012						
Serial Number	0004004						
Model	SoundTrack LxT®						
Firmware Version	2.302						
User							
Location							
Job Description							
Note							

Measurement Description

Start	2018-10-09 11:25:03		
Stop	2018-10-09 11:40:04		
Duration	00:15:00.7		
Run Time	00:15:00.7		
Pause	00:00:00.0		
Pre Calibration	2018-10-09 11:24:28		
Post Calibration	None		
Calibration Deviation	---		

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamp	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
Overload	123.2 dB		
	A	**C**	**Z**
Under Range Peak	**79.5**	76.5	81.5 dB
Under Range Limit	**27.5**	26.8	32.2 dB
Noise Floor	17.2	17.6	23.0 dB

Results

LAeq	58.0 dB	
LAE	87.6 dB	
EA	63.785 µPa²h	
EA8	2.040 mPa²h	
EA40	10.198 mPa²h	
LApeak (max)	2018-10-09 11:34:23	91.2 dB
LASmax	2018-10-09 11:37:13	71.3 dB
LASmin	2018-10-09 11:26:10	48.9 dB
SEA	-99.9 dB	

LAS > 75.0 dB (Exceedance Counts / Duration)	0	0.0 s
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**7:00-23:00**	**3:00-07:00**	**Lden**	**7:00-19:00**	**9:00-23:00**	**3:00-07:00**
	58.0	58.0	-99.9	58.0	58.0	-99.9	-99.9

LCeq	72.8 dB
LAeq	58.0 dB
LCeq - LAeq	14.8 dB
LAIeq	60.6 dB
LAeq	58.0 dB
LAIeq - LAeq	2.6 dB
# Overloads	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	43.0	43.0 dB

Statistics

LAS5.00	62.5 dB
LAS10.00	61.0 dB
LAS33.30	57.7 dB
LAS50.00	56.3 dB
LAS66.60	55.0 dB
LAS90.00	51.5 dB

Summary							
File Name	LxT_Data.010						
Serial Number	0004004						
Model	SoundTrack LxT®						
Firmware Version	2.302						
User							
Location							
Job Description							
Note							

Measurement Description	
Start	2018-10-09 10:34:15
Stop	2018-10-09 10:49:16
Duration	00:15:01.2
Run Time	00:15:01.2
Pause	00:00:00.0
Pre Calibration	2018-10-09 10:31:51
Post Calibration	None
Calibration Deviation	---

Overall Settings			
RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamp	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
Overload	123.2 dB		
	A	**C**	**Z**
Under Range Peak	**79.5**	76.5	81.5 dB
Under Range Limit	**27.5**	26.8	32.2 dB
Noise Floor	17.2	17.6	23.0 dB

Results							
LAeq	66.3 dB						
LAE	95.9 dB						
EA	431.534 µPa²h						
EA8	13.791 mPa²h						
EA40	68.953 mPa²h						
LApeak (max)	2018-10-09 10:34:24	93.7 dB					
LASmax	2018-10-09 10:35:35	75.2 dB					
LASmin	2018-10-09 10:34:57	60.0 dB					
SEA	-99.9 dB						
LAS > 75.0 dB (Exceedance Counts / Duration)	1	2.5 s					
LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s					
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s					
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s					
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s					
Community Noise	**Ldn**	**7:00-23:00**	**3:00-07:00**	**Lden**	**7:00-19:00**	**9:00-23:00**	**3:00-07:00**
	66.3	66.3	-99.9	66.3	66.3	-99.9	-99.9
LCeq	78.6 dB						
LAeq	66.3 dB						
LCeq - LAeq	12.2 dB						
LAIeq	67.4 dB						
LAeq	66.3 dB						
LAIeq - LAeq	1.1 dB						
# Overloads	0						
Overload Duration	0.0 s						

Dose Settings		
Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results		
Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	51.3	51.3 dB

Statistics	
LAS5.00	70.6 dB
LAS10.00	69.4 dB
LAS33.30	66.6 dB
LAS50.00	64.6 dB
LAS66.60	62.7 dB
LAS90.00	61.5 dB

Construction Data

Construction Schedule and Equipment List
3700 California
San Francisco, California

Equipment List		Block A			Block B			Block C		
Phase	**Equipment Type**	**Quantity**	**Avg. Usage Hours per Day**	**Total Usage Days**	**Quantity**	**Avg. Usage Hours per Day**	**Total Usage Days**	**Quantity**	**Avg. Usage Hours per Day**	**Total Usage Days**
Demolition	Crawler Tractors	2	4	6	2	4	12	2	4	51
	Cranes	1	8	6	1	8	12	1	8	8
	Dumper/Tender	4	8	26	4	8	53	4	8	34
	Aerial Lifts	1	2	6	1	2	12	1	2	8
	Concrete/Industrial Saws	1	8	26	1	8	53	1	8	34
	Excavators	1	8	13	1	8	26	1	8	17
	Forklifts	1	8	13	1	8	26	1	8	17
	Generator Sets	1	6	26	1	6	53	1	6	34
	Pumps	1	8	5	1	8	10	1	8	6
	Rubber Tired Dozers	2	7	5	2	7	10	2	7	6
	Skid Steer Loaders (Bobcat)	2	7	26	2	7	53	2	7	34
	Tractors/Loaders/Backhoes	1	8	26	1	8	53	1	8	34
	Welders	1	4	13	1	4	13	1	4	17
	Tractors/Loaders/Backhoes	1	8	23	1	8	23	1	8	23
	Dumpers/Tenders	4	8	18	4	8	18	4	8	18
	Crushing/proc. Equipment	1	8	8	1	8	8	1	8	8
	Excavators	1	8	23	1	8	23	1	8	23
	Graders	1	0	0	1	0	0	1	0	0
	Pressure Washer	1	0	0	1	0	0	1	0	0
	Pumps	1	8	23	1	8	23	1	8	23
	Signal Boards	1	8	23	1	8	23	1	8	23
	Sweepers/Scrubbers	1	2	23	1	2	23	1	2	23
Excavation & Shoring	Bore/Drill Rigs	1	8	28	1	8	52	1	8	31
	Dumpers/Tenders	2	6	28	2	6	52	2	6	31
	Excavators	1	8	28	1	8	52	1	8	31
	Pumps	1	8	14	1	8	26	1	8	15
	Crawler Tractors	1	8	7	1	8	7	1	8	4
Drainage/Utilities/Sub grade	Cement and Mortar Mixers	1	4	5	1	4	5	1	4	5
	Cranes	0	0	0	0	0	0	0	0	0
	Excavators	1	4	37	1	4	37	1	4	37
	Plate Compactors	1	4	13	1	4	13	1	4	13
	Rough Terrain Forklifts	1	2	37	1	2	37	1	2	37
	Trenchers	1	4	37	1	4	37	1	4	37
Building Construction (New Construction)	Aerial Lifts	0	0	355	0	0	495	0	0	473
	Bore/Drill Rigs	1	8	18	1	8	25	1	8	24
	Cement and Mortar Mixers	1	4	71	1	4	99	1	4	95
	Cranes B18*(Crane is Electric)*	1	6	178	1	6	248	1	6	237
	Dumpers/Tenders	1	8	71	1	8	99	1	8	95
	Forklifts	1	4	18	1	4	25	1	4	24
	Other General Industrial Equipment	1	6	71	1	6	99	1	6	95
	Pressure Washers	1	2	18	1	2	25	1	2	24
	Pumps	1	6	18	1	6	25	1	6	24
	Rubber Tired Loaders	1	6	71	1	6	99	1	6	95
	Sweepers/Scrubbers	1	2	18	1	2	25	1	2	24
Sitework	Tractors/Loaders/Backhoes	1	4	35	1	4	60	1	4	50
	Dumpers/Tenders	2	4	35	2	4	60	2	4	50
	Crushing/proc. Equipment	1	0	0	0	0	0	1	0	0
	Excavators	1	4	35	1	4	60	1	4	50
	Graders	1	8	3	1	8	6	1	8	5
	Pressure Washers	1	2	35	1	2	60	1	2	50
	Pumps	1	8	35	1	8	60	1	8	50
	Sweepers/Scrubbers	1	2	10	1	2	12	1	2	10

Construction Schedule and Equipment List
3700 California
San Francisco, California

Hauling Trips	Block A			Block B			Block C		
Phase Name	Average Worker Trips	Average Material Trips	Total Hauling Trips	Average Worker Trips	Average Material Trips	Total Hauling Trips	Average Worker Trips	Average Material Trips	Total Hauling Trips
	trips/day	trips/day	total trips	trips/day	trips/day	total trips	trips/day	trips/day	total trips
Demolition	48	0	832	48	0	1,696	48	0	1,088
Site Preparation & Grading	38	0	0	38	0	0	38	0	0
Excavation & Shoring	28	0	448	28	0	832	28	0	496
Drainage/Utilities/ Subgrade	38	0	0	38		0	38	0	0
Building Construction (New Construction)	29	5	0	104	16	0	59	9	0
Sitework	30	0	280	30	0	480	30	0	400

Construction Noise Calculation Sheets by Activity

Demolition Work

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Source 1: Concrete/industrial saw - Sound level (dBA) at 50 feet =	90	20%	83.0
Source 2: Crawler tractor - Sound level (dBA) at 50 feet =	84	40%	80.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			91
All Sources Combined - Leq sound level (dBA) at 50 feet =			85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0	97	91
50	0	0.0	91	85
70	-3	0.0	88	82
100	-6	0.0	85	79
200	-12	0.0	79	73
250	-14	0.0	77	71
300	-16	0.0	75	69
400	-18	0.0	73	67
500	-20	0.0	71	65
600	-22	0.0	69	63
650	-22	0.0	69	62
700	-23	0.0	68	62
800	-24	0.0	67	61
900	-25	0.0	66	60
1000	-26	0.0	65	59
1200	-28	0.0	63	57
1400	-29	0.0	62	56
1600	-30	0.0	61	55
1800	-31	0.0	60	54
2000	-32	0.0	59	53

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Site Preparation and Grading

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Source 1: Crushing/proc. Equipment - Sound level (dBA) at !	90	20%	83.0
Source 2: Grader - Sound level (dBA) at 50 feet =	85	40%	81.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			91
All Sources Combined - Leq sound level (dBA) at 50 feet =			85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0	97	91
50	0	0.0	91	85
70	-3	0.0	88	82
100	-6	0.0	85	79
200	-12	0.0	79	73
250	-14	0.0	77	71
300	-16	0.0	76	70
400	-18	0.0	73	67
500	-20	0.0	71	65
600	-22	0.0	70	64
650	-22	0.0	69	63
700	-23	0.0	68	62
800	-24	0.0	67	61
900	-25	0.0	66	60
1000	-26	0.0	65	59
1200	-28	0.0	64	58
1400	-29	0.0	62	56
1600	-30	0.0	61	55
1800	-31	0.0	60	54
2000	-32	0.0	59	53

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Excavation

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Source 1: Crawler tractor - Sound level (dBA) at 50 feet =	84	40%	80.0
Source 2: Bore/drill rig - Sound level (dBA) at 50 feet =	84	20%	77.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			87
All Sources Combined - Leq sound level (dBA) at 50 feet =			82

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0	93	88
50	0	0.0	87	82
70	-3	0.0	84	79
100	-6	0.0	81	76
200	-12	0.0	75	70
250	-14	0.0	73	68
300	-16	0.0	71	66
400	-18	0.0	69	64
500	-20	0.0	67	62
600	-22	0.0	65	60
650	-22	0.0	65	60
700	-23	0.0	64	59
800	-24	0.0	63	58
900	-25	0.0	62	57
1000	-26	0.0	61	56
1200	-28	0.0	59	54
1400	-29	0.0	58	53
1600	-30	0.0	57	52
1800	-31	0.0	56	51
2000	-32	0.0	55	50

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Drainage/Utilities/Sub-grade

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Source 1: Rough terrain forklift - Sound level (dBA) at 50 fee	84	40%	80.0
Source 2: Plate compactor - Sound level (dBA) at 50 feet =	83	20%	76.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			87
All Sources Combined - Leq sound level (dBA) at 50 feet =			81

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0	93	87
50	0	0.0	87	81
70	-3	0.0	84	79
100	-6	0.0	81	75
200	-12	0.0	74	69
250	-14	0.0	73	67
300	-16	0.0	71	66
400	-18	0.0	68	63
500	-20	0.0	67	61
600	-22	0.0	65	60
650	-22	0.0	64	59
700	-23	0.0	64	59
800	-24	0.0	62	57
900	-25	0.0	61	56
1000	-26	0.0	61	55
1200	-28	0.0	59	54
1400	-29	0.0	58	53
1600	-30	0.0	56	51
1800	-31	0.0	55	50
2000	-32	0.0	54	49

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Building Construction (New and Rennovation) - Rennovation includes all of the same equipment as new construction except for drill

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Source 1: Other general industrial equipment - Sound level (	85	50%	82.0
Source 2: Forklift - Sound level (dBA) at 50 feet =	84	40%	80.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			88
All Sources Combined - Leq sound level (dBA) at 50 feet =			84

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0	94	90
50	0	0.0	88	84
70	-3	0.0	85	81
100	-6	0.0	82	78
200	-12	0.0	75	72
250	-14	0.0	74	70
300	-16	0.0	72	69
400	-18	0.0	69	66
500	-20	0.0	68	64
600	-22	0.0	66	63
650	-22	0.0	65	62
700	-23	0.0	65	61
800	-24	0.0	63	60
900	-25	0.0	62	59
1000	-26	0.0	62	58
1200	-28	0.0	60	57
1400	-29	0.0	59	55
1600	-30	0.0	57	54
1800	-31	0.0	56	53
2000	-32	0.0	55	52

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Sitework

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Source 1: Crushing/proc. Equipment - Sound level (dBA) at !	90	20%	83.0
Source 2: Grader - Sound level (dBA) at 50 feet =	85	40%	81.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			91
All Sources Combined - Leq sound level (dBA) at 50 feet =			85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
25	6	0	97	91
50	0	0.0	91	85
70	-3	0.0	88	82
100	-6	0.0	85	79
200	-12	0.0	79	73
250	-14	0.0	77	71
300	-16	0.0	76	70
400	-18	0.0	73	67
500	-20	0.0	71	65
600	-22	0.0	70	64
650	-22	0.0	69	63
700	-23	0.0	68	62
800	-24	0.0	67	61
900	-25	0.0	66	60
1000	-26	0.0	65	59
1200	-28	0.0	64	58
1400	-29	0.0	62	56
1600	-30	0.0	61	55
1800	-31	0.0	60	54
2000	-32	0.0	59	53

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Hourly Turning Movement Volumes

3700 California Transportation Study - Turning Movement Volumes

Intersection	Turning Movement		Existing Volumes		Net Change Project Trips		Existing + Project Trips		Cumulative Plus Project (2040)	
			AM	PM	AM	PM	AM	PM	AM	PM
1. Arguello Blvd - Lake St/Sacramento St	NB	LT	21	36	-3	-6	18	30	60	50
		TH	325	231	-3	-6	322	225	340	240
		RT	95	38	-2	-1	93	37	100	40
	SB	LT	9	7	-3	-1	6	6	20	10
		TH	192	307	-5	-3	187	304	190	340
		RT	139	274	0	0	139	274	140	280
	EB	LT	237	137	0	0	237	137	240	140
		TH	174	55	-4	-1	170	54	200	70
		RT	59	91	-7	-4	52	87	60	130
	WB	LT	37	46	-2	-4	35	42	40	50
		TH	55	110	-2	-6	53	104	70	130
		RT	14	13	-1	-5	13	8	20	20
2. Cherry St - Sacramento St	NB	LT	30	31	-6	-8	24	23	40	40
		TH	80	44	-7	-15	73	29	90	50
		RT	43	29	6	-6	49	23	50	40
	SB	LT	15	10	-1	0	14	10	20	20
		TH	75	40	-19	-11	56	29	90	50
		RT	36	16	-1	0	35	16	40	30
	EB	LT	43	8	0	-1	43	7	50	20
		TH	189	102	-7	-8	182	94	200	120
		RT	28	4	-2	-2	26	2	40	10
	WB	LT	27	9	-13	2	14	11	30	10
		TH	94	148	-6	-7	88	141	100	180
		RT	12	4	0	-1	12	3	20	10
3. Maple St - Sacramento St	NB	LT	13	21	-1	-5	12	16	20	30
		TH	55	42	-4	-9	51	33	60	50
		RT	19	24	15	-2	34	22	20	30
	SB	LT	22	11	0	0	22	11	30	20
		TH	69	58	-9	-4	60	54	80	70
		RT	25	9	-7	-3	18	6	30	20
	EB	LT	15	5	-1	-2	14	3	20	10
		TH	207	111	4	-10	211	101	220	120
		RT	48	35	-5	-2	43	33	60	50
	WB	LT	12	8	-7	14	5	22	20	10
		TH	75	127	-11	2	64	129	80	140
		RT	9	6	0	0	9	6	10	10
4. Spruce St - Sacramento St	NB	LT	28	47	-1	0	27	47	40	60
		TH	47	76	-5	-9	42	67	50	90
		RT	24	34	0	-4	24	30	30	40
	SB	LT	7	9	0	0	7	9	10	10
		TH	73	52	-3	-1	70	51	80	60
		RT	5	11	-2	2	3	13	10	20
	EB	LT	21	6	0	-2	21	4	30	10
		TH	177	114	21	-7	198	107	180	120
		RT	51	33	-1	-3	50	30	60	50
	WB	LT	20	38	-3	-1	17	37	30	40
		TH	58	92	-16	15	42	107	60	100
		RT	13	22	0	0	13	22	20	30

3700 California Transportation Study - Turning Movement Volumes

Intersection	Turning Movement		Existing Volumes		Net Change Project Trips		Existing + Project Trips		Cumulative Plus Project (2040)	
			AM	PM	AM	PM	AM	PM	AM	PM
5. Arguello Blvd - California St	NB	LT	68	69	0	0	68	69	120	100
		TH	269	213	-1	-1	268	212	230	190
		RT	63	57	-31	-13	32	44	90	50
	SB	LT	28	59	-12	-8	16	51	50	130
		TH	238	330	-2	-4	236	326	230	300
		RT	32	57	0	-1	32	56	30	80
	EB	LT	128	41	0	0	128	41	110	60
		TH	629	472	-31	-12	598	460	660	520
		RT	63	37	0	0	63	37	110	50
	WB	LT	26	65	-8	-31	18	34	40	60
		TH	273	595	-24	-66	249	529	360	690
		RT	27	30	-6	-12	21	18	100	50
6. Jordan Ave/Cherry St - California St	NB	LT	50	23	-17	-10	33	13	60	30
		TH	111	35	-11	0	100	35	140	40
		RT	25	14	-3	0	22	14	30	20
	SB	LT	36	42	5	-18	41	24	40	50
		TH	22	17	3	-8	25	9	30	20
		RT	33	40	-17	-22	16	18	40	50
	EB	LT	39	18	-14	-11	25	7	50	20
		TH	553	516	-41	-85	512	431	600	660
		RT	34	41	-6	-17	28	24	40	50
	WB	LT	4	4	1	-2	5	2	10	10
		TH	277	629	-78	-55	199	574	430	690
		RT	44	28	-17	4	27	32	50	30
7. Commonwealth Ave - California St	NB	LT	17	11	-7	0	10	11	0	0
		TH	0	0	0	0	0	0	0	0
		RT	56	15	-3	1	53	16	0	0
	SB	LT	0	0	0	0	0	0	0	0
		TH	0	0	0	0	0	0	0	0
		RT	0	0	0	0	0	0	0	0
	EB	LT	0	0	0	0	0	0	0	0
		TH	590	514	-37	-88	553	426	660	680
		RT	39	61	-3	-14	36	47	50	70
	WB	LT	17	16	1	-3	18	13	20	20
		TH	309	647	-88	-53	221	594	450	690
		RT	0	0	0	0	0	0	0	0
8. Maple St/Parker Ave - California St	NB	LT	25	15	-13	-4	12	11	30	30
		TH	63	33	-3	18	60	51	80	40
		RT	46	40	-2	-1	44	39	50	50
	SB	LT	24	8	19	2	43	10	30	10
		TH	67	67	18	1	85	68	70	90
		RT	36	27	0	-7	36	20	40	30
	EB	LT	23	22	-8	0	15	22	30	30
		TH	594	482	-33	-81	561	401	650	620
		RT	26	15	1	-7	27	8	30	30
	WB	LT	8	33	-1	-2	7	31	10	40
		TH	267	624	-74	-46	193	578	420	670
		RT	15	23	-3	19	12	42	20	30

3700 California Transportation Study - Turning Movement Volumes

Intersection	Turning Movement		Existing Volumes		Net Change Project Trips		Existing + Project Trips		Cumulative Plus Project (2040)	
			AM	PM	AM	PM	AM	PM	AM	PM
9. Spruce St - California St	NB	LT	19	52	-8	4	11	56	30	60
		TH	72	91	-1	-1	71	90	80	120
		RT	25	46	0	0	25	46	30	70
	SB	LT	35	28	0	-2	35	26	40	30
		TH	68	60	0	-1	68	59	80	90
		RT	11	18	-6	-2	5	16	20	20
	EB	LT	22	24	-5	-14	17	10	30	30
		TH	610	461	-4	-55	606	406	660	600
		RT	43	49	-4	-24	39	25	60	60
	WB	LT	26	37	0	0	26	37	40	50
		TH	257	461	-75	-26	182	435	410	500
		RT	17	24	0	0	17	24	20	30

APPENDIX H AIR QUALITY MODEL OUTPUTS

TABLE OF CONTENTS

H.1 – Air Quality Supporting Tables

- Table 1: Land Use Summary
- Table 2: Emissions Calculation Methodology
- Table 3: Construction Equipment List
- Table 4A: Construction Trips
- Table 4B: Construction Onroad Emission Factors
- Table 5: Architectural Coating Emissions
- Table 6: Asphalt Paving Off-Gassing Emissions
- Table 7: Entrained Dust Emission Factor
- Table 8: Construction CAP Emissions
- Table 9: Construction TAC Emissions for Modeling
- Table 10A: Operational Trip Rates
- Table 10B: Operational Trip Lengths
- Table 11A: Onroad Emission Factors for Operational Emissions, 2018
- Table 11B: Onroad Emission Factors for Operational Emissions, 2023
- Table 11C: Onroad Emission Factors for Operational Emissions, 2024
- Table 12: Baseline Generator Emissions
- Table 13: Annual Operational CAP Emissions
- Table 14: Average Daily Operational CAP Emissions
- Table 15: Average Daily CAP Emissions from Operation and Construction
- Table 16: Modeling Parameters
- Table 17: Exposure Durations
- Table 18: Exposure Parameters
- Table 19: Age Sensitivity Factors
- Table 20: Excess Lifetime Cancer Risk at Project Off-site and On-site MEIR
- Table 21: $PM_{2.5}$ Concentration at Project Off-site and On-site MEIR
- Table 22: Existing and Cumulative Excess Lifetime Cancer Risk at Project Off-site and On-site MEIR
- Table 23: Existing and Cumulative $PM_{2.5}$ Concentration at Project Off-site and On-site MEIR

I.2 – Air Quality Supporting Figures

- Figure 1: Project Location
- Figure 2: Phasing Schedule

- Figure 3: Project Boundary and Modeling Extent
- Figure 4: Nearby Sensitive Receptors
- Figure 5: Construction Modeled Sources
- Figure 6: Maximally Exposed Individual Receptor (MEIR) Locations

H.3 – CalEEMod® Output Files

H.4 – Supporting Documentation

H.5 – Ramboll Scope of Work

APPENDIX H.1
AIR QUALITY SUPPORTING TABLES

Table 1
Land Use Summary
3700 California Street
San Francisco, California

Existing Land Uses[1]					
Land Use Category	**Land Use Subtype[2]**	**Land Use Amount**	**Size Metric**	**Building Area (sqft)**	**Acreage[3]**
Commercial	Hospital	527	1000 sqft	527,000	5.01
Commercial	Medical Office Building	95	1000 sqft	95,000	0.90
Parking	Parking Lot	105	1000 sqft	105,000	1.00
Residential	Apartment Mid-rise	9	DU	7,000	0.07

Project Land Uses by Block[1]						
Block	**Land Use Category**	**Land Use Subtype[2]**	**Land Use Amount**	**Size Metric**	**Building Area (sqft)**	**Acreage[3]**
C	Residential	Single Family Housing	3	DU	16,900	0.19
C	Residential	Apartment Mid-rise	80	DU	138,200	1.54
C	Recreational	City Park	34	1000 sqft	33,600	0.77
C	Parking	Enclosed Parking Structure with Elevator	120	Spaces	67,653	0.76
C	Parking	Parking Lot	6	Spaces	3,383	0.04
C	Recreational	Health Club[4]	23	1000 sqft	23,100	0.26
B	Residential	Single Family Housing	6	DU	28,700	0.08
B	Residential	Apartment Mid-rise	141	DU	317,500	0.90
B	Recreational	City Park	38	1000 sqft	37,600	0.86
B	Parking	Enclosed Parking Structure with Elevator	215	Spaces	121,212	0.34
B	Parking	Parking Lot	8	Spaces	4,510	0.01
A	Residential	Single Family Housing	5	DU	25,300	0.17
A	Residential	Apartment Mid-rise	38	DU	68,200	0.46
A	Recreational	City Park	15	1000 sqft	15,100	0.35
A	Parking	Enclosed Parking Structure with Elevator	57	Spaces	32,135	0.22
A	Parking	Parking Lot	10	Spaces	5,638	0.04

Table 1
Land Use Summary
3700 California Street
San Francisco, California

Overall project Land Uses				
Land Use Subtype[2]	**Land Use Amount**	**Size Metric**	**Building Area (sqft)**	**Acreage[3]**
Single Family Housing	14	DU	70,900	0.44
Apartment Mid-rise	259	DU	523,900	2.90
City Park	86	1000 sqft	86,300	1.98
Enclosed Parking Structure with	392	Spaces	221,000	1.31
Parking Lot	24	Spaces	13,531	0.09
Health Club[4]	23	1000 sqft	23,100	0.26

Notes:

1. Land Use Assumptions obtained from the project description.
2. Land uses as defined in CalEEMod. When an exact mapping of a land use was not available in CalEEMod® relative to the project description, a land use with similar emission characteristics was chosen. Since emissions are dominated by traffic, and project-specific trip rates were provided, it is not expected that the land use type will substantially influence emissions where an exact mapping was not available (e.g., events center).
3. Lot acreages were based on the outdoor square footage provided by the project description, where available, or CalEEMod® 2016.3.2 defaults when not available. Acreage does not impact operational emissions for land uses which contain buildings using CalEEMod® methodology.
4. The official project statistics updated on May 23, 2018 specifies that the amount of interior area for amenity space in Building C7 is 14,787 gross square feet. This analysis was conservatively performed assuming that the building square footage per dwelling unit was the same for Building C7 as in Building C8. In making this assumption, the remaining amenity space consistent with the project description in Chapter 2 was 23,100 gross square feet. This analysis is conservative because CalEEMod® will estimate the majority of emissions from residential and non-residential land uses using the number of dwelling units and gross square footage, respectively. In this way, the emissions are likely an over-estimate since the square footage that should be attributed to residential land uses is being counted as both part of the number of dwelling units and the building square footage of the amenity space.

Abbreviations:

CalEEMod ® - CALifornia Emissions Estimator MODel
DU - dwelling units
sqft - square feet

Table 2
Emissions Calculation Methodology
3700 California Street
San Francisco, California

Type	Source	Methodology and Formula	Reference
Construction Equipment	Off-Road Equipment[1]	$Ec = \Sigma(EFc * HP * LF * Hr * C)$	OFFROAD2011 and ARB/USEPA Engine Standards
Construction On-Road Mobile Sources[2]	Exhaust – Running	$E_R = \Sigma(EF_R * VMT * C)$, where VMT = Trip Length * Trip Number	EMFAC2017
	Exhaust - Idling	$E_I = \Sigma(EF_I * \text{Trip Number} * C)$	EMFAC2017

Notes:

1. E_c: off-road equipment exhaust emissions (lb).
EF_c: emission factor (g/hp-hr). CalEEMod 2016.3.2 default emission factors used.
HP: equipment horsepower. OFFROAD2017.
LF: equipment load factor. OFFROAD2017.
Hr: equipment hours.
C: unit conversion factor.
2. On-road mobile sources include truck and passenger vehicle trips. Emissions associated with mobile sources were calculated using the following formulas.
E_R: running exhaust and running losses emissions (lb).
EF_R: running emission factor (g/mile). From EMFAC2017.
VMT: vehicle miles traveled
C: unit conversion factor
The calculation involves the following assumptions:
a. All material transporting and soil hauling trucks are heavy-heavy duty trucks.
b. Trip Length: The one-way trip length as calculated based on the truck route or the default length from CalEEMod or construction contractor.
c. Trip Number: provided by the construction contractor or estimated in CalEEMod.
E_I: vehicle idling emissions (lb).
EF_I: vehicle idling emission factor (g/trip). From EMFAC2017.
C: unit conversion factor.

Abbreviations:

ARB: California Air Resources Board
EF: Emission Factor
EMFAC: EMission FACtor Model
g: gram
HP: horsepower
lb: pound
LF: Load Factor
mi: mile
USEPA: United States Environmental Protection Agency
VMT: vehicle miles traveled

References:

ARB/USEPA. 2013. Table 1: ARB and USEPA Off-Road Compression-Ignition (Diesel) Engine Standards. Available online at: http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls
ARB. 2017. EMission FACtors Model, 2017 (EMFAC2017). Available online at: http://www.arb.ca.gov/emfac/2017/

Table 3
Construction Equipment List
3700 California Street
San Francisco, California

Subphase	Project Equipment[1]	Equipment Quantity[1]	Horsepower[1]	Usage Hours per Day[1]	Percent of Active Equipment Usage Days[2]		
					Block C	Block B	Block A
Demolition	Aerial Lifts	1	63	2.0	16%	15%	15%
	Concrete/Industrial Saws	1	81	8.0	67%	67%	67%
	Cranes	1	231	8.0	16%	15%	15%
	Crawler Tractors	2	212	4.0	100%	15%	15%
	Dumper/Tender	4	16	8.0	67%	67%	67%
	Excavators	1	158	8.0	33%	33%	33%
	Forklifts	1	89	8.0	33%	33%	33%
	Generator Sets	1	84	6.0	67%	67%	67%
	Pumps	1	84	8.0	12%	13%	13%
	Rubber Tired Dozers	2	247	7.0	12%	13%	13%
	Skid Steer Loaders (Bobcat)	2	97	7.0	67%	67%	67%
	Tractors/Loaders/Backhoes	1	97	8.0	67%	67%	67%
	Welders	1	46	4.0	33%	16%	33%
Site Preparation & Grading	Crushing/proc. Equipment	1	85	8.0	73%	35%	35%
	Dumper/Tender	4	16	8.0	100%	78%	78%
	Excavators	1	158	8.0	100%	100%	100%
	Pumps	1	84	8.0	100%	100%	100%
	Signal Boards	1	6.0	8.0	100%	100%	100%
	Sweepers/Scrubbers	1	64	2.0	100%	100%	100%
	Tractors/Loaders/Backhoes	1	97	8.0	100%	100%	100%
Excavation & Shoring	Bore/Drill Rigs	1	221	8.0	50%	50%	50%
	Crawler Tractors	1	212	8.0	6%	7%	13%
	Dumper/Tender	2	16	6.0	50%	50%	50%
	Excavators	1	158	8.0	50%	50%	50%
	Pumps	1	84	8.0	24%	25%	25%
Drainage/Utilities/ Subgrade	Cement and Mortar Mixers	1	9.0	4.0	7%	4%	6%
	Excavators	1	158	4.0	51%	29%	47%
	Plate Compactors	1	8.0	4.0	18%	10%	16%
	Rough Terrain Forklifts	1	100	2.0	51%	29%	47%
	Trenchers	1	78	4.0	51%	29%	47%

Table 3
Construction Equipment List
3700 California Street
San Francisco, California

Subphase	Project Equipment[1]	Equipment Quantity[1]	Horsepower[1]	Usage Hours per Day[1]	Percent of Active Equipment Usage Days[2]		
					Block C	Block B	Block A
Building Construction	Bore/Drill Rigs	1	221	8.0	5%	5%	5%
	Cement and Mortar Mixers	1	9.0	4.0	20%	20%	20%
	Cranes[3]	1	-	-	-	-	-
	Dumper/Tender	1	16	8.0	20%	20%	20%
	Forklifts	1	89	4.0	5%	5%	5%
	Other General Industrial Equipment	1	88	6.0	20%	20%	20%
	Pressure Washers	1	13	2.0	5%	5%	5%
	Pumps	1	84	6.0	5%	5%	5%
	Rubber Tired Loaders	1	203	6.0	20%	20%	20%
	Sweepers/Scrubbers	1	64	2.0	5%	5%	5%
Sitework	Dumper/Tender	2	16	4.0	50%	50%	50%
	Excavators	1	158	4.0	50%	50%	50%
	Graders	1	187	8.0	5%	5%	4%
	Pressure Washers	1	13	2.0	50%	50%	50%
	Pumps	1	84	8.0	50%	50%	50%
	Sweepers/Scrubbers	1	64	2.0	10%	10%	14%
	Tractors/Loaders/Backhoes	1	97	4.0	50%	50%	50%

Notes:

1. Project offroad construction equipment information was provided by the project sponsor.
2. For equipment that is not used every day throughout the duration of a given subphase, the portion of time it will be used is reflected in the percent of active equipment usage days.
3. Cranes used during the building construction subphase for the construction of each block are electric powered. All other equipment is considered to be diesel-powered.

Table 4A
Construction Trips
3700 California Street
San Francisco, California

Block	Construction Subphase	Construction Round Trips[1]		
		Average Worker Trips [trips/day]	Average Material Trips [trips/day]	Hauling Trips [trips/phase]
C	Demolition	48	0	1,088
	Site Preparation & Grading	38	0	0
	Excavation & Shoring	28	0	496
	Drainage/Utilities/ Subgrade	38	0	0
	Building Construction	59	8.9	0
	Sitework	30	0	400
B	Demolition	48	0	1,696
	Site Preparation & Grading	38	0	0
	Excavation & Shoring	28	0	832
	Drainage/Utilities/ Subgrade	38	0	0
	Building Construction	104	16	0
	Sitework	30	0	480
A	Demolition	48	0	832
	Site Preparation & Grading	38	0	0
	Excavation & Shoring	28	0	448
	Drainage/Utilities/ Subgrade	38	0	0
	Building Construction	29	4.6	0
	Sitework	30	0	280

Notes:

1. Construction trip rates were provided by the project sponsor for each block of construction. The number of trips was doubled for use in the model to represent the number of one-way trips.

