

19J

19th and J Mixed-Use Project
(DR16-202)

Draft SCEA Initial Study



Contact:

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October 2016

SUSTAINABLE COMMUNITIES ENVIRONMENTAL ASSESSMENT

This Sustainable Communities Environmental Assessment (SCEA) has been prepared pursuant to Section 21155.2 of the Public Resources Code.

PROJECT TITLE: 19J (DR16-202)

PROJECT DESCRIPTION: The proposed development 19J (Project) would remove two existing commercial buildings totaling 9,780-square foot (sf), associated ancillary buildings, and concrete areas for the construction of a mixed use residential and commercial development. The Project includes a 173-unit, 11-story, housing complex with approximately 7,000 square feet (sf) of ground floor commercial and a second floor parking garage on the corner of 19th Street and J Street.

PROJECT LOCATION: The Project site consists of approximately 0.29 acres (12,630 sf) located at 1827 and 1831 J Street in the City of Sacramento in Sacramento County, California, and identified as Assessor Parcel Number (APN) 007-0012-011.

NAME OF PUBLIC AGENCY APPROVING PROJECT: City Sacramento

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CONTACT PERSON/INFORMATION: Scott Johnson, Associate Planner, (916) 808-5842, srjohnson@cityofsacramento.org.

NAME OF AGENCY CARRYING OUT PROJECT: City of Sacramento

REQUIRED FINDINGS: The City of Sacramento has determined that:

- 1) the project is consistent with the general use designations, density, building intensity, and applicable policies specified for the project area in the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) prepared by the Sacramento Area Council of Governments for the Sacramento Region;
- 2) the project qualifies as a transit priority project pursuant to Public Resources Code Section 21155(b);
- 3) the project is a residential or mixed-use project as defined by Public Resources Code Section 21159.28(d);
- 4) the project as mitigated incorporates all relevant and feasible mitigation measures, performance standards, or criteria set forth in both the MTP/SCS Program Environmental Impact Report (EIR) and the 2035 General Plan Master EIR;
- 5) all potentially significant or significant effects required to be identified and analyzed pursuant to the California Environmental Quality Act (CEQA) have been identified and analyzed in an initial study; and
- 6) the project, as mitigated, either avoids or mitigates to a level of insignificance all potentially significant or significant effects of the project required to be analyzed pursuant to CEQA.

Therefore, the City of Sacramento finds that the proposed project complies with the requirements of CEQA for using an SCEA as authorized pursuant to Public Resources Code Section 21155.2(b).

The attached Environmental Checklist/IS has been prepared by the City of Sacramento in support of this SCEA IS. Further information including the Project file and supporting reports and studies may be reviewed at the Community Development Department, 300 Richards Boulevard, Third Floor, Sacramento, CA 95811.

MITIGATION MEASURES: Pursuant to Section 21155.2 of the PRC, this SCEA IS: 1) incorporates all feasible mitigation measures, performance standards, or criteria set forth in the prior applicable environmental impact reports (EIRs), including the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) EIR, and adopted in findings made pursuant to Section 21081; and 2) contains measures that either avoid or mitigate to a level of insignificance all potentially significant or significant effects of the Project required to be identified in this IS.

Environmental Services Manager, City of Sacramento
California, a Municipal Corporation

By: _____

Date: _____

SUSTAINABLE COMMUNITIES ENVIRONMENTAL ASSESSMENT INITIAL STUDY

- Project Title:** 19J (DR16-202)
- Lead Agency:** City of Sacramento
Community Development Department
300 Richards Boulevard, Third Floor
Sacramento, CA 95811
- Lead Agency Contact:** Scott Johnson, Associate Planner
(916) 808-5842
srjohnson@cityofsacramento.org
- Project Location:** The Project site consists of approximately 0.29 acres (12,630 sf) located at 1827 and 1831 J Street in the City of Sacramento in Sacramento County, California, and identified as APN 007-0012-011.
- Project Applicant:** Nikky Mohanna
1025 9th Street, Suite 205
Sacramento, CA 95814
- Property Owner:** 19J, LLC
Nikky Mohanna
1025 9th Street, Suite 205
Sacramento, CA 95814
- Land Use Designations:** The City's General Plan Land Use and Zoning designations for the Project site are discussed in further detail below.