Table 4B
Construction Onroad Emission Factors
3700 California Street
San Francisco, California

Year	Fleet Mix[1]	Emission Factor	Units	Type[2]	Pollutant	Fuel Type Restriction[3]
2021	MHDT/HHDT	0.065	g/mile	RUNEX	DPM	Dsl
2021	MHDT/HHDT	0.0070	g/trip	IDLEX	DPM	Dsl
2022	MHDT/HHDT	0.036	g/mile	RUNEX	DPM	Dsl
2022	MHDT/HHDT	0.0047	g/trip	IDLEX	DPM	Dsl
2023	MHDT/HHDT	0.016	g/mile	RUNEX	DPM	Dsl
2023	MHDT/HHDT	0.0037	g/trip	IDLEX	DPM	Dsl
2024	MHDT/HHDT	0.016	g/mile	RUNEX	DPM	Dsl
2024	MHDT/HHDT	0.0034	g/trip	IDLEX	DPM	Dsl
2021	HHDT	0.060	g/mile	RUNEX	DPM	Dsl
2021	HHDT	0.011	g/trip	IDLEX	DPM	Dsl
2022	HHDT	0.034	g/mile	RUNEX	DPM	Dsl
2022	HHDT	0.0073	g/trip	IDLEX	DPM	Dsl
2023	HHDT	0.024	g/mile	RUNEX	DPM	Dsl
2023	HHDT	0.0064	g/trip	IDLEX	DPM	Dsl
2024	HHDT	0.024	g/mile	RUNEX	DPM	Dsl
2024	HHDT	0.0060	g/trip	IDLEX	DPM	Dsl
2021	LD_Mix	31	g/trip	DIURN	ROG	Gas
2021	LD_Mix	72	g/trip	HOTSOAK	ROG	Gas
2021	LD_Mix	0.037	g/mile	PMBW	PM10	Gas
2021	LD_Mix	0.016	g/mile	PMBW	PM2_5	Gas
2021	LD_Mix	0.0080	g/mile	PMTW	PM10	Gas
2021	LD_Mix	0.0020	g/mile	PMTW	PM2_5	Gas
2021	LD_Mix	29	g/trip	RESTLOSS	ROG	Gas
2021	LD_Mix	0.059	g/mile	RUNEX	NOx	Gas
2021	LD_Mix	0.0020	g/mile	RUNEX	PM10	Gas
2021	LD_Mix	0.0019	g/mile	RUNEX	PM2_5	Gas
2021	LD_Mix	0.016	g/mile	RUNEX	ROG	Gas
2021	LD_Mix	0.052	g/mile	RUNLOSS	ROG	Gas
2021	LD_Mix	123	g/trip	STREX	NOx	Gas
2021	LD_Mix	1.1	g/trip	STREX	PM10	Gas
2021	LD_Mix	1.0	g/trip	STREX	PM2_5	Gas
2021	LD_Mix	163	g/trip	STREX	ROG	Gas
2022	LD_Mix	32	g/trip	DIURN	ROG	Gas
2022	LD_Mix	74	g/trip	HOTSOAK	ROG	Gas
2022	LD_Mix	0.037	g/mile	PMBW	PM10	Gas
2022	LD_Mix	0.016	g/mile	PMBW	PM2_5	Gas
2022	LD_Mix	0.0080	g/mile	PMTW	PM10	Gas
2022	LD_Mix	0.0020	g/mile	PMTW	PM2_5	Gas
2022	LD_Mix	31	g/trip	RESTLOSS	ROG	Gas
2022	LD_Mix	0.052	g/mile	RUNEX	NOx	Gas
2022	LD_Mix	0.0019	g/mile	RUNEX	PM10	Gas
2022	LD_Mix	0.0018	g/mile	RUNEX	PM2_5	Gas
2022	LD_Mix	0.014	g/mile	RUNEX	ROG	Gas
2022	LD_Mix	0.050	g/mile	RUNLOSS	ROG	Gas
2022	LD_Mix	126	g/trip	STREX	NOx	Gas
2022	LD_Mix	1.2	g/trip	STREX	PM10	Gas
2022	LD_Mix	1.1	g/trip	STREX	PM2_5	Gas

Table 4B
Construction Onroad Emission Factors
3700 California Street
San Francisco, California

Year	Fleet Mix[1]	Emission Factor	Units	Type[2]	Pollutant	Fuel Type Restriction[3]
2022	LD_Mix	163	g/trip	STREX	ROG	Gas
2023	LD_Mix	33	g/trip	DIURN	ROG	Gas
2023	LD_Mix	77	g/trip	HOTSOAK	ROG	Gas
2023	LD_Mix	0.037	g/mile	PMBW	PM10	Gas
2023	LD_Mix	0.016	g/mile	PMBW	PM2_5	Gas
2023	LD_Mix	0.0080	g/mile	PMTW	PM10	Gas
2023	LD_Mix	0.0020	g/mile	PMTW	PM2_5	Gas
2023	LD_Mix	32	g/trip	RESTLOSS	ROG	Gas
2023	LD_Mix	0.046	g/mile	RUNEX	NOx	Gas
2023	LD_Mix	0.0019	g/mile	RUNEX	PM10	Gas
2023	LD_Mix	0.0017	g/mile	RUNEX	PM2_5	Gas
2023	LD_Mix	0.012	g/mile	RUNEX	ROG	Gas
2023	LD_Mix	0.049	g/mile	RUNLOSS	ROG	Gas
2023	LD_Mix	130	g/trip	STREX	NOx	Gas
2023	LD_Mix	1.2	g/trip	STREX	PM10	Gas
2023	LD_Mix	1.1	g/trip	STREX	PM2_5	Gas
2023	LD_Mix	164	g/trip	STREX	ROG	Gas
2024	LD_Mix	34	g/trip	DIURN	ROG	Gas
2024	LD_Mix	79	g/trip	HOTSOAK	ROG	Gas
2024	LD_Mix	0.037	g/mile	PMBW	PM10	Gas
2024	LD_Mix	0.016	g/mile	PMBW	PM2_5	Gas
2024	LD_Mix	0.0080	g/mile	PMTW	PM10	Gas
2024	LD_Mix	0.0020	g/mile	PMTW	PM2_5	Gas
2024	LD_Mix	33	g/trip	RESTLOSS	ROG	Gas
2024	LD_Mix	0.041	g/mile	RUNEX	NOx	Gas
2024	LD_Mix	0.0018	g/mile	RUNEX	PM10	Gas
2024	LD_Mix	0.0016	g/mile	RUNEX	PM2_5	Gas
2024	LD_Mix	0.010	g/mile	RUNEX	ROG	Gas
2024	LD_Mix	0.048	g/mile	RUNLOSS	ROG	Gas
2024	LD_Mix	134	g/trip	STREX	NOx	Gas
2024	LD_Mix	1.3	g/trip	STREX	PM10	Gas
2024	LD_Mix	1.2	g/trip	STREX	PM2_5	Gas
2024	LD_Mix	164	g/trip	STREX	ROG	Gas
2021	MHDT/HHDT	0.095	g/mile	PMBW	PM10	Dsl
2021	MHDT/HHDT	0.041	g/mile	PMBW	PM2_5	Dsl
2021	MHDT/HHDT	0.023	g/mile	PMTW	PM10	Dsl
2021	MHDT/HHDT	0.0058	g/mile	PMTW	PM2_5	Dsl
2021	MHDT/HHDT	4.2	g/mile	RUNEX	NOx	Dsl
2021	MHDT/HHDT	0.065	g/mile	RUNEX	PM10	Dsl
2021	MHDT/HHDT	0.062	g/mile	RUNEX	PM2_5	Dsl
2021	MHDT/HHDT	0.16	g/mile	RUNEX	ROG	Dsl
2021	MHDT/HHDT	1.8	g/trip	STREX	NOx	Dsl
2021	MHDT/HHDT	4.0	g/trip	IDLEX	NOx	Dsl
2021	MHDT/HHDT	0.19	g/trip	IDLEX	ROG	Dsl
2021	MHDT/HHDT	0.0070	g/trip	IDLEX	PM10	Dsl
2021	MHDT/HHDT	0.0067	g/trip	IDLEX	PM2_5	Dsl

RAMBOLL

Table 4B
Construction Onroad Emission Factors
3700 California Street
San Francisco, California

Year	Fleet Mix[1]	Emission Factor	Units	Type[2]	Pollutant	Fuel Type Restriction[3]
2022	MHDT/HHDT	0.095	g/mile	PMBW	PM10	Dsl
2022	MHDT/HHDT	0.041	g/mile	PMBW	PM2_5	Dsl
2022	MHDT/HHDT	0.023	g/mile	PMTW	PM10	Dsl
2022	MHDT/HHDT	0.0058	g/mile	PMTW	PM2_5	Dsl
2022	MHDT/HHDT	3.5	g/mile	RUNEX	NOx	Dsl
2022	MHDT/HHDT	0.036	g/mile	RUNEX	PM10	Dsl
2022	MHDT/HHDT	0.035	g/mile	RUNEX	PM2_5	Dsl
2022	MHDT/HHDT	0.087	g/mile	RUNEX	ROG	Dsl
2022	MHDT/HHDT	2.0	g/trip	STREX	NOx	Dsl
2022	MHDT/HHDT	3.9	g/trip	IDLEX	NOx	Dsl
2022	MHDT/HHDT	0.19	g/trip	IDLEX	ROG	Dsl
2022	MHDT/HHDT	0.0047	g/trip	IDLEX	PM10	Dsl
2022	MHDT/HHDT	0.0045	g/trip	IDLEX	PM2_5	Dsl
2023	MHDT/HHDT	0.095	g/mile	PMBW	PM10	Dsl
2023	MHDT/HHDT	0.041	g/mile	PMBW	PM2_5	Dsl
2023	MHDT/HHDT	0.023	g/mile	PMTW	PM10	Dsl
2023	MHDT/HHDT	0.0058	g/mile	PMTW	PM2_5	Dsl
2023	MHDT/HHDT	2.8	g/mile	RUNEX	NOx	Dsl
2023	MHDT/HHDT	0.016	g/mile	RUNEX	PM10	Dsl
2023	MHDT/HHDT	0.015	g/mile	RUNEX	PM2_5	Dsl
2023	MHDT/HHDT	0.024	g/mile	RUNEX	ROG	Dsl
2023	MHDT/HHDT	2.3	g/trip	STREX	NOx	Dsl
2023	MHDT/HHDT	3.6	g/trip	IDLEX	NOx	Dsl
2023	MHDT/HHDT	0.19	g/trip	IDLEX	ROG	Dsl
2023	MHDT/HHDT	0.0037	g/trip	IDLEX	PM10	Dsl
2023	MHDT/HHDT	0.0035	g/trip	IDLEX	PM2_5	Dsl
2024	MHDT/HHDT	0.095	g/mile	PMBW	PM10	Dsl
2024	MHDT/HHDT	0.041	g/mile	PMBW	PM2_5	Dsl
2024	MHDT/HHDT	0.023	g/mile	PMTW	PM10	Dsl
2024	MHDT/HHDT	0.0058	g/mile	PMTW	PM2_5	Dsl
2024	MHDT/HHDT	2.7	g/mile	RUNEX	NOx	Dsl
2024	MHDT/HHDT	0.016	g/mile	RUNEX	PM10	Dsl
2024	MHDT/HHDT	0.015	g/mile	RUNEX	PM2_5	Dsl
2024	MHDT/HHDT	0.023	g/mile	RUNEX	ROG	Dsl
2024	MHDT/HHDT	2.4	g/trip	STREX	NOx	Dsl
2024	MHDT/HHDT	3.4	g/trip	IDLEX	NOx	Dsl
2024	MHDT/HHDT	0.19	g/trip	IDLEX	ROG	Dsl
2024	MHDT/HHDT	0.0034	g/trip	IDLEX	PM10	Dsl
2024	MHDT/HHDT	0.0033	g/trip	IDLEX	PM2_5	Dsl
2021	HHDT	0.060	g/mile	PMBW	PM10	Dsl
2021	HHDT	0.026	g/mile	PMBW	PM2_5	Dsl
2021	HHDT	0.035	g/mile	PMTW	PM10	Dsl
2021	HHDT	0.0087	g/mile	PMTW	PM2_5	Dsl
2021	HHDT	5.7	g/mile	RUNEX	NOx	Dsl
2021	HHDT	0.060	g/mile	RUNEX	PM10	Dsl
2021	HHDT	0.057	g/mile	RUNEX	PM2_5	Dsl

Table 4B
Construction Onroad Emission Factors
3700 California Street
San Francisco, California

Year	Fleet Mix[1]	Emission Factor	Units	Type[2]	Pollutant	Fuel Type Restriction[3]
2021	HHDT	0.14	g/mile	RUNEX	ROG	Dsl
2021	HHDT	2.0	g/trip	STREX	NOx	Dsl
2021	HHDT	6.8	g/trip	IDLEX	NOx	Dsl
2021	HHDT	0.37	g/trip	IDLEX	ROG	Dsl
2021	HHDT	0.011	g/trip	IDLEX	PM10	Dsl
2021	HHDT	0.010	g/trip	IDLEX	PM2_5	Dsl
2022	HHDT	0.060	g/mile	PMBW	PM10	Dsl
2022	HHDT	0.026	g/mile	PMBW	PM2_5	Dsl
2022	HHDT	0.035	g/mile	PMTW	PM10	Dsl
2022	HHDT	0.0087	g/mile	PMTW	PM2_5	Dsl
2022	HHDT	4.9	g/mile	RUNEX	NOx	Dsl
2022	HHDT	0.034	g/mile	RUNEX	PM10	Dsl
2022	HHDT	0.032	g/mile	RUNEX	PM2_5	Dsl
2022	HHDT	0.088	g/mile	RUNEX	ROG	Dsl
2022	HHDT	2.3	g/trip	STREX	NOx	Dsl
2022	HHDT	6.6	g/trip	IDLEX	NOx	Dsl
2022	HHDT	0.37	g/trip	IDLEX	ROG	Dsl
2022	HHDT	0.0073	g/trip	IDLEX	PM10	Dsl
2022	HHDT	0.0069	g/trip	IDLEX	PM2_5	Dsl
2023	HHDT	0.060	g/mile	PMBW	PM10	Dsl
2023	HHDT	0.026	g/mile	PMBW	PM2_5	Dsl
2023	HHDT	0.035	g/mile	PMTW	PM10	Dsl
2023	HHDT	0.0087	g/mile	PMTW	PM2_5	Dsl
2023	HHDT	4.1	g/mile	RUNEX	NOx	Dsl
2023	HHDT	0.024	g/mile	RUNEX	PM10	Dsl
2023	HHDT	0.023	g/mile	RUNEX	PM2_5	Dsl
2023	HHDT	0.036	g/mile	RUNEX	ROG	Dsl
2023	HHDT	2.5	g/trip	STREX	NOx	Dsl
2023	HHDT	6.2	g/trip	IDLEX	NOx	Dsl
2023	HHDT	0.37	g/trip	IDLEX	ROG	Dsl
2023	HHDT	0.0064	g/trip	IDLEX	PM10	Dsl
2023	HHDT	0.0062	g/trip	IDLEX	PM2_5	Dsl
2024	HHDT	0.060	g/mile	PMBW	PM10	Dsl
2024	HHDT	0.026	g/mile	PMBW	PM2_5	Dsl
2024	HHDT	0.035	g/mile	PMTW	PM10	Dsl
2024	HHDT	0.0087	g/mile	PMTW	PM2_5	Dsl
2024	HHDT	4.0	g/mile	RUNEX	NOx	Dsl
2024	HHDT	0.024	g/mile	RUNEX	PM10	Dsl
2024	HHDT	0.023	g/mile	RUNEX	PM2_5	Dsl
2024	HHDT	0.036	g/mile	RUNEX	ROG	Dsl

Table 4B
Construction Onroad Emission Factors
3700 California Street
San Francisco, California

Year	Fleet Mix[1]	Emission Factor	Units	Type[2]	Pollutant	Fuel Type Restriction[3]
2024	HHDT	2.6	g/trip	STREX	NOx	Dsl
2024	HHDT	6.0	g/trip	IDLEX	NOx	Dsl
2024	HHDT	0.37	g/trip	IDLEX	ROG	Dsl
2024	HHDT	0.0060	g/trip	IDLEX	PM10	Dsl
2024	HHDT	0.0058	g/trip	IDLEX	PM2_5	Dsl

Notes:

1. CalEEMod default fleet mixes were used for Worker (LD_Mix), Vendor (MHDT/HHDT), and Hauling (HHDT) trips.
2. EMFAC2017 was run for each year of construction. Annual number of trips and VMT were outputted for the model year for San Francisco by fuel and averaged across model years for EMFAC 2007 vehicle classes for a specific fuel type. From these, emission factors were calculated by dividing the emissions by either the number of trips or the VMT, where appropriate. Emission factors were calculated using the equations below:

   $E_{g/mi} = E / VMT$

   $E_{g/trip} = E / T$

   Where $E_{g/mi}$ is the emission factor in g/mi, $E_{g/trip}$ is the emission factor in g/trip, VMT is annual vehicle miles traveled, and T is the annual number of trips.

3. LD_Mix was assumed to be 100% gasoline vehicles and MHDT/HHDT and HHDT were assumed to be 100% diesel vehicles.

Table 5
Architectural Coating Emissions
3700 California Street
San Francisco, California

Coating Category	Interior	Exterior	
VOC Content (g/L)[1]	100	150	
Emission Factor (lb/ft^2)[2]	0.0046	0.0069	
Land Use	**Fraction of Surface Area Painted[2] (%)**		**Painted Area Multiplier[2]**
Residential	75%	25%	2.7
Non-Residential	75%	25%	2
Paved Parking	0%	6%	--

Construction Phase	Building	Building Square Footage[3]			Painted Areas		ROG Emissions
		Residential Area	Non-residential Area	Parking Area	Interior	Exterior	
		ft^2	ft^2	ft^2	ft^2	ft^2	tons
C	Single Family Housing	16,900	--	--	34,223	11,408	0.12
	Apartment Mid-rise	138,200	--	--	279,855	93,285	0.97
	City Park	--	33,600	--	50,400	16,800	0.175
	Enclosed Parking Structure with Elevator	--	--	67,653	--	4,059	0.0141
	Parking Lot	--	--	3,383	--	203	0.0007
	Health Club4	--	23,100	--	34,650	11,550	0.12
B	Single Family Housing	28,700	--	--	58,118	19,373	0.20
	Apartment Mid-rise	317,500	--	--	642,938	214,313	2.2
	City Park	--	37,600	--	56,400	18,800	0.20
	Enclosed Parking Structure with Elevator	--	--	121,212	--	7,273	0.025
	Parking Lot	--	--	4,510	--	271	9.4E-04
A	Single Family Housing	25,300	--	--	51,233	17,078	0.18
	Apartment Mid-rise	68,200	--	--	138,105	46,035	0.5
	City Park	--	15,100	--	22,650	7,550	0.08
	Enclosed Parking Structure with Elevator	--	--	32,135	--	1,928	0.007
	Parking Lot	--	--	5,638	--	338	1.2E-03
Total		594,800	109,400	234,531	1,368,570	470,262	**4.8**

Table 5
Architectural Coating Emissions
3700 California Street
San Francisco, California

Notes:

1. VOC content of paint is assumed to be consistent with BAAQMD Regulation 8, Rule 3. VOC is assumed to be equivalent to ROG for these purposes.
2. CalEEMod® default architectural coating emissions parameters.
3. Project square footage by land use was provided by the Project Sponsor.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator MODel
CEQA - California Environmental Quality Act
ft^2 - square feet
g - gram
gal - gallons
L - liters
lb - pounds
ROG - reactive organic gas
VOC - volatile organic compound

References:

BAAQMD. 2009. Regulation 8 Rule 3 Architectural Coatings. July.
California Air Pollution Control Officers Association (CAPCOA). 2016. Appendix A. Available at: http://www.caleemod.com

Table 6
Asphalt Paving Off-Gassing emissions
3700 California Street
San Francisco, California

Construction Phase	Building	Parking Area[1]		VOC Emission Factor[2]	ROG Emissions[2,3]
		ft^2	acres	lb/acre	lb
C	Parking Lot	3,383	0.08	2.6	0.20
B	Parking Lot	4510	0.10		0.27
A	Parking Lot	5,638	0.129		0.34
Total		**13,531**	**0.3**	**--**	**0.81**

Notes:

1. Parking areas are estimated by using the CalEEMod® default area per parking space and the number of above-ground parking spaces provided by the project sponsor. The enclosed parking structures are assumed to have no asphalt paving. Parking lots are assumed to have asphalt paving.
2. VOC emissions from paving the parking areas were calculated consistent with CalEEMod® methodology.
3. ROG and VOC emissions are assumed to be equivalent.

Abbreviations:

CalEEMod® - California Emissions Estimator MODel
CAPCOA - California Air Pollution Control Officers Association
lb - pound
ft^2 - square feet
ROG - reactive organic gases
VOC - volatile organic compound

References:

California Air Pollution Control Officers Association (CAPCOA). 2016. Appendix A. Available at: http://www.caleemod.com

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Table 7
Entrained Dust Emission Factor
3700 California Street
San Francisco, California

Road Dust Equation[1]
E = k*(sL)^0.91 * (W)^1.02 * (1-P/4N)

Parameters	Value
k = particle size multiplier for PM_{10} [lb/VMT]	0.0022
sL = roadway silt loading [grams per square meter - g/m^2]	0.080
P = number of "wet" days in county with at least 0.01 in of precipitation during the annual averaging period	67
N = number of days in the averaging period	365
PM_{10} speciation profile fraction	0.46
$PM_{2.5}$ speciation profile fraction	0.069

Trip Type-Specific Parameters[2]	Worker	Vendor	Hauling
W = average weight of vehicles traveling the road [lbs]	3,750	37,000	46,500
W = average weight of vehicles traveling the road [tons]	1.9	19	23

Trip Type-Specific Emission Factors	Worker	Vendor	Hauling
$PM_{2.5}$ Emission Factor [g/VMT]	0.027	0.28	0.36
PM_{10} Emission Factor [g/VMT]	0.18	1.9	2.4

Notes:

1. Road dust equation is based on the U.S. EPA AP-42 document. Parameters values were obtained from the 2016 California ARB Paved Entrained Road Dust methodology using major roadways.
2. Average vehicle weights are based on the EMFAC 2007 User's Guide, which publishes weight classes for each vehicle class modeled. Fleet mixes were chosen to be consistent with CalEEMod® methodology. The worker vehicle fleet is assumed to be composed of LDA, LDT1, and LDT2 vehicle classes. Vendor trips are assumed to be a mix of MHDT and HHDT vehicles. Hauling trips are assumed to consist of only HHDT vehicles. For worker trips, the average weight chosen is the high point for LDT1 vehicles, which is likely a conservative estimate of average weight of the fleet. For vendor and hauling vehicle weight, the midpoint of the range provided was selected to represent the average weight.

Abbreviations:

ARB: California Air Resources Board
EF: Emission Factor
EMFAC: EMission FACtor Model
g: gram
HP: horsepower
lb: pound
LF: Load Factor
mi: mile
USEPA: U.S. Environmental Protection Agency
VMT: vehicle miles traveled

References:

1. USEPA. 1996. AP 42. Compilation of Air Pollutant Emission Factors, Volume 1. Fifth Edition. Chapter 13.2.1, Paved Roads. Available online at: https://www3.epa.gov/ttnchie1/ap42/ch13/final/c13s0201.pdf
2. California ARB. 2016. Miscellaneous Processes Methodologies - Paved Entrained Road Dust. Available online at: https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2016.pdf

Table 8
Construction CAP Emissions
3700 California Street
San Francisco, California

Total CAP Emissions						
Phase	**Year**	**Source**	**Emissions[1]**			
			ROG	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
			lbs			
C	**2021**	Off-road Equipment[2]	192	1,834	88	83
	2022		34	308	14	13
	2023		38	330	15	15
B	**2021**		212	1,953	97	92
	2022		32	291	13	12
	2023		61	528	24	23
	2024		2.1	18	0.78	0.76
A	**2022**		123	1,090	53	50
	2023		31	275	12	11
	2024		26	221	10	9
C	**2021**	On-road Trucks and Vehicles[3]	114	1,041	62	31
	2022		92	526	50	23
	2023		39	244	23	10
B	**2021**		114	1,365	66	33
	2022		154	619	80	36
	2023		136	632	78	34
	2024		3.6	173	5.4	2.6
A	**2022**		56	614	34	15
	2023		41	257	25.2	10.9
	2024		19	140	12.4	5.4
C	**2023**	Architectural Coating[4] Off-Gassing	2,803	--	--	--
B	**2023**		5,315	--	--	--
A	**2023**		1,489	--	--	--
C	**2023**	Paving[5] Off-Gassing	0.20	--	--	--
B	**2023**		0.27	--	--	--
A	**2023**		0.34	--	--	--
Total Emissions (lbs)			**11,126**	**12,460**	**762**	**509**

Average Daily Emissions					
Phase	**Year**	**Emissions[1]**			
		ROG	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
		lbs/day			
C	**2021**	1.2	12	0.6	0.5
	2022	0.50	3.3	0.26	0.14
	2023	12	2.3	0.15	0.10
B	**2021**	1.3	13	0.7	0.5
	2022	0.74	3.6	0.37	0.19
	2023	22	4.6	0.41	0.23
	2024	0.02	0.8	0.02	0.01
A	**2022**	0.7	7	0.3	0.3
	2023	6.2	2.1	0.15	0.09
	2024	0.2	1.4	0.09	0.06

Table 8
Construction CAP Emissions
3700 California Street
San Francisco, California

Total Combined Project Emissions				
Year	**Emissions[1]**			
	ROG	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
	lbs/day			
2021	2.5	25	1.3	1.0
2022	2.0	14	1.0	0.6
2023	40	9	0.7	0.41
2024	0.20	2.2	0.11	0.07

Notes:

1. Emissions were estimated using methodology consistent with CalEEMod® and Table 2.
2. A construction equipment list and hours of operation for each piece of equipment for each phase were provided by the project sponsor. See Table 3 for more details. Emissions are calculated based on the default CalEEMod® off-road construction equipment emission factors for each piece of equipment for each year being modeled.
3. Total number of hauling, concrete, and delivery trips was provided by the project sponsor for each Phase. Trip lengths for hauling, concrete, and vendor trips were assumed to be CalEEMod® defaults.
4. Architectural Coating emissions are calculated in Table 5. It was conservatively assumed architectural coating would occur in 2023 for all blocks to analyze the maximum overlap.
5. Paving emissions are calculated in Table 6. Because there is no subphase that explicitly indicates when paving will happen, it was conservatively assumed to occur in 2023 for all blocks.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CAP - criteria air pollutant
CalEEMod® - California Emissions Estimate Model
CAPCOA - California Air Pollution Control Officers Association
CEQA - California Environmental Quality Act
lb - pound
NOx - oxides of nitrogen
PM_{10} - particulate matter less than 10 μm
$PM_{2.5}$ - particulate matter less than 2.5 μm
ROG - reactive organic gas

References:

California Air Pollution Control Officers Association (CAPCOA). 2016. CalEEMod. Available at: http://www.caleemod.com.

Table 9
Construction TAC Emissions for Modeling
3700 California Street
San Francisco, California

Block	Year	Annual TAC Emissions[1] [lbs]				Modeled Emissions[2] [g/s]			
		Offroad Sources[3]		Onroad Sources[4]		Offroad Sources[3]		Onroad Sources[4]	
		DPM	$PM_{2.5}$	DPM	$PM_{2.5}$	DPM	$PM_{2.5}$	DPM	$PM_{2.5}$
C	2021	88	83	0.73	2.2	1.3E-03	1.2E-03	1.1E-05	3.2E-05
	2022	14	13	0.40	2.0	2.0E-04	1.8E-04	5.8E-06	2.8E-05
	2023	15	15	0.095	0.80	2.2E-04	2.1E-04	1.4E-06	1.2E-05
B	2021	97	92	0.67	1.9	0.0014	0.0013	9.6E-06	2.7E-05
	2022	13	12	0.56	3.0	1.8E-04	1.7E-04	8.1E-06	4.4E-05
	2023	24	23	0.28	2.7	3.4E-04	3.3E-04	4.1E-06	3.9E-05
	2024	0.78	0.76	0.051	0.11	1.1E-05	1.1E-05	7.3E-07	1.6E-06
A	2022	53	50	0.18	0.84	0.0008	0.0007	2.6E-06	1.2E-05
	2023	12	11	0.10	0.76	1.7E-04	1.6E-04	1.4E-06	1.1E-05
	2024	10	9.3	0.043	0.33	1.4E-04	1.3E-04	6.2E-07	4.8E-06

Notes:

1. Emissions were estimated using methodology consistent with CalEEMod® and Table 2.
2. Annual emissions were converted to g/s by dividing by assuming 365 days per year and 24 hours per day. Construction was modeled for ten hours per day for the duration of construction, so the difference in emission rate was reconciled using an AERMOD EMISFAC of 2.4 for construction hours.
3. Offroad emissions are consistent with Table 8.
4. Onroad trip rates are consistent with Table 4. For modeling purposes only, emissions are based on the model trip length.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
CAPCOA - California Air Pollution Control Officers Association
DPM - diesel particulate matter
lb - pound
$PM_{2.5}$ - particulate matter less than 2.5 micrometers in diameter
TAC - toxic air contaminant

References:

California Air Pollution Control Officers Association (CAPCOA). 2016. CalEEMod. Available at: http://www.caleemod.com.

Table 10A
Operational Trip Rates
3700 California Street
San Francisco, California

Existing Trip Rates

Land Use Type	Amount	Size Metric	Total Daily Trips[1,2]	Daily Trips[2,4]	
				trips/day	trips/day/size metric
Hospital	527	sq ft	6,262	5,306	10.07
Medical Office Building	95	sq ft		956	10.07
Residential Units	9	DU	46	46	5.09

Project Trip Rates

Land Use Type	Amount	Size Metric	Total Daily Trips[3]	Daily Trips[4]	
				trips/day	trips/day/size metric
Single Family Housing	14	DU	71	71	5.09
Multi family housing	259	DU	1,318	1,318	5.09

Notes:

1. Existing trips for hospital and medical office building are from Table 6 of Fehr & Peer's Memorandum #1: Preliminary Travel Demand Estimates for 3700 California.
2. Existing trips for residential units are assumed to be equal to the rate of project residential trips because existing residential units are expected to be renovated, with no additions or removal of residences.
3. Project trips are from Table 7 of travel demand memo for vehicle trips only.
4. Trip rate is assumed to be the same for weekends and weekdays.

Abbreviations:

sq ft - square feet
DU - dwelling unit

References:

Fehr & Peers, Memorandum #1: Preliminary Travel Demand Estimates for 3700 California, Case No. 2017-003559PPA, August 24, 2018.

Table 10B
Operational Trip Lengths
3700 California Street
San Francisco, California

Block	Number of DU	Size Metric	Trips/Day/Size Metric[1]	Total Daily Trips[2]	Population[3]	VMT/ Capita[4]	Daily VMT[5]	Average Trip Length[6,7] (mi)
A/B	190	DU	5.09	967	493	7.9	3,895	--
C	83	DU	5.09	422	208	7.7	1,599	3.79
A,B,C	273	DU	5.09	1,390	701	--	5,494	3.95

Notes:
1. Trip rate as calculated in Table 10A and is assumed to be the same for weekends and weekdays.
2. Calculated by multiplying the Trips/Day/Size Metric by the number of DU.
3. Consistent with the Population and Housing section of the Initial Study.
4. VMT/capita consistent with Table 4.2-2 in the Transportation Section of the EIR.
5. Daily VMT is the product of population and VMT per capita and is assumed to be the same for weekends and weekdays. The VMT shown in the CalEEMod outputs are less than 0.5% different than reported here due to rounding in CalEEMod.
6. Average trip rate is calculated as the daily VMT divided by the daily trips. This is calculated as the average of all blocks for Project buildout and for Block C separately for the intermediate phase calculation.
7. Trip types in CalEEMod are 100% primary trips.

Abbreviations:
DU - dwelling unit
mi - miles
VMT - vehicle miles traveled

Table 11A
Onroad Emission Factors for Operational Emissions, 2018
3700 California Street
San Francisco, California

Pollutant	Emission Type[1]	LDA	LDT1	LDT2	MDV	LHDT1	LHDT2	MHDT	HHDT	OBUS	UBUS	MCY	SBUS	MH	Units
	Fleet Mix[2]	0.60	0.054	0.17	0.089	0.024	0.0046	0.022	0.0084	0.0042	0.0067	0.0091	0.0010	3.6E-04	%
CH4	Idling Exhaust	0	0	0	0	0.0071	0.0045	0.0039	0.043	0.0082	0	0	0.18	0	g/trip
CH4	Running Exhaust	0.0047	0.0082	0.0059	0.0074	0.011	0.0094	0.018	0.34	0.020	1.2	0.42	0.0043	0.032	g/mi
CH4	Starting Exhaust	0.073	0.090	0.087	0.10	0.022	0.013	0.011	1.1E-06	0.019	0	0.26	0.015	0.032	g/trip
CO	Idling Exhaust	0	0	0	0	0.21	0.16	0.46	3.6	0.57	0	0	6.3	0	g/trip
CO	Running Exhaust	0.94	1.5	1.1	1.3	1.0	0.81	1.2	1.9	1.5	8.7	23	0.33	4.9	g/mi
CO	Starting Exhaust	2.6	2.8	3.2	3.6	1.5	1.0	1.4	0.0066	2.0	0	8.9	2.2	3.1	g/trip
CO2	Non-Biological Idling Exhaust	0	0	0	0	8.9	14	114	926	100	0	0	413	0	g/trip
CO2	Non-Biological Running Exhaust	300	352	389	463	913	870	1,226	2,112	1,489	1,762	230	958	1,603	g/mi
CO2	Non-Biological Starting Exhaust	60	70	78	92	15	11	11	0.85	16	0	63	13	23	g/trip
NOX	Idling Exhaust	0	0	0	0	0.042	0.10	1.2	7.1	0.85	0	0	2.5	0	g/trip
NOX	Running Exhaust	0.067	0.13	0.11	0.13	0.66	1.0	4.0	7.1	3.8	1.5	1.2	1.7	1.7	g/mi
NOX	Starting Exhaust	0.26	0.32	0.39	0.43	0.46	0.27	0.88	1.2	0.64	0	0.27	0.91	0.25	g/trip
PM10	Idling Exhaust	0	0	0	0	4.8E-04	0.0012	0.0042	0.021	0.0072	0	0	0.0024	0	g/trip
PM10	PM from Brakewear	0.037	0.037	0.037	0.037	0.076	0.089	0.13	0.060	0.13	0.066	0.012	0.74	0.13	g/mi
PM10	PM from Tirewear	0.0080	0.0080	0.0080	0.0080	0.0091	0.010	0.012	0.035	0.012	0.035	0.0040	0.0094	0.013	g/mi
PM10	Running Exhaust	0.0021	0.0028	0.0020	0.0023	0.0077	0.015	0.13	0.10	0.13	0.0062	0.0021	0.011	0.029	g/mi
PM10	Starting Exhaust	0.0021	0.0027	0.0019	0.0023	3.4E-04	1.9E-04	1.6E-04	6.2E-05	1.5E-04	0	0.0040	1.5E-04	7.0E-04	g/trip
PM25	Idling Exhaust	0	0	0	0	4.6E-04	0.0011	0.0040	0.020	0.0069	0	0	0.0023	0	g/trip
PM25	PM from Brakewear	0.016	0.016	0.016	0.016	0.033	0.038	0.056	0.026	0.056	0.028	0.0050	0.32	0.056	g/mi
PM25	PM from Tirewear	0.0020	0.0020	0.0020	0.0020	0.0023	0.0026	0.0030	0.0087	0.0030	0.0087	0.0010	0.0024	0.0033	g/mi
PM25	Running Exhaust	0.0020	0.0025	0.0018	0.0021	0.0074	0.014	0.12	0.10	0.12	0.0059	0.0020	0.010	0.027	g/mi
PM25	Starting Exhaust	0.0019	0.0025	0.0018	0.0021	3.1E-04	1.7E-04	1.5E-04	5.9E-05	1.4E-04	0	0.0038	1.4E-04	6.5E-04	g/trip
ROG	Diurnal	0.053	0.088	0.054	0.059	0.0019	0.0013	5.7E-04	8.1E-05	9.2E-04	0	0.75	5.4E-04	1.2	g/trip
ROG	Hotsoak	0.13	0.20	0.13	0.13	0.083	0.059	0.027	0.0077	0.014	0	0.80	0.0045	0.12	g/trip
ROG	Idling Exhaust	0	0	0	0	0.027	0.020	0.029	0.34	0.072	0	0	0.77	0	g/trip
ROG	Rest Losses	0.050	0.077	0.055	0.060	0.0011	7.3E-04	3.2E-04	5.3E-05	4.5E-04	0	0.49	2.3E-04	0.46	g/trip
ROG	Running Exhaust	0.021	0.038	0.026	0.035	0.086	0.11	0.33	0.27	0.34	0.017	3.0	0.039	0.20	g/mi
ROG	Running Losses	0.035	0.10	0.060	0.055	0.20	0.15	0.032	0.0040	0.029	0	0.74	0.0069	0.033	g/mi
ROG	Starting Exhaust	0.36	0.47	0.43	0.51	0.11	0.068	0.066	5.8E-06	0.10	0	2.1	0.081	0.17	g/trip
SO2	Idling Exhaust	0	0	0	0	8.7E-05	1.3E-04	0.0011	0.0079	9.5E-04	0	0	0.0040	0	g/trip
SO2	Running Exhaust	0.0030	0.0035	0.0038	0.0046	0.0090	0.0084	0.012	0.017	0.014	0.013	0.0023	0.0093	0.016	g/mi
SO2	Starting Exhaust	5.9E-04	7.0E-04	7.7E-04	9.1E-04	1.5E-04	1.1E-04	1.0E-04	8.4E-06	1.6E-04	0	6.3E-04	1.3E-04	2.3E-04	g/trip
TOG	Diurnal	0.053	0.088	0.054	0.059	0.0019	0.0013	5.7E-04	8.1E-05	9.2E-04	0	0.75	5.4E-04	1.2	g/trip
TOG	Hotsoak	0.13	0.20	0.13	0.13	0.083	0.059	0.027	0.0077	0.014	0	0.80	0.0045	0.12	g/trip
TOG	Idling Exhaust	0	0	0	0	0.039	0.028	0.037	0.41	0.089	0	0	1.1	0	g/trip
TOG	Rest Losses	0.050	0.077	0.055	0.060	0.0011	7.3E-04	3.2E-04	5.3E-05	4.5E-04	0	0.49	2.3E-04	0.46	g/trip
TOG	Running Exhaust	0.030	0.054	0.037	0.049	0.11	0.14	0.38	0.63	0.39	1.2	3.6	0.049	0.26	g/mi
TOG	Running Losses	0.035	0.10	0.060	0.055	0.20	0.15	0.032	0.0040	0.029	0	0.74	0.0069	0.033	g/mi
TOG	Starting Exhaust	0.40	0.52	0.47	0.56	0.12	0.075	0.072	6.4E-06	0.11	0	2.2	0.089	0.19	g/trip

Notes:

1. EMFAC2017 was run for each operational model year. Annual number of trips and VMT were outputted for the model year for San Francisco, aggregated by fuel, and averaged across model years for EMFAC 2007 vehicle classes. From these, emission factors were calculated by dividing the emissions by either the number of trips or the VMT, where appropriate. Emission factors were calculated using the equations below:

$E_{g/mi}$ = E / VMT

$E_{g/trip}$ = E / T

Where $E_{g/mi}$ is the emission factor in g/mi, $E_{g/trip}$ is the emission factor in g/trip, VMT is annual vehicle miles traveled, and T is the annual number of trips.

2. EMFAC2017 was run for each operational model year to output the annual vehicle population for EMFAC 2007 vehicle classes. These were used to calculate the fleet mix for each model year.

Table 11B
Onroad Emission Factors for Operational Emissions, 2023
3700 California Street
San Francisco, California

Pollutant	Emission Type[1]	LDA	LDT1	LDT2	MDV	LHDT1	LHDT2	MHDT	HHDT	OBUS	UBUS	MCY	SBUS	MH	Units
Fleet Mix[2]		0.58	0.055	0.17	0.10	0.024	0.0054	0.027	0.0085	0.0035	0.0065	0.0073	0.0010	5.6E-04	%
CH4	Idling Exhaust	0	0	0	0	0.0059	0.0035	0.0033	0.045	0.0067	0	0	0.16	0	g/trip
CH4	Running Exhaust	0.0023	0.0038	0.0033	0.0035	0.0071	0.0063	0.0016	0.35	0.0040	1.4	0.40	0.0035	0.0091	g/mi
CH4	Starting Exhaust	0.048	0.058	0.062	0.064	0.015	0.0084	0.0082	1.2E-06	0.017	0	0.25	0.013	0.022	g/trip
CO	Idling Exhaust	0	0	0	0	0.20	0.15	0.50	4.9	0.59	0	0	5.9	0	g/trip
CO	Running Exhaust	0.60	0.84	0.76	0.75	0.61	0.54	0.22	1.4	0.51	10	21	0.29	1.0	g/mi
CO	Starting Exhaust	2.2	2.4	2.8	2.9	1.1	0.68	0.93	0.013	1.8	0	9.0	1.8	2.1	g/trip
CO2	Non-Biological Idling Exhaust	0	0	0	0	8.7	14	117	957	98	0	0	395	0	g/trip
CO2	Non-Biological Running Exhaust	258	310	330	389	824	781	1,065	1,867	1,352	1,710	230	939	1,477	g/mi
CO2	Non-Biological Starting Exhaust	52	62	66	76	13	8.7	8.3	0.16	15	0	62	12	18	g/trip
NOX	Idling Exhaust	0	0	0	0	0.043	0.087	0.75	6.0	0.40	0	0	2.2	0	g/trip
NOX	Running Exhaust	0.033	0.060	0.055	0.057	0.38	0.53	1.4	3.8	1.5	0.75	1.2	1.5	1.0	g/mi
NOX	Starting Exhaust	0.18	0.22	0.25	0.26	0.35	0.20	1.8	2.3	1.1	0	0.28	1.2	0.23	g/trip
PM10	Idling Exhaust	0	0	0	0	6.5E-04	0.0013	7.4E-04	0.0064	1.3E-04	0	0	0.0016	0	g/trip
PM10	PM from Brakewear	0.037	0.037	0.037	0.037	0.076	0.089	0.13	0.060	0.13	0.066	0.012	0.74	0.13	g/mi
PM10	PM from Tirewear	0.0080	0.0080	0.0080	0.0080	0.0095	0.011	0.012	0.035	0.012	0.035	0.0040	0.010	0.013	g/mi
PM10	Running Exhaust	0.0018	0.0021	0.0018	0.0019	0.0068	0.013	0.0067	0.022	0.0077	0.0055	0.0023	0.010	0.014	g/mi
PM10	Starting Exhaust	0.0018	0.0021	0.0017	0.0018	2.5E-04	1.3E-04	9.3E-05	5.2E-06	1.4E-04	0	0.0031	1.5E-04	3.0E-04	g/trip
PM25	Idling Exhaust	0	0	0	0	6.2E-04	0.0013	7.0E-04	0.0061	1.2E-04	0	0	0.0015	0	g/trip
PM25	PM from Brakewear	0.016	0.016	0.016	0.016	0.033	0.038	0.056	0.026	0.056	0.028	0.0050	0.32	0.056	g/mi
PM25	PM from Tirewear	0.0020	0.0020	0.0020	0.0020	0.0024	0.0027	0.0030	0.0087	0.0030	0.0087	0.0010	0.0024	0.0033	g/mi
PM25	Running Exhaust	0.0017	0.0019	0.0017	0.0018	0.0065	0.012	0.0064	0.021	0.0073	0.0052	0.0022	0.0094	0.013	g/mi
PM25	Starting Exhaust	0.0016	0.0019	0.0016	0.0017	2.3E-04	1.2E-04	8.6E-05	4.8E-06	1.3E-04	0	0.0030	1.4E-04	2.8E-04	g/trip
ROG	Diurnal	0.034	0.057	0.046	0.045	0.0015	8.6E-04	3.4E-04	1.6E-05	0.0011	0	0.79	0.0011	0.45	g/trip
ROG	Hotsoak	0.091	0.13	0.10	0.10	0.064	0.039	0.018	8.8E-04	0.017	0	0.78	0.011	0.044	g/trip
ROG	Idling Exhaust	0	0	0	0	0.023	0.017	0.021	0.33	0.046	0	0	0.72	0	g/trip
ROG	Rest Losses	0.034	0.055	0.051	0.050	9.4E-04	5.4E-04	2.2E-04	1.1E-05	5.5E-04	0	0.51	5.5E-04	0.18	g/trip
ROG	Running Exhaust	0.0089	0.016	0.013	0.014	0.072	0.10	0.016	0.047	0.027	0.020	2.8	0.034	0.057	g/mi
ROG	Running Losses	0.029	0.076	0.058	0.046	0.17	0.10	0.019	8.1E-04	0.039	0	0.71	0.016	0.012	g/mi
ROG	Starting Exhaust	0.22	0.28	0.29	0.30	0.073	0.041	0.044	6.3E-06	0.087	0	2.0	0.072	0.089	g/trip
SO2	Idling Exhaust	0	0	0	0	8.5E-05	1.3E-04	0.0011	0.0081	9.3E-04	0	0	0.0038	0	g/trip
SO2	Running Exhaust	0.0026	0.0031	0.0033	0.0038	0.0081	0.0076	0.010	0.015	0.013	0.012	0.0023	0.0091	0.014	g/mi
SO2	Starting Exhaust	5.1E-04	6.1E-04	6.6E-04	7.6E-04	1.3E-04	8.6E-05	8.2E-05	1.6E-06	1.5E-04	0	6.1E-04	1.2E-04	1.8E-04	g/trip
TOG	Diurnal	0.034	0.057	0.046	0.045	0.0015	8.6E-04	3.4E-04	1.6E-05	0.0011	0	0.79	0.0011	0.45	g/trip
TOG	Hotsoak	0.091	0.13	0.10	0.10	0.064	0.039	0.018	8.8E-04	0.017	0	0.78	0.011	0.044	g/trip
TOG	Idling Exhaust	0	0	0	0	0.033	0.023	0.027	0.40	0.059	0	0	1.0	0	g/trip
TOG	Rest Losses	0.034	0.055	0.051	0.050	9.4E-04	5.4E-04	2.2E-04	1.1E-05	5.5E-04	0	0.51	5.5E-04	0.18	g/trip
TOG	Running Exhaust	0.013	0.023	0.019	0.020	0.089	0.11	0.020	0.40	0.036	1.4	3.5	0.042	0.076	g/mi
TOG	Running Losses	0.029	0.076	0.058	0.046	0.17	0.10	0.019	8.1E-04	0.039	0	0.71	0.016	0.012	g/mi
TOG	Starting Exhaust	0.24	0.31	0.31	0.33	0.079	0.045	0.048	6.9E-06	0.10	0	2.2	0.079	0.10	g/trip

Notes:

1. EMFAC2017 was run for each operational model year. Annual number of trips and VMT were outputted for the model year for San Francisco, aggregated by fuel, and averaged across model years for EMFAC 2007 vehicle classes. From these, emission factors were calculated by dividing the emissions by either the number of trips or the VMT, where appropriate. Emission factors were calculated using the equations below:

$E_{g/mi} = E / VMT$

$E_{g/trip} = E / T$

Where $E_{g/mi}$ is the emission factor in g/mi, $E_{g/trip}$ is the emission factor in g/trip, VMT is annual vehicle miles traveled, and T is the annual number of trips.

2. EMFAC2017 was run for each operational model year to output the annual vehicle population for EMFAC 2007 vehicle classes. These were used to calculate the fleet mix for each model year.

Table 11C
Onroad Emission Factors for Operational Emissions, 2024
3700 California Street
San Francisco, California

Pollutant	Emission Type[1]	LDA	LDT1	LDT2	MDV	LHDT1	LHDT2	MHDT	HHDT	OBUS	UBUS	MCY	SBUS	MH	Units
Fleet Mix[2]		0.58	0.055	0.17	0.11	0.024	0.0055	0.028	0.0086	0.0034	0.0065	0.0071	0.0010	5.8E-04	%
CH4	Idling Exhaust	0	0	0	0	0.0057	0.0034	0.0032	0.045	0.0066	0	0	0.16	0	g/trip
CH4	Running Exhaust	0.0020	0.0033	0.0030	0.0030	0.0067	0.0060	0.0013	0.35	0.0037	1.4	0.40	0.0034	0.0079	g/mi
CH4	Starting Exhaust	0.044	0.053	0.058	0.059	0.014	0.0077	0.0076	1.1E-06	0.016	0	0.25	0.013	0.021	g/trip
CO	Idling Exhaust	0	0	0	0	0.20	0.14	0.50	4.9	0.61	0	0	5.9	0	g/trip
CO	Running Exhaust	0.56	0.77	0.71	0.69	0.58	0.52	0.19	1.4	0.48	10	21	0.28	0.78	g/mi
CO	Starting Exhaust	2.1	2.3	2.7	2.7	1.1	0.65	0.85	0.012	1.7	0	9.1	1.8	2.0	g/trip
CO2	Non-Biological Idling Exhaust	0	0	0	0	8.6	13	115	945	101	0	0	390	0	g/trip
CO2	Non-Biological Running Exhaust	249	301	318	375	807	765	1,042	1,827	1,333	1,710	230	932	1,444	g/mi
CO2	Non-Biological Starting Exhaust	50	60	64	74	13	8.4	7.7	0.11	14	0	62	12	17	g/trip
NOX	Idling Exhaust	0	0	0	0	0.042	0.083	0.72	5.9	0.41	0	0	2.1	0	g/trip
NOX	Running Exhaust	0.029	0.053	0.049	0.049	0.34	0.47	1.4	3.7	1.6	0.75	1.2	1.5	1.0	g/mi
NOX	Starting Exhaust	0.17	0.21	0.23	0.23	0.33	0.19	1.8	2.3	1.2	0	0.28	1.2	0.23	g/trip
PM10	Idling Exhaust	0	0	0	0	6.8E-04	0.0014	6.3E-04	0.0060	1.3E-04	0	0	0.0014	0	g/trip
PM10	PM from Brakewear	0.037	0.037	0.037	0.037	0.076	0.089	0.13	0.060	0.13	0.066	0.012	0.74	0.13	g/mi
PM10	PM from Tirewear	0.0080	0.0080	0.0080	0.0080	0.010	0.011	0.012	0.035	0.012	0.035	0.0040	0.010	0.013	g/mi
PM10	Running Exhaust	0.0017	0.0020	0.0017	0.0018	0.0066	0.012	0.0067	0.022	0.0081	0.0055	0.0024	0.010	0.013	g/mi
PM10	Starting Exhaust	0.0017	0.0020	0.0017	0.0017	2.4E-04	1.3E-04	8.6E-05	2.1E-06	1.4E-04	0	0.0030	1.5E-04	2.8E-04	g/trip
PM25	Idling Exhaust	0	0	0	0	6.5E-04	0.0013	6.0E-04	0.0057	1.3E-04	0	0	0.0014	0	g/trip
PM25	PM from Brakewear	0.016	0.016	0.016	0.016	0.033	0.038	0.056	0.026	0.056	0.028	0.0050	0.32	0.056	g/mi
PM25	PM from Tirewear	0.0020	0.0020	0.0020	0.0020	0.0024	0.0027	0.0030	0.0087	0.0030	0.0087	0.0010	0.0024	0.0033	g/mi
PM25	Running Exhaust	0.0016	0.0018	0.0016	0.0017	0.0063	0.012	0.0064	0.021	0.0078	0.0052	0.0022	0.0092	0.012	g/mi
PM25	Starting Exhaust	0.0016	0.0018	0.0016	0.0016	2.2E-04	1.2E-04	7.9E-05	1.9E-06	1.3E-04	0	0.0028	1.4E-04	2.6E-04	g/trip
ROG	Diurnal	0.032	0.053	0.045	0.043	0.0014	8.0E-04	3.1E-04	6.3E-06	0.0011	0	0.79	0.0012	0.38	g/trip
ROG	Hotsoak	0.086	0.12	0.10	0.091	0.061	0.036	0.016	3.6E-04	0.017	0	0.78	0.012	0.038	g/trip
ROG	Idling Exhaust	0	0	0	0	0.022	0.016	0.020	0.33	0.047	0	0	0.71	0	g/trip
ROG	Rest Losses	0.032	0.052	0.050	0.048	9.2E-04	5.1E-04	2.0E-04	4.0E-06	5.7E-04	0	0.51	6.2E-04	0.15	g/trip
ROG	Running Exhaust	0.0077	0.014	0.012	0.012	0.070	0.10	0.014	0.045	0.026	0.020	2.8	0.033	0.051	g/mi
ROG	Running Losses	0.028	0.073	0.058	0.046	0.16	0.088	0.017	2.5E-04	0.041	0	0.70	0.018	0.010	g/mi
ROG	Starting Exhaust	0.20	0.25	0.27	0.27	0.067	0.037	0.040	5.7E-06	0.085	0	2.0	0.071	0.084	g/trip
SO2	Idling Exhaust	0	0	0	0	8.4E-05	1.3E-04	0.0011	0.0080	0.0010	0	0	0.0038	0	g/trip
SO2	Running Exhaust	0.0025	0.0030	0.0031	0.0037	0.0079	0.0074	0.010	0.014	0.013	0.012	0.0023	0.0090	0.014	g/mi
SO2	Starting Exhaust	4.9E-04	6.0E-04	6.3E-04	7.3E-04	1.3E-04	8.3E-05	7.7E-05	1.1E-06	1.4E-04	0	6.1E-04	1.2E-04	1.7E-04	g/trip
TOG	Diurnal	0.032	0.053	0.045	0.043	0.0014	8.0E-04	3.1E-04	6.3E-06	0.0011	0	0.79	0.0012	0.38	g/trip
TOG	Hotsoak	0.086	0.12	0.10	0.091	0.061	0.036	0.016	3.6E-04	0.017	0	0.78	0.012	0.038	g/trip
TOG	Idling Exhaust	0	0	0	0	0.032	0.022	0.026	0.40	0.060	0	0	1.0	0	g/trip
TOG	Rest Losses	0.032	0.052	0.050	0.048	9.2E-04	5.1E-04	2.0E-04	4.0E-06	5.7E-04	0	0.51	6.2E-04	0.15	g/trip
TOG	Running Exhaust	0.011	0.020	0.017	0.018	0.087	0.11	0.018	0.40	0.034	1.4	3.5	0.041	0.067	g/mi
TOG	Running Losses	0.028	0.073	0.058	0.046	0.16	0.088	0.017	2.5E-04	0.041	0	0.70	0.018	0.010	g/mi
TOG	Starting Exhaust	0.22	0.28	0.29	0.30	0.074	0.041	0.044	6.3E-06	0.093	0	2.2	0.078	0.092	g/trip

Notes:

1. EMFAC2017 was run for each operational model year. Annual number of trips and VMT were outputted for the model year for San Francisco, aggregated by fuel, and averaged across model years for EMFAC 2007 vehicle classes. From these, emission factors were calculated by dividing the emissions by either the number of trips or the VMT, where appropriate. Emission factors were calculated using the equations below:

   $E_{g/mi} = E / VMT$

   $E_{g/trip} = E / T$

   Where $E_{g/mi}$ is the emission factor in g/mi, $E_{g/trip}$ is the emission factor in g/trip, VMT is annual vehicle miles traveled, and T is the annual number of trips.

2. EMFAC2017 was run for each operational model year to output the annual vehicle population for EMFAC 2007 vehicle classes. These were used to calculate the fleet mix for each model year.

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Table 12
Baseline Generator Emissions
3700 California Street
San Francisco, California

Emissions from BAAQMD

Source	Emissions (lb/day)			
	Methane[1]	Organics[1]	NOx[2]	DPM[3]
3698 CAT	1.2E-04	0.0041	0.029	0.0017
3700 CAT	8.1E-04	0.029	0.43	0.030
3700 Detroit	0.0013	0.054	0.68	0.049
Total	**0.0022**	**0.087**	**1.14**	**0.081**

Estimated Baseline CAP Emissions

Source	Emissions (tons/yr)[4]			
	ROG[1]	NOx[2]	PM_{10}[3]	$PM_{2.5}$[3]
Total	**0.016**	**0.21**	**0.015**	**0.015**

Notes:

1. The source emissions file provided by BAAQMD reports total organics (Code 990) as "Organics (other, including CH4)." Consistent with the BAAQMD definition of ROG, total methane emissions were subtracted from the total Organics emissions to determine the total ROG emissions as (0.087-0.0022=0.0846 lb/day ROG).
2. The source emissions file provided by BAAQMD reports NOx (Code 2990) as "Nitrous Oxides (part not spec elsewhere)". This was conservatively assumed to equal all NOx.
3. DPM was considered equivalent to PM_{10} and $PM_{2.5}$.
4. Emissions were converted from daily to annual by multiplying by 365 days per year.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CAP - criteria air pollutant
lb/day - pounds per day
NO_x - nitrous oxides
PM_{10} - particulate matter with a diameter smaller than 10 µm
$PM_{2.5}$ - particulate matter with a diameter smaller than 2.5 µm
ROG - reactive organic gases
tons/yr - tons per year

Table 13
Annual Operational CAP Emissions
3700 California Street
San Francisco, California

Modeled Year	Category	Average Yearly Operational Emissions[1] [tons/yr]			
		ROG	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
2018 Baseline[2]	Area[5,6]	2.8	0.0012	4.2E-04	4.2E-04
	Energy[7]	0.30	2.7	0.20	0.20
	Mobile[8]	2.8	5.9	4.9	1.4
	Generator[9]	0.016	0.21	0.015	0.015
Total		**5.9**	**8.8**	**5.1**	**1.6**
2023 Block C Operation[3]	Area[5,6]	0.83	0.010	0.0037	0.0037
	Energy[7]	0.0075	0.066	0.0052	0.0052
	Mobile[8]	0.1018	0.1498	0.2184	0.0598
Total		**0.9**	**0.23**	**0.23**	**0.069**
2024 Full Project Buildout[4]	Area[5,6]	2.9	0.053	0.014	0.014
	Energy[7]	0.019	0.16	0.013	0.013
	Mobile[8]	0.3162	0.4867	0.7486	0.2048
Total		**3.2**	**0.70**	**0.8**	**0.23**

Notes:

1. Operational emissions were calculated with CalEEMod® version 2016.3.2.
2. Operational emissions from the baseline scenario were estimated using CalEEMod® default emission factors for 2018.
3. Emissions were estimated for the operation of full occupation of Block C for the entire year.
4. All blocks will be fully operational in 2024. Emissions were estimated assuming full occupation immediately after completion of construction.
5. For consumer products, ROG emissions were calculated based on the average emissions factor for the City of San Francisco. San Francisco's ROG emissions from consumer products was 5.67 tons (Ref: https://www.arb.ca.gov/app/emsinv/emssumcat.php). San Francisco's building square footage was 539,022,396 square feet (Ref: DataSF Land Use shapefiles). Therefore, the emission factor was updated as follows:
(5.67 tons/day * 2000 lbs/ton)/539,022,396 sq. ft. = 2.10 x 10-5 lbs/(sq. ft.-day).
6. Per BAAQMD Rule 6-3-306, no new building construction can include wood-burning devices. As such, the numbers of wood hearths and stoves were set to zero. The default total number of wood hearths are assumed to be natural gas hearths.
7. Baseline energy consumption was assumed to adhere to Title 24 2016.
8. See Tables 4 and 10 for trip assumptions.
9. Average daily baseline generator emissions were acquired from BAAQMD from the CRRP-HRA analysis. DPM emissions were modeled for health risks by converting the PM10 emissions to g/s assuming 365 days of operation, 24 hours per day.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model
CAP - criteria air pollutant
CEQA - California Environmental Quality Act
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 micrometers in diameter
$PM_{2.5}$ - particulate matter less than 2.5 micrometers in diameter
ROG - reactive organic gases
sqft - square feet
tpy - tons per year

References:

BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines. May. Available online at: www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-

DataSF. 2016. San Francisco Land Uses. Available online at: https://data.sfgov.org/Housing-and-Buildings/Land-Use/us3s-fp9q/data

ARB. 2018. ROG Inventory. Available online at: https://www.arb.ca.gov/app/emsinv/emssumcat.php

Table 14
Average Daily Operational CAP Emissions
3700 California Street
San Francisco, California

Modeled Year	Category	Average Daily Operational Emissions[1] [lb/day]			
		ROG	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
2018 Baseline[2]	Area[5,6]	15	0.0063	0.0023	0.0023
	Energy[7]	1.6	15	1.1	1.1
	Mobile[8]	15	32	27	7.8
	Generator[9]	0.086	1.1	0.081	0.081
Total		**32**	**48**	**28**	**9.0**
2023 Block C Operation[3]	Area[5,6]	4.5	0.055	0.020	0.020
	Energy[7]	0.041	0.36	0.028	0.028
	Mobile[8]	0.56	0.8	1.2	0.33
Total		**5.1**	**1.2**	**1.2**	**0.38**
2024 Full Project Buildout[4]	Area[5,6]	16	0.29	0.075	0.075
	Energy[7]	0.10	0.87	0.070	0.070
	Mobile[8]	1.7	2.7	4.1	1.1
Total		**18**	**3.8**	**4.2**	**1.3**

Notes:

1. Operational emissions were calculated with CalEEMod® version 2016.3.2.
2. Operational emissions from the baseline scenario were estimated using CalEEMod® default emission factors for 2018.
3. Emissions were estimated for the operation of full occupation of Block C for the entire year.
4. All blocks will be fully operational in 2024. Emissions were estimated assuming full occupation immediately after completion of construction.
5. For consumer products, ROG emissions were calculated based on the average emissions factor for the City of San Francisco. San Francisco's ROG emissions from consumer products was 5.67 tons (Ref: https://www.arb.ca.gov/app/emsinv/emssumcat.php). San Francisco's building square footage was 539,022,396 square feet (Ref: DataSF Land Use shapefiles). Therefore, the emission factor was updated as follows:
(5.67 tons/day * 2000 lbs/ton)/539,022,396 sq. ft. = 2.10 x 10-5 lbs/(sq. ft.-day).
6. Per BAAQMD Rule 6-3-306, no new building construction can include wood-burning devices. As such, the numbers of wood hearths and stoves were set to zero. The default total number of wood hearths are assumed to be natural gas hearths.
7. Baseline energy consumption was assumed to adhere to Title 24 2016.
8. See Tables 4 and 10 for trip assumptions.
9. Average daily baseline generator emissions were acquired from BAAQMD from the CRRP-HRA analysis. DPM emissions were modeled for health risks by converting the PM10 emissions to g/s assuming 365 days of operation, 24 hours per day.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model
CAP - criteria air pollutant
CEQA - California Environmental Quality Act
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 micrometers in diameter
$PM_{2.5}$ - particulate matter less than 2.5 micrometers in diameter
ROG - reactive organic gases
sqft - square feet
tpy - tons per year

References:

BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines. May. Available online at: www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en
DataSF. 2016. San Francisco Land Uses. Available online at: https://data.sfgov.org/Housing-and-Buildings/Land-Use/us3s-fp9q/data
ARB. 2018. ROG Inventory. Available online at: https://www.arb.ca.gov/app/emsinv/emssumcat.php

Table 15
Average Daily CAP Emissions from Operation and Construction
3700 California Street
San Francisco, California

Scenario	Year	Average Daily Emissions[1] [lb/day]			
		ROG	NO_x	PM_{10}	$PM_{2.5}$
Operation Only[2]	2021	-32	-48	-28	-9.0
	2022	-32	-48	-28	-9.0
	2023	-27	-47	-27	-8.6
	2024	-15	-44	-24	-7.7
Construction Only[3]	2021	2.5	25	1.3	1.0
	2022	2.0	14	1.0	0.59
	2023	40	9.1	0.71	0.41
	2024	0.20	2.2	0.11	0.072
Construction and Operation	2021	-30	-24	-27	-8.0
	2022	-30	-34	-27	-8.4
	2023	13	-38	-26	-8.2
	2024	-14	-42	-24	-7.6

Notes:

1. Emissions were estimated using methodology consistent with Table 2.
2. Operational emissions were calculated with CalEEMod® version 2016.3.2. Operational emissions are reported by year in Tables 13 and 14 .
3. Construction emissions are reported by year in Table 8.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model
CAP - criteria air pollutant
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 micrometers in diameter
$PM_{2.5}$ - particulate matter less than 2.5 micrometers in diameter
ROG - reactive organic gases

References:

BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines. May. Available online at: www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Table 16
Modeling Parameters
3700 California Street
San Francisco, California

Construction Sources

Source	Source Type[1]	Source Dimension	Release Height[2]	Initial Vertical Dimension[3]	Initial Lateral Dimension[4]
		[m]	[m]	[m]	[m]
Construction Equipment	Area	Project Area	5	1.4	--
On-Road Trucks	Volume	22	2.5	2.3	10

Baseline Operational Sources

Source[5]	Source Type	Stack Height	Stack Velocity	Stack Diameter	Stack Temperature
		[m]	[m/s]	[m]	°F
Generators	Point	3.66	45.3	0.18	872

Notes:

1. Construction off-road equipment is modeled as an area source covering the project site, consistent with the CRRP-HRA (BAAQMD 2012).
2. According to the CRRP-HRA methodology, release height of a modeled area source representing construction equipment was set to 5 meters. On-road truck release height based on CRRP modeling and USEPA haul road guidance (USEPA 2012).
3. According to the CRRP-HRA methodology, initial vertical dimension of the modeled construction equipment volume sources was set to 1.4 meters. On-road truck initial vertical dimension based on previous CRRP modeling and USEPA haul road guidance.
4. According to USEPA AERMOD User's Guide, for a line source modeled as adjacent volume sources, the initial lateral dimension is the length of the side divided by 2.15 (USEPA 2018).
5. Generators were modeled assuming default parameters for Prime or Standby Generators in Table 13 of the CRRP-HRA technical guidance document.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CRRP - Community Risk Reduction Plan
HRA - Health risk assessment
m - meter
s - second
USEPA - United States Environmental Protection Agency

References:

BAAQMD. 2012. The San Francisco Community Risk Reduction Plan: Technical Support Documentation. December. Available at: http://www.gsweventcenter.com/Appeal_Response_References/2012_1201_BAAQMD.pdf

USEPA. 2012. Haul Road Workgroup Final Report Submission to EPA-OAQPS. March. Available at: https://www3.epa.gov/scram001/reports/Haul_Road_Workgroup-Final_Report_Package-20120302.pdf

USEPA. 2018. User's Guide for the AMS/EPA Regulatory Model (AERMOD). April. Available at: https://www3.epa.gov/ttn/scram/models/aermod/aermod_userguide.pdf

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Table 17
Exposure Durations
3700 California Street
San Francisco, California

Phase	Sub-Phase	Operational Year	Exposure Duration[1]	
			[days]	[years]
Off-Site Resident	Block C	2023	860	2.36
	Block B	2024	1,044	2.86
	Block A	2024	670	1.84
On-Site Resident	Block C Residents[2]	2023	326	0.89
	Block B Residents[3]	2024	83	0.23

Notes:

1. The exposure duration in this table refers to the period of time that residents will be exposed to construction emissions from each block. This is different from the exposure duration used in calculating the inhalation factor, as discussed in Table 17.
2. Block C construction ends in May 2023 and it is assumed that occupation of residents begins immediately after. The new residents of Block C will be exposed to emissions from construction of Block B and Block A.
3. Block B construction ends in January 2024 and it is assumed that occupation of residents begins immediately after. The new residents of Block B will be exposed to emissions from construction of Block A.

Table 18
Exposure Parameters
3700 California Street
San Francisco, California

Receptor Type		Year	Receptor Age Group	Exposure Parameters				
				Daily Breathing Rate (DBR)[1] [L/kg-day]	Fraction of Time at Home (FAH)[2] [unitless]	Exposure Frequency (EF)[3] [days/year]	Exposure Duration (ED)[4,5] [years]	Intake Factor, Inhalation (IF_{inh}) [m^3/kg-day]
All	Baseline Generator Operations[6]	30-Year Exposure	3rd Trimester	361	1.0	350	0.25	0.0012
			Age 0-<2 Years	1,090	1.0	350	2.0	0.030
			Age 2-<16 Years	572	1.0	350	14	0.11
			Age 16-<30 Years	261	0.73	350	14	0.036
Off-Site Resident	Construction Blocks A-C (2021 Start Date)[7]	2021	3rd Trimester	361	1.0	350	0.25	0.0012
			Age 0-<2 Years	1,090	1.0	350	0.75	0.0112
		2022	Age 0-<2 Years	1,090	1.0	350	1.00	0.0149
		2023	Age 0-<2 Years	1,090	1.0	350	0.25	0.0037
			Age 2-<9 Years	631	1.0	350	0.75	0.0065
		2024	Age 2-<9 Years	631	1.0	350	1.00	0.0086
	Construction Blocks A-C (2022 Start Date)[7]	2022	3rd Trimester	361	1.0	350	0.25	0.0012
			Age 0-<2 Years	1,090	1.0	350	0.75	0.0112
		2023	Age 0-<2 Years	1,090	1.0	350	1.00	0.0149
		2024	Age 0-<2 Years	1,090	1.0	350	0.75	0.0112
			Age 2-<9 Years	631	1.0	350	0.25	0.0022
On-Site Resident	Block C Residents[8]	2023	Age 0-<2 Years	1,090	1.0	350	1.00	0.0149
		2024	Age 0-<2 Years	1,090	1.0	350	1.00	0.0149
	Block B Residents[9]	2024	Age 0-<2 Years	1,090	1.0	350	1.00	0.0149

Notes:

1. Consistent with the ARB Risk Manual (ARB 2015), the daily breathing rates reflect default breathing rates from OEHHA 2015 and BAAQMD 2016 as follows: 95th percentile 24-hour daily breathing rate for 3rd trimester and age 0-<2 years; 80th percentile for ages 2 years and older (per BAAQMD 2016 guidance).
2. Fraction of time spent at home is conservatively assumed to be 1 (i.e. 24 hours/day) for age groups from the third trimester to less than 16 years old based on the recommendation from BAAQMD (BAAQMD 2016) and OEHHA (OEHHA 2015). The fraction of time at home for adults age 16-30 reflects default OEHHA guidance (OEHHA 2015) as recommended by BAAQMD (2016).
3. Exposure frequency reflects default residential exposure frequency from OEHHA 2015.
4. The exposure duration for the on-site resident reflects two scenarios due to the phased move-in of the on-site residence after each phase of construction is complete: Block C) an analysis of a child born when the residents in the units constructed in Phase C move in and are exposed to the remaining construction of Phase A and B emissions; and Block B) an analysis of a child born when the residents in the units constructed in Phase B move in and are exposed to the remaining construction of Phase A emissions.
5. Because emissions are annualized, exposure durations are also annualized. In years where emissions do not occur all year, this can result in the exposure duration of a specific age group exceeding the length of time that a specific individual will be in that age group. This is reconciled in the calculation by multiplying the air concentration at each receptor by a scaling factor that reflects the portion of annual emissions that the individual will be exposed to.
6. The existing CPMC facility has multiple generators, which emit DPM. Exposure to these generators for 30 years was modeled to estimate the baseline health risk impacts to onsite and offsite receptors.

Table 18
Exposure Parameters
3700 California Street
San Francisco, California

Notes, Continued:

7. In order to ensure that the maximum exposed individual was identified, considering phased construction, two off-site residential exposure scenarios were modeled with the 3rd trimester starting 1/1/2021 and 1/1/2022, respectively.

8. Block C construction ends in May 2023 and it is assumed that occupation of residents begins immediately after. The new residents of Block C will be exposed to emissions from construction of Block B and Block A.

9. Block B construction ends in January 2024 and it is assumed that occupation of residents begins immediately after. The new residents of Block B will be exposed to emissions from construction of Block A.

Calculation:

IF_{inh} = DBR * FAH * EF * ED * CF / AT
CF = 0.001 (m^3/L)
AT = 25,550 (days)

Abbreviations:

AT - averaging time
BAAQMD - Bay Area Air Quality Management District
DBR - daily breathing rate
DPM - diesel particulate matter
ED - exposure duration
EF - exposure frequency
FAH - fraction of time at home
IF_{inh} - intake factor
kg - kilogram
L - liter
m^3 - cubic meter
OEHHA - Office of Environmental Health Hazard Assessment

References:

BAAQMD. 2016. Air Toxics NSR ProgramHealth Risk Assessment (HRA) Guidelines. January.
OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.
ARB. 2015. Risk Management Guidance for Stationary Sources of Air Toxics. July.

Table 19
Age Sensitivity Factors
3700 California Street
San Francisco, California

Receptor Age Group	Value[1]
3rd Trimester	10
Age 0-<2 Years	10
Age 2-<9 Years	3
Age 2-<16 Years	3
Age >16 Years	1

Note:
1. Based on OEHHA 2015. Age sensitivity factors are unitless.

Abbreviation:
OEHHA - Office of Environmental Health Hazard Assessment

Source:
OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 20
Excess Lifetime Cancer Risk at Project Off-site and On-site MEIR
3700 California Street
San Francisco, California

Scenario[1,2]	Excess Lifetime Cancer Risk [in a million]
Off-Site Resident 2021	41
Off-Site Resident 2022	32
On-Site Resident Block C	7.0
On-Site Resident Block B	4.7

MEIR Location:

MEIR Type[3,4]	UTMx	UTMy	Receptor Height
	[m]		[m]
Off-Site Resident 2021	548,060	4,182,320	1.8
Off-Site Resident 2022	547,780	4,182,240	1.8
On-Site Resident Block C	547,980	4,182,260	5.3
On-Site Resident Block B	547,840	4,182,240	5.3

Notes:

1. In order to ensure that the maximum exposed individual was identified considering phased construction, two off-site residential exposure scenarios were modeled with the 3rd trimester starting 1/1/2021 and 1/1/2022, respectively.
2. Block C construction ends in May 2023 and it is assumed that occupation of residents begins immediately after. The new residents of Block C will be exposed to emissions from construction of Block B and Block A. Block B construction ends in January 2024 and it is assumed that occupation of residents begins immediately after. The new residents of Block B will be exposed to emissions from construction of Block A.
3. Off-site project MEIR was identified as the off-site sensitive receptor location with the maximum total cancer risk attributed to the emissions associated with the project construction.
4. On-site project MEIR was identified as the on-site sensitive receptor location with the maximum total cancer risk attributed to the emissions associated with the project construction.

Abbreviations:

m - meter

MEIR - Maximally Exposed Individual Receptor

UTM - Universal Transverse Mercator

Table 21
PM2.5 Concentration at Project Off-site and On-site MEIR
3700 California Street
San Francisco, California

Scenario[2,3]	**$PM_{2.5}$ Concentration**[1] [μg/m^3]
Off-Site Resident	0.21
On-Site Resident Block C	0.037
On-Site Resident Block B	0.028

MEIR Location:

MEIR Type[2,4]	**UTMx**	**UTMy**	**Receptor Height**
	[m]		[m]
Off-Site Resident	548,060	4,182,320	1.8
On-Site Resident Block C	547,980	4,182,260	5.3
On-Site Resident Block B	547,840	4,182,240	5.3

Notes:

1. The Maximum Annual Project $PM_{2.5}$ Concentration is the maximum annual $PM_{2.5}$ concentration attributable to construction emissions.
2. Off-site Project MEIR was identified as the off-site sensitive receptor location with the maximum $PM_{2.5}$ concentration attributed to the emissions associated with the Project construction. The maximum concentrations from construction occur during 2021, the period of construction overlap for Blocks C and B.
3. Block C construction ends in May 2023 and it is assumed that occupation of residents begins immediately after. The new residents of Block C will be exposed to emissions from construction of Block B and Block A. Block B construction ends in January 2024 and it is assumed that occupation of residents begins immediately after. The new residents of Block B will be exposed to emissions from construction of Block A.
4. On-site Project MEIR was identified as the on-site sensitive receptor location with the maximum $PM_{2.5}$ concentration attributed to the emissions associated with the project construction.