General Plan

The General Plan land use designation for the Project site is Urban Corridor High. The Urban Corridor High designation is defined as follows:

Corridors with this designation in urbanized areas include multi-story structures and highly developed transit service. New development along the corridor contributes to a more compact and consistent pattern that relocates parking primarily to structures and to the rear of buildings. Street level frontages are lined with retail and other pedestrian-oriented uses. The streetscape is appointed with pedestrian amenities that support and enhance pedestrian activity.

Key urban form characteristics envisioned for Urban Corridor High includes the following:

- 1. Compact development pattern with high lot coverage, limited side yard setbacks, and buildings sited at or near their front lot lines to create a consistent and well-defined street wall*
- 2. Building heights highest at intersections and stepped down in between*

3. *Building heights generally ranging from three to eight stories*
4. *Building heights highest at major intersections and lower when adjacent to neighborhoods unless near a major intersection*
5. *Lot coverage generally not exceeding 80 percent*
6. *Building façades and entrances directly addressing the street and having a high degree of transparency*
7. *Buildings with a high degree of pedestrian-oriented uses such as outdoor cafes and restaurant seating located at street level*
8. *Integrated residential, office, and retail uses*
9. *Parking is located behind buildings, integrated into buildings, or accommodated in separate parking structures*
10. *Limited number of curb cuts along arterial streets, with shared and/or rear alley access to parking and service functions*
11. *Attractive pedestrian streetscape, with broad sidewalks that includes appropriate landscaping, lighting, and pedestrian amenities/facilities*
12. *Public and semi-public outdoor spaces such as plazas, courtyards, and sidewalk cafes*

Urban Corridor High land use designation provides for a mix of horizontal and vertical mixed-use development and single-use commercial and residential development that includes the following:

- *Retail, service, office, and residential uses;*
- *Gathering places such as plazas, courtyards, or parks;*
- *Compatible public, quasi-public, and special uses; and*
- *Development should include a mix of nonresidential and residential with more intense development near major intersections*

The Urban Corridor High land use designation development standards are as follows:

<i>Minimum Density:</i>	<i>33.0 units/net acre</i>
<i>Maximum Density:</i>	<i>150.0 units/net acre</i>
<i>Minimum Floor Area Ratio (FAR):</i>	<i>0.30 FAR</i>
<i>Maximum FAR:</i>	<i>6.00 FAR</i>

Note: Residential development that is part of a mixed-use building shall comply with the allowed FAR range and is not subject to allowed density range. Standalone residential development shall comply with the allowed density range.

Zoning

The zoning designation for the Project site is General Commercial in an Urban Neighborhood overlay zone (C-2-UN). Multi-unit dwellings are permitted in the C-2-UN zone, subject to compliance with special use regulations in Section 17.228.117.

The C-2 Zone is described as follows:

Chapter 17.216 Article VII. C-2 Zone.

The purpose of the C-2 zone is to provide for the sale of goods; the performance of services, including repair facilities; office uses; dwellings; small wholesale stores or distributors; and limited processing and packaging.

Development projects not located in a historic district or involving a landmark, a final subdivision map shall not be approved and a permit shall not be issued unless and until an application for site plan and design review of the Project is approved in accordance with chapter 17.808 or the project is exempt under section 17.808.160.

As used in this subsection A, "permit" means a building permit, a demolition permit, a sign permit, a grading permit, a paving permit, an encroachment permit, and a certificate of occupancy.

For development projects located in a historic district or involving a landmark, a person shall not commence construction or otherwise undertake, and a final subdivision map shall not be approved and a permit shall not be issued unless and until an application for site plan and design review of the Project is approved in accordance with chapter 17.808 or the project is exempt under section 17.808.160.

The UN Zone is described as follows:

Chapter 17.344 Urban Neighborhood (UN) Overlay Zone.

Development in the Urban Neighborhood overlay zone is subject to the requirements of the underlying zone. (Ord. 2013-0020 § 1; Ord. 2013-0007 § 1).

Surrounding Land Uses and Setting: The Project is in the downtown area of the City of Sacramento (see Figure 1). The Project is within the Central City area and is less than one mile away from the State Capitol, downtown employment areas, and Regional Transit hubs. The Project site is immediately surrounded by commercial land uses, with residential neighborhoods to the south, north, and east, and the Central City employment center to the west (see Figure 2). The MTP/SCS identifies the Central City as a Center and Corridor Community. Center and Corridor Communities allow for compact and mixed-use growth, which can help reduce dependence on single passenger vehicle travel by allowing for greater access to alternative means of transportation.