Abbreviations:

m - meter
m^3 - cubic meter
μg - microgram
MEIR - Maximally Exposed Individual Receptor
$PM_{2.5}$ - particulate matter 2.5 microns or less
UTM - Universal Transverse Mercator

Table 22
Existing and Cumulative Excess Lifetime Cancer Risk at Off-site and On-Site Project MEIR
3700 California Street
San Francisco, California

Source Category	**Excess Lifetime Cancer Risk [in a million]**			
	Off-Site Resident[1]		**On-Site Resident[2]**	
	2014 CRRP	**2040 CRRP**	**2014 CRRP**	**2040 CRRP**
CRRP Background[3]	23	19	45	37
Project Construction[4]	41		7.0	
Removal of Existing Generator[5]	-3.4		-2.2	
Total Project + Background[6]	**60**	**56**	**49**	**42**
Future Construction Projects not in CRRP	--		--	
3333 California St[7]	0.84		0.72	
Total Non-Project	**0.84**		**0.72**	
Cumulative Total[8]	**61**	**57**	**50**	**42**

MEIR Location:

MEIR Type	**UTMx**	**UTMy**	**Receptor Height**
	[m]		[m]
Off-Site Resident	548,060	4,182,320	1.8
On-Site Resident	547,980	4,182,260	5.3

Notes:

1. Off-site Project MEIR was identified as the off-site sensitive receptor location with the maximum total cancer risk attributed to the emissions associated with the Project construction as noted in Table 20.
2. On-site Project MEIR was identified as the on-site sensitive receptor location with the maximum total cancer risk attributed to the emissions associated with the Project construction as noted in Table 20.
3. Background cancer risks for 2014 were obtained from the San Francisco Community Risk Reduction Plan (CRRP) model output database (BAAQMD, SFDPH, SFEP 2012), and background cancer risk for 2040 was obtained from the San Francisco Community Risk Reduction Plan (CRRP) model output database and adjusted for 2040 traffic by ENVIRON (former name of Ramboll). The background cancer risks obtained from the model output database were adjusted (scaled by 1.3744) to be consistent with the 2015 OEHHA Guidelines, consistent with guidance from BAAQMD.
4. Construction includes impacts from off-road construction equipment and on-road construction trips.
5. The existing onsite generators would be removed and the project would not result in any new stationary sources. These generators were included in the CRRP background so a reduction is applied to remove the generator impacts from the cumulative impact. However, the reduction from the generator was not included in the project analysis to be conservative.

Table 22
Existing and Cumulative Excess Lifetime Cancer Risk at Off-site and On-Site Project MEIR
3700 California Street
San Francisco, California

Notes, Continued:

6. Operational health risks from the reduction in project traffic were not included in this analysis. The project would redevelop a hospital with residential uses, and the vehicle trips associated with the project would substantially decrease below existing levels (as shown in Table 10). Therefore, that project would result in a net reduction in operational health risks from existing conditions. The traffic would be included in the CRRP. Therefore, this value is conservative as there is no reduction from the CRRP value for these changes.
7. Construction and operational health impacts for the 3333 California St Project were taken from the 2018 DEIR and conservatively summed together.
8. Cumulative total health impacts are the sum of the Proposed Project impacts, background impacts included in the CRRP, and background impacts for future projects not included in the CRRP.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CRRP - Community Risk Reduction Plan
DEIR - Draft Environmental Impact Report
m - meter
OEHHA - Office of Environmental Health Hazard Assessment
MEISR - Maximally Exposed Individual Sensitive Receptor
$PM_{2.5}$ - particulate matter 2.5 microns or less
SFDPH - San Francisco Department of Public Health
SFEP - San Francisco Environmental Planning
UTM - Universal Transverse Mercator

References:

ENVIRON. 2014. City-wide Cumulative 2040 Traffic Model.
PLACEHOLDER FOR 3333 DEIR

Table 23
Existing and Cumulative PM2.5 Concentration at Off-site and On-Site Project MEIR
3700 California Street
San Francisco, California

Source Category	$PM_{2.5}$ Concentration[1] [µg/m3]			
	Off-Site Resident[2]		On-Site Resident[3]	
	2014 CRRP	2040 CRRP	2014 CRRP	2040 CRRP
CRRP Background[4]	8.3	8.4	8.5	8.6
Project Construction[5]	0.21		0.037	
Removal of Existing Generator[6]	-0.0046		-0.0030	
Total Project + Background[7]	**8.5**	**8.6**	**8.5**	**8.6**
Future Construction Projects not in CRRP	--		--	
3333 California St[8]	0.0022		0.0019	
Total Non-Project	**0.0022**		**0.0019**	
Cumulative Total[9]	**8.5**	**8.6**	**8.5**	**8.6**

MEIR Location:

MEIR Type	UTMx	UTMy	Receptor Height
	[m]		[m]
Off-Site Resident	548,060	4,182,320	1.8
On-Site Resident	547,980	4,182,260	5.3

Notes:

1. The Maximum Annual Project $PM_{2.5}$ Concentration is the maximum annual $PM_{2.5}$ concentration attributable to construction emissions.
2. Off-site Project MEIR was identified as the off-site sensitive receptor location with the maximum $PM_{2.5}$ concentration attributed to the emissions associated with the Project construction. The maximum concentrations from construction occur during 2021, the period of construction overlap for Blocks C and B.
3. On-site Project MEIR was identified as the on-site sensitive receptor location with the maximum total cancer risk and $PM_{2.5}$ concentration attributed to the emissions associated with the Project construction. The maximum concentrations from construction occur during 2023, the period of construction overlap for Blocks B and A.
4. Background $PM_{2.5}$ concentration for 2014 were obtained from the San Francisco Community Risk Reduction Plan (CRRP) model output database (BAAQMD, SFDPH, SFEP 2012), and background $PM_{2.5}$ concentration for 2040 was obtained from the San Francisco Community Risk Reduction Plan (CRRP) model output database and adjusted for 2040 traffic by ENVIRON (former name of Ramboll).
5. Construction includes impacts from off-road construction equipment and on-road construction trips.
6. The existing onsite generators would be removed and the project would not result in any new stationary sources. These generators were included in the CRRP background so a reduction is applied to remove the generator impacts from the cumulative impact. However, the reduction from the generator was not included in the project analysis to be conservative.

Table 23
Existing and Cumulative PM2.5 Concentration at Off-site and On-Site Project MEIR
3700 California Street
San Francisco, California

Notes, Continued:

7. Operational health risks from the reduction in project traffic were not included in this analysis. The project would redevelop a hospital with residential uses, thus the vehicle trips associated with the project would substantially decrease below existing levels (as shown in Table 10). Therefore, that project would result in a net reduction in operational health risks from existing conditions. The traffic would be included in the CRRP. Therefore, this value is conservative as there is no reduction from the CRRP value for these changes.
8. Construction and operational health impacts for the 3333 California St Project were taken from the 2018 DEIR and conservatively summed together.
9. Cumulative total health impacts are the sum of the proposed project impacts, background impacts included in the CRRP, and background impacts for future projects not included in the CRRP.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CRRP - Community Risk Reduction Plan
DEIR - Draft Environmental Impact Report
m - meter
OEHHA - Office of Environmental Health Hazard Assessment
MEISR - Maximally Exposed Individual Sensitive Receptor
$PM_{2.5}$ - particulate matter 2.5 microns or less
SFDPH - San Francisco Department of Public Health
SFEP - San Francisco Environmental Planning
UTM - Universal Transverse Mercator

References:

ENVIRON. 2014. City-wide Cumulative 2040 Traffic Model.
PLACEHOLDER FOR 3333 DEIR

APPENDIX H.2
AIR QUALITY SUPPORTING FIGURES

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Project Location
3700 California Street
San Francisco, California

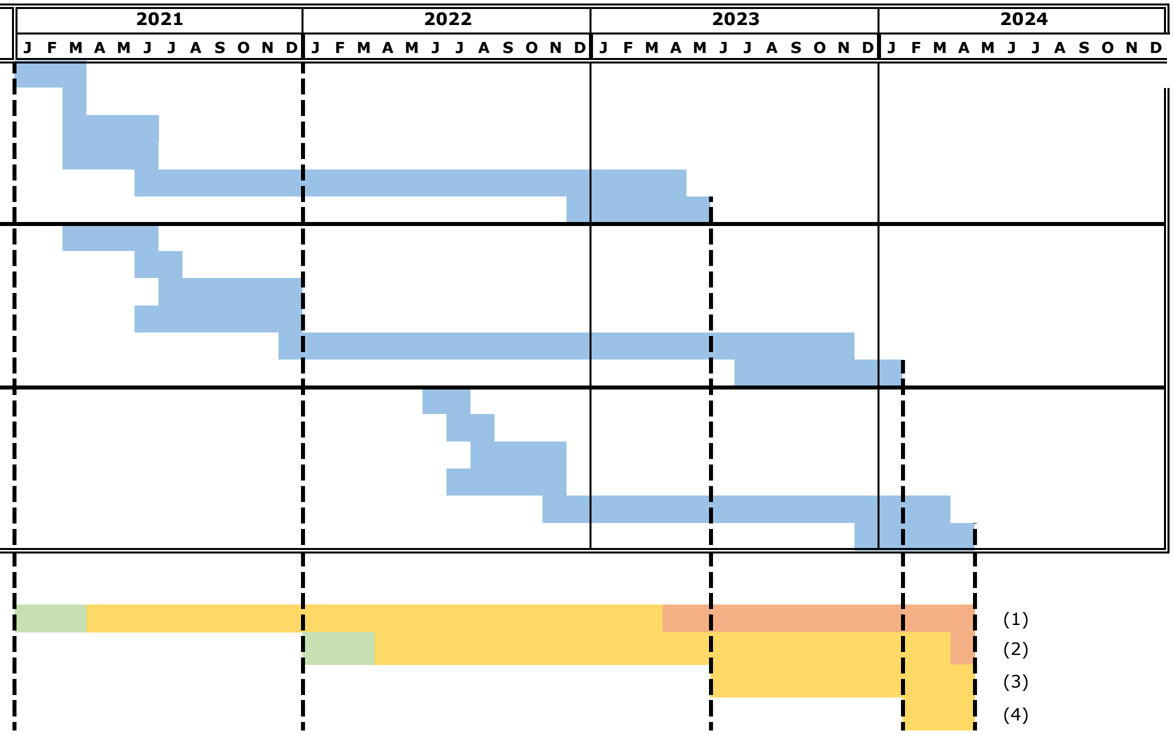
FIGURE 1

DRAFTED BY: AA, AKVK | DATE: 7/27/2018 | PROJECT:

Figure 2
Phasing Schedule
3700 California Street
San Francisco, California

Detailed Construction Schedule

Construction Phase	Construction Subphase	Number of Days	Operational Year
Block C	Demolition	51	2023
	Site Preparation & Grading	11	
	Excavation & Shoring	62	
	Drainage, Utilities, & Subgrade	73	
	Building Construction	473	
	Sitework	100	
Block B	Demolition	79	2024
	Site Preparation & Grading	23	
	Excavation & Shoring	103	
	Drainage, Utilities, & Subgrade	126	
	Building Construction	495	
	Sitework	120	
Block A	Demolition	39	2024
	Site Preparation & Grading	23	
	Excavation & Shoring	56	
	Drainage, Utilities, & Subgrade	79	
	Building Construction	355	
	Sitework	70	



__**Scenarios**__

Off-site Resident born in 2021 (exposed to Construction Phases A-C)

Off-site Resident born in 2022 (exposed to Construction Phases A-C)

Phase C Residents (exposed to Phase A and B construction)

Phase B Residents (exposed to Phase A construction)

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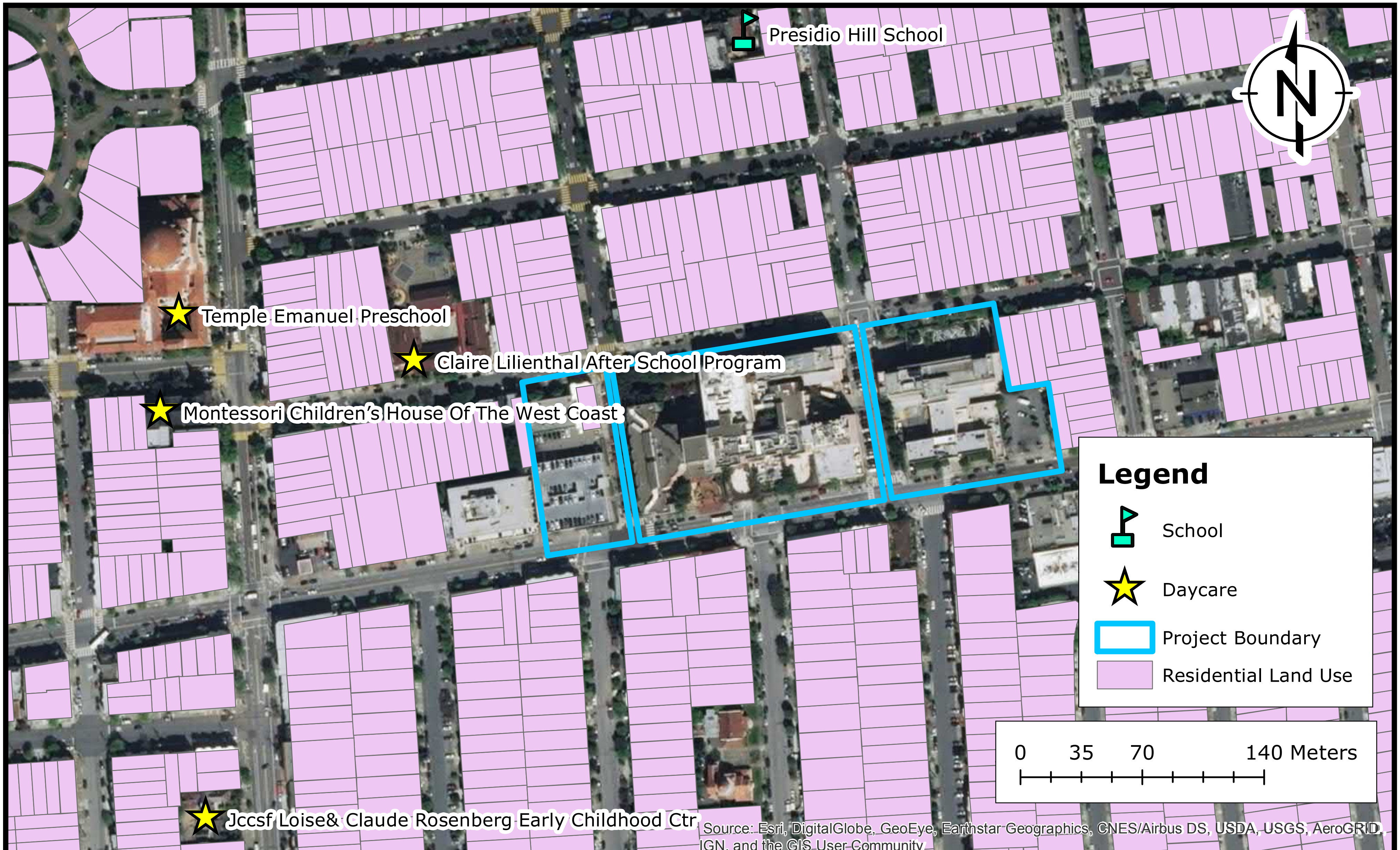
Project Boundary and Modeling Extent
3700 California Street

San Francisco, California

FIGURE 3

DRAFTED BY: AA, AKVK | DATE: 7/27/2018 | PROJECT:



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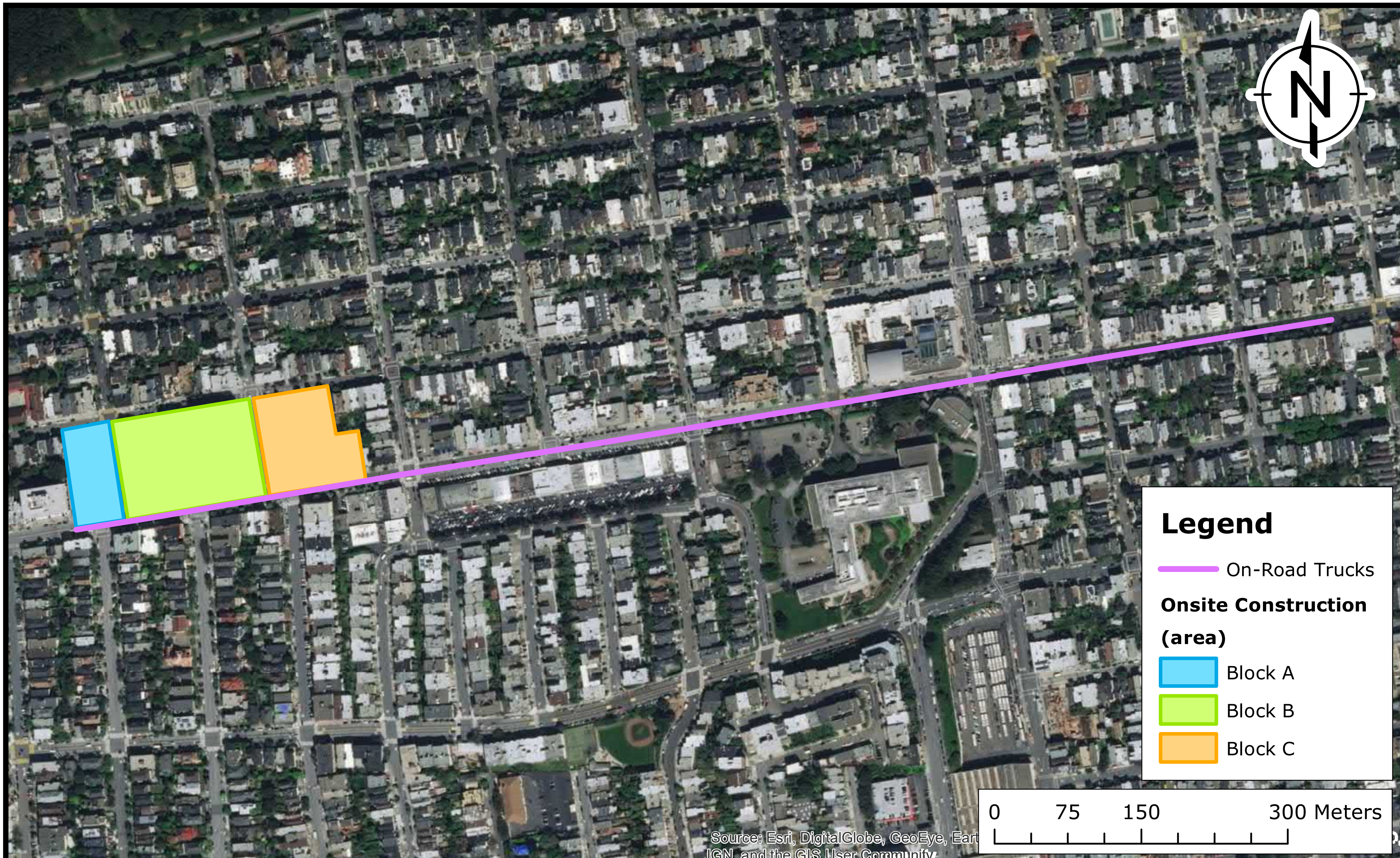
Nearby Sensitive Recepors
3700 California Street
San Francisco, CA

FIGURE
4

DRAFTED BY: LK | DATE: 10/1/2018

PROJECT: 1690007720



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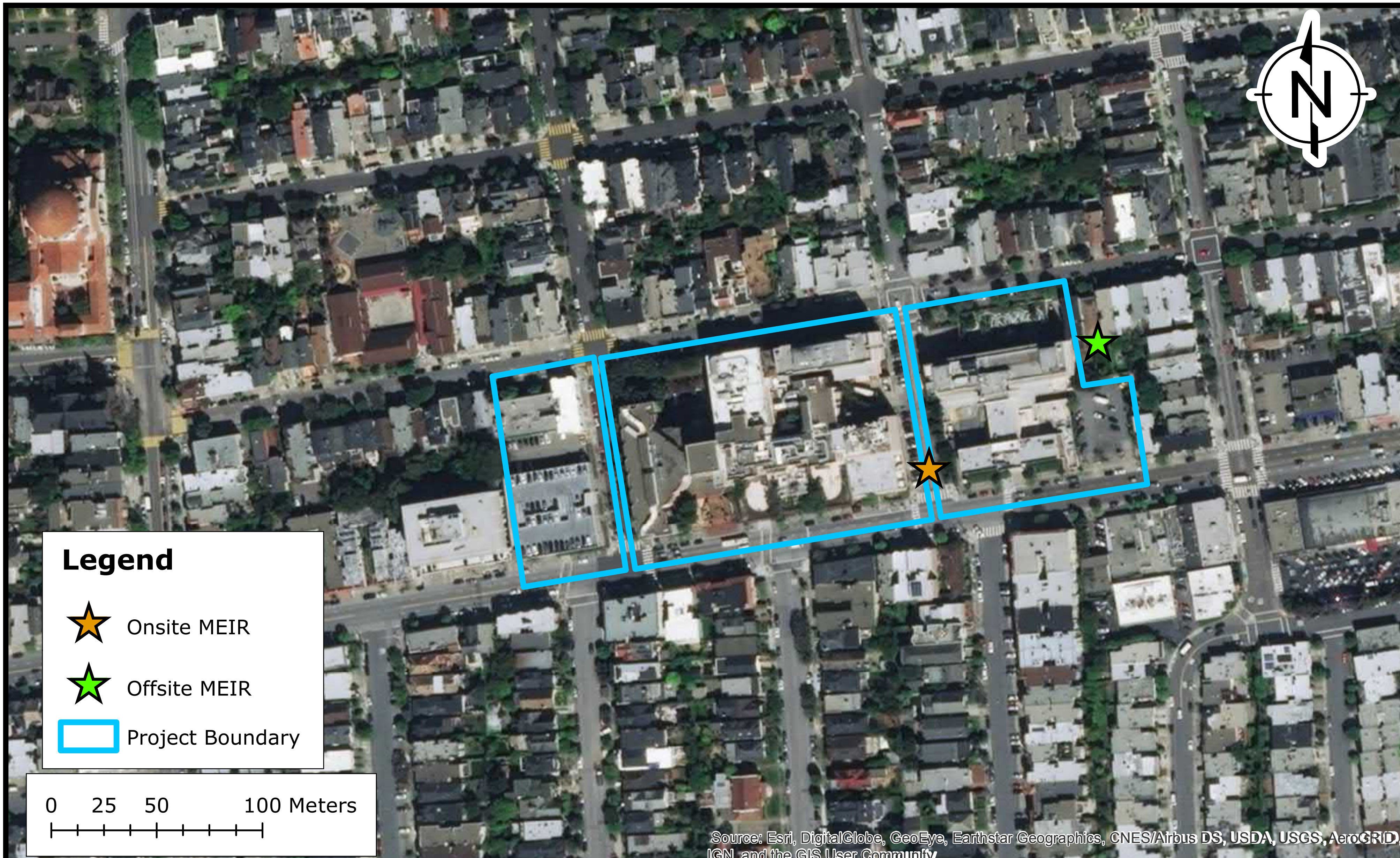
DRAFTED BY: LK

DATE: 10/12/2018

Construction Modeled Sources
3700 California Street
San Francisco, CA

FIGURE
5

PROJECT:



RAMBOLL

DRAFTED BY: LK | DATE: 9/27/2018

Maximally Exposed Individual Receptor (MEIR) Locations
3700 California Street
San Francisco, CA

FIGURE
6

PROJECT: 1690007720

APPENDIX H.3
CALEEMOD® OUTPUT FILES

3700 California Street Baseline

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	527.00	1000sqft	5.01	527,000.00	0
Medical Office Building	95.00	1000sqft	0.90	95,000.00	0
Parking Lot	105.00	1000sqft	1.00	105,000.00	0
Apartments Mid Rise	9.00	Dwelling Unit	0.07	7,000.00	26

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 4.6 **Precipitation Freq (Days)** 64

Climate Zone 5 **Operational Year** 2018

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 641.35 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

3700 California Street Baseline - San Francisco County, Annual

Project Characteristics -

Land Use - Land use sqaure footage based on project description

Construction Phase - Not modelling construction emissions

Grading - Contruction emissions not being modeled

Architectural Coating - No construction emissions

Vehicle Trips - From traffic memo

Vehicle Emission Factors - EMFAC2017

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust - Silt loading based on entrained road dust methodology from AP-42 for San Francisco

Woodstoves - all NG fireplaces

Consumer Products - Update emissions factor based on 2020 ARB inventory for county of SF

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblConsumerProducts	ROG_EF	2.14E-05	2.1E-05
tblFireplaces	NumberGas	1.35	2.88
tblFireplaces	NumberWood	1.53	0.00
tblFleetMix	HHD	8.4520e-003	8.3990e-003
tblFleetMix	HHD	8.4520e-003	8.3990e-003
tblFleetMix	HHD	8.4520e-003	8.3990e-003

tblFleetMix	HHD	8.4520e-003	8.3990e-003
tblFleetMix	LDA	0.61	0.60
tblFleetMix	LDA	0.61	0.60
tblFleetMix	LDA	0.61	0.60
tblFleetMix	LDA	0.61	0.60
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	4.7170e-003	4.6460e-003
tblFleetMix	LHD2	4.7170e-003	4.6460e-003
tblFleetMix	LHD2	4.7170e-003	4.6460e-003
tblFleetMix	LHD2	4.7170e-003	4.6460e-003
tblFleetMix	MCY	7.4450e-003	9.0660e-003
tblFleetMix	MCY	7.4450e-003	9.0660e-003
tblFleetMix	MCY	7.4450e-003	9.0660e-003
tblFleetMix	MCY	7.4450e-003	9.0660e-003
tblFleetMix	MDV	0.09	0.09
tblFleetMix	MDV	0.09	0.09

tblFleetMix	MDV	0.09	0.09
tblFleetMix	MDV	0.09	0.09
tblFleetMix	MH	4.2500e-004	3.5900e-004
tblFleetMix	MH	4.2500e-004	3.5900e-004
tblFleetMix	MH	4.2500e-004	3.5900e-004
tblFleetMix	MH	4.2500e-004	3.5900e-004
tblFleetMix	MHD	0.03	0.02
tblFleetMix	MHD	0.03	0.02
tblFleetMix	MHD	0.03	0.02
tblFleetMix	MHD	0.03	0.02
tblFleetMix	OBUS	4.2570e-003	4.2420e-003
tblFleetMix	OBUS	4.2570e-003	4.2420e-003
tblFleetMix	OBUS	4.2570e-003	4.2420e-003
tblFleetMix	OBUS	4.2570e-003	4.2420e-003
tblFleetMix	SBUS	9.1500e-004	9.5000e-004
tblFleetMix	SBUS	9.1500e-004	9.5000e-004
tblFleetMix	SBUS	9.1500e-004	9.5000e-004
tblFleetMix	SBUS	9.1500e-004	9.5000e-004
tblFleetMix	UBUS	5.7670e-003	6.7320e-003
tblFleetMix	UBUS	5.7670e-003	6.7320e-003
tblFleetMix	UBUS	5.7670e-003	6.7320e-003
tblFleetMix	UBUS	5.7670e-003	6.7320e-003
tblLandUse	LandUseSquareFeet	9,000.00	7,000.00
tblLandUse	LotAcreage	12.10	5.01
tblLandUse	LotAcreage	2.18	0.90
tblLandUse	LotAcreage	2.41	1.00
tblLandUse	LotAcreage	0.24	0.07

tblRoadDust	RoadSiltLoading	0.1	0.08
tblVehicleEF	HHD	0.94	0.04
tblVehicleEF	HHD	0.33	0.34
tblVehicleEF	HHD	0.21	1.0000e-006
tblVehicleEF	HHD	2.87	3.57
tblVehicleEF	HHD	1.90	1.90
tblVehicleEF	HHD	5.41	6.6390e-003
tblVehicleEF	HHD	3,298.56	926.21
tblVehicleEF	HHD	2,130.09	2,112.47
tblVehicleEF	HHD	14.18	0.85
tblVehicleEF	HHD	27.40	7.14
tblVehicleEF	HHD	6.68	7.15
tblVehicleEF	HHD	19.56	1.24
tblVehicleEF	HHD	0.06	0.02
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.03	0.10
tblVehicleEF	HHD	4.8200e-004	6.2000e-005
tblVehicleEF	HHD	0.06	0.02
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.5490e-003	8.7230e-003
tblVehicleEF	HHD	0.03	0.10
tblVehicleEF	HHD	4.5500e-004	5.9000e-005
tblVehicleEF	HHD	1.9400e-004	8.1000e-005
tblVehicleEF	HHD	0.02	7.6710e-003
tblVehicleEF	HHD	0.68	0.34
tblVehicleEF	HHD	1.2300e-004	5.3000e-005

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tblVehicleEF	HHD	2.7330e-003	3.9940e-003
tblVehicleEF	HHD	0.23	6.0000e-006
tblVehicleEF	HHD	0.03	7.9200e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	2.3400e-004	8.0000e-006
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tblVehicleEF	HHD	1.2300e-004	5.3000e-005
tblVehicleEF	HHD	0.52	0.63
tblVehicleEF	HHD	2.7330e-003	3.9940e-003
tblVehicleEF	HHD	0.25	6.0000e-006
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tblVehicleEF	LDA	0.75	0.94
tblVehicleEF	LDA	1.92	2.59
tblVehicleEF	LDA	318.46	299.71
tblVehicleEF	LDA	64.96	59.71
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.13	0.26
tblVehicleEF	LDA	2.2300e-003	2.1190e-003
tblVehicleEF	LDA	2.3550e-003	2.0860e-003
tblVehicleEF	LDA	2.0570e-003	1.9550e-003
tblVehicleEF	LDA	2.1670e-003	1.9200e-003
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.14	0.13

tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.05	0.04
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tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.05	0.04
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tblVehicleEF	LDT1	77.02	70.47
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tblVehicleEF	LDT1	3.1580e-003	2.7410e-003
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tblVehicleEF	LDT1	2.9070e-003	2.5220e-003
tblVehicleEF	LDT1	0.08	0.09
tblVehicleEF	LDT1	0.24	0.20
tblVehicleEF	LDT1	0.07	0.08

tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.18	0.10
tblVehicleEF	LDT1	0.25	0.47
tblVehicleEF	LDT1	3.7810e-003	3.4810e-003
tblVehicleEF	LDT1	8.3200e-004	6.9700e-004
tblVehicleEF	LDT1	0.08	0.09
tblVehicleEF	LDT1	0.24	0.20
tblVehicleEF	LDT1	0.07	0.08
tblVehicleEF	LDT1	0.05	0.05
tblVehicleEF	LDT1	0.18	0.10
tblVehicleEF	LDT1	0.27	0.52
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tblVehicleEF	LDT2	0.89	1.15
tblVehicleEF	LDT2	2.18	3.24
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tblVehicleEF	LDT2	88.14	77.90
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tblVehicleEF	LDT2	0.20	0.39
tblVehicleEF	LDT2	2.0180e-003	1.9860e-003
tblVehicleEF	LDT2	2.1530e-003	1.9330e-003
tblVehicleEF	LDT2	1.8560e-003	1.8290e-003
tblVehicleEF	LDT2	1.9800e-003	1.7780e-003
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tblVehicleEF	LDT2	0.12	0.13
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.02	0.03

tblVehicleEF	LDT2	0.07	0.06
tblVehicleEF	LDT2	0.15	0.43
tblVehicleEF	LDT2	4.2890e-003	3.8460e-003
tblVehicleEF	LDT2	9.1900e-004	7.7100e-004
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.12	0.13
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.03	0.04
tblVehicleEF	LDT2	0.07	0.06
tblVehicleEF	LDT2	0.16	0.47
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tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	0.17	0.21
tblVehicleEF	LHD1	1.11	0.98
tblVehicleEF	LHD1	3.32	1.46
tblVehicleEF	LHD1	8.67	8.86
tblVehicleEF	LHD1	750.74	913.48
tblVehicleEF	LHD1	41.45	15.49
tblVehicleEF	LHD1	0.06	0.04
tblVehicleEF	LHD1	0.98	0.66
tblVehicleEF	LHD1	1.32	0.46
tblVehicleEF	LHD1	6.1600e-004	4.7600e-004
tblVehicleEF	LHD1	9.4530e-003	9.0700e-003
tblVehicleEF	LHD1	0.01	7.7490e-003
tblVehicleEF	LHD1	1.1050e-003	3.3700e-004
tblVehicleEF	LHD1	5.9000e-004	4.5600e-004

tblVehicleEF	LHD1	2.3630e-003	2.2670e-003
tblVehicleEF	LHD1	0.01	7.3560e-003
tblVehicleEF	LHD1	1.0160e-003	3.1100e-004
tblVehicleEF	LHD1	2.1170e-003	1.8710e-003
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.2770e-003	1.0970e-003
tblVehicleEF	LHD1	0.11	0.09
tblVehicleEF	LHD1	0.29	0.20
tblVehicleEF	LHD1	0.35	0.11
tblVehicleEF	LHD1	8.8000e-005	8.7000e-005
tblVehicleEF	LHD1	7.4180e-003	8.9730e-003
tblVehicleEF	LHD1	4.7700e-004	1.5300e-004
tblVehicleEF	LHD1	2.1170e-003	1.8710e-003
tblVehicleEF	LHD1	0.10	0.08
tblVehicleEF	LHD1	0.03	0.04
tblVehicleEF	LHD1	1.2770e-003	1.0970e-003
tblVehicleEF	LHD1	0.14	0.11
tblVehicleEF	LHD1	0.29	0.20
tblVehicleEF	LHD1	0.38	0.12
tblVehicleEF	LHD2	4.6220e-003	4.4830e-003
tblVehicleEF	LHD2	0.01	9.4010e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.13	0.16
tblVehicleEF	LHD2	0.82	0.81
tblVehicleEF	LHD2	2.02	0.97
tblVehicleEF	LHD2	13.95	13.69

tblVehicleEF	LHD2	749.70	870.41
tblVehicleEF	LHD2	28.52	10.91
tblVehicleEF	LHD2	0.11	0.10
tblVehicleEF	LHD2	1.04	1.02
tblVehicleEF	LHD2	0.69	0.27
tblVehicleEF	LHD2	1.3000e-003	1.1910e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	0.01
tblVehicleEF	LHD2	6.2600e-004	1.8900e-004
tblVehicleEF	LHD2	1.2430e-003	1.1390e-003
tblVehicleEF	LHD2	2.6480e-003	2.5870e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	5.7700e-004	1.7400e-004
tblVehicleEF	LHD2	1.1420e-003	1.3270e-003
tblVehicleEF	LHD2	0.05	0.06
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	6.3800e-004	7.3300e-004
tblVehicleEF	LHD2	0.12	0.11
tblVehicleEF	LHD2	0.14	0.15
tblVehicleEF	LHD2	0.18	0.07
tblVehicleEF	LHD2	1.3700e-004	1.3100e-004
tblVehicleEF	LHD2	7.3090e-003	8.4460e-003
tblVehicleEF	LHD2	3.2200e-004	1.0800e-004
tblVehicleEF	LHD2	1.1420e-003	1.3270e-003
tblVehicleEF	LHD2	0.05	0.06
tblVehicleEF	LHD2	0.02	0.03
tblVehicleEF	LHD2	6.3800e-004	7.3300e-004

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tblVehicleEF	LHD2	0.14	0.15
tblVehicleEF	LHD2	0.19	0.07
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tblVehicleEF	MCY	0.17	0.26
tblVehicleEF	MCY	23.29	22.82
tblVehicleEF	MCY	10.08	8.93
tblVehicleEF	MCY	188.91	230.40
tblVehicleEF	MCY	48.18	63.32
tblVehicleEF	MCY	1.19	1.19
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.3010e-003	2.1050e-003
tblVehicleEF	MCY	5.6940e-003	3.9890e-003
tblVehicleEF	MCY	2.1670e-003	1.9800e-003
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tblVehicleEF	MCY	0.52	0.49
tblVehicleEF	MCY	2.99	2.95
tblVehicleEF	MCY	0.98	0.74
tblVehicleEF	MCY	2.37	2.06
tblVehicleEF	MCY	2.3570e-003	2.2800e-003
tblVehicleEF	MCY	7.1700e-004	6.2700e-004
tblVehicleEF	MCY	0.79	0.75
tblVehicleEF	MCY	0.89	0.80
tblVehicleEF	MCY	0.52	0.49
tblVehicleEF	MCY	3.61	3.59

tblVehicleEF	MCY	0.98	0.74
tblVehicleEF	MCY	2.58	2.24
tblVehicleEF	MDV	0.01	7.4070e-003
tblVehicleEF	MDV	0.02	0.10
tblVehicleEF	MDV	1.22	1.27
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tblVehicleEF	MDV	0.28	0.43
tblVehicleEF	MDV	2.2120e-003	2.2930e-003
tblVehicleEF	MDV	2.3680e-003	2.2520e-003
tblVehicleEF	MDV	2.0410e-003	2.1170e-003
tblVehicleEF	MDV	2.1800e-003	2.0730e-003
tblVehicleEF	MDV	0.04	0.06
tblVehicleEF	MDV	0.14	0.13
tblVehicleEF	MDV	0.04	0.06
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.09	0.06
tblVehicleEF	MDV	0.25	0.51
tblVehicleEF	MDV	5.5210e-003	4.5780e-003
tblVehicleEF	MDV	1.1640e-003	9.0600e-004
tblVehicleEF	MDV	0.04	0.06
tblVehicleEF	MDV	0.14	0.13
tblVehicleEF	MDV	0.04	0.06
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.09	0.06

tblVehicleEF	MDV	0.27	0.56
tblVehicleEF	MH	0.06	0.03
tblVehicleEF	MH	0.04	0.03
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tblVehicleEF	MH	9.42	3.10
tblVehicleEF	MH	1,219.42	1,602.69
tblVehicleEF	MH	67.79	23.03
tblVehicleEF	MH	1.37	1.74
tblVehicleEF	MH	1.00	0.25
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.7130e-003	7.0300e-004
tblVehicleEF	MH	3.2140e-003	3.2640e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.5350e-003	6.5300e-004
tblVehicleEF	MH	0.91	1.19
tblVehicleEF	MH	0.09	0.12
tblVehicleEF	MH	0.37	0.46
tblVehicleEF	MH	0.22	0.20
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.61	0.17
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	8.4500e-004	2.2800e-004
tblVehicleEF	MH	0.91	1.19
tblVehicleEF	MH	0.09	0.12
tblVehicleEF	MH	0.37	0.46
tblVehicleEF	MH	0.28	0.26

tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.67	0.19
tblVehicleEF	MHD	0.02	3.9090e-003
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.07	0.01
tblVehicleEF	MHD	0.50	0.46
tblVehicleEF	MHD	0.92	1.22
tblVehicleEF	MHD	8.75	1.37
tblVehicleEF	MHD	140.44	113.65
tblVehicleEF	MHD	1,217.52	1,226.38
tblVehicleEF	MHD	64.09	10.56
tblVehicleEF	MHD	1.09	1.18
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tblVehicleEF	MHD	10.54	0.88
tblVehicleEF	MHD	4.8110e-003	4.2300e-003
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tblVehicleEF	MHD	1.2760e-003	1.6100e-004
tblVehicleEF	MHD	4.6030e-003	4.0470e-003
tblVehicleEF	MHD	0.08	0.12
tblVehicleEF	MHD	1.1750e-003	1.4900e-004
tblVehicleEF	MHD	1.2140e-003	5.6800e-004
tblVehicleEF	MHD	0.06	0.03
tblVehicleEF	MHD	0.04	0.03
tblVehicleEF	MHD	6.8000e-004	3.2200e-004
tblVehicleEF	MHD	0.20	0.33
tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	MHD	0.54	0.07

tblVehicleEF	MHD	1.3530e-003	1.0760e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	7.9500e-004	1.0400e-004
tblVehicleEF	MHD	1.2140e-003	5.6800e-004
tblVehicleEF	MHD	0.06	0.03
tblVehicleEF	MHD	0.05	0.04
tblVehicleEF	MHD	6.8000e-004	3.2200e-004
tblVehicleEF	MHD	0.23	0.38
tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	MHD	0.59	0.07
tblVehicleEF	OBUS	0.01	8.1580e-003
tblVehicleEF	OBUS	0.01	0.02
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.30	0.57
tblVehicleEF	OBUS	0.80	1.50
tblVehicleEF	OBUS	6.35	1.95
tblVehicleEF	OBUS	130.74	99.70
tblVehicleEF	OBUS	1,350.79	1,488.65
tblVehicleEF	OBUS	68.30	15.79
tblVehicleEF	OBUS	0.92	0.85
tblVehicleEF	OBUS	3.02	3.79
tblVehicleEF	OBUS	3.42	0.64
tblVehicleEF	OBUS	5.4500e-004	7.1610e-003
tblVehicleEF	OBUS	0.01	0.13
tblVehicleEF	OBUS	6.8300e-004	1.5400e-004
tblVehicleEF	OBUS	5.2200e-004	6.8520e-003
tblVehicleEF	OBUS	0.01	0.12

tblVehicleEF	OBUS	6.3300e-004	1.4200e-004
tblVehicleEF	OBUS	1.0600e-003	9.2100e-004
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.04	0.07
tblVehicleEF	OBUS	5.4500e-004	4.4900e-004
tblVehicleEF	OBUS	0.10	0.34
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.41	0.10
tblVehicleEF	OBUS	1.2590e-003	9.4700e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.9500e-004	1.5600e-004
tblVehicleEF	OBUS	1.0600e-003	9.2100e-004
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.06	0.09
tblVehicleEF	OBUS	5.4500e-004	4.4900e-004
tblVehicleEF	OBUS	0.12	0.39
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.45	0.11
tblVehicleEF	SBUS	0.87	0.18
tblVehicleEF	SBUS	0.01	4.3050e-003
tblVehicleEF	SBUS	0.07	0.01
tblVehicleEF	SBUS	7.72	6.27
tblVehicleEF	SBUS	0.80	0.33
tblVehicleEF	SBUS	7.69	2.20
tblVehicleEF	SBUS	1,170.16	413.13
tblVehicleEF	SBUS	1,092.70	957.54
tblVehicleEF	SBUS	51.49	13.45

tblVehicleEF	SBUS	11.66	2.49
tblVehicleEF	SBUS	5.36	1.71
tblVehicleEF	SBUS	12.93	0.91
tblVehicleEF	SBUS	0.02	2.4290e-003
tblVehicleEF	SBUS	0.01	9.4480e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	5.0200e-004	1.5500e-004
tblVehicleEF	SBUS	0.01	2.3240e-003
tblVehicleEF	SBUS	2.6650e-003	2.3620e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	4.6200e-004	1.4200e-004
tblVehicleEF	SBUS	1.9020e-003	5.4500e-004
tblVehicleEF	SBUS	0.02	4.5270e-003
tblVehicleEF	SBUS	0.93	0.77
tblVehicleEF	SBUS	9.7200e-004	2.3100e-004
tblVehicleEF	SBUS	0.12	0.04
tblVehicleEF	SBUS	0.01	6.9190e-003
tblVehicleEF	SBUS	0.40	0.08
tblVehicleEF	SBUS	0.01	3.9800e-003
tblVehicleEF	SBUS	0.01	9.2850e-003
tblVehicleEF	SBUS	6.4800e-004	1.3300e-004
tblVehicleEF	SBUS	1.9020e-003	5.4500e-004
tblVehicleEF	SBUS	0.02	4.5270e-003
tblVehicleEF	SBUS	1.34	1.12
tblVehicleEF	SBUS	9.7200e-004	2.3100e-004
tblVehicleEF	SBUS	0.14	0.05
tblVehicleEF	SBUS	0.01	6.9190e-003

tblVehicleEF	SBUS	0.44	0.09
tblVehicleEF	UBUS	0.45	1.19
tblVehicleEF	UBUS	0.07	0.00
tblVehicleEF	UBUS	15.25	8.65
tblVehicleEF	UBUS	10.07	0.00
tblVehicleEF	UBUS	2,359.00	1,762.05
tblVehicleEF	UBUS	56.66	0.00
tblVehicleEF	UBUS	19.67	1.47
tblVehicleEF	UBUS	18.32	0.00
tblVehicleEF	UBUS	0.73	0.07
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.38	6.2100e-003
tblVehicleEF	UBUS	2.5060e-003	0.00
tblVehicleEF	UBUS	0.31	0.03
tblVehicleEF	UBUS	3.0000e-003	8.6540e-003
tblVehicleEF	UBUS	0.36	5.9410e-003
tblVehicleEF	UBUS	2.3620e-003	0.00
tblVehicleEF	UBUS	4.7390e-003	0.00
tblVehicleEF	UBUS	0.15	0.00
tblVehicleEF	UBUS	2.3490e-003	0.00
tblVehicleEF	UBUS	1.79	0.02
tblVehicleEF	UBUS	0.03	0.00
tblVehicleEF	UBUS	0.90	0.00
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	7.5300e-004	0.00
tblVehicleEF	UBUS	4.7390e-003	0.00
tblVehicleEF	UBUS	0.15	0.00

tblVehicleEF	UBUS	2.3490e-003	0.00
tblVehicleEF	UBUS	2.37	1.22
tblVehicleEF	UBUS	0.03	0.00
tblVehicleEF	UBUS	0.98	0.00
tblVehicleTrips	ST_TR	6.39	5.09
tblVehicleTrips	ST_TR	10.18	10.07
tblVehicleTrips	ST_TR	8.96	10.07
tblVehicleTrips	SU_TR	5.86	5.09
tblVehicleTrips	SU_TR	8.91	10.07
tblVehicleTrips	SU_TR	1.55	10.07
tblVehicleTrips	WD_TR	6.65	5.09
tblVehicleTrips	WD_TR	13.22	10.07
tblVehicleTrips	WD_TR	36.13	10.07
tblWoodstoves	NumberCatalytic	0.18	0.00
tblWoodstoves	NumberNoncatalytic	0.18	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					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**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)
		Highest		

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	2.7516	1.1500e-003	0.0742	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	0.4817	0.4817	1.5000e-004	1.0000e-005	0.4874
Energy	0.2965	2.6948	2.2621	0.0162		0.2048	0.2048		0.2048	0.2048	0.0000	5,787.2084	5,787.2084	0.1853	0.0805	5,815.8232
Mobile	2.8215	5.9064	29.1135	0.0676	4.8000	0.1165	4.9165	1.3067	0.1101	1.4167	0.0000	6,316.0114	6,316.0114	0.4889	0.0000	6,328.2341
Waste						0.0000	0.0000		0.0000	0.0000	1,364.4525	0.0000	1,364.4525	80.6368	0.0000	3,380.3733
Water						0.0000	0.0000		0.0000	0.0000	24.9474	139.2948	164.2422	2.5686	0.0618	246.8759
Total	**5.8696**	**8.6023**	**31.4498**	**0.0838**	**4.8000**	**0.3217**	**5.1217**	**1.3067**	**0.3153**	**1.6220**	**1,389.3998**	**12,242.9963**	**13,632.3961**	**83.8798**	**0.1423**	**15,771.7939**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7516	1.1500e-003	0.0742	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	0.4817	0.4817	1.5000e-004	1.0000e-005	0.4874
Energy	0.2965	2.6948	2.2621	0.0162		0.2048	0.2048		0.2048	0.2048	0.0000	5,787.2084	5,787.2084	0.1853	0.0805	5,815.8232
Mobile	2.8215	5.9064	29.1135	0.0676	4.8000	0.1165	4.9165	1.3067	0.1101	1.4167	0.0000	6,316.0114	6,316.0114	0.4889	0.0000	6,328.2341
Waste						0.0000	0.0000		0.0000	0.0000	1,364.4525	0.0000	1,364.4525	80.6368	0.0000	3,380.3733
Water						0.0000	0.0000		0.0000	0.0000	24.9474	139.2948	164.2422	2.5686	0.0618	246.8759
Total	**5.8696**	**8.6023**	**31.4498**	**0.0838**	**4.8000**	**0.3217**	**5.1217**	**1.3067**	**0.3153**	**1.6220**	**1,389.3998**	**12,242.9963**	**13,632.3961**	**83.8798**	**0.1423**	**15,771.7939**

	ROG	NOx	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	1/1/2017	12/30/2016	5	0	
2	Site Preparation	Site Preparation	1/28/2017	1/27/2017	5	0	
3	Grading	Grading	2/11/2017	2/10/2017	5	0	
4	Building Construction	Building Construction	3/11/2017	3/10/2017	5	0	
5	Paving	Paving	1/27/2018	1/26/2018	5	0	
6	Architectural Coating	Architectural Coating	2/24/2018	2/23/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 14,175; Residential Outdoor: 4,725; Non-Residential Indoor: 933,000; Non-Residential Outdoor: 311,000; Striped Parking Area: 6,300 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	250.00	120.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2017

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2017

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2017

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2017

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2017

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	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2017

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2017

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2018

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2018

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2018

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2018

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	2.8215	5.9064	29.1135	0.0676	4.8000	0.1165	4.9165	1.3067	0.1101	1.4167	0.0000	6,316.0114	6,316.0114	0.4889	0.0000	6,328.2341
Unmitigated	2.8215	5.9064	29.1135	0.0676	4.8000	0.1165	4.9165	1.3067	0.1101	1.4167	0.0000	6,316.0114	6,316.0114	0.4889	0.0000	6,328.2341

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	45.81	45.81	45.81	105,803	105,803
Hospital	5,306.89	5,306.89	5306.89	13,365,065	13,365,065
Medical Office Building	956.65	956.65	956.65	1,872,403	1,872,403
Parking Lot	0.00	0.00	0.00		
Total	6,309.35	6,309.35	6,309.35	15,343,271	15,343,271

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Parking Lot	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	0.601825	0.053690	0.174822	0.089295	0.023914	0.004646	0.022060	0.008399	0.004242	0.006732	0.009066	0.000950	0.000359
Hospital	0.601825	0.053690	0.174822	0.089295	0.023914	0.004646	0.022060	0.008399	0.004242	0.006732	0.009066	0.000950	0.000359
Medical Office Building	0.601825	0.053690	0.174822	0.089295	0.023914	0.004646	0.022060	0.008399	0.004242	0.006732	0.009066	0.000950	0.000359
Parking Lot	0.601825	0.053690	0.174822	0.089295	0.023914	0.004646	0.022060	0.008399	0.004242	0.006732	0.009066	0.000950	0.000359

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	2,853.343 4	2,853.343 4	0.1290	0.0267	2,864.523 7
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,853.343 4	2,853.343 4	0.1290	0.0267	2,864.523 7
NaturalGas Mitigated	0.2965	2.6948	2.2621	0.0162		0.2048	0.2048		0.2048	0.2048	0.0000	2,933.865 0	2,933.865 0	0.0562	0.0538	2,951.299 5
NaturalGas Unmitigated	0.2965	2.6948	2.2621	0.0162		0.2048	0.2048		0.2048	0.2048	0.0000	2,933.865 0	2,933.865 0	0.0562	0.0538	2,951.299 5

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	78573.9	4.2000e-004	3.6200e-003	1.5400e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.1930	4.1930	8.0000e-005	8.0000e-005	4.2179
Hospital	5.30636e+007	0.2861	2.6012	2.1850	0.0156		0.1977	0.1977		0.1977	0.1977	0.0000	2,831.6774	2,831.6774	0.0543	0.0519	2,848.5046
Medical Office Building	1.83635e+006	9.9000e-003	0.0900	0.0756	5.4000e-004		6.8400e-003	6.8400e-003		6.8400e-003	6.8400e-003	0.0000	97.9946	97.9946	1.8800e-003	1.8000e-003	98.5770
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.2965**	**2.6948**	**2.2621**	**0.0162**		**0.2048**	**0.2048**		**0.2048**	**0.2048**	**0.0000**	**2,933.8650**	**2,933.8650**	**0.0562**	**0.0538**	**2,951.2995**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	78573.9	4.2000e-004	3.6200e-003	1.5400e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.1930	4.1930	8.0000e-005	8.0000e-005	4.2179
Hospital	5.30636e+007	0.2861	2.6012	2.1850	0.0156		0.1977	0.1977		0.1977	0.1977	0.0000	2,831.6774	2,831.6774	0.0543	0.0519	2,848.5046
Medical Office Building	1.83635e+006	9.9000e-003	0.0900	0.0756	5.4000e-004		6.8400e-003	6.8400e-003		6.8400e-003	6.8400e-003	0.0000	97.9946	97.9946	1.8800e-003	1.8000e-003	98.5770
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.2965**	**2.6948**	**2.2621**	**0.0162**		**0.2048**	**0.2048**		**0.2048**	**0.2048**	**0.0000**	**2,933.8650**	**2,933.8650**	**0.0562**	**0.0538**	**2,951.2995**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	37997.9	11.0540	5.0000e-004	1.0000e-004	11.0973
Hospital	8.54794e+006	2,486.6938	0.1124	0.0233	2,496.4374
Medical Office Building	1.1856e+006	344.9046	0.0156	3.2300e-003	346.2561
Parking Lot	36750	10.6910	4.8000e-004	1.0000e-004	10.7329
Total		**2,853.3434**	**0.1290**	**0.0267**	**2,864.5237**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	37997.9	11.0540	5.0000e-004	1.0000e-004	11.0973
Hospital	8.54794e+006	2,486.6938	0.1124	0.0233	2,496.4374
Medical Office Building	1.1856e+006	344.9046	0.0156	3.2300e-003	346.2561
Parking Lot	36750	10.6910	4.8000e-004	1.0000e-004	10.7329
Total		**2,853.3434**	**0.1290**	**0.0267**	**2,864.5237**

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	2.7516	1.1500e-003	0.0742	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	0.4817	0.4817	1.5000e-004	1.0000e-005	0.4874
Unmitigated	2.7516	1.1500e-003	0.0742	1.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	0.4817	0.4817	1.5000e-004	1.0000e-005	0.4874

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	0.3315					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.4174					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.0000e-005	3.1000e-004	1.3000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3595	0.3595	1.0000e-005	1.0000e-005	0.3617
Landscaping	2.7200e-003	8.4000e-004	0.0741	0.0000		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	0.1222	0.1222	1.4000e-004	0.0000	0.1258
Total	**2.7516**	**1.1500e-003**	**0.0742**	**0.0000**		**4.2000e-004**	**4.2000e-004**		**4.2000e-004**	**4.2000e-004**	**0.0000**	**0.4817**	**0.4817**	**1.5000e-004**	**1.0000e-005**	**0.4874**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3315					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.4174					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.0000e-005	3.1000e-004	1.3000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3595	0.3595	1.0000e-005	1.0000e-005	0.3617
Landscaping	2.7200e-003	8.4000e-004	0.0741	0.0000		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	0.1222	0.1222	1.4000e-004	0.0000	0.1258
Total	**2.7516**	**1.1500e-003**	**0.0742**	**0.0000**		**4.2000e-004**	**4.2000e-004**		**4.2000e-004**	**4.2000e-004**	**0.0000**	**0.4817**	**0.4817**	**1.5000e-004**	**1.0000e-005**	**0.4874**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	164.2422	2.5686	0.0618	246.8759
Unmitigated	164.2422	2.5686	0.0618	246.8759

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0.586386 / 0.369678	1.4855	0.0192	4.6000e-004	2.1027
Hospital	66.1282 / 12.5959	137.8983	2.1601	0.0520	207.3882
Medical Office Building	11.9207 / 2.2706	24.8583	0.3894	9.3700e-003	37.3850
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**164.2422**	**2.5686**	**0.0618**	**246.8759**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0.586386 / 0.369678	1.4855	0.0192	4.6000e-004	2.1027
Hospital	66.1282 / 12.5959	137.8983	2.1601	0.0520	207.3882
Medical Office Building	11.9207 / 2.2706	24.8583	0.3894	9.3700e-003	37.3850
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**164.2422**	**2.5686**	**0.0618**	**246.8759**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1,364.452 5	80.6368	0.0000	3,380.373 3
Unmitigated	1,364.452 5	80.6368	0.0000	3,380.373 3

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	4.14	0.8404	0.0497	0.0000	2.0820
Hospital	5691.6	1,155.343 4	68.2788	0.0000	2,862.314 3
Medical Office Building	1026	208.2687	12.3083	0.0000	515.9770
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**1,364.452 5**	**80.6368**	**0.0000**	**3,380.373 3**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	4.14	0.8404	0.0497	0.0000	2.0820
Hospital	5691.6	1,155.343 4	68.2788	0.0000	2,862.314 3
Medical Office Building	1026	208.2687	12.3083	0.0000	515.9770
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**1,364.452 5**	**80.6368**	**0.0000**	**3,380.373 3**

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

3700 California Block C

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	120.00	Space	0.76	67,653.00	0
Parking Lot	6.00	Space	0.04	3,383.00	0
City Park	0.77	Acre	0.77	33,600.00	0
Health Club	23.10	1000sqft	0.26	23,100.00	0
Apartments Mid Rise	80.00	Dwelling Unit	1.54	138,200.00	229
Single Family Housing	3.00	Dwelling Unit	0.19	16,900.00	9

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 4.6 **Precipitation Freq (Days)** 64

Climate Zone 5 **Operational Year** 2023

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 641.35 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land use area based on project description

Construction Phase - Construction emissions calculated outside CalEEMod

Off-road Equipment - Construction Emissions calculated outside CalEEMod

Grading - Construction Emissions calculated outside CalEEMod

Architectural Coating - Construction Emissions calculated outside CalEEMod

Vehicle Trips - Trip rates and trip lengths consistent with transportation analysis

Vehicle Emission Factors - EMFAC2017

Road Dust - Silt dust loading is based on entrained road dust methodology consistent with AP-42

Woodstoves - Changes based on project description. all stoves are NG

Consumer Products - Updated emissions factor from project description

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	8.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	NumDays	5.00	0.00
tblConsumerProducts	ROG_EF	2.14E-05	2.1E-05
tblFireplaces	NumberGas	12.00	25.60
tblFireplaces	NumberGas	0.75	2.04
tblFireplaces	NumberWood	13.60	0.00
tblFireplaces	NumberWood	1.29	0.00
tblFleetMix	HHD	9.1810e-003	8.5380e-003
tblFleetMix	HHD	9.1810e-003	8.5380e-003

tblFleetMix	HHD	9.1810e-003	8.5380e-003
tblFleetMix	HHD	9.1810e-003	8.5380e-003
tblFleetMix	HHD	9.1810e-003	8.5380e-003
tblFleetMix	HHD	9.1810e-003	8.5380e-003
tblFleetMix	LDA	0.61	0.58
tblFleetMix	LDA	0.61	0.58
tblFleetMix	LDA	0.61	0.58
tblFleetMix	LDA	0.61	0.58
tblFleetMix	LDA	0.61	0.58
tblFleetMix	LDA	0.61	0.58
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02

tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	5.0360e-003	5.4360e-003
tblFleetMix	LHD2	5.0360e-003	5.4360e-003
tblFleetMix	LHD2	5.0360e-003	5.4360e-003
tblFleetMix	LHD2	5.0360e-003	5.4360e-003
tblFleetMix	LHD2	5.0360e-003	5.4360e-003
tblFleetMix	LHD2	5.0360e-003	5.4360e-003
tblFleetMix	MCY	6.4040e-003	7.3390e-003
tblFleetMix	MCY	6.4040e-003	7.3390e-003
tblFleetMix	MCY	6.4040e-003	7.3390e-003
tblFleetMix	MCY	6.4040e-003	7.3390e-003
tblFleetMix	MCY	6.4040e-003	7.3390e-003
tblFleetMix	MCY	6.4040e-003	7.3390e-003
tblFleetMix	MDV	0.09	0.10
tblFleetMix	MDV	0.09	0.10
tblFleetMix	MDV	0.09	0.10
tblFleetMix	MDV	0.09	0.10
tblFleetMix	MDV	0.09	0.10
tblFleetMix	MDV	0.09	0.10
tblFleetMix	MH	5.0500e-004	5.5900e-004
tblFleetMix	MH	5.0500e-004	5.5900e-004
tblFleetMix	MH	5.0500e-004	5.5900e-004
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tblFleetMix	MH	5.0500e-004	5.5900e-004
tblFleetMix	MH	5.0500e-004	5.5900e-004
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03

tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03
tblFleetMix	OBUS	4.3090e-003	3.5180e-003
tblFleetMix	OBUS	4.3090e-003	3.5180e-003
tblFleetMix	OBUS	4.3090e-003	3.5180e-003
tblFleetMix	OBUS	4.3090e-003	3.5180e-003
tblFleetMix	OBUS	4.3090e-003	3.5180e-003
tblFleetMix	OBUS	4.3090e-003	3.5180e-003
tblFleetMix	SBUS	9.4100e-004	1.0200e-003
tblFleetMix	SBUS	9.4100e-004	1.0200e-003
tblFleetMix	SBUS	9.4100e-004	1.0200e-003
tblFleetMix	SBUS	9.4100e-004	1.0200e-003
tblFleetMix	SBUS	9.4100e-004	1.0200e-003
tblFleetMix	SBUS	9.4100e-004	1.0200e-003
tblFleetMix	UBUS	3.7680e-003	6.5380e-003
tblFleetMix	UBUS	3.7680e-003	6.5380e-003
tblFleetMix	UBUS	3.7680e-003	6.5380e-003
tblFleetMix	UBUS	3.7680e-003	6.5380e-003
tblFleetMix	UBUS	3.7680e-003	6.5380e-003
tblFleetMix	UBUS	3.7680e-003	6.5380e-003
tblLandUse	LandUseSquareFeet	48,000.00	67,653.00
tblLandUse	LandUseSquareFeet	2,400.00	3,383.00
tblLandUse	LandUseSquareFeet	33,541.20	33,600.00
tblLandUse	LandUseSquareFeet	80,000.00	138,200.00
tblLandUse	LandUseSquareFeet	5,400.00	16,900.00

tblLandUse	LotAcreage	1.08	0.76
tblLandUse	LotAcreage	0.05	0.04
tblLandUse	LotAcreage	0.53	0.26
tblLandUse	LotAcreage	2.11	1.54
tblLandUse	LotAcreage	0.97	0.19
tblVehicleEF	HHD	0.60	0.05
tblVehicleEF	HHD	0.37	0.35
tblVehicleEF	HHD	0.08	1.0000e-006
tblVehicleEF	HHD	1.82	4.85
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tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.7290e-003	0.02
tblVehicleEF	HHD	1.5200e-004	5.0000e-006
tblVehicleEF	HHD	0.03	6.1250e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.5320e-003	8.7170e-003
tblVehicleEF	HHD	8.3510e-003	0.02
tblVehicleEF	HHD	1.3900e-004	5.0000e-006

tblVehicleEF	HHD	9.0000e-005	1.6000e-005
tblVehicleEF	HHD	4.6760e-003	8.8100e-004
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tblVehicleEF	HHD	6.2000e-005	1.1000e-005
tblVehicleEF	HHD	0.10	0.05
tblVehicleEF	HHD	9.0300e-004	8.0900e-004
tblVehicleEF	HHD	0.10	6.0000e-006
tblVehicleEF	HHD	0.03	8.1130e-003
tblVehicleEF	HHD	0.02	0.01
tblVehicleEF	HHD	2.1100e-004	2.0000e-006
tblVehicleEF	HHD	9.0000e-005	1.6000e-005
tblVehicleEF	HHD	4.6760e-003	8.8100e-004
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tblVehicleEF	HHD	6.2000e-005	1.1000e-005
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tblVehicleEF	HHD	9.0300e-004	8.0900e-004
tblVehicleEF	HHD	0.11	7.0000e-006
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tblVehicleEF	LDA	1.10	2.21
tblVehicleEF	LDA	260.09	258.07
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tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.18
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tblVehicleEF	LDA	2.2680e-003	1.7840e-003

tblVehicleEF	LDA	1.9620e-003	1.6570e-003
tblVehicleEF	LDA	2.0860e-003	1.6400e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.01	8.8610e-003
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.07	0.22
tblVehicleEF	LDA	2.6030e-003	2.5530e-003
tblVehicleEF	LDA	5.6600e-004	5.1000e-004
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.09	0.09
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tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.07	0.24
tblVehicleEF	LDT1	6.6630e-003	3.8290e-003
tblVehicleEF	LDT1	9.3990e-003	0.06
tblVehicleEF	LDT1	0.80	0.84
tblVehicleEF	LDT1	2.00	2.37
tblVehicleEF	LDT1	322.78	309.94
tblVehicleEF	LDT1	68.33	62.06
tblVehicleEF	LDT1	0.07	0.06
tblVehicleEF	LDT1	0.11	0.22
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tblVehicleEF	LDT1	2.6430e-003	2.1070e-003
tblVehicleEF	LDT1	2.1980e-003	1.9110e-003

tblVehicleEF	LDT1	2.4300e-003	1.9380e-003
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tblVehicleEF	LDT1	0.17	0.13
tblVehicleEF	LDT1	0.05	0.06
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.13	0.08
tblVehicleEF	LDT1	0.13	0.28
tblVehicleEF	LDT1	3.2350e-003	3.0670e-003
tblVehicleEF	LDT1	7.1800e-004	6.1400e-004
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tblVehicleEF	LDT1	0.17	0.13
tblVehicleEF	LDT1	0.05	0.06
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.13	0.08
tblVehicleEF	LDT1	0.14	0.31
tblVehicleEF	LDT2	5.3900e-003	3.3200e-003
tblVehicleEF	LDT2	5.7570e-003	0.06
tblVehicleEF	LDT2	0.66	0.76
tblVehicleEF	LDT2	1.31	2.76
tblVehicleEF	LDT2	363.74	329.89
tblVehicleEF	LDT2	76.27	66.35
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.09	0.25
tblVehicleEF	LDT2	2.1630e-003	1.7980e-003
tblVehicleEF	LDT2	2.2970e-003	1.7430e-003
tblVehicleEF	LDT2	1.9890e-003	1.6550e-003
tblVehicleEF	LDT2	2.1120e-003	1.6020e-003

tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.09	0.10
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.08	0.29
tblVehicleEF	LDT2	3.6410e-003	3.2630e-003
tblVehicleEF	LDT2	7.8400e-004	6.5700e-004
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.09	0.10
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.08	0.31
tblVehicleEF	LHD1	5.9180e-003	5.9390e-003
tblVehicleEF	LHD1	0.01	7.1100e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.16	0.20
tblVehicleEF	LHD1	0.80	0.61
tblVehicleEF	LHD1	2.47	1.15
tblVehicleEF	LHD1	8.75	8.69
tblVehicleEF	LHD1	699.44	823.78
tblVehicleEF	LHD1	36.18	13.27
tblVehicleEF	LHD1	0.06	0.04
tblVehicleEF	LHD1	0.66	0.38
tblVehicleEF	LHD1	1.08	0.35
tblVehicleEF	LHD1	7.0300e-004	6.5000e-004

tblVehicleEF	LHD1	9.8890e-003	9.4800e-003
tblVehicleEF	LHD1	0.01	6.7960e-003
tblVehicleEF	LHD1	8.5400e-004	2.4800e-004
tblVehicleEF	LHD1	6.7200e-004	6.2200e-004
tblVehicleEF	LHD1	2.4720e-003	2.3700e-003
tblVehicleEF	LHD1	9.7090e-003	6.4530e-003
tblVehicleEF	LHD1	7.8500e-004	2.2800e-004
tblVehicleEF	LHD1	1.9400e-003	1.4800e-003
tblVehicleEF	LHD1	0.09	0.06
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.2640e-003	9.4500e-004
tblVehicleEF	LHD1	0.09	0.07
tblVehicleEF	LHD1	0.29	0.17
tblVehicleEF	LHD1	0.25	0.07
tblVehicleEF	LHD1	8.8000e-005	8.5000e-005
tblVehicleEF	LHD1	6.8780e-003	8.0660e-003
tblVehicleEF	LHD1	4.0800e-004	1.3100e-004
tblVehicleEF	LHD1	1.9400e-003	1.4800e-003
tblVehicleEF	LHD1	0.09	0.06
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.2640e-003	9.4500e-004
tblVehicleEF	LHD1	0.12	0.09
tblVehicleEF	LHD1	0.29	0.17
tblVehicleEF	LHD1	0.27	0.08
tblVehicleEF	LHD2	3.3940e-003	3.5240e-003
tblVehicleEF	LHD2	7.2700e-003	6.3150e-003
tblVehicleEF	LHD2	6.3740e-003	8.3840e-003

tblVehicleEF	LHD2	0.12	0.15
tblVehicleEF	LHD2	0.52	0.54
tblVehicleEF	LHD2	1.20	0.68
tblVehicleEF	LHD2	13.87	13.56
tblVehicleEF	LHD2	704.32	780.75
tblVehicleEF	LHD2	24.46	8.73
tblVehicleEF	LHD2	0.10	0.09
tblVehicleEF	LHD2	0.51	0.53
tblVehicleEF	LHD2	0.44	0.20
tblVehicleEF	LHD2	1.2260e-003	1.3330e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.0700e-004	1.3200e-004
tblVehicleEF	LHD2	1.1730e-003	1.2750e-003
tblVehicleEF	LHD2	2.6880e-003	2.6570e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.7400e-004	1.2200e-004
tblVehicleEF	LHD2	6.4300e-004	8.6300e-004
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	4.1200e-004	5.3600e-004
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.07	0.10
tblVehicleEF	LHD2	0.09	0.04
tblVehicleEF	LHD2	1.3500e-004	1.3000e-004
tblVehicleEF	LHD2	6.8500e-003	7.5530e-003
tblVehicleEF	LHD2	2.6600e-004	8.6000e-005

tblVehicleEF	LHD2	6.4300e-004	8.6300e-004
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.1200e-004	5.3600e-004
tblVehicleEF	LHD2	0.11	0.11
tblVehicleEF	LHD2	0.07	0.10
tblVehicleEF	LHD2	0.09	0.05
tblVehicleEF	MCY	0.56	0.40
tblVehicleEF	MCY	0.17	0.25
tblVehicleEF	MCY	20.94	20.92
tblVehicleEF	MCY	10.16	9.05
tblVehicleEF	MCY	192.56	229.93
tblVehicleEF	MCY	46.41	61.93
tblVehicleEF	MCY	1.19	1.19
tblVehicleEF	MCY	0.33	0.28
tblVehicleEF	MCY	2.4910e-003	2.3420e-003
tblVehicleEF	MCY	4.1620e-003	3.1290e-003
tblVehicleEF	MCY	2.3320e-003	2.1910e-003
tblVehicleEF	MCY	3.9320e-003	2.9510e-003
tblVehicleEF	MCY	0.79	0.79
tblVehicleEF	MCY	0.82	0.78
tblVehicleEF	MCY	0.52	0.51
tblVehicleEF	MCY	2.82	2.82
tblVehicleEF	MCY	0.88	0.71
tblVehicleEF	MCY	2.28	2.00
tblVehicleEF	MCY	2.3530e-003	2.2750e-003
tblVehicleEF	MCY	6.9700e-004	6.1300e-004

tblVehicleEF	MCY	0.79	0.79
tblVehicleEF	MCY	0.82	0.78
tblVehicleEF	MCY	0.52	0.51
tblVehicleEF	MCY	3.48	3.48
tblVehicleEF	MCY	0.88	0.71
tblVehicleEF	MCY	2.48	2.17
tblVehicleEF	MDV	7.8070e-003	3.4620e-003
tblVehicleEF	MDV	0.01	0.06
tblVehicleEF	MDV	0.84	0.75
tblVehicleEF	MDV	1.95	2.85
tblVehicleEF	MDV	476.44	389.00
tblVehicleEF	MDV	97.47	76.44
tblVehicleEF	MDV	0.09	0.06
tblVehicleEF	MDV	0.16	0.26
tblVehicleEF	MDV	2.2530e-003	1.9230e-003
tblVehicleEF	MDV	2.3520e-003	1.8410e-003
tblVehicleEF	MDV	2.0760e-003	1.7740e-003
tblVehicleEF	MDV	2.1620e-003	1.6930e-003
tblVehicleEF	MDV	0.04	0.05
tblVehicleEF	MDV	0.12	0.10
tblVehicleEF	MDV	0.04	0.05
tblVehicleEF	MDV	0.02	0.01
tblVehicleEF	MDV	0.09	0.05
tblVehicleEF	MDV	0.14	0.30
tblVehicleEF	MDV	4.7640e-003	3.8440e-003
tblVehicleEF	MDV	1.0080e-003	7.5600e-004
tblVehicleEF	MDV	0.04	0.05

tblVehicleEF	MDV	0.12	0.10
tblVehicleEF	MDV	0.04	0.05
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.09	0.05
tblVehicleEF	MDV	0.15	0.33
tblVehicleEF	MH	0.02	9.1410e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.30	0.96
tblVehicleEF	MH	4.77	2.08
tblVehicleEF	MH	1,189.19	1,476.64
tblVehicleEF	MH	57.03	17.78
tblVehicleEF	MH	0.88	1.03
tblVehicleEF	MH	0.66	0.23
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	1.0690e-003	3.0100e-004
tblVehicleEF	MH	3.2220e-003	3.2760e-003
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	9.8300e-004	2.7700e-004
tblVehicleEF	MH	0.39	0.45
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	0.16	0.18
tblVehicleEF	MH	0.06	0.06
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.26	0.09
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.5300e-004	1.7600e-004

tblVehicleEF	MH	0.39	0.45
tblVehicleEF	MH	0.04	0.04
tblVehicleEF	MH	0.16	0.18
tblVehicleEF	MH	0.09	0.08
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.29	0.10
tblVehicleEF	MHD	0.02	3.3170e-003
tblVehicleEF	MHD	3.8520e-003	1.5570e-003
tblVehicleEF	MHD	0.05	8.2030e-003
tblVehicleEF	MHD	0.32	0.50
tblVehicleEF	MHD	0.32	0.22
tblVehicleEF	MHD	5.21	0.93
tblVehicleEF	MHD	151.25	116.55
tblVehicleEF	MHD	1,183.64	1,064.52
tblVehicleEF	MHD	53.64	8.29
tblVehicleEF	MHD	0.45	0.75
tblVehicleEF	MHD	1.10	1.42
tblVehicleEF	MHD	11.74	1.77
tblVehicleEF	MHD	1.8200e-004	7.3700e-004
tblVehicleEF	MHD	3.1590e-003	6.7180e-003
tblVehicleEF	MHD	7.8400e-004	9.3000e-005
tblVehicleEF	MHD	1.7400e-004	7.0500e-004
tblVehicleEF	MHD	3.0190e-003	6.4230e-003
tblVehicleEF	MHD	7.2100e-004	8.6000e-005
tblVehicleEF	MHD	8.1900e-004	3.4100e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.02

tblVehicleEF	MHD	5.1700e-004	2.1600e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.32	0.04
tblVehicleEF	MHD	1.4540e-003	1.1030e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	6.2800e-004	8.2000e-005
tblVehicleEF	MHD	8.1900e-004	3.4100e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	MHD	5.1700e-004	2.1600e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.35	0.05
tblVehicleEF	OBUS	0.01	6.7120e-003
tblVehicleEF	OBUS	5.7780e-003	4.0240e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.59
tblVehicleEF	OBUS	0.44	0.51
tblVehicleEF	OBUS	4.93	1.76
tblVehicleEF	OBUS	137.46	98.38
tblVehicleEF	OBUS	1,311.33	1,351.95
tblVehicleEF	OBUS	64.62	14.68
tblVehicleEF	OBUS	0.31	0.40
tblVehicleEF	OBUS	1.06	1.54
tblVehicleEF	OBUS	3.62	1.15
tblVehicleEF	OBUS	2.8000e-005	1.3000e-004

tblVehicleEF	OBUS	2.9570e-003	7.6530e-003
tblVehicleEF	OBUS	6.3300e-004	1.4000e-004
tblVehicleEF	OBUS	2.7000e-005	1.2400e-004
tblVehicleEF	OBUS	2.8180e-003	7.3120e-003
tblVehicleEF	OBUS	5.8200e-004	1.2900e-004
tblVehicleEF	OBUS	1.0840e-003	1.0760e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	5.9100e-004	5.5400e-004
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.31	0.09
tblVehicleEF	OBUS	1.3230e-003	9.3400e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.3300e-004	1.4500e-004
tblVehicleEF	OBUS	1.0840e-003	1.0760e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	5.9100e-004	5.5400e-004
tblVehicleEF	OBUS	0.06	0.04
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.34	0.10
tblVehicleEF	SBUS	0.82	0.16
tblVehicleEF	SBUS	0.01	3.4700e-003
tblVehicleEF	SBUS	0.06	0.01
tblVehicleEF	SBUS	8.05	5.94
tblVehicleEF	SBUS	0.63	0.29

tblVehicleEF	SBUS	7.30	1.84
tblVehicleEF	SBUS	1,114.46	394.81
tblVehicleEF	SBUS	1,062.76	939.01
tblVehicleEF	SBUS	56.28	12.03
tblVehicleEF	SBUS	8.51	2.16
tblVehicleEF	SBUS	3.69	1.51
tblVehicleEF	SBUS	11.98	1.17
tblVehicleEF	SBUS	8.0990e-003	1.5580e-003
tblVehicleEF	SBUS	0.01	9.6150e-003
tblVehicleEF	SBUS	0.02	9.8310e-003
tblVehicleEF	SBUS	6.5000e-004	1.5000e-004
tblVehicleEF	SBUS	7.7480e-003	1.4900e-003
tblVehicleEF	SBUS	2.6410e-003	2.4040e-003
tblVehicleEF	SBUS	0.02	9.3770e-003
tblVehicleEF	SBUS	5.9800e-004	1.3800e-004
tblVehicleEF	SBUS	2.6200e-003	1.0540e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.95	0.72
tblVehicleEF	SBUS	1.4540e-003	5.5000e-004
tblVehicleEF	SBUS	0.09	0.03
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.38	0.07
tblVehicleEF	SBUS	0.01	3.7990e-003
tblVehicleEF	SBUS	0.01	9.0870e-003
tblVehicleEF	SBUS	6.8900e-004	1.1900e-004
tblVehicleEF	SBUS	2.6200e-003	1.0540e-003
tblVehicleEF	SBUS	0.03	0.01

tblVehicleEF	SBUS	1.38	1.04
tblVehicleEF	SBUS	1.4540e-003	5.5000e-004
tblVehicleEF	SBUS	0.11	0.04
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.42	0.08
tblVehicleEF	UBUS	0.43	1.38
tblVehicleEF	UBUS	0.04	0.00
tblVehicleEF	UBUS	8.86	10.31
tblVehicleEF	UBUS	9.21	0.00
tblVehicleEF	UBUS	2,277.10	1,709.69
tblVehicleEF	UBUS	61.87	0.00
tblVehicleEF	UBUS	16.41	0.75
tblVehicleEF	UBUS	17.45	0.00
tblVehicleEF	UBUS	0.70	0.07
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.31	5.4620e-003
tblVehicleEF	UBUS	1.1170e-003	0.00
tblVehicleEF	UBUS	0.30	0.03
tblVehicleEF	UBUS	3.0000e-003	8.6540e-003
tblVehicleEF	UBUS	0.30	5.2260e-003
tblVehicleEF	UBUS	1.0270e-003	0.00
tblVehicleEF	UBUS	3.1360e-003	0.00
tblVehicleEF	UBUS	0.08	0.00
tblVehicleEF	UBUS	1.5400e-003	0.00
tblVehicleEF	UBUS	1.31	0.02
tblVehicleEF	UBUS	0.03	0.00
tblVehicleEF	UBUS	0.60	0.00

tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	7.8200e-004	0.00
tblVehicleEF	UBUS	3.1360e-003	0.00
tblVehicleEF	UBUS	0.08	0.00
tblVehicleEF	UBUS	1.5400e-003	0.00
tblVehicleEF	UBUS	1.84	1.41
tblVehicleEF	UBUS	0.03	0.00
tblVehicleEF	UBUS	0.66	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	5.70	3.79
tblVehicleTrips	HO_TL	5.70	3.79
tblVehicleTrips	HS_TL	4.80	3.79
tblVehicleTrips	HS_TL	4.80	3.79
tblVehicleTrips	HW_TL	10.80	3.79
tblVehicleTrips	HW_TL	10.80	3.79
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	ST_TR	6.39	5.09
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	9.91	5.09
tblVehicleTrips	SU_TR	5.86	5.09
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	26.73	0.00

tblVehicleTrips	SU_TR	8.62	5.09
tblVehicleTrips	WD_TR	6.65	5.09
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	9.52	5.09
tblWoodstoves	NumberCatalytic	1.60	0.00
tblWoodstoves	NumberCatalytic	0.12	0.00
tblWoodstoves	NumberNoncatalytic	1.60	0.00
tblWoodstoves	NumberNoncatalytic	0.12	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					
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**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)
		Highest		