Description of Project: The Project is a mixed-use residential and commercial development (see Figure 3). The site totals approximately 0.29 acres, and the Project would include the construction of a 173-unit, 11-story, housing complex with ground floor commercial and second-story parking garage on the corner of 19th Street and J Street (see Figure 4 and Figure 5). Project architecture would use an articulated design to reduce building massing, and would incorporate multiple materials, including green walls, to create a variable and textured façade. To further reduce the building's mass and increase interest, a third and fourth floor outdoor room would be included on the corner of 19th and J Street for use by residents.

Figure 1
Regional Project Location

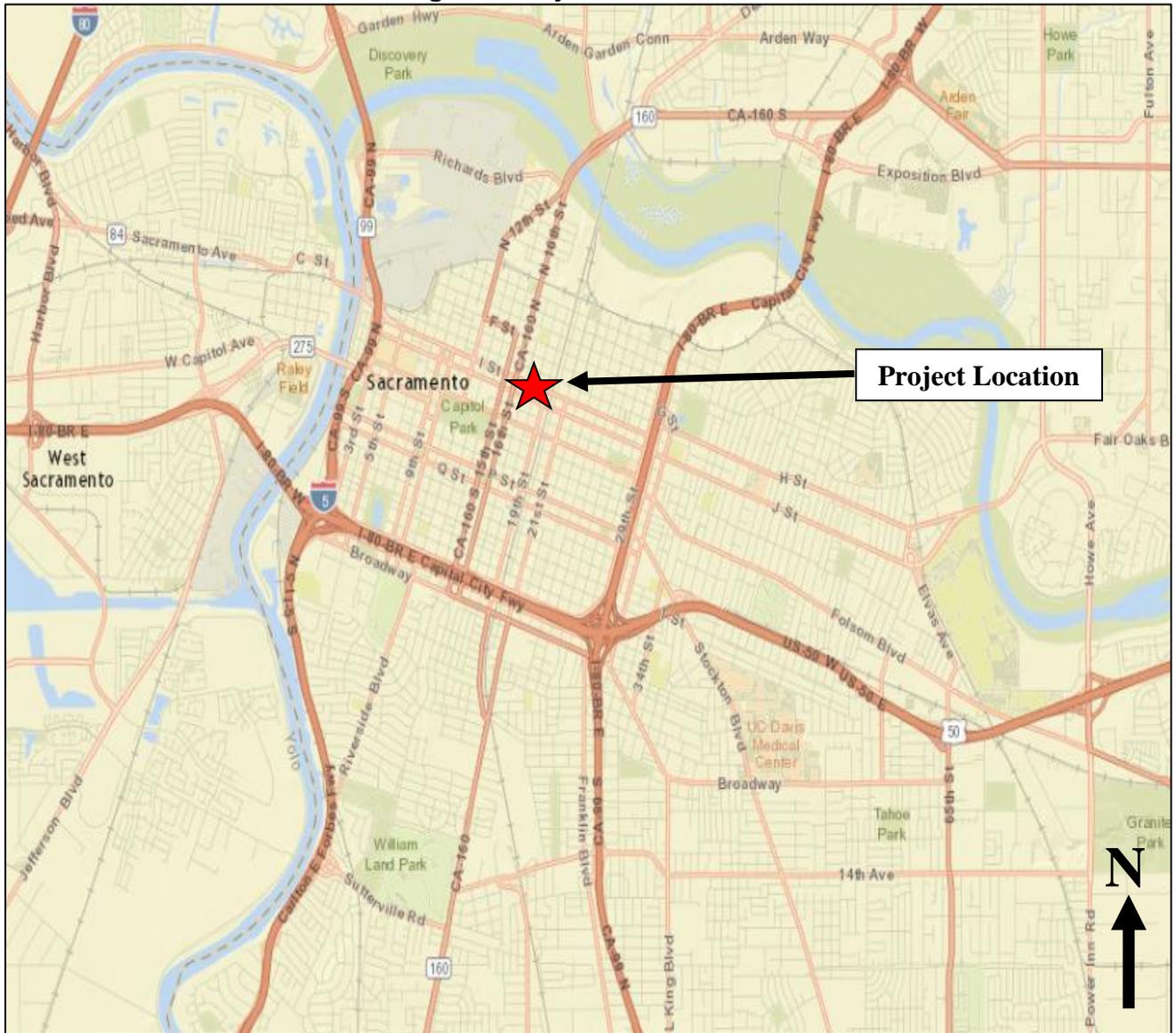


Figure 2
Project Vicinity Map

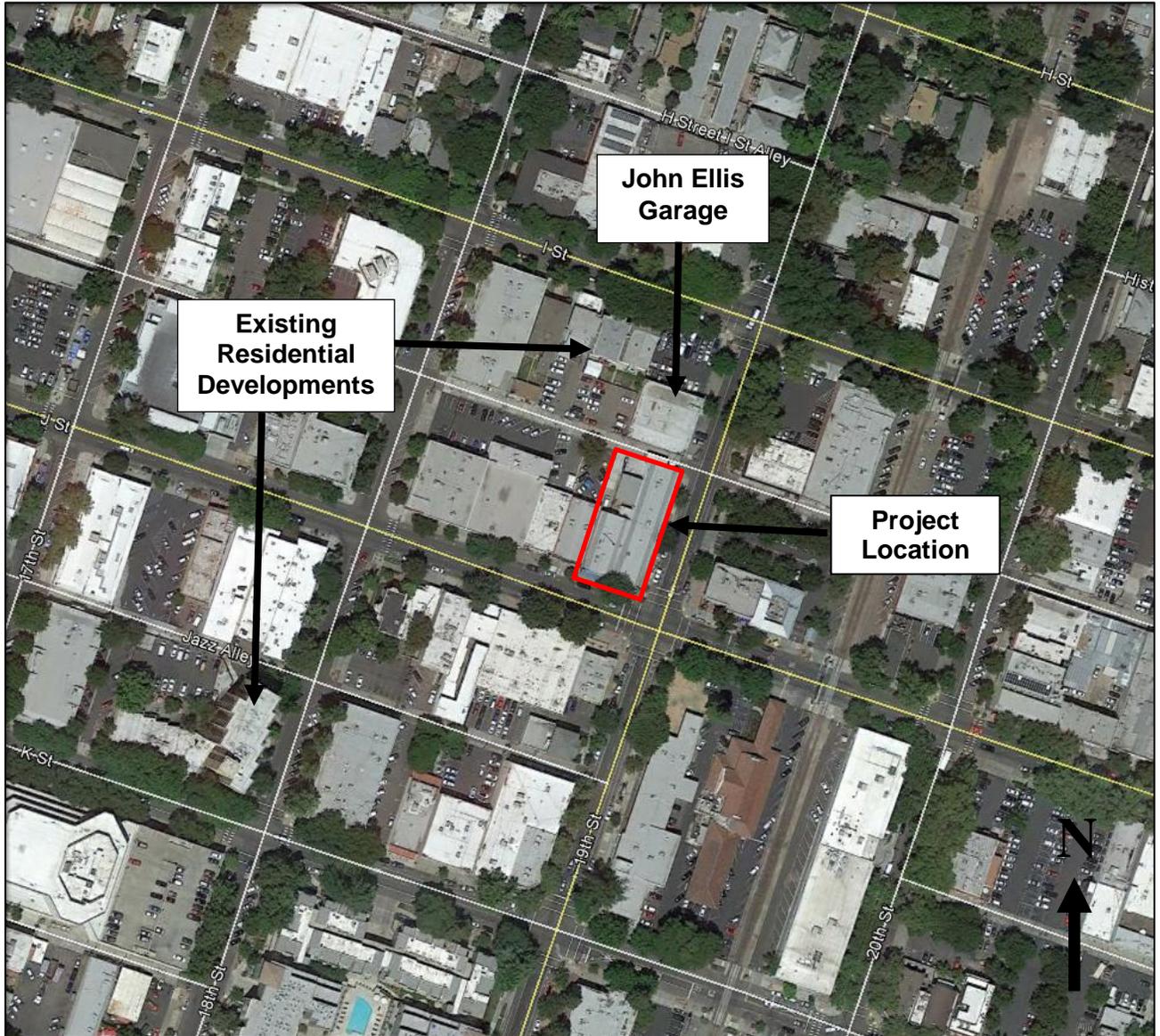


Figure 3
Project site Plan

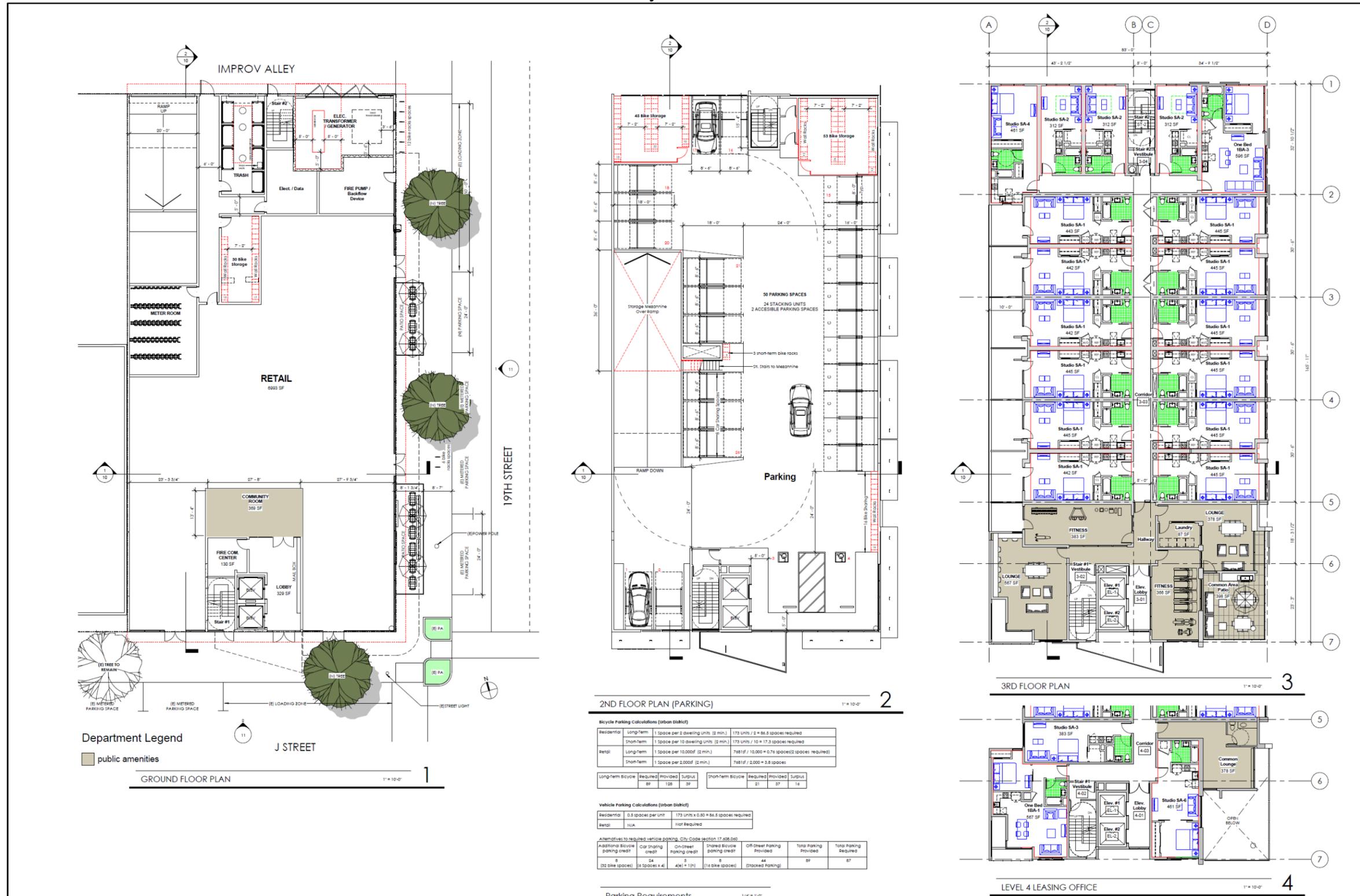


Figure 4
Project Rendering 1



Figure 5
Project Rendering 2



Additionally, the Project would feature outdoor patio spaces on the ground floor, and may include Juliet balconies throughout the Project in order to activate the corner of 19th and J Streets for pedestrian uses.

Site Access

The Project site is bordered by J Street to the south, 19th Street to the east, and Improv Alley to the north. Both 19th Street and J Street are one-way streets, which run north to south and west to east, respectively. Both J Street and 19th Street are designated as being arterial streets by the City of Sacramento 2035 General Plan. Improv Alley to the north of the Project site would provide vehicle access to the second story parking level (see Figure 3).

Utilities

The following section summarizes the proposed connections to existing infrastructure included in the Project.

Water

The City of Sacramento Department of Utilities (DOU) provides water service to the project area, and would continue to provide service to the Project. Currently, a six-inch water distribution main exists in Improv Alley to the north of the Project site. The six-inch water line extends into 19th Street where the line connects to an existing 24-inch transmission main. The Project would connect to the existing six-inch water distribution main in Improv Alley. In addition, The Project would include water conservation measures sufficient to reduce indoor water consumption by 25 percent and outdoor water use by 50 percent.

Wastewater and Drainage

The City of Sacramento 2035 General Plan Draft Background Report indicates that the Project site is located in a portion of the Central City where sanitary sewage and storm drainage are collected in the City operated Combined Sewer System (CSS).¹ The City currently has agreements with various storage areas and treatment plants to treat up to 540 million gallons per day (mgd). There is an existing 10-inch CSS line located in Improv Alley and in J Street.

Electricity, Energy Efficiency, and Natural Gas

The Sacramento Municipal Utility District (SMUD) provides electrical service to the Project site and would continue to provide service to the Project site with the approval of the Project. Concurrently Pacific Gas & Electric Company (PG&E) provides natural gas services to the Project site through a four-inch gas line within 19th Street. The Project is anticipated to be certified by the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) program at the Gold level, which includes the goal for the project to be a net-zero energy building (NZEB). The National Renewable Energy Laboratory defines a NZEB as being a residential building with energy efficiency gains and reduced energy needs to allow for all needed energy to be provided by renewable sources of energy. The Project would attain the NZEB status through energy efficiency measures which would exceed current Title 24 standards by 30 percent and a combination of rooftop solar photovoltaic energy panels, generating 20 kilowatt hours of electricity, and purchased solar credits from the SMUD grid.

¹ City of Sacramento. *2035 General Plan Draft Background Report*. August 2014.

Construction

The Project is anticipated to begin construction activity in spring 2017. Construction would begin with the demolition of the existing 9,780 sf building, which would last for approximately one month. Site preparation, grading, and paving would follow the demolition activity and would last for approximately two months before the commencement of building construction. Building construction is anticipated to last for 18-months and would include various pieces of heavy machinery including a crane.

Entitlements

The requested project entitlements for project implementation are as follows:

- Adoption of the CEQA SCEA and IS;
- Mitigation Monitoring Program;
- Site Plan and Design Review approval; and
- Tree Removal Permit.

Background: The Project site currently consists of two existing commercial buildings totaling 9,780 sf (the Italian Importing Company and the former site of Metro Electronics), associated structures, and paved areas. The existing buildings were constructed in approximately 1943 and are single-story.

Previous Relevant Environmental Analysis: Development within the immediate area was assumed as part of the SACOG MTP/SCS and analyzed as part of the cumulative conditions assumed in the MTP/SCS EIR (SCH # 2014062060) certified February 18, 2016 and in the Sacramento 2035 General Plan Master EIR (SCH # 2012122006) adopted March 3, 2015.

Sustainable Communities and Transit Priority Projects: The Sustainable Communities and Climate Protection Act of 2008 (SB 375) was passed by the California Senate with the goal of reducing greenhouse gas emissions through coordination between transportation and land use planning thus fostering more environmentally sustainable communities. SACOG has applied the goals of SB 375 to regional planning through the implementation of the MTP/SCS. One of the key goals of SB 375 and the MTP/SCS, is the reduction of greenhouse gas (GHG) emissions from passenger vehicles. To accomplish such reductions, the MTP/SCS seeks to improve connections between the housing stock and employment centers within the planning area through compact and mixed use developments. The MTP/SCS pursues this strategy by identifying Transit Priority Areas (TPA), which are defined as areas within one-half mile of a light rail station stop or a high-quality transit corridor with bus service intervals of 15 minutes or less. Businesses or residences developed or densified within TPAs would afford commuters convenient access to alternative means of transportation. Greater use of alternative transportation would lead to a reduction in passenger vehicle use, and thus help SACOG meet the GHG emission reduction goals imposed by SB 375. Additionally, the MTP/SCS was itself the subject of a