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	0.8296	0.0101	0.6191	5.0000e-005		3.6600e-003	3.6600e-003		3.6600e-003	3.6600e-003	0.0000	4.4599	4.4599	1.0400e-003	6.0000e-005	4.5048
Energy	7.5300e-003	0.0661	0.0397	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	346.2598	346.2598	0.0137	3.9100e-003	347.7674
Mobile	0.1018	0.1498	0.9591	2.3000e-003	0.2165	1.8200e-003	0.2184	0.0581	1.7000e-003	0.0598	0.0000	215.8503	215.8503	0.0183	0.0000	216.3066
Waste						0.0000	0.0000		0.0000	0.0000	34.9794	0.0000	34.9794	2.0672	0.0000	86.6600
Water						0.0000	0.0000		0.0000	0.0000	2.1491	15.9211	18.0702	0.2215	5.3600e-003	25.2040
Total	**0.9389**	**0.2259**	**1.6179**	**2.7600e-003**	**0.2165**	**0.0107**	**0.2272**	**0.0581**	**0.0106**	**0.0687**	**37.1285**	**582.4910**	**619.6195**	**2.3217**	**9.3300e-003**	**680.4428**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8296	0.0101	0.6191	5.0000e-005		3.6600e-003	3.6600e-003		3.6600e-003	3.6600e-003	0.0000	4.4599	4.4599	1.0400e-003	6.0000e-005	4.5048
Energy	7.5300e-003	0.0661	0.0397	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	309.4904	309.4904	0.0121	3.5600e-003	310.8540
Mobile	0.1018	0.1498	0.9591	2.3000e-003	0.2165	1.8200e-003	0.2184	0.0581	1.7000e-003	0.0598	0.0000	215.8503	215.8503	0.0183	0.0000	216.3066
Waste						0.0000	0.0000		0.0000	0.0000	34.9794	0.0000	34.9794	2.0672	0.0000	86.6600
Water						0.0000	0.0000		0.0000	0.0000	2.1491	15.9211	18.0702	0.2215	5.3600e-003	25.2040
Total	**0.9389**	**0.2259**	**1.6179**	**2.7600e-003**	**0.2165**	**0.0107**	**0.2272**	**0.0581**	**0.0106**	**0.0687**	**37.1285**	**545.7216**	**582.8501**	**2.3200**	**8.9800e-003**	**643.5293**

	ROG	NOx	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**	**6.31**	**5.93**	**0.07**	**3.75**	**5.42**

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	1/1/2021	12/31/2020	5	0	
2	Site Preparation	Site Preparation	1/29/2021	1/28/2021	5	0	
3	Grading	Grading	2/5/2021	2/4/2021	5	0	
4	Building Construction	Building Construction	2/17/2021	2/16/2021	5	0	
5	Paving	Paving	1/5/2022	1/4/2022	5	0	
6	Architectural Coating	Architectural Coating	1/29/2022	1/28/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.8

Residential Indoor: 314,078; Residential Outdoor: 104,693; Non-Residential Indoor: 34,650; Non-Residential Outdoor: 11,550; Striped Parking Area: 4,262 (Architectural Coating – sqft)

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	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	112.00	30.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

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

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2021

Mitigated Construction Off-Site

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

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

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

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	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

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

3.6 Paving - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2022

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2022

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2022

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2022

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.1018	0.1498	0.9591	2.3000e-003	0.2165	1.8200e-003	0.2184	0.0581	1.7000e-003	0.0598	0.0000	215.8503	215.8503	0.0183	0.0000	216.3066
Unmitigated	0.1018	0.1498	0.9591	2.3000e-003	0.2165	1.8200e-003	0.2184	0.0581	1.7000e-003	0.0598	0.0000	215.8503	215.8503	0.0183	0.0000	216.3066

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	407.20	407.20	407.20	561,757	561,757
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	15.27	15.27	15.27	21,066	21,066
Total	422.47	422.47	422.47	582,823	582,823

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	3.79	3.79	3.79	31.00	15.00	54.00	100	0	0
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	3.79	3.79	3.79	31.00	15.00	54.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.583540	0.054774	0.174133	0.103925	0.023773	0.005436	0.026907	0.008538	0.003518	0.006538	0.007339	0.001020	0.000559
City Park	0.583540	0.054774	0.174133	0.103925	0.023773	0.005436	0.026907	0.008538	0.003518	0.006538	0.007339	0.001020	0.000559
Enclosed Parking with Elevator	0.583540	0.054774	0.174133	0.103925	0.023773	0.005436	0.026907	0.008538	0.003518	0.006538	0.007339	0.001020	0.000559
Health Club	0.583540	0.054774	0.174133	0.103925	0.023773	0.005436	0.026907	0.008538	0.003518	0.006538	0.007339	0.001020	0.000559
Parking Lot	0.583540	0.054774	0.174133	0.103925	0.023773	0.005436	0.026907	0.008538	0.003518	0.006538	0.007339	0.001020	0.000559
Single Family Housing	0.583540	0.054774	0.174133	0.103925	0.023773	0.005436	0.026907	0.008538	0.003518	0.006538	0.007339	0.001020	0.000559

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive 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	234.9342	234.9342	0.0106	2.2000e-003	235.8547
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	271.7035	271.7035	0.0123	2.5400e-003	272.7682
NaturalGas Mitigated	7.5300e-003	0.0661	0.0397	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	74.5562	74.5562	1.4300e-003	1.3700e-003	74.9993
NaturalGas Unmitigated	7.5300e-003	0.0661	0.0397	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	74.5562	74.5562	1.4300e-003	1.3700e-003	74.9993

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	698434	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6000e-003	2.6000e-003		2.6000e-003	2.6000e-003	0.0000	37.2711	37.2711	7.1000e-004	6.8000e-004	37.4926
City Park	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
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
Health Club	571725	3.0800e-003	0.0280	0.0235	1.7000e-004		2.1300e-003	2.1300e-003		2.1300e-003	2.1300e-003	0.0000	30.5094	30.5094	5.8000e-004	5.6000e-004	30.6907
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	126971	6.8000e-004	5.8500e-003	2.4900e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.7757	6.7757	1.3000e-004	1.2000e-004	6.8159
Total		**7.5300e-003**	**0.0661**	**0.0397**	**4.2000e-004**		**5.2000e-003**	**5.2000e-003**		**5.2000e-003**	**5.2000e-003**	**0.0000**	**74.5562**	**74.5562**	**1.4200e-003**	**1.3600e-003**	**74.9993**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	698434	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6000e-003	2.6000e-003		2.6000e-003	2.6000e-003	0.0000	37.2711	37.2711	7.1000e-004	6.8000e-004	37.4926
City Park	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
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
Health Club	571725	3.0800e-003	0.0280	0.0235	1.7000e-004		2.1300e-003	2.1300e-003		2.1300e-003	2.1300e-003	0.0000	30.5094	30.5094	5.8000e-004	5.6000e-004	30.6907
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	126971	6.8000e-004	5.8500e-003	2.4900e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.7757	6.7757	1.3000e-004	1.2000e-004	6.8159
Total		**7.5300e-003**	**0.0661**	**0.0397**	**4.2000e-004**		**5.2000e-003**	**5.2000e-003**		**5.2000e-003**	**5.2000e-003**	**0.0000**	**74.5562**	**74.5562**	**1.4200e-003**	**1.3600e-003**	**74.9993**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	337759	98.2580	4.4400e-003	9.2000e-004	98.6430
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	396447	115.3309	5.2100e-003	1.0800e-003	115.7828
Health Club	174636	50.8036	2.3000e-003	4.8000e-004	51.0027
Parking Lot	1184.05	0.3445	2.0000e-005	0.0000	0.3458
Single Family Housing	23947.5	6.9666	3.2000e-004	7.0000e-005	6.9939
Total		**271.7035**	**0.0123**	**2.5500e-003**	**272.7682**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	308102	89.6303	4.0500e-003	8.4000e-004	89.9815
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	337250	98.1100	4.4400e-003	9.2000e-004	98.4944
Health Club	140102	40.7571	1.8400e-003	3.8000e-004	40.9168
Parking Lot	592.025	0.1722	1.0000e-005	0.0000	0.1729
Single Family Housing	21534.2	6.2646	2.8000e-004	6.0000e-005	6.2891
Total		**234.9342**	**0.0106**	**2.2000e-003**	**235.8547**

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	0.8296	0.0101	0.6191	5.0000e-005		3.6600e-003	3.6600e-003		3.6600e-003	3.6600e-003	0.0000	4.4599	4.4599	1.0400e-003	6.0000e-005	4.5048
Unmitigated	0.8296	0.0101	0.6191	5.0000e-005		3.6600e-003	3.6600e-003		3.6600e-003	3.6600e-003	0.0000	4.4599	4.4599	1.0400e-003	6.0000e-005	4.5048

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	0.1227					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6879					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.5000e-004	2.9800e-003	1.2700e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	3.4506	3.4506	7.0000e-005	6.0000e-005	3.4711
Landscaping	0.0187	7.1200e-003	0.6178	3.0000e-005		3.4200e-003	3.4200e-003		3.4200e-003	3.4200e-003	0.0000	1.0094	1.0094	9.8000e-004	0.0000	1.0337
Total	**0.8296**	**0.0101**	**0.6191**	**5.0000e-005**		**3.6600e-003**	**3.6600e-003**		**3.6600e-003**	**3.6600e-003**	**0.0000**	**4.4599**	**4.4599**	**1.0500e-003**	**6.0000e-005**	**4.5048**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1227					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6879					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.5000e-004	2.9800e-003	1.2700e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	3.4506	3.4506	7.0000e-005	6.0000e-005	3.4711
Landscaping	0.0187	7.1200e-003	0.6178	3.0000e-005		3.4200e-003	3.4200e-003		3.4200e-003	3.4200e-003	0.0000	1.0094	1.0094	9.8000e-004	0.0000	1.0337
Total	**0.8296**	**0.0101**	**0.6191**	**5.0000e-005**		**3.6600e-003**	**3.6600e-003**		**3.6600e-003**	**3.6600e-003**	**0.0000**	**4.4599**	**4.4599**	**1.0500e-003**	**6.0000e-005**	**4.5048**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	18.0702	0.2215	5.3600e-003	25.2040
Unmitigated	18.0702	0.2215	5.3600e-003	25.2040

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.21232 / 3.28603	13.2043	0.1704	4.1200e-003	18.6907
City Park	0 / 0.917441	0.9341	4.0000e-005	1.0000e-005	0.9378
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Health Club	1.36621 / 0.837352	3.4366	0.0447	1.0800e-003	4.8746
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.195462 / 0.123226	0.4952	6.3900e-003	1.5000e-004	0.7009
Total		**18.0701**	**0.2215**	**5.3600e-003**	**25.2039**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.21232 / 3.28603	13.2043	0.1704	4.1200e-003	18.6907
City Park	0 / 0.917441	0.9341	4.0000e-005	1.0000e-005	0.9378
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Health Club	1.36621 / 0.837352	3.4366	0.0447	1.0800e-003	4.8746
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.195462 / 0.123226	0.4952	6.3900e-003	1.5000e-004	0.7009
Total		**18.0701**	**0.2215**	**5.3600e-003**	**25.2039**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	34.9794	2.0672	0.0000	86.6600
Unmitigated	34.9794	2.0672	0.0000	86.6600

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	36.8	7.4701	0.4415	0.0000	18.5068
City Park	0.07	0.0142	8.4000e-004	0.0000	0.0352
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Health Club	131.67	26.7278	1.5796	0.0000	66.2170
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	3.78	0.7673	0.0454	0.0000	1.9010
Total		**34.9794**	**2.0672**	**0.0000**	**86.6600**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	36.8	7.4701	0.4415	0.0000	18.5068
City Park	0.07	0.0142	8.4000e-004	0.0000	0.0352
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Health Club	131.67	26.7278	1.5796	0.0000	66.2170
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	3.78	0.7673	0.0454	0.0000	1.9010
Total		**34.9794**	**2.0672**	**0.0000**	**86.6600**

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

3700 California Blocks A,B,C-Input

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	57.00	Space	0.22	32,135.00	0
Enclosed Parking with Elevator	215.00	Space	0.34	121,212.00	0
Enclosed Parking with Elevator	120.00	Space	0.76	67,653.00	0
Parking Lot	10.00	Space	0.04	5,638.00	0
Parking Lot	8.00	Space	0.01	4,510.00	0
Parking Lot	6.00	Space	0.04	3,383.00	0
City Park	0.35	Acre	0.35	15,100.00	0
City Park	0.86	Acre	0.86	37,600.00	0
City Park	0.77	Acre	0.77	33,600.00	0
Health Club	23.10	1000sqft	0.26	23,100.00	0
Apartments Mid Rise	38.00	Dwelling Unit	0.46	68,200.00	109
Apartments Mid Rise	141.00	Dwelling Unit	0.90	317,500.00	403
Apartments Mid Rise	80.00	Dwelling Unit	1.54	138,200.00	229
Single Family Housing	5.00	Dwelling Unit	0.17	25,300.00	14
Single Family Housing	6.00	Dwelling Unit	0.08	28,700.00	17
Single Family Housing	3.00	Dwelling Unit	0.19	16,900.00	9

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2024

Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land use area based on project description

Construction Phase - Construction emissions calculated outside CalEEMod

Off-road Equipment - Construction emissions calculated outside CalEEMod

Trips and VMT -

Grading - Construction emissions calculated outside CalEEMod

Architectural Coating - Construction emissions calculated outside CalEEMod

Vehicle Trips - Trip rates and trip lengths consistent with transportation analysis

Vehicle Emission Factors - EMFAC2017

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust - Road silt loading is calculated based on entrained road dust methodology from AP-42

Woodstoves - Changes based on project description. All NG fireplaces

Consumer Products - Change based on project description

Area Coating -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	14,072.00	11,399.00
tblAreaCoating	Area_Parking	14072	11399
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	230.00	0.00

tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblConsumerProducts	ROG_EF	2.14E-05	2.1E-05
tblFireplaces	NumberGas	38.85	82.88
tblFireplaces	NumberGas	3.50	9.52
tblFireplaces	NumberWood	44.03	0.00
tblFireplaces	NumberWood	6.02	0.00
tblFleetMix	HHD	9.2570e-003	8.5740e-003
tblFleetMix	HHD	9.2570e-003	8.5740e-003
tblFleetMix	HHD	9.2570e-003	8.5740e-003
tblFleetMix	HHD	9.2570e-003	8.5740e-003
tblFleetMix	HHD	9.2570e-003	8.5740e-003
tblFleetMix	HHD	9.2570e-003	8.5740e-003
tblFleetMix	LDA	0.60	0.58
tblFleetMix	LDA	0.60	0.58
tblFleetMix	LDA	0.60	0.58
tblFleetMix	LDA	0.60	0.58
tblFleetMix	LDA	0.60	0.58
tblFleetMix	LDA	0.60	0.58
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05

tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	5.0770e-003	5.5390e-003
tblFleetMix	LHD2	5.0770e-003	5.5390e-003
tblFleetMix	LHD2	5.0770e-003	5.5390e-003
tblFleetMix	LHD2	5.0770e-003	5.5390e-003
tblFleetMix	LHD2	5.0770e-003	5.5390e-003
tblFleetMix	LHD2	5.0770e-003	5.5390e-003
tblFleetMix	MCY	6.2620e-003	7.1020e-003
tblFleetMix	MCY	6.2620e-003	7.1020e-003
tblFleetMix	MCY	6.2620e-003	7.1020e-003
tblFleetMix	MCY	6.2620e-003	7.1020e-003
tblFleetMix	MCY	6.2620e-003	7.1020e-003
tblFleetMix	MCY	6.2620e-003	7.1020e-003
tblFleetMix	MDV	0.09	0.11
tblFleetMix	MDV	0.09	0.11
tblFleetMix	MDV	0.09	0.11

tblFleetMix	MDV	0.09	0.11
tblFleetMix	MDV	0.09	0.11
tblFleetMix	MDV	0.09	0.11
tblFleetMix	MH	5.1900e-004	5.8400e-004
tblFleetMix	MH	5.1900e-004	5.8400e-004
tblFleetMix	MH	5.1900e-004	5.8400e-004
tblFleetMix	MH	5.1900e-004	5.8400e-004
tblFleetMix	MH	5.1900e-004	5.8400e-004
tblFleetMix	MH	5.1900e-004	5.8400e-004
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03
tblFleetMix	OBUS	4.2880e-003	3.4080e-003
tblFleetMix	OBUS	4.2880e-003	3.4080e-003
tblFleetMix	OBUS	4.2880e-003	3.4080e-003
tblFleetMix	OBUS	4.2880e-003	3.4080e-003
tblFleetMix	OBUS	4.2880e-003	3.4080e-003
tblFleetMix	OBUS	4.2880e-003	3.4080e-003
tblFleetMix	SBUS	9.4500e-004	1.0360e-003
tblFleetMix	SBUS	9.4500e-004	1.0360e-003
tblFleetMix	SBUS	9.4500e-004	1.0360e-003
tblFleetMix	SBUS	9.4500e-004	1.0360e-003
tblFleetMix	SBUS	9.4500e-004	1.0360e-003
tblFleetMix	SBUS	9.4500e-004	1.0360e-003

tblFleetMix	UBUS	3.5530e-003	6.4740e-003
tblFleetMix	UBUS	3.5530e-003	6.4740e-003
tblFleetMix	UBUS	3.5530e-003	6.4740e-003
tblFleetMix	UBUS	3.5530e-003	6.4740e-003
tblFleetMix	UBUS	3.5530e-003	6.4740e-003
tblFleetMix	UBUS	3.5530e-003	6.4740e-003
tblLandUse	LandUseSquareFeet	48,000.00	67,653.00
tblLandUse	LandUseSquareFeet	86,000.00	121,212.00
tblLandUse	LandUseSquareFeet	22,800.00	32,135.00
tblLandUse	LandUseSquareFeet	4,000.00	5,638.00
tblLandUse	LandUseSquareFeet	2,400.00	3,383.00
tblLandUse	LandUseSquareFeet	3,200.00	4,510.00
tblLandUse	LandUseSquareFeet	15,246.00	15,100.00
tblLandUse	LandUseSquareFeet	33,541.20	33,600.00
tblLandUse	LandUseSquareFeet	37,461.60	37,600.00
tblLandUse	LandUseSquareFeet	141,000.00	317,500.00
tblLandUse	LandUseSquareFeet	38,000.00	68,200.00
tblLandUse	LandUseSquareFeet	80,000.00	138,200.00
tblLandUse	LandUseSquareFeet	5,400.00	16,900.00
tblLandUse	LandUseSquareFeet	9,000.00	25,300.00
tblLandUse	LandUseSquareFeet	10,800.00	28,700.00
tblLandUse	LotAcreage	1.08	0.76
tblLandUse	LotAcreage	1.93	0.34
tblLandUse	LotAcreage	0.51	0.22
tblLandUse	LotAcreage	0.09	0.04
tblLandUse	LotAcreage	0.05	0.04
tblLandUse	LotAcreage	0.07	0.01

tblLandUse	LotAcreage	0.53	0.26
tblLandUse	LotAcreage	3.71	0.90
tblLandUse	LotAcreage	1.00	0.46
tblLandUse	LotAcreage	2.11	1.54
tblLandUse	LotAcreage	0.97	0.19
tblLandUse	LotAcreage	1.62	0.17
tblLandUse	LotAcreage	1.95	0.08
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblTripsAndVMT	VendorTripNumber	86.00	78.00
tblTripsAndVMT	WorkerTripNumber	336.00	317.00
tblTripsAndVMT	WorkerTripNumber	67.00	63.00
tblVehicleEF	HHD	0.56	0.05
tblVehicleEF	HHD	0.38	0.35
tblVehicleEF	HHD	0.06	1.0000e-006
tblVehicleEF	HHD	1.74	4.91
tblVehicleEF	HHD	2.21	1.39
tblVehicleEF	HHD	4.51	0.01
tblVehicleEF	HHD	3,134.48	944.78
tblVehicleEF	HHD	1,887.93	1,827.00
tblVehicleEF	HHD	14.15	0.11
tblVehicleEF	HHD	17.68	5.87
tblVehicleEF	HHD	3.02	3.67
tblVehicleEF	HHD	18.99	2.33
tblVehicleEF	HHD	0.03	5.9640e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.03	0.03

tblVehicleEF	HHD	8.4530e-003	0.02
tblVehicleEF	HHD	1.4500e-004	2.0000e-006
tblVehicleEF	HHD	0.02	5.7060e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.5310e-003	8.7170e-003
tblVehicleEF	HHD	8.0860e-003	0.02
tblVehicleEF	HHD	1.3300e-004	2.0000e-006
tblVehicleEF	HHD	7.9000e-005	6.0000e-006
tblVehicleEF	HHD	4.0930e-003	3.5600e-004
tblVehicleEF	HHD	0.39	0.33
tblVehicleEF	HHD	5.6000e-005	4.0000e-006
tblVehicleEF	HHD	0.10	0.04
tblVehicleEF	HHD	6.6800e-004	2.4900e-004
tblVehicleEF	HHD	0.09	6.0000e-006
tblVehicleEF	HHD	0.03	7.9910e-003
tblVehicleEF	HHD	0.02	0.01
tblVehicleEF	HHD	2.1500e-004	1.0000e-006
tblVehicleEF	HHD	7.9000e-005	6.0000e-006
tblVehicleEF	HHD	4.0930e-003	3.5600e-004
tblVehicleEF	HHD	0.48	0.40
tblVehicleEF	HHD	5.6000e-005	4.0000e-006
tblVehicleEF	HHD	0.48	0.40
tblVehicleEF	HHD	6.6800e-004	2.4900e-004
tblVehicleEF	HHD	0.10	6.0000e-006
tblVehicleEF	LDA	3.6440e-003	2.0270e-003
tblVehicleEF	LDA	4.2460e-003	0.04
tblVehicleEF	LDA	0.49	0.56

tblVehicleEF	LDA	1.00	2.13
tblVehicleEF	LDA	248.83	249.41
tblVehicleEF	LDA	52.61	49.94
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.17
tblVehicleEF	LDA	2.0930e-003	1.7070e-003
tblVehicleEF	LDA	2.2530e-003	1.7140e-003
tblVehicleEF	LDA	1.9270e-003	1.5720e-003
tblVehicleEF	LDA	2.0710e-003	1.5760e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.08	0.09
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	9.2100e-003	7.6970e-003
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.20
tblVehicleEF	LDA	2.4900e-003	2.4670e-003
tblVehicleEF	LDA	5.4300e-004	4.9400e-004
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.08	0.09
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.22
tblVehicleEF	LDT1	5.9890e-003	3.3460e-003
tblVehicleEF	LDT1	8.2800e-003	0.05
tblVehicleEF	LDT1	0.74	0.77
tblVehicleEF	LDT1	1.81	2.29

tblVehicleEF	LDT1	310.75	301.05
tblVehicleEF	LDT1	66.21	60.36
tblVehicleEF	LDT1	0.06	0.05
tblVehicleEF	LDT1	0.10	0.21
tblVehicleEF	LDT1	2.3520e-003	1.9580e-003
tblVehicleEF	LDT1	2.5880e-003	1.9990e-003
tblVehicleEF	LDT1	2.1640e-003	1.8020e-003
tblVehicleEF	LDT1	2.3800e-003	1.8380e-003
tblVehicleEF	LDT1	0.05	0.05
tblVehicleEF	LDT1	0.16	0.12
tblVehicleEF	LDT1	0.05	0.05
tblVehicleEF	LDT1	0.01	0.01
tblVehicleEF	LDT1	0.13	0.07
tblVehicleEF	LDT1	0.11	0.25
tblVehicleEF	LDT1	3.1140e-003	2.9790e-003
tblVehicleEF	LDT1	6.9300e-004	5.9700e-004
tblVehicleEF	LDT1	0.05	0.05
tblVehicleEF	LDT1	0.16	0.12
tblVehicleEF	LDT1	0.05	0.05
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.13	0.07
tblVehicleEF	LDT1	0.12	0.28
tblVehicleEF	LDT2	5.0070e-003	3.0070e-003
tblVehicleEF	LDT2	5.1920e-003	0.06
tblVehicleEF	LDT2	0.64	0.71
tblVehicleEF	LDT2	1.22	2.68
tblVehicleEF	LDT2	350.14	318.38

tblVehicleEF	LDT2	73.70	64.11
tblVehicleEF	LDT2	0.06	0.05
tblVehicleEF	LDT2	0.08	0.23
tblVehicleEF	LDT2	2.1760e-003	1.7430e-003
tblVehicleEF	LDT2	2.3270e-003	1.6970e-003
tblVehicleEF	LDT2	2.0010e-003	1.6040e-003
tblVehicleEF	LDT2	2.1400e-003	1.5600e-003
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.09	0.10
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.07	0.27
tblVehicleEF	LDT2	3.5050e-003	3.1490e-003
tblVehicleEF	LDT2	7.5700e-004	6.3400e-004
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.09	0.10
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.08	0.29
tblVehicleEF	LHD1	5.6310e-003	5.7060e-003
tblVehicleEF	LHD1	0.01	6.6600e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.15	0.20
tblVehicleEF	LHD1	0.75	0.58
tblVehicleEF	LHD1	2.33	1.10

tblVehicleEF	LHD1	8.76	8.63
tblVehicleEF	LHD1	690.52	806.60
tblVehicleEF	LHD1	35.12	12.89
tblVehicleEF	LHD1	0.06	0.04
tblVehicleEF	LHD1	0.60	0.34
tblVehicleEF	LHD1	1.03	0.33
tblVehicleEF	LHD1	7.0900e-004	6.8000e-004
tblVehicleEF	LHD1	9.9640e-003	9.5380e-003
tblVehicleEF	LHD1	9.9640e-003	6.6230e-003
tblVehicleEF	LHD1	8.1300e-004	2.4000e-004
tblVehicleEF	LHD1	6.7800e-004	6.5100e-004
tblVehicleEF	LHD1	2.4910e-003	2.3840e-003
tblVehicleEF	LHD1	9.4940e-003	6.2890e-003
tblVehicleEF	LHD1	7.4800e-004	2.2100e-004
tblVehicleEF	LHD1	1.8860e-003	1.4240e-003
tblVehicleEF	LHD1	0.09	0.06
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.2420e-003	9.2100e-004
tblVehicleEF	LHD1	0.09	0.07
tblVehicleEF	LHD1	0.28	0.16
tblVehicleEF	LHD1	0.23	0.07
tblVehicleEF	LHD1	8.8000e-005	8.4000e-005
tblVehicleEF	LHD1	6.7840e-003	7.8940e-003
tblVehicleEF	LHD1	3.9500e-004	1.2800e-004
tblVehicleEF	LHD1	1.8860e-003	1.4240e-003
tblVehicleEF	LHD1	0.09	0.06
tblVehicleEF	LHD1	0.02	0.03

tblVehicleEF	LHD1	1.2420e-003	9.2100e-004
tblVehicleEF	LHD1	0.11	0.09
tblVehicleEF	LHD1	0.28	0.16
tblVehicleEF	LHD1	0.26	0.07
tblVehicleEF	LHD2	3.2090e-003	3.3650e-003
tblVehicleEF	LHD2	6.7110e-003	6.0180e-003
tblVehicleEF	LHD2	5.6100e-003	7.6680e-003
tblVehicleEF	LHD2	0.12	0.14
tblVehicleEF	LHD2	0.50	0.52
tblVehicleEF	LHD2	1.11	0.65
tblVehicleEF	LHD2	13.84	13.47
tblVehicleEF	LHD2	698.44	765.11
tblVehicleEF	LHD2	23.92	8.40
tblVehicleEF	LHD2	0.09	0.08
tblVehicleEF	LHD2	0.44	0.47
tblVehicleEF	LHD2	0.40	0.19
tblVehicleEF	LHD2	1.1970e-003	1.3540e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.9100e-004	1.2600e-004
tblVehicleEF	LHD2	1.1450e-003	1.2960e-003
tblVehicleEF	LHD2	2.6920e-003	2.6650e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.5900e-004	1.1600e-004
tblVehicleEF	LHD2	5.8600e-004	8.0100e-004
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.01	0.02

tblVehicleEF	LHD2	3.8300e-004	5.0800e-004
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.06	0.09
tblVehicleEF	LHD2	0.08	0.04
tblVehicleEF	LHD2	1.3500e-004	1.2900e-004
tblVehicleEF	LHD2	6.7910e-003	7.3990e-003
tblVehicleEF	LHD2	2.5900e-004	8.3000e-005
tblVehicleEF	LHD2	5.8600e-004	8.0100e-004
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.8300e-004	5.0800e-004
tblVehicleEF	LHD2	0.11	0.11
tblVehicleEF	LHD2	0.06	0.09
tblVehicleEF	LHD2	0.08	0.04
tblVehicleEF	MCY	0.56	0.40
tblVehicleEF	MCY	0.17	0.25
tblVehicleEF	MCY	20.61	20.63
tblVehicleEF	MCY	10.18	9.07
tblVehicleEF	MCY	193.06	229.85
tblVehicleEF	MCY	46.00	61.66
tblVehicleEF	MCY	1.19	1.19
tblVehicleEF	MCY	0.33	0.28
tblVehicleEF	MCY	2.5080e-003	2.3850e-003
tblVehicleEF	MCY	3.7870e-003	2.9930e-003
tblVehicleEF	MCY	2.3460e-003	2.2300e-003
tblVehicleEF	MCY	3.5710e-003	2.8200e-003
tblVehicleEF	MCY	0.79	0.79

tblVehicleEF	MCY	0.80	0.78
tblVehicleEF	MCY	0.51	0.51
tblVehicleEF	MCY	2.80	2.80
tblVehicleEF	MCY	0.84	0.70
tblVehicleEF	MCY	2.26	1.99
tblVehicleEF	MCY	2.3520e-003	2.2750e-003
tblVehicleEF	MCY	6.9300e-004	6.1000e-004
tblVehicleEF	MCY	0.79	0.79
tblVehicleEF	MCY	0.80	0.78
tblVehicleEF	MCY	0.51	0.51
tblVehicleEF	MCY	3.46	3.47
tblVehicleEF	MCY	0.84	0.70
tblVehicleEF	MCY	2.46	2.16
tblVehicleEF	MDV	7.1350e-003	3.0460e-003
tblVehicleEF	MDV	9.0500e-003	0.06
tblVehicleEF	MDV	0.80	0.69
tblVehicleEF	MDV	1.79	2.72
tblVehicleEF	MDV	460.22	375.26
tblVehicleEF	MDV	94.54	73.63
tblVehicleEF	MDV	0.08	0.05
tblVehicleEF	MDV	0.14	0.23
tblVehicleEF	MDV	2.2400e-003	1.8270e-003
tblVehicleEF	MDV	2.3440e-003	1.7490e-003
tblVehicleEF	MDV	2.0640e-003	1.6850e-003
tblVehicleEF	MDV	2.1550e-003	1.6080e-003
tblVehicleEF	MDV	0.04	0.04
tblVehicleEF	MDV	0.11	0.09

tblVehicleEF	MDV	0.04	0.05
tblVehicleEF	MDV	0.02	0.01
tblVehicleEF	MDV	0.09	0.05
tblVehicleEF	MDV	0.12	0.27
tblVehicleEF	MDV	4.6020e-003	3.7080e-003
tblVehicleEF	MDV	9.7600e-004	7.2900e-004
tblVehicleEF	MDV	0.04	0.04
tblVehicleEF	MDV	0.11	0.09
tblVehicleEF	MDV	0.04	0.05
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.09	0.05
tblVehicleEF	MDV	0.13	0.30
tblVehicleEF	MH	0.02	7.9410e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.01	0.78
tblVehicleEF	MH	4.36	1.96
tblVehicleEF	MH	1,185.81	1,444.02
tblVehicleEF	MH	56.72	17.21
tblVehicleEF	MH	0.83	0.98
tblVehicleEF	MH	0.62	0.23
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	1.0110e-003	2.8400e-004
tblVehicleEF	MH	3.2230e-003	3.2780e-003
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	9.3000e-004	2.6100e-004
tblVehicleEF	MH	0.34	0.38

tblVehicleEF	MH	0.03	0.04
tblVehicleEF	MH	0.15	0.15
tblVehicleEF	MH	0.05	0.05
tblVehicleEF	MH	0.01	9.9170e-003
tblVehicleEF	MH	0.24	0.08
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.4300e-004	1.7000e-004
tblVehicleEF	MH	0.34	0.38
tblVehicleEF	MH	0.03	0.04
tblVehicleEF	MH	0.15	0.15
tblVehicleEF	MH	0.07	0.07
tblVehicleEF	MH	0.01	9.9170e-003
tblVehicleEF	MH	0.27	0.09
tblVehicleEF	MHD	0.02	3.1870e-003
tblVehicleEF	MHD	3.4540e-003	1.3420e-003
tblVehicleEF	MHD	0.05	7.5740e-003
tblVehicleEF	MHD	0.31	0.50
tblVehicleEF	MHD	0.30	0.19
tblVehicleEF	MHD	4.66	0.85
tblVehicleEF	MHD	155.32	115.14
tblVehicleEF	MHD	1,179.47	1,042.42
tblVehicleEF	MHD	51.33	7.73
tblVehicleEF	MHD	0.45	0.72
tblVehicleEF	MHD	1.09	1.42
tblVehicleEF	MHD	12.05	1.80
tblVehicleEF	MHD	1.5900e-004	6.2700e-004
tblVehicleEF	MHD	3.1450e-003	6.7340e-003

tblVehicleEF	MHD	7.2000e-004	8.6000e-005
tblVehicleEF	MHD	1.5200e-004	6.0000e-004
tblVehicleEF	MHD	3.0060e-003	6.4390e-003
tblVehicleEF	MHD	6.6200e-004	7.9000e-005
tblVehicleEF	MHD	7.5300e-004	3.0600e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	4.8600e-004	1.9900e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.29	0.04
tblVehicleEF	MHD	1.4920e-003	1.0890e-003
tblVehicleEF	MHD	0.01	9.9130e-003
tblVehicleEF	MHD	5.9500e-004	7.7000e-005
tblVehicleEF	MHD	7.5300e-004	3.0600e-004
tblVehicleEF	MHD	0.04	0.02
tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	MHD	4.8600e-004	1.9900e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.32	0.04
tblVehicleEF	OBUS	0.01	6.6390e-003
tblVehicleEF	OBUS	5.3460e-003	3.7010e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.61
tblVehicleEF	OBUS	0.42	0.48
tblVehicleEF	OBUS	4.75	1.70

tblVehicleEF	OBUS	142.11	100.56
tblVehicleEF	OBUS	1,309.44	1,333.01
tblVehicleEF	OBUS	64.09	14.28
tblVehicleEF	OBUS	0.32	0.41
tblVehicleEF	OBUS	1.10	1.59
tblVehicleEF	OBUS	3.67	1.17
tblVehicleEF	OBUS	2.9000e-005	1.3400e-004
tblVehicleEF	OBUS	3.1040e-003	8.1250e-003
tblVehicleEF	OBUS	6.6000e-004	1.4000e-004
tblVehicleEF	OBUS	2.8000e-005	1.2900e-004
tblVehicleEF	OBUS	2.9580e-003	7.7640e-003
tblVehicleEF	OBUS	6.0600e-004	1.2900e-004
tblVehicleEF	OBUS	1.0980e-003	1.0910e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	6.0200e-004	5.6600e-004
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.30	0.08
tblVehicleEF	OBUS	1.3670e-003	9.5500e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.2400e-004	1.4100e-004
tblVehicleEF	OBUS	1.0980e-003	1.0910e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	6.0200e-004	5.6600e-004
tblVehicleEF	OBUS	0.06	0.03

tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.33	0.09
tblVehicleEF	SBUS	0.81	0.16
tblVehicleEF	SBUS	9.8340e-003	3.3570e-003
tblVehicleEF	SBUS	0.06	0.01
tblVehicleEF	SBUS	8.09	5.87
tblVehicleEF	SBUS	0.59	0.28
tblVehicleEF	SBUS	7.19	1.80
tblVehicleEF	SBUS	1,103.84	390.07
tblVehicleEF	SBUS	1,057.81	932.50
tblVehicleEF	SBUS	57.01	11.79
tblVehicleEF	SBUS	7.90	2.10
tblVehicleEF	SBUS	3.38	1.47
tblVehicleEF	SBUS	11.83	1.21
tblVehicleEF	SBUS	7.0490e-003	1.4420e-003
tblVehicleEF	SBUS	0.01	9.6480e-003
tblVehicleEF	SBUS	0.02	9.6500e-003
tblVehicleEF	SBUS	6.8100e-004	1.4900e-004
tblVehicleEF	SBUS	6.7440e-003	1.3800e-003
tblVehicleEF	SBUS	2.6370e-003	2.4120e-003
tblVehicleEF	SBUS	0.02	9.2040e-003
tblVehicleEF	SBUS	6.2600e-004	1.3700e-004
tblVehicleEF	SBUS	2.7710e-003	1.1660e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.96	0.71
tblVehicleEF	SBUS	1.5500e-003	6.2300e-004
tblVehicleEF	SBUS	0.09	0.03

tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.38	0.07
tblVehicleEF	SBUS	0.01	3.7520e-003
tblVehicleEF	SBUS	0.01	9.0210e-003
tblVehicleEF	SBUS	6.9400e-004	1.1700e-004
tblVehicleEF	SBUS	2.7710e-003	1.1660e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	1.38	1.03
tblVehicleEF	SBUS	1.5500e-003	6.2300e-004
tblVehicleEF	SBUS	0.11	0.04
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.42	0.08
tblVehicleEF	UBUS	0.42	1.38
tblVehicleEF	UBUS	0.05	0.00
tblVehicleEF	UBUS	8.65	10.31
tblVehicleEF	UBUS	9.26	0.00
tblVehicleEF	UBUS	2,259.15	1,709.68
tblVehicleEF	UBUS	65.85	0.00
tblVehicleEF	UBUS	15.81	0.75
tblVehicleEF	UBUS	17.18	0.00
tblVehicleEF	UBUS	0.69	0.07
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.30	5.4620e-003
tblVehicleEF	UBUS	1.1580e-003	0.00
tblVehicleEF	UBUS	0.29	0.03
tblVehicleEF	UBUS	3.0000e-003	8.6540e-003
tblVehicleEF	UBUS	0.29	5.2260e-003

tblVehicleEF	UBUS	1.0650e-003	0.00
tblVehicleEF	UBUS	3.1800e-003	0.00
tblVehicleEF	UBUS	0.08	0.00
tblVehicleEF	UBUS	1.5890e-003	0.00
tblVehicleEF	UBUS	1.27	0.02
tblVehicleEF	UBUS	0.03	0.00
tblVehicleEF	UBUS	0.62	0.00
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	8.2300e-004	0.00
tblVehicleEF	UBUS	3.1800e-003	0.00
tblVehicleEF	UBUS	0.08	0.00
tblVehicleEF	UBUS	1.5890e-003	0.00
tblVehicleEF	UBUS	1.79	1.41
tblVehicleEF	UBUS	0.03	0.00
tblVehicleEF	UBUS	0.68	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	5.70	3.95
tblVehicleTrips	HO_TL	5.70	3.95
tblVehicleTrips	HS_TL	4.80	3.95
tblVehicleTrips	HS_TL	4.80	3.95
tblVehicleTrips	HW_TL	10.80	3.95
tblVehicleTrips	HW_TL	10.80	3.95
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00

tblVehicleTrips	ST_TR	6.39	5.09
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	9.91	5.09
tblVehicleTrips	SU_TR	5.86	5.09
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	8.62	5.09
tblVehicleTrips	WD_TR	6.65	5.09
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	9.52	5.09
tblWoodstoves	NumberCatalytic	5.18	0.00
tblWoodstoves	NumberCatalytic	0.56	0.00
tblWoodstoves	NumberNoncatalytic	5.18	0.00
tblWoodstoves	NumberNoncatalytic	0.56	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					
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**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)
		Highest		

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	2.8836	0.0533	2.0430	3.0000e-004		0.0137	0.0137		0.0137	0.0137	0.0000	37.9245	37.9245	3.8600e-003	6.3000e-004	38.2101
Energy	0.0185	0.1595	0.0795	1.0100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	962.3447	962.3447	0.0388	0.0106	966.4855
Mobile	0.3162	0.4867	3.0819	7.6500e-003	0.7426	6.0000e-003	0.7486	0.1993	5.5800e-003	0.2048	0.0000	718.5382	718.5382	0.0586	0.0000	720.0042
Waste						0.0000	0.0000		0.0000	0.0000	54.3569	0.0000	54.3569	3.2124	0.0000	134.6670
Water						0.0000	0.0000		0.0000	0.0000	6.0764	44.8217	50.8982	0.6261	0.0152	71.0680
Total	**3.2182**	**0.6995**	**5.2043**	**8.9600e-003**	**0.7426**	**0.0324**	**0.7750**	**0.1993**	**0.0320**	**0.2313**	**60.4334**	**1,763.6292**	**1,824.0626**	**3.9398**	**0.0264**	**1,930.4348**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8836	0.0533	2.0430	3.0000e-004		0.0137	0.0137		0.0137	0.0137	0.0000	37.9245	37.9245	3.8600e-003	6.3000e-004	38.2101
Energy	0.0185	0.1595	0.0795	1.0100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	864.1459	864.1459	0.0343	9.7300e-003	867.9019
Mobile	0.3162	0.4867	3.0819	7.6500e-003	0.7426	6.0000e-003	0.7486	0.1993	5.5800e-003	0.2048	0.0000	718.5382	718.5382	0.0586	0.0000	720.0042
Waste						0.0000	0.0000		0.0000	0.0000	54.3569	0.0000	54.3569	3.2124	0.0000	134.6670
Water						0.0000	0.0000		0.0000	0.0000	6.0764	44.8217	50.8982	0.6261	0.0152	71.0680
Total	**3.2182**	**0.6995**	**5.2043**	**8.9600e-003**	**0.7426**	**0.0324**	**0.7750**	**0.1993**	**0.0320**	**0.2313**	**60.4334**	**1,665.4304**	**1,725.8637**	**3.9354**	**0.0255**	**1,831.8512**

	ROG	NOx	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**	**5.57**	**5.38**	**0.11**	**3.44**	**5.11**

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	2/1/2021	1/31/2021	5	0	
2	Site Preparation	Site Preparation	2/27/2021	2/26/2021	5	0	
3	Grading	Grading	3/13/2021	3/12/2021	5	0	
4	Building Construction	Building Construction	4/10/2021	4/9/2021	5	0	
5	Paving	Paving	2/26/2022	2/25/2022	5	0	
6	Architectural Coating	Architectural Coating	3/26/2022	3/25/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.41

Residential Indoor: 1,204,470; Residential Outdoor: 401,490; Non-Residential Indoor: 34,650; Non-Residential Outdoor: 11,550; Striped Parking Area: 11,399 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	317.00	78.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	63.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

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

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	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2021

Mitigated Construction Off-Site

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

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

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

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2021

Mitigated Construction Off-Site

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

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

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

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	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

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

3.6 Paving - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2022

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2022

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2022

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2022

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	0.0000	0.0000	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**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.3162	0.4867	3.0819	7.6500e-003	0.7426	6.0000e-003	0.7486	0.1993	5.5800e-003	0.2048	0.0000	718.5382	718.5382	0.0586	0.0000	720.0042
Unmitigated	0.3162	0.4867	3.0819	7.6500e-003	0.7426	6.0000e-003	0.7486	0.1993	5.5800e-003	0.2048	0.0000	718.5382	718.5382	0.0586	0.0000	720.0042

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	193.42	193.42	193.42	278,099	278,099
Apartments Mid Rise	717.69	717.69	717.69	1,031,895	1,031,895
Apartments Mid Rise	407.20	407.20	407.20	585,472	585,472
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	25.45	25.45	25.45	36,592	36,592
Single Family Housing	30.54	30.54	30.54	43,910	43,910
Single Family Housing	15.27	15.27	15.27	21,955	21,955
Total	1,389.57	1,389.57	1,389.57	1,997,924	1,997,924

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	3.95	3.95	3.95	31.00	15.00	54.00	100	0	0
Apartments Mid Rise	3.95	3.95	3.95	31.00	15.00	54.00	100	0	0
Apartments Mid Rise	3.95	3.95	3.95	31.00	15.00	54.00	100	0	0
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	3.95	3.95	3.95	31.00	15.00	54.00	100	0	0
Single Family Housing	3.95	3.95	3.95	31.00	15.00	54.00	100	0	0
Single Family Housing	3.95	3.95	3.95	31.00	15.00	54.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.580966	0.054933	0.173869	0.105905	0.023720	0.005539	0.027890	0.008574	0.003408	0.006474	0.007102	0.001036	0.000584
City Park	0.580966	0.054933	0.173869	0.105905	0.023720	0.005539	0.027890	0.008574	0.003408	0.006474	0.007102	0.001036	0.000584
Enclosed Parking with Elevator	0.580966	0.054933	0.173869	0.105905	0.023720	0.005539	0.027890	0.008574	0.003408	0.006474	0.007102	0.001036	0.000584
Health Club	0.580966	0.054933	0.173869	0.105905	0.023720	0.005539	0.027890	0.008574	0.003408	0.006474	0.007102	0.001036	0.000584
Parking Lot	0.580966	0.054933	0.173869	0.105905	0.023720	0.005539	0.027890	0.008574	0.003408	0.006474	0.007102	0.001036	0.000584
Single Family Housing	0.580966	0.054933	0.173869	0.105905	0.023720	0.005539	0.027890	0.008574	0.003408	0.006474	0.007102	0.001036	0.000584

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive 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	681.3514	681.3514	0.0308	6.3700e-003	684.0211
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	779.5503	779.5503	0.0353	7.2900e-003	782.6048
NaturalGas Mitigated	0.0185	0.1595	0.0795	1.0100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	182.7945	182.7945	3.5000e-003	3.3500e-003	183.8807
NaturalGas Unmitigated	0.0185	0.1595	0.0795	1.0100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	182.7945	182.7945	3.5000e-003	3.3500e-003	183.8807

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	331756	1.7900e-003	0.0153	6.5100e-003	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	17.7038	17.7038	3.4000e-004	3.2000e-004	17.8090
Apartments Mid Rise	698434	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6000e-003	2.6000e-003		2.6000e-003	2.6000e-003	0.0000	37.2711	37.2711	7.1000e-004	6.8000e-004	37.4926
Apartments Mid Rise	1.23099e+006	6.6400e-003	0.0567	0.0241	3.6000e-004		4.5900e-003	4.5900e-003		4.5900e-003	4.5900e-003	0.0000	65.6904	65.6904	1.2600e-003	1.2000e-003	66.0807
City Park	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
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
Health Club	571725	3.0800e-003	0.0280	0.0235	1.7000e-004		2.1300e-003	2.1300e-003		2.1300e-003	2.1300e-003	0.0000	30.5094	30.5094	5.8000e-004	5.6000e-004	30.6907
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	126971	6.8000e-004	5.8500e-003	2.4900e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.7757	6.7757	1.3000e-004	1.2000e-004	6.8159
Single Family Housing	211619	1.1400e-003	9.7500e-003	4.1500e-003	6.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	11.2928	11.2928	2.2000e-004	2.1000e-004	11.3599
Single Family Housing	253943	1.3700e-003	0.0117	4.9800e-003	7.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	13.5513	13.5513	2.6000e-004	2.5000e-004	13.6319
Total		**0.0185**	**0.1595**	**0.0795**	**1.0100e-003**		**0.0128**	**0.0128**		**0.0128**	**0.0128**	**0.0000**	**182.7945**	**182.7945**	**3.5000e-003**	**3.3400e-003**	**183.8807**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.23099e+006	6.6400e-003	0.0567	0.0241	3.6000e-004		4.5900e-003	4.5900e-003		4.5900e-003	4.5900e-003	0.0000	65.6904	65.6904	1.2600e-003	1.2000e-003	66.0807
Apartments Mid Rise	331756	1.7900e-003	0.0153	6.5100e-003	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	17.7038	17.7038	3.4000e-004	3.2000e-004	17.8090
Apartments Mid Rise	698434	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6000e-003	2.6000e-003		2.6000e-003	2.6000e-003	0.0000	37.2711	37.2711	7.1000e-004	6.8000e-004	37.4926
City Park	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
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
Health Club	571725	3.0800e-003	0.0280	0.0235	1.7000e-004		2.1300e-003	2.1300e-003		2.1300e-003	2.1300e-003	0.0000	30.5094	30.5094	5.8000e-004	5.6000e-004	30.6907
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	126971	6.8000e-004	5.8500e-003	2.4900e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	6.7757	6.7757	1.3000e-004	1.2000e-004	6.8159
Single Family Housing	211619	1.1400e-003	9.7500e-003	4.1500e-003	6.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	11.2928	11.2928	2.2000e-004	2.1000e-004	11.3599
Single Family Housing	253943	1.3700e-003	0.0117	4.9800e-003	7.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	13.5513	13.5513	2.6000e-004	2.5000e-004	13.6319
Total		**0.0185**	**0.1595**	**0.0795**	**1.0100e-003**		**0.0128**	**0.0128**		**0.0128**	**0.0128**	**0.0000**	**182.7945**	**182.7945**	**3.5000e-003**	**3.3400e-003**	**183.8807**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	160436	46.6726	2.1100e-003	4.4000e-004	46.8554
Apartments Mid Rise	337759	98.2580	4.4400e-003	9.2000e-004	98.6430
Apartments Mid Rise	595301	173.1798	7.8300e-003	1.6200e-003	173.8583
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	188311	54.7819	2.4800e-003	5.1000e-004	54.9965
Enclosed Parking with Elevator	396447	115.3309	5.2100e-003	1.0800e-003	115.7828
Enclosed Parking with Elevator	710302	206.6351	9.3400e-003	1.9300e-003	207.4448
Health Club	174636	50.8036	2.3000e-003	4.8000e-004	51.0027
Parking Lot	1184.05	0.3445	2.0000e-005	0.0000	0.3458
Parking Lot	1578.5	0.4592	2.0000e-005	0.0000	0.4610
Parking Lot	1973.3	0.5741	3.0000e-005	1.0000e-005	0.5763
Single Family Housing	23947.5	6.9666	3.2000e-004	7.0000e-005	6.9939
Single Family Housing	39912.5	11.6110	5.3000e-004	1.1000e-004	11.6565
Single Family Housing	47894.9	13.9332	6.3000e-004	1.3000e-004	13.9878
Total		**779.5503**	**0.0353**	**7.3000e-003**	**782.6048**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	146348	42.5744	1.9300e-003	4.0000e-004	42.7412
Apartments Mid Rise	308102	89.6303	4.0500e-003	8.4000e-004	89.9815
Apartments Mid Rise	543029	157.9734	7.1400e-003	1.4800e-003	158.5924
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	160193	46.6020	2.1100e-003	4.4000e-004	46.7846
Enclosed Parking with Elevator	337250	98.1100	4.4400e-003	9.2000e-004	98.4944
Enclosed Parking with Elevator	604242	175.7809	7.9500e-003	1.6400e-003	176.4696
Health Club	140102	40.7571	1.8400e-003	3.8000e-004	40.9168
Parking Lot	592.025	0.1722	1.0000e-005	0.0000	0.1729
Parking Lot	789.25	0.2296	1.0000e-005	0.0000	0.2305
Parking Lot	986.65	0.2870	1.0000e-005	0.0000	0.2882
Single Family Housing	21534.2	6.2646	2.8000e-004	6.0000e-005	6.2891
Single Family Housing	35890.4	10.4409	4.7000e-004	1.0000e-004	10.4818
Single Family Housing	43068.4	12.5291	5.7000e-004	1.2000e-004	12.5782
Total		**681.3514**	**0.0308**	**6.3800e-003**	**684.0211**

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	2.8836	0.0533	2.0430	3.0000e-004		0.0137	0.0137		0.0137	0.0137	0.0000	37.9245	37.9245	3.8600e-003	6.3000e-004	38.2101
Unmitigated	2.8836	0.0533	2.0430	3.0000e-004		0.0137	0.0137		0.0137	0.0137	0.0000	37.9245	37.9245	3.8600e-003	6.3000e-004	38.2101

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	0.4347					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3841					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.5000e-003	0.0299	0.0127	1.9000e-004		2.4200e-003	2.4200e-003		2.4200e-003	2.4200e-003	0.0000	34.6055	34.6055	6.6000e-004	6.3000e-004	34.8111
Landscaping	0.0613	0.0234	2.0303	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3190	3.3190	3.2000e-003	0.0000	3.3990
Total	**2.8836**	**0.0533**	**2.0430**	**3.0000e-004**		**0.0137**	**0.0137**		**0.0137**	**0.0137**	**0.0000**	**37.9245**	**37.9245**	**3.8600e-003**	**6.3000e-004**	**38.2101**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4347					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3841					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.5000e-003	0.0299	0.0127	1.9000e-004		2.4200e-003	2.4200e-003		2.4200e-003	2.4200e-003	0.0000	34.6055	34.6055	6.6000e-004	6.3000e-004	34.8111
Landscaping	0.0613	0.0234	2.0303	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3190	3.3190	3.2000e-003	0.0000	3.3990
Total	**2.8836**	**0.0533**	**2.0430**	**3.0000e-004**		**0.0137**	**0.0137**		**0.0137**	**0.0137**	**0.0000**	**37.9245**	**37.9245**	**3.8600e-003**	**6.3000e-004**	**38.2101**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	50.8982	0.6261	0.0152	71.0680
Unmitigated	50.8982	0.6261	0.0152	71.0680

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.8749 / 10.6385	42.7488	0.5516	0.0133	60.5112
City Park	0 / 2.35913	2.4021	1.1000e-004	2.0000e-005	2.4115
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Health Club	1.36621 / 0.837352	3.4366	0.0447	1.0800e-003	4.8746
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.912156 / 0.575055	2.3108	0.0298	7.2000e-004	3.2709
Total		**50.8982**	**0.6261**	**0.0152**	**71.0680**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.8749 / 10.6385	42.7488	0.5516	0.0133	60.5112
City Park	0 / 2.35913	2.4021	1.1000e-004	2.0000e-005	2.4115
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Health Club	1.36621 / 0.837352	3.4366	0.0447	1.0800e-003	4.8746
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.912156 / 0.575055	2.3108	0.0298	7.2000e-004	3.2709
Total		**50.8982**	**0.6261**	**0.0152**	**71.0680**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	54.3569	3.2124	0.0000	134.6670
Unmitigated	54.3569	3.2124	0.0000	134.6670

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	119.14	24.1843	1.4293	0.0000	59.9157
City Park	0.17	0.0345	2.0400e-003	0.0000	0.0855
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Health Club	131.67	26.7278	1.5796	0.0000	66.2170
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	16.8	3.4103	0.2015	0.0000	8.4488
Total		**54.3569**	**3.2124**	**0.0000**	**134.6670**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	119.14	24.1843	1.4293	0.0000	59.9157
City Park	0.17	0.0345	2.0400e-003	0.0000	0.0855
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Health Club	131.67	26.7278	1.5796	0.0000	66.2170
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	16.8	3.4103	0.2015	0.0000	8.4488
Total		**54.3569**	**3.2124**	**0.0000**	**134.6670**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX H.4
SUPPORTING DOCUMENTATION

BAY AREA AIR QUALITY MANAGEMENT DISTRICT Printed: NOV 5, 2018
DETAIL POLLUTANTS - ABATED
P/O APPROVED (2011)

California Pacific Medical Center (P# 7264)

S#	SOURCE NAME / MATERIAL / THROUGHPUT	SOURCE CODE / DATE	POLLUTANT	CODE	LBS/DAY
1	Erie City Boiler No 1				
		C1340098			
			Benzene	41	1.92E-05
			Formaldehyde	124	5.89E-05
			Organics (other, including	990	9.90E-04
			Arsenic (all)	1030	6.20E-07
			Beryllium (all) pollutant	1040	3.63E-07
			Cadmium	1070	1.55E-06
			Chromium (hexavalent)	1095	3.21E-08
			Lead (all) pollutant	1140	1.31E-06
			Manganese	1160	2.06E-06
			Nickel pollutant	1180	2.51E-05
			Mercury (all) pollutant	1190	4.38E-07
			PAH's (non-speciated)	1840	3.27E-06
			Particulates (part not spe	1990	2.67E-03
			Nitrous Oxide (N2O)	2030	1.91E-04
			Nitrogen Oxides (part not	2990	1.92E-02
			Sulfur Dioxide (SO2)	3990	3.10E-01
			Carbon Monoxide (CO) pollu	4990	5.34E-03
			Carbon Dioxide, non-biogen	6960	2.38E+01
			Methane (CH4)	6970	9.53E-04
		C1340189			
			Benzene	41	2.71E-05
			Formaldehyde	124	9.67E-04
			Toluene	293	4.39E-05
			Organics (other, including	990	7.38E-02
			Particulates (part not spe	1990	3.87E-02
			Nitrous Oxide (N2O)	2030	2.98E-03
			Nitrogen Oxides (part not	2990	4.51E-01
			Sulfur Dioxide (SO2)	3990	7.33E-03
			Carbon Monoxide (CO) pollu	4990	4.51E-01
			Carbon Dioxide, non-biogen	6960	1.58E+03
			Methane (CH4)	6970	2.45E-02
2	Erie City Boiler No 2				
		C1340098			
			Benzene	41	1.92E-05
			Formaldehyde	124	5.89E-05
			Organics (other, including	990	9.90E-04

		Arsenic (all)	1030	6.20E-07
		Beryllium (all) pollutant	1040	3.63E-07
		Cadmium	1070	1.55E-06
		Chromium (hexavalent)	1095	3.21E-08
		Lead (all) pollutant	1140	1.31E-06
		Manganese	1160	2.06E-06
		Nickel pollutant	1180	2.51E-05
		Mercury (all) pollutant	1190	4.38E-07
		PAH's (non-speciated)	1840	3.27E-06
		Particulates (part not spe	1990	2.67E-03
		Nitrous Oxide (N2O)	2030	1.91E-04
		Nitrogen Oxides (part not	2990	1.92E-02
		Sulfur Dioxide (SO2)	3990	3.10E-01
		Carbon Monoxide (CO) pollu	4990	5.34E-03
		Carbon Dioxide, non-biogen	6960	2.38E+01
		Methane (CH4)	6970	9.53E-04
	C1340189			
		Benzene	41	2.71E-05
		Formaldehyde	124	9.67E-04
		Toluene	293	4.39E-05
		Organics (other, including	990	7.38E-02
		Particulates (part not spe	1990	3.87E-02
		Nitrous Oxide (N2O)	2030	2.98E-03
		Nitrogen Oxides (part not	2990	4.51E-01
		Sulfur Dioxide (SO2)	3990	7.33E-03
		Carbon Monoxide (CO) pollu	4990	4.51E-01
		Carbon Dioxide, non-biogen	6960	1.58E+03
		Methane (CH4)	6970	2.45E-02
7	Diesel Engine, emergency standby: 3698 CAT			
	C24AG098			
		Benzene	41	9.25E-05
		Formaldehyde	124	7.55E-06
		Organics (other, including	990	4.05E-03
		Arsenic (all)	1030	7.95E-08
		Beryllium (all) pollutant	1040	4.66E-08
		Cadmium	1070	1.99E-07
		Chromium (hexavalent)	1095	4.11E-09
		Lead (all) pollutant	1140	1.68E-07
		Manganese	1160	2.64E-07
		Nickel pollutant	1180	3.21E-06
		Mercury (all) pollutant	1190	5.62E-08
		Diesel Engine Exhaust Part	1350	1.66E-03
		PAH's (non-speciated)	1840	4.19E-07
		Nitrous Oxide (N2O)	2030	2.44E-05
		Nitrogen Oxides (part not	2990	2.87E-02
		Sulfur Dioxide (SO2)	3990	2.98E-05
		Carbon Monoxide (CO) pollu	4990	3.53E-02
		Carbon Dioxide, non-biogen	6960	3.06E+00

		Methane (CH4)	6970	1.22E-04
8	Diesel Engine, emergency standby: 3700 CAT			
	C22BG098			
		Benzene	41	6.04E-04
		Formaldehyde	124	5.00E-05
		Organics (other, including	990	2.92E-02
		Arsenic (all)	1030	5.26E-07
		Beryllium (all) pollutant	1040	3.08E-07
		Cadmium	1070	1.31E-06
		Chromium (hexavalent)	1095	2.72E-08
		Lead (all) pollutant	1140	1.12E-06
		Manganese	1160	1.75E-06
		Nickel pollutant	1180	2.13E-05
		Mercury (all) pollutant	1190	3.72E-07
		Diesel Engine Exhaust Part	1350	3.04E-02
		PAH's (non-speciated)	1840	2.77E-06
		Nitrous Oxide (N2O)	2030	1.62E-04
		Nitrogen Oxides (part not	2990	4.25E-01
		Sulfur Dioxide (SO2)	3990	1.97E-04
		Carbon Monoxide (CO) pollu	4990	9.25E-02
		Carbon Dioxide, non-biogen	6960	2.02E+01
		Methane (CH4)	6970	8.09E-04
9	Diesel Engine, emergency standby: 3700 Detroit			
	C24BH098			
		Benzene	41	9.84E-04
		Formaldehyde	124	8.03E-05
		Organics (other, including	990	5.36E-02
		Arsenic (all)	1030	8.45E-07
		Beryllium (all) pollutant	1040	4.96E-07
		Cadmium	1070	2.11E-06
		Chromium (hexavalent)	1095	4.37E-08
		Lead (all) pollutant	1140	1.79E-06
		Manganese	1160	2.81E-06
		Nickel pollutant	1180	3.42E-05
		Mercury (all) pollutant	1190	5.98E-07
		Diesel Engine Exhaust Part	1350	4.88E-02
		PAH's (non-speciated)	1840	4.46E-06
		Nitrous Oxide (N2O)	2030	2.60E-04
		Nitrogen Oxides (part not	2990	6.84E-01
		Sulfur Dioxide (SO2)	3990	3.17E-04
		Carbon Monoxide (CO) pollu	4990	1.49E-01
		Carbon Dioxide, non-biogen	6960	3.25E+01
		Methane (CH4)	6970	1.30E-03
10	Natural Gas Engine, emergency standby			
	C22AF189			
		Benzene	41	7.23E-05
		Formaldehyde	124	6.53E-04
		Organics (other, including	990	6.50E-02

		Particulates (part not spe	1990	4.70E-04
		Nitrous Oxide (N2O)	2030	1.08E-05
		Nitrogen Oxides (part not	2990	1.60E-01
		Sulfur Dioxide (SO2)	3990	2.38E-05
		Carbon Monoxide (CO) pollu	4990	2.02E-02
		Carbon Dioxide, non-biogen	6960	5.75E+00
		Methane (CH4)	6970	6.41E-02
11	Temporary Rental Steam Boiler			
	C1340189			
			0	0.00E+00

PLANT TOTAL:

lbs/day	Pollutant
2.69E-06	Arsenic (all) (1030)
1.85E-03	Benzene (41)
1.58E-06	Beryllium (all) pollutant (1040)
6.73E-06	Cadmium (1070)
3.27E+03	Carbon Dioxide, non-biogenic CO2 (6960)
1.21E+00	Carbon Monoxide (CO) pollutant (4990)
1.39E-07	Chromium (hexavalent) (1095)
8.09E-02	Diesel Engine Exhaust Particulate Matter (1350)
2.84E-03	Formaldehyde (124)
5.71E-06	Lead (all) pollutant (1140)
8.95E-06	Manganese (1160)
1.90E-06	Mercury (all) pollutant (1190)
1.17E-01	Methane (CH4) (6970)
1.09E-04	Nickel pollutant (1180)
2.24E+00	Nitrogen Oxides (part not spec elsewhere) (2990)
6.80E-03	Nitrous Oxide (N2O) (2030)
3.01E-01	Organics (other, including CH4) (990)
1.42E-05	PAH's (non-speciated) (1840)
8.32E-02	Particulates (part not spec elsewhere) (1990)
6.35E-01	Sulfur Dioxide (SO2) (3990)
8.77E-05	Toluene (293)

APPENDIX H.5
RAMBOLL SCOPE OF WORK

Prepared for
San Francisco Planning Department
San Francisco, California

Prepared by
Ramboll US Corporation
San Francisco, California

Project Number

1690007720

Date
August 7, 2018

CEQA AIR QUALITY AND HEALTH RISK ASSESSMENT METHODOLOGY

3700 CALIFORNIA STREET PROJECT
SAN FRANCISCO, CALIFORNIA

CONTENTS

1.	**INTRODUCTION**	**1**
1.1	Project Understanding	1
1.2	Objective and Methodology	2
1.3	Document Organization	3
2.	**EMISSION ESTIMATES**	**4**
2.1	Calculation Methodologies for Construction Emissions	4
2.1.1	Off-road Equipment	4
2.1.2	Construction On-road Mobile Sources	5
2.2	Calculation Methodologies for Operational Emissions	5
2.2.1	Operational On-road Mobile Sources	5
2.2.2	Net Operational CAP Emissions	5
3.	**ESTIMATED AIR CONCENTRATIONS**	**6**
3.1	Chemical Selection	6
3.2	Sources	6
3.3	AERMOD Modeling	6
3.3.1	Meteorological data	7
3.3.2	Terrain and land use considerations	7
3.3.3	Emission rates	7
3.3.4	Source parameters	7
3.3.5	Receptors	7
4.	**RISK CHARACTERIZATION METHODS**	**9**
4.1	Project Sources Evaluated	9
4.2	Exposure Assessment	9
4.2.1	Toxicity Assessment	10
4.2.2	Age Sensitivity Factors	11
4.3	Risk Characterization	11
4.3.1	Estimation of Cancer Risks	11
5.	**CUMULATIVE ANALYSIS**	**12**
6.	**REFERENCES**	**13**

TABLES

Table 1: Phasing Schedule
Table 2: Emissions Calculation Methodology
Table 3: Modeling Parameters
Table 4: Exposure Durations
Table 5: Exposure Parameters
Table 6: Age Sensitivity Factors

FIGURES

Figure 1: Property Boundary
Figure 2: Project Boundary and Modeling Extent
Figure 3: Sensitive Receptor Parcels

Acronyms and Abbreviations

ADT	Average Daily Traffic
AERMOD	USEPA's atmospheric dispersion modeling system
APEZ	Air Pollution Exposure Zone
ARB	(California) Air Resources Board
ASF	Age Sensitivity Factor
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technologies
Cal/EPA	California Environmental Protection Agency
CalEEMod®	California Emissions Estimator Model
CAP	Criteria Air Pollutant
CEQA	California Environmental Quality Act
CMPC	California Pacific Medical Center
CPF	Cancer Potency Factor
CRRP	Community Risk Reduction Plan
CRRP-HRA	Community Risk Reduction Plan Health Risk Analysis database
DPM	Diesel Particulate Matter
EIR	Environmental Impact Report
gsf	gross square feet
g/s	gram per second
HI	Health Index
HRA	Health Risk Assessment
ICF	ICF Jones & Stokes
m	meter
MEISR	Maximally Exposed Individual Sensitive Receptor
OEHHA	Office of Environmental Health Hazard Assessment
OFFROAD2011	(ARB) In-Use Off-Road Equipment model
PM	Particulate Matter
$PM_{2.5}$	Fine Particulate Matter Less than 2.5 Micrometers in Aerodynamic Diameter
PM_{10}	Particulate Matter Less than 10 Micrometers in Aerodynamic Diameter
Ramboll	Ramboll US Corporation
SF DPH	San Francisco Department of Public Health
SF EP	San Francisco Planning Department Environmental Planning Division
SF Planning	San Francisco Planning Department
TAC	Toxic Air Contaminant
UCSF	University of California San Francisco
$\mu g/m^3$	microgram per cubic meter
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VDECS	Verified Diesel Emissions Control Strategy

1. INTRODUCTION

At the request of ICF Jones & Stokes (ICF), Ramboll US Corporation (Ramboll) will conduct a California Environmental Quality Act (CEQA) analysis of criteria air pollutants and precursors and local air quality and health impacts associated with the construction and operation of the proposed residential project at 3700 California Street in San Francisco (referred to hereafter as "the Proposed Project" or "Project") at on-site and adjacent off-site sensitive receptors. This emissions and Health Risk Assessment (HRA) Methodology describes the scope and methodology for evaluation of air quality and health impacts from construction sources, operational sources, and cumulative off-site sources at on-site and adjacent off-site sensitive receptors. This analysis will be performed to support the Project's CEQA documentation at the request of the San Francisco Planning Department's (SF Planning) Environmental Planning (SF EP) Division.

1.1 Project Understanding

The Proposed Project would be located at 3700 California Street in San Francisco, California, and is a residential development that would replace the existing California Pacific Medical Center (CMPC) buildings, spanning 3 blocks and 14 parcels. The Project would demolish five of the seven existing structures, including parking garages and parking lots. The Project would retain the nine-unit residential building at 401 Cherry Street and convert the existing Marshall Hale Memorial Hospital to a 24-unit residential building. The Project would include construction of 31 new buildings, including single-family dwellings and multi-family housing that would contain 264 new residential units. In total, the project site would consist of 33 buildings ranging from three to seven stories, and contain 273 residential units, 416 parking spaces, and 424 bicycle parking spaces. The Project would also include excavation of up to 75 feet below grade for a portion of the site. The Project would include approximately 23,100square feet of amenity space for use by on-site residents. **Figure 1** shows the site extent and the location of the Proposed Project within San Francisco. The Proposed Project is not located within an Air Pollution Exposure Zone (APEZ), which is an area designated by the San Francisco Department of Public Health (SF DPH) as an area with poor air quality (SF DPH & SF Planning 2014). The Project would not include an emergency generator, the existing two generators for the hospital would be removed.

The proposed plan for the Project is assumed to include three overlapping construction phases, as shown in **Table 1.** Construction is expected to begin in 2021 and last approximately 3.3 years. The first phase includes construction of Block C and is anticipated to last 28 months, and consists of the conversion of the existing Marshall Hale Hospital and the construction of the single and multi-family residential buildings on the same block, which are proposed to include 83 residential units (178,205 gsf), approximately 126 parking spaces as well as portions of the parks and public spaces. The second phase (construction of Block B) would last approximately 36 months and would overlap with the previous phase for approximately 27 months. It would include the construction of approximately 147 residential units (346,396 gsf) and 223 parking spaces. The third phase (construction of Block A) would take approximately 24 months, overlapping approximately 20 months with Phase 2. This phase includes the construction of 43 residential units (93,593 gsf), 67 parking spaces, as well as additional public spaces.

There is a potential for the residential buildings constructed in each phase to be occupied during the construction activities associated with the subsequent phases. Therefore, future residents would be considered on-site sensitive receptors for purposes of the air quality analysis. Off-site sensitive receptors will also be analyzed.

1.2 Objective and Methodology

The purpose of the air quality analysis is to assess potential criteria air pollutant and health risks and hazards that would result from the construction and operation of the Proposed Project consistent with guidelines and methodologies from air quality agencies, specifically, the BAAQMD, the California Air Resources Board (ARB), the California Office of Environmental Health Hazard Assessment (OEHHA), and the US Environmental Protection Agency (USEPA). Consistent with guidelines and recommended methods from these agencies, the HRA will evaluate the estimated incremental increase in cancer risk from diesel particulate matter (DPM) and fine particulate matter (PM) concentrations (specifically particulate matter less than 2.5 microns in aerodynamic diameter [$PM_{2.5}$]) associated with exhaust that would be emitted by construction activities. The construction and operational emission sources for the Proposed Project include diesel-powered construction equipment and Project-related traffic. However, based on consultation with the traffic engineer, the Project is expected to decrease trips compared to the existing hospital uses. Thus, traffic on surrounding roadways is expected to be reduced and analysis of the health risk from traffic is not needed. Additionally, the Project will not have an emergency generator or require any other sources of toxic air contaminants.

The San Francisco City-wide HRA evaluates the cumulative cancer risks and $PM_{2.5}$ concentrations from existing known sources of air pollution as part of the development of a Community Risk Reduction Plan (CRRP). For the purposes of this report, the database developed for that effort is referred to as the Community Risk Reduction Plan Health Risk Analysis database (CRRP-HRA). The modeling is documented in *The San Francisco Community Risk Reduction Plan: Technical Support Documentation* (BAAQMD, SF DPH & SF Planning 2012). The cumulative health risk analysis for the Proposed Project will estimate excess lifetime cancer risks and $PM_{2.5}$ concentrations that are attributable to other mobile and stationary sources as calculated in the CRRP-HRA, in addition to effects from the Proposed Project and other nearby sources that are not included in the CRRP-HRA. The CRRP-HRA was completed before the OEHHA updated its Air Toxics Hot Spots Program Risk Assessment Guidelines in 2015, so the CRRP-HRA results will be adjusted to use the 2015 OEHHA Guidance (OEHHA 2015). Ramboll understands that SF EP is updating this database; if the updated version is available sufficiently prior to the completion of the Air Quality Analysis, Ramboll will use the updated version.

In accordance with CEQA requirements (BAAQMD 2017) and consistent with the CRRP-HRA, which was developed in consultation with the BAAQMD, the proposed Air Quality Analysis will include:

1. Mass emissions of criteria air pollutants (CAPs) from both construction and operational sources;
2. Excess lifetime cancer risks and PM2.5 concentrations from construction emissions to sensitive off-site and on-site populations. As discussed above, traffic is expected to decrease as a result of the Project, so an analysis of operational health impacts is not needed;

3. Existing plus Project HRA consisting of cancer risk and $PM_{2.5}$ concentrations (to both on-site and off-site receptors) resulting from the proposed project and other sources of stationary, area, and mobile emissions as calculated in the CRRP-HRA for year 2014;
4. Cumulative Project HRA consisting of cancer risk and $PM_{2.5}$ concentrations (to both on-site and off-site receptors) resulting from the proposed project and other sources of stationary, area, and mobile emissions as calculated in the CRRP-HRA for year 2014 in addition to health impacts from the Proposed Project construction and operational sources and other nearby off-site sources not included in the CRRP-HRA; and
5. A qualitative assessment of the 2040 CRRP-HRA modeling, which shows that $PM_{2.5}$ concentration and excess cancer risk generally decrease for receptor points within 1,000 feet under 2040 conditions without the project.

The results of the analysis will be documented in the draft Environmental Impact Report (EIR) for the Proposed Project, with technical documentation included as part of the EIR appendix.

1.3 Document Organization

This scope of work is divided into seven sections as follows:

Section 1.0 – Introduction: describes the purpose and scope of the air quality analysis, the objectives and methodology to be used, and outlines the document organization.

Section 2.0 – Emission Estimates: describes the methods that will be used to estimate CAP and toxic air contaminant (TAC) emissions from the Project;

Section 3.0 – Estimated Air Concentrations: discusses the air dispersion modeling, the selection of the dispersion models, the data to be used in the dispersion models (*e.g.*, terrain, meteorology, source characterization), and the identification of receptor locations evaluated in the HRA.

Section 4.0 – Risk Characterization Methods: provides an overview of the methodology for conducting the HRA.

Section 5.0 – Cumulative Analysis: summarizes the approach to be used in the HRA cumulative analysis.

Section 6.0 – References: includes a listing of all references cited in this report.

2. EMISSION ESTIMATES

Ramboll will estimate the Project and net incremental (Project minus Existing) CAP and toxic air contaminant (TAC) emissions from Proposed Project construction and operational sources. Methodologies to be used to calculate CAP and TAC emissions are summarized below.

2.1 Calculation Methodologies for Construction Emissions

Ramboll was provided with a detailed construction equipment list by the Project sponsor, which includes the type, quantity, construction schedule and hours of operation anticipated for each piece of equipment for each construction phase. This data will be used to estimate construction emissions using the California Emissions Estimator Model version 2016.3.2 (CalEEMod®) or equivalent methods. It is assumed that all construction off-road equipment is diesel powered. Ramboll will assume that all off-road equipment emissions of PM with an aerodynamic diameter less than 10 microns (PM_{10}) is DPM, which is a TAC.

Construction emission calculation methodologies cover off-road equipment (primarily diesel-fueled) and on-road vehicles. The Proposed Project construction would span 3.3 years and would be continuous. As discussed in **Section 1.1**, the site is divided into three overlapping construction phases. The analysis described here does not rely on the default construction phasing data from CalEEMod®, as the actual schedule and equipment list are known and will be included in the air quality technical appendix.

Ramboll will use the methodology for each emissions category presented in **Table 2**. Ramboll will use specific construction inputs for the Proposed Project where available such as schedule, the equipment list, and the count of on-road vehicle trips.

2.1.1 Off-road Equipment

For diesel-powered off-road construction equipment, Ramboll will use CalEEMod® and methodologies consistent with CalEEMod® to estimate emissions. The CalEEMod® emissions methodology for off-road construction equipment relies on the ARB In-Use Off-Road Equipment model (OFFROAD2017), which incorporates statewide survey data to develop emission factors based on the fleet average for each year of construction. Since the last release of CalEEMod, ARB released a new version of its In-Use Off-Road Equipment Model, OFFROAD2017, which will be used in this assessment. The OFFROAD2017 model also identifies average horsepower and load factor for each type of equipment. Where Project-specific equipment information is not available, CalEEMod® default values from OFFROAD2017 are used. Load factors for each piece of equipment are based on the default load factor in OFFROAD2017, which are included in CalEEMod®. The methodology to be used to calculate emissions from off-road equipment is presented in **Table 2**.

The use of Tier 4 Final, Tier 4 Interim, or Tier 2 engines equipped with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS) would reduce diesel emissions and, thus, reduce the potential health impacts from the Proposed Project on sensitive receptors. Emissions without control measures are calculated assuming fleet average equipment, meaning the emission factors used reflect the fleet predicted to be in use in the OFFROAD2017 model. A scenario incorporating control measures will also be calculated, assuming Tier 2 or higher engines with Level 3 VDECS on all equipment, if the Proposed Project construction exceeds the CEQA document's thresholds. SF EP also requires equipment idling to be limited to 2 minutes, although emissions reductions due to this control measure would not be quantified.

2.1.2 Construction On-road Mobile Sources

Ramboll has been provided with estimated worker, vendor, and demolition hauling trip generation rates for construction of the Proposed Project by the Project sponsor. Alternatively, the count of hauling trips can be based on the total offhaul amount in cubic yards for the Proposed Project.

The emission factors for running emissions of criteria pollutants in CalEEMod® are from EMFAC2014, the ARB Emission Factors model for on-road emissions. Since the last release of CalEEMod, ARB released a new version of its model for on-road emissions, EMFAC2017, which will be used in this assessment. The emission factors used for construction of the Proposed Project cover the years 2021 through 2024, the anticipated years of construction. EMFAC2017 incorporates the Pavley Clean Car Standards and the Advanced Clean Cars program.

The methodology used to calculate emissions from on-road sources is presented in **Table 2**.

2.2 Calculation Methodologies for Operational Emissions

As discussed above, Ramboll will evaluate the Project and net (Project minus Baseline) CAP operational emissions. Source of operational emissions from the existing site include the two emergency diesel generators, on-road vehicles, and building energy use. Sources of operational emissions from the Proposed Project include on-road vehicles and building energy use.

Operational emissions that are concurrent with construction activities will be presented by construction phase in order to determine the combined construction and operational emissions for each year of construction.

2.2.1 Operational On-road Mobile Sources

Vehicles on the roadway emit CAPs and TACs in their exhaust and through evaporation and thus must be evaluated in an off-site risk evaluation. To estimate baseline on-road vehicle emissions, Ramboll will work with the transportation engineer to get baseline trip rates. Ramboll will use CalEEMod® version 2016.3.2 or equivalent methods to obtain emissions from the vehicle travel.

Ramboll assumes that the Transportation Engineer will provide trip generation. Project operational emissions, including mobile emissions, will be estimated using CalEEMod®.

2.2.2 Net Operational CAP Emissions

As discussed above, the Project would replace the existing hospital with residential land uses. Therefore, total operational emissions associated with the Proposed Project are the difference between emissions from the new sources and emissions from baseline sources that would no longer be present. Baseline emissions, including mobile and area sources, will be calculated using CalEEMod® or equivalent methods. Emissions from the Project will be analyzed by phase to get the combined impact from construction and operation, using the operational year where the phase first becomes operational. Baseline emissions will be calculated using the operational year that the Notice of Preparation is released. Baseline emissions will be subtracted from Proposed Project emissions to get total net emissions.

3. ESTIMATED AIR CONCENTRATIONS

Consistent with the CRRP-HRA, the air toxics analysis will evaluate health risks and $PM_{2.5}$ concentrations resulting from the Proposed Project upon the surrounding community. For the Proposed Project, this would include construction emissions over the course of build-out. As discussed previously, traffic is expected to decrease as a result of the Project and the proposed project would not require any new sources of toxic air contaminants, so an analysis of operational health impacts is not needed. The methodologies used to evaluate emissions for the Proposed Project and cumulative HRA are based on the most recent BAAQMD CEQA Guidelines (BAAQMD 2017) and the most recent Air Toxics Hot Spots Program Risk Assessment Guidelines (OEHHA 2015).

3.1 Chemical Selection

The cancer risk analysis in the HRA for the Project is based on DPM concentrations from construction on- and off-road equipment. Diesel exhaust, a complex mixture that includes hundreds of individual constituents (California Environmental Protection Agency [Cal/EPA] 1998), is identified by the State of California as a known carcinogen (Cal/EPA 2016). Under California regulatory guidelines, DPM is used as a surrogate measure of exposure for the mixture of chemicals that make up diesel exhaust as a whole. Cal/EPA and other proponents of using the surrogate approach to quantifying cancer risks associated with the diesel mixture indicate that this method is preferable to use of a component-based approach. A component-based approach involves estimating risks for each of the individual components of a mixture. Critics of the component-based approach believe it will underestimate the risks associated with diesel as a whole mixture because the identity of all chemicals in the mixture may not be known and/or exposure and health effects information for all chemicals identified within the mixture may not be available. Furthermore, Cal/EPA has concluded that "potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multi-pathway cancer risk from the speciated components" (OEHHA 2003).

3.2 Sources

As discussed in the next section, concentrations of TACs from the Proposed Project construction emissions will be estimated using the USEPA's preferred atmospheric dispersion modeling system (AERMOD).

3.3 AERMOD Modeling

Ramboll will use the most recent version of the American Meteorological Society/Environmental Protection Agency regulatory air dispersion model (AERMOD Version 16216r) to evaluate ambient air concentrations of DPM and $PM_{2.5}$ at on- and off-site receptors (USEPA 2015). For each receptor location, the model generates air concentrations (or air dispersion factors as unit emissions will be modeled) that result from emissions from multiple sources.

Air dispersion models such as AERMOD require a variety of inputs such as source parameters, meteorological data, topographical data, and receptor parameters. When site-specific information is unknown, Ramboll will use default parameter sets that are designed to produce conservative (i.e., overestimates of) air concentrations (USEPA 2015).

3.3.1 Meteorological data

Air dispersion modeling applications require the use of meteorological data that ideally are spatially and temporally representative of conditions in the immediate vicinity of the site under consideration. For this HRA, BAAQMD's Mission Bay meteorological data for the year 2008 will be used, which aligns with the San Francisco CRRP-HRA Methodology (BAAQMD, SF DPH & SF Planning 2012).

3.3.2 Terrain and land use considerations

Elevation for all emissions sources will be imported from the National Elevation Dataset maintained by the United States Geological Survey ([USGS] 2013). Elevations for all receptors will be consistent with the CRRP-HRA modeling.

An important consideration in an air dispersion modeling analysis is whether or not to model an area as urban. Due to the urban nature of San Francisco, the site will be modeled with the urban population of 805,235, corresponding to the 2010 US Census (US Census Bureau 2010). The urban option in AERMOD accounts for increased turbulence associated with the urban heat island effect.

3.3.3 Emission rates

Emissions will be modeled using the χ/Q ("chi over q") method, such that each source has a unit emission rate (i.e., 1 gram per second [g/s]), and the model estimates dispersion factors (with units of [$\mu g/m^3$]/[g/s]). Actual emissions will be multiplied by the dispersion factors to obtain concentrations.

For annual average ambient air concentrations, the estimated annual average dispersion factors are multiplied by the annual average emission rates. The emission rates will vary day to day, with some days having no emissions. The model will assume a constant emission rate during the entire year.

3.3.4 Source parameters

Source location and parameters are necessary to model the dispersion of air emissions. For construction, area sources will be used to represent the on-site activity in AERMOD. The on-site construction area sources will be modeled with the same release parameters used in the CRRP-HRA: a release height of 5 meters and an initial vertical dimension of 1.4 meters, (BAAQMD, SF DPH & SF Planning 2012). Roadways will be modeled to represent heavy-duty haul trucks, using a series of volume sources. The volume source width will correspond to the roadway, while the modeled release height will be 2.5 meter (m) and the initial vertical dimension will be 2.3 m, consistent with the CRRP-HRA modeling and USEPA haul road guidance. On-road construction worker trips are expected to be negligible and will therefore not be included in the HRA analysis. This assumption will be verified based on the project-specific Transportation Impact Study. **Table 3** summarizes the modeling parameters used in AERMOD.

3.3.5 Receptors

In order to evaluate health impacts to on-site and off-site receptors, receptors will be placed at locations collocated with the receptors used in the CRRP-HRA and within 1,000 m of the Project site, as shown in **Figure 2**. Receptors will be modeled at a height of 1.8 m, above terrain height, a default breathing height for ground-floor receptors, consistent with the CRRP-HRA analysis. As discussed previously, maximum average annual dispersion factors will be estimated for each receptor location.

Sensitive receptors will be identified based on residential land use and/or zoning, and field confirmation. **Figure 3** outlines the parcels that are characterized as “residential” using data from SF OpenData, the City and County of San Francisco’s official open data portal (SF County 2016). Ramboll proposes to work with ICF to identify the sensitive receptors within 1,000 meters of the project, based on a combination of latest available geographic information systems data and nearby information on existing and future projects provided by ICF, including field confirmation if necessary. Ramboll will work with ICF and the Project sponsor to finalize the map of sensitive receptor locations prior to modeling.

4. RISK CHARACTERIZATION METHODS

In February 2015, OEHHA released the updated Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2015), which combines information from previously-released and adopted technical support documents to delineate OEHHA's revised risk assessment methodologies based on current science. This updated Guidance Manual supersedes the 2003 Hot Spots Guidance Manual (OEHHA 2003) that previously provided methodologies for conducting HRAs under the Air Toxics Hot Spots Program (AB2588). The BAAQMD has issued Guidelines on adopting the OEHHA 2015 Guidance Manual. This evaluation will utilize the 2015 methodology; details of this methodology are discussed below.

4.1 Project Sources Evaluated

As discussed in **Section 1.2**, Ramboll will evaluate excess lifetime cancer risk and $PM_{2.5}$ concentration for on-site and off-site sensitive receptor exposure to emissions from Proposed Project construction. The health risks from construction activity (construction equipment and nearby off-site haul trucks) will be calculated using the methodology explained in the following sections. Because the Proposed Project will be completed in three phases of construction activity, analyses will be completed for on-site residents to conservatively estimate a worst-case exposure, as discussed below.

4.2 Exposure Assessment

Ramboll will conservatively model all existing CRRP-HRA grid (20-meter spacing) receptors on-site and within 1 kilometer of the Proposed Project boundary. Consistent with the CRRP-HRA, all off-site sensitive receptors will be analyzed as residents. As shown in **Figure 3**, not all surrounding receptors are residential. Only those receptors that are residential receptors living on site or off-site or include other sensitive populations will be included in the health risk assessment results and used to identify the maximally exposed receptors. On-site sensitive receptors will be determined with refined site plans and through discussion with SF EP.

We understand there will be no on-site receptors during the first phase of construction (Phase 1). During the subsequent two phases of construction, the on-site receptors in the new residential units will not be age restricted, so the on-site receptor will be analyzed as a residential receptor.

Potentially Exposed Populations: This analysis will evaluate health risks to on- and off-site residents based on OEHHA 2015 Hot Spots Guidelines. Off-site residents will be evaluated in three scenarios, which are shown in **Tables 1 and 4**:

1. An analysis of a fetus at the beginning of its third trimester when Phase 1 of construction commences and exposed to all construction emissions (off-site residents);
2. An analysis of a baby born[1] at completion of Phase 1 on the first day of occupancy and exposed to only Phase 2 and Phase 3 construction emissions (for on-site and off-site residents); and

[1] The third trimester exposure is not included here to be conservative. The 0-2 age bin has the largest intake factor, exposure for less than two years should all be in this age bin to be conservative.

3. An analysis of a baby born[1] at completion of Phase 2 on the first day of occupancy and exposed to only Phase 3 construction emissions (for on-site and off-site residents).

The analysis will identify which of these scenarios results in the highest risk and $PM_{2.5}$ values. A conservative approach of considering all off-site sensitive receptors as residential receptors will be used in this analysis. Residential exposure assumptions are more conservative than those made for other sensitive receptor types as residential uses have the longest exposure duration, the highest breathing rate by applicable age group, and the highest exposure frequency and exposure time.

There will be on-site receptors during the final two phases of construction; when one phase of construction is completed, it is assumed that the site occupants will immediately occupy the portion of the completed site. On-site residents will be analyzed commencing with Phase 2 of construction, during which residential receptors will have moved onto the site in residential facilities completed during Phase 1. A similar scenario approach to that described above for off-site resident will be used to determine the most conservative scenario to evaluate the on-site resident. Again, the analysis will identify which of these scenarios results in the highest risk and $PM_{2.5}$ values.

Exposure Assumptions: The exposure parameters used to estimate excess lifetime cancer risks for all potentially exposed populations for the construction evaluation for this analysis will be obtained using risk assessment guidelines from OEHHA (2015) and BAAQMD (2016). **Table 5** shows the proposed exposure parameters that will be used for the HRA.

Calculation of Intake: The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical. The intake factor for inhalation, IF_{inh}, can be calculated as follows:

$$IF_{inh} = \frac{DBR * FAH * EF * ED * CF}{AT}$$

Where:

IF_{inh}	=	Intake Factor for Inhalation (m^3/kg-day)
DBR	=	Daily Breathing Rate (L/kg-day)
FAH	=	Frequency of time at Home (unitless)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
AT	=	Averaging Time (days)
CF	=	Conversion Factor, 0.001 (m^3/L)

The chemical intake or dose is estimated by multiplying the inhalation intake factor, IF_{inh}, by the chemical concentration in air, C_i. When coupled with the chemical concentration, this calculation is mathematically equivalent to the dose algorithm given in the current OEHHA Hot Spots guidance (OEHHA 2015).

4.2.1 Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure.

For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories – cancer and non-cancer endpoints. Toxicity values that are used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment.

As discussed in **Section 1.2**, only the carcinogenic effects of DPM will be evaluated in this HRA analysis. Ramboll will utilize the Cal/EPA-approved (Cal/EPA 2017) inhalation cancer potency factor for DPM to evaluate DPM emitted from construction sources. The cancer potency factor (CPF) for DPM that will be used for the HRA is 1.1 $(mg/kg\text{-}day)^{-1}$.

4.2.2 Age Sensitivity Factors

The estimated excess lifetime cancer risks for a resident will be adjusted using age sensitivity factors (ASFs) that account for an "anticipated special sensitivity to carcinogens" of infants and children as recommended in the OEHHA Technical Support Document (OEHHA 2009) and OEHHA 2015 Guidance (2015). Cancer risk estimates will be weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to two years of age and by a factor of three for exposures that occur from two years through 15 years of age. No weighting factor (i.e., an ASF of one, which is equivalent to no adjustment) is applied to ages 16 and older. **Table 6** presents the ASF values that will be used for the HRA.

4.3 Risk Characterization

4.3.1 Estimation of Cancer Risks

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific CPF.

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$Risk_{inh} = C_i \times CF \times IF_{inh} \times CPF \times ASF$$

Where:

$Risk_{inh}$	=	Cancer risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)
C_i	=	Annual average air concentration for $chemical_i$ ($\mu g/m^3$)
CF	=	Conversion factor ($mg/\mu g$)
IF_{inh}	=	Intake factor for inhalation ($m^3/kg\text{-}day$)
CPF_i	=	Cancer potency factor for $chemical_i$ $(mg\ chemical/kg\ body\ weight\text{-}day)^{-1}$
ASF	=	Age sensitivity factor (unitless)

5. EXISTING PLUS PROJECT ANALYSIS

Using the Project risks determined in the Section above, Ramboll will then calculate the existing plus project risks and $PM_{2.5}$ concentrations from the Proposed Project and the background sources in the surrounding area at the on- and off-site sensitive receptor locations within the modeling domain. Since the Proposed Project and nearby sensitive receptors are not in an APEZ, the Proposed Project will directly assess its impacts on the Maximally Exposed Individual Sensitive Receptor (MEISR) against the cumulative APEZ standards for this area, which are: a cancer risk of 100 in a million from all modeled sources and/or a $PM_{2.5}$ concentration of 10 µg/m^3 from all modeled sources, and including background ambient $PM_{2.5}$ concentrations. Ramboll will evaluate the existing plus project impacts at all modeled sensitive receptors in order to determine whether the Project would create a new APEZ. Additionally, Ramboll will integrate the calculated Project risk and $PM_{2.5}$ concentration results into the CRRP-HRA in coordination with SF EP. Ramboll will provide a geodatabase of these results for use in GIS.

Although Ramboll will rely on the 2014 CRRP-HRA for background data, the background cancer risk in the 2014 CRRP-HRA will need to be adjusted to account for the 2015 OEHHA guidance. Ramboll will use scaling factors approved by the BAAQMD to convert risks from the CRRP-HRA to be consistent with the 2015 OEHHA guidance. A scaling factor of 1.37 will be used. The CRRP-HRA includes stationary sources (such as diesel-fueled standby emergency generators) and roadways with traffic greater than 1,000 vehicles per day.

6. CUMULATIVE ANALYSIS

The cumulative analysis will include the analysis presented in Section 5 above in addition to construction-related emissions from nearby occurring or reasonably foreseeable Projects (within 1,000 feet), if known, or will include a qualitative discussion of those Projects and their likely impact on the MEISR. Based on discussions with SF EP, one of the known nearby sources of emissions not already included in the CRRP-HRA is the construction of the 3333 California Street project; Ramboll will estimate impacts from 3333 California Street on nearby sensitive receptors to the Project. Ramboll assumes no additional modeling will be required in the cumulative analysis. However, if under cumulative conditions, construction activity from the 3333 California Street project or other nearby projects not already included in the CRRP-HRA could result in sensitive receptor locations that exceed the APEZ criteria, additional quantitative modeling of the construction impact of these projects may be required by SF EP.

To assess the cumulative risks and hazards, Ramboll will conservatively sum the impacts from construction of the Project, the 2014 CRRP background results, and the construction-related emissions from nearby occurring or reasonably foreseeable Projects.

In addition, the CRRP-HRA has been evaluated for 2040, assuming changes to the on-road vehicle fleet. Ramboll will qualitatively discuss the cumulative impacts of the 2040 CRRP-HRA background plus the Proposed Project and any known new projects since the 2014 CRRP-HRA modeling was conducted.

7. REFERENCES

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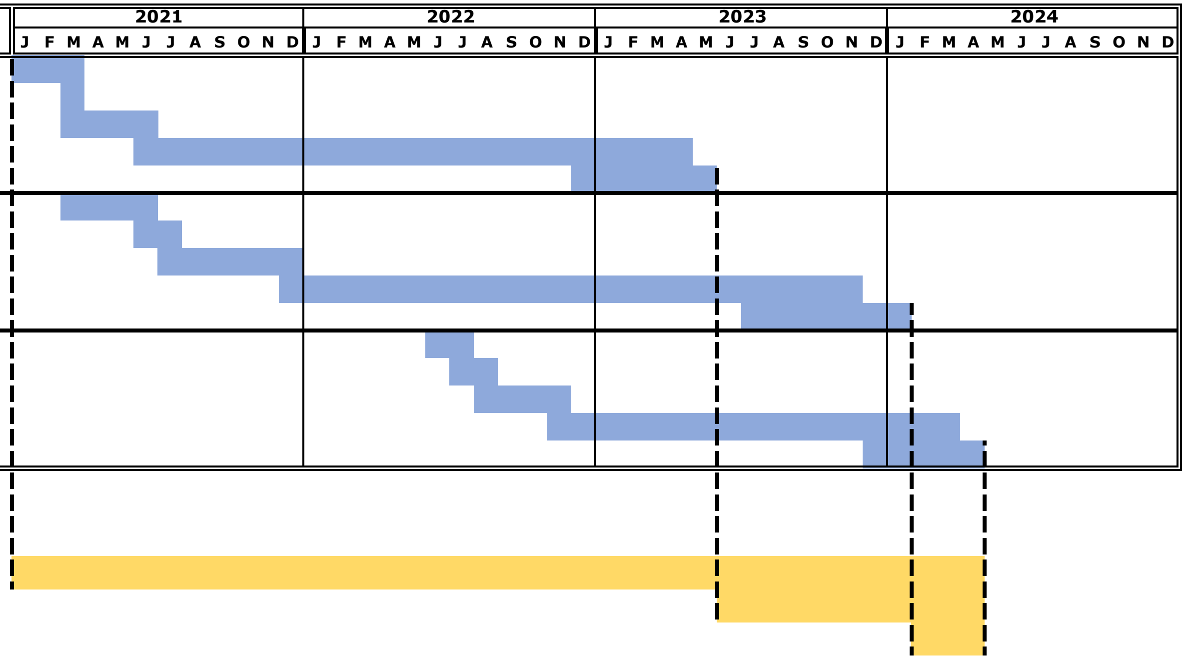
TABLES

Table 1
Phasing Schedule
3700 California Street
San Francisco, California

Detailed Construction Schedule

Construction Phase	Construction Subphase	Number of Days	Operational Year
Block C	Demolition	51	2023
	Site Preparation & Grading	11	
	Excavation & Shoring	62	
	Building Construction	473	
	Sitework	100	
Block B	Demolition	79	2024
	Site Preparation & Grading	23	
	Excavation & Shoring	103	
	Building Construction	495	
	Sitework	120	
Block A	Demolition	39	2024
	Site Preparation & Grading	23	
	Excavation & Shoring	56	
	Building Construction	355	
	Sitework	70	



Scenarios

Off-site Residents (exposed to Construction Phases A-C)

Phase C Residents (exposed to Phase A and B construction)

Phase B Residents (exposed to Phase A construction)

Table 2
Emissions Calculation Methodology
3700 California Street
San Francisco, California

Type	Source	Methodology and Formula	Reference
Construction Equipment	Off-Road Equipment[1]	$E_c = \Sigma(EF_c * HP * LF * Hr * C)$	OFFROAD2011 and ARB/USEPA Engine Standards
Construction On-Road Mobile Sources[2]	Exhaust – Running	$E_R = \Sigma(EF_R * VMT * C)$, where VMT = Trip Length * Trip Number	EMFAC2017
	Exhaust - Idling	$E_I = \Sigma(EF_I * \text{Trip Number} * T_I * C)$	EMFAC2017
Operational On-Road Mobile Sources[2]	Exhaust - Running	$E_R = \Sigma(EF_R * VMT * C)$, where VMT = Trip Length * Trip Number	EMFAC2017

Notes:

1. E_c: off-road equipment exhaust emissions (lb).
   EF_c: emission factor (g/hp-hr). CalEEMod 2016.3.2 default emission factors used.
   HP: equipment horsepower. OFFROAD2017.
   LF: equipment load factor. OFFROAD2017.
   Hr: equipment hours.
   C: unit conversion factor.
2. On-road mobile sources include truck and passenger vehicle trips. Emissions associated with mobile sources were calculated using the following formulas.
   E_R: running exhaust and running losses emissions (lb).
   EF_R: running emission factor (g/mile). From EMFAC2017.
   VMT: vehicle miles traveled
   C: unit conversion factor
   The calculation involves the following assumptions:
   a. All material transporting and soil hauling trucks are heavy-heavy duty trucks.
   b. Trip Length: The one-way trip length as calculated based on the truck route or the default length from CalEEMod or construction contractor.
   c. Trip Number: provided by the construction contractor or estimated in CalEEMod.
   E_I: vehicle idling emissions (lb).
   EF_I: vehicle idling emission factor (g/hr-trip). From EMFAC2017.
   T_I: idling time.
   C: unit conversion factor.
3. Operational emissions from the generator were calculated using the following formulas:
   E_{SS}: Stationary Source emissions.
   EF_{SS}: Stationary Source emission factor
   Hr: hours of operation per year (hr)
   C: unit conversion factor

Abbreviations:

ARB: California Air Resources Board
EF: Emission Factor
EMFAC: EMission FACtor Model
g: gram
HP: horsepower
lb: pound
LF: Load Factor
mi: mile
USEPA: United States Environmental Protection Agency
VMT: vehicle miles traveled

References:

ARB/USEPA. 2013. Table 1: ARB and USEPA Off-Road Compression-Ignition (Diesel) Engine Standards. Available online at: http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls

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Table 3
Modeling Parameters
3700 California Street
San Francisco, California

Construction Sources

Source	Source Type[1]	Source Dimension	Release Height[2]	Initial Vertical Dimension[3]	Initial Lateral Dimension[4,5]
		[m]	[m]	[m]	[m]
Construction Equipment	Area	Project Area	5	1.4	
On-Road Trucks	Volume	Variable	2.5	2.3	Variable

Notes:

1. Construction off-road equipment is modeled as an area source covering the project site, consistent with the CRRP-HRA (BAAQMD 2012).
2. According to the CRRP-HRA methodology, release height of a modeled area source representing construction equipment was set to 5 meters. On-road truck release height based on CRRP modeling and USEPA haul road guidance.
3. According to the CRRP-HRA methodology, initial vertical dimension of the modeled construction equipment volume sources was set to 1.4 meters. On-road truck initial vertical dimension based on previous CRRP modeling and USEPA haul road guidance.
4. According to USEPA AERMOD User's Guide, for a line source modeled as adjacent volume sources, the initial lateral dimension is the length of the side divided by 2.15.
5. Shaded cells indicate that those parameters are not applicable.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CRRP - Community Risk Reduction Plan
HRA - Health risk assessment
m - meter
s - second
USEPA - United States Environmental Protection Agency

References:

BAAQMD. 2012. The San Francisco Community Risk Reduction Plan: Technical Support Documentation. December. Available at: http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Findings_v9.pdf

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Table 4
Exposure Durations
3700 California Street
San Francisco, California

Phase	Sub-Phase	Operational Year	Exposure Duration	
			[days]	[years]
Off-Site Resident	Block C	2023	861	2.36
	Block B	2024	1,045	2.86
	Block A	2024	671	1.84
On-Site Resident	Phase C Residents (exposed to Phase A and B construction)	2023	326	0.89
	Phase B Residents (exposed to Phase A construction)	2024	83	0.23

Table 5
Exposure Parameters
3700 California Street
San Francisco, California

Receptor Type	Period	Receptor Age Group	Exposure Parameters					
			Daily Breathing Rate (DBR)[1] [L/kg-day]	Exposure Duration (ED)[2] [years]	Fraction of Time at Home (FAH)[3] [unitless]	Exposure Frequency (EF)[4] [days/year]	Averaging Time (AT) [days]	Intake Factor, Inhalation (IF_{inh}) [m^3/kg-day]
Off-Site Resident	Construction Phase A-C	3rd Trimester	361	0.25	1	350	25,550	0.0012
		Age 0-<2 Years	1,090	2.00	1			0.0299
		Age 2-<9 Years	631	1.08	1			0.0094
On-Site Resident[2]	Phase C Residents (exposed to Phase A and B construction)	Age 0-<2 Years	1,090	0.98	1	350	25,550	0.0146
	Phase B Residents (exposed to Phase A construction)	Age 0-<2 Years	1,090	0.30	1			0.0045

Notes:

1. Daily breathing rates reflect default breathing rates from OEHHA 2015 and BAAQMD 2016 as follows: 95th percentile 24-hour daily breathing rate for 3rd trimester and age 0-<2 years; 80th percentile for ages 2 years and older (per BAAQMD 2016 guidance).
2. The exposure duration for the on-site resident reflects two scenarios due to the phased move-in of the on-site residence after each phase of construction is complete: Scenario 4) an analysis of a child born when the residents in the units constructed in Phase C move in and are exposed to the remaining construction of Phase A and B emissions; and Scenario 5) an analysis of a child born when the residents in the units constructed in Phase B move in and are exposed to the remaining construction of Phase A emissions.
3. Fraction of time spent at home is conservatively assumed to be 1 (i.e. 24 hours/day) for age groups from the third trimester to less than 16 years old based on the recommendation from BAAQMD (BAAQMD 2016) and OEHHA (OEHHA 2015). The fraction of time at home for adults age 16-30 reflects default OEHHA guidance (OEHHA 2015) as recommended by BAAQMD (2016).
4. Exposure frequency reflects default residential exposure frequency from OEHHA 2015.

Calculation:

IF_{inh} = DBR * FAH * EF * ED * CF / AT
CF = 0.001 (m^3/L)

Abbreviations:

AT - averaging time
BAAQMD - Bay Area Air Quality Management District
DBR - daily breathing rate
ED - exposure duration
EF - exposure frequency
FAH - fraction of time at home
IF_{inh} - intake factor
kg - kilogram
L - liter
m^3 - cubic meter
OEHHA - Office of Environmental Health Hazard Assessment

References:

BAAQMD. 2016. Air Toxics NSR ProgramHealth Risk Assessment (HRA) Guidelines. January.
OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

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Table 6
Age Sensitivity Factors[1]
3700 California Street
San Francisco, California

Receptor Age Group	Value
3rd Trimester	10
Age 0-<2 Years	10
Age 2-<9 Years	3
Age 2-<16 Years	3
Age >16 Years	1

Note:

1. Based on OEHHA 2015. Age sensitivity factors are unitless.

Abbreviation:

OEHHA - Office of Environmental Health Hazard Assessment

Source:

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

FIGURES

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DRAFTED BY: AA, AKVK | DATE: 7/27/2018

Project Location
3700 California Street

San Francisco, California

FIGURE 1

PROJECT:

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RAMBOLL

DRAFTED BY: AA, AKVK | DATE: 7/27/2018

Project Boundary and Modeling Extent
3700 California Street

San Francisco, California

FIGURE 2

PROJECT:

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DRAFTED BY: AA, AKVK

DATE: 7/27/2018

Sensitive Receptor Parcels
3700 California Street

San Francisco, California

FIGURE
3

PROJECT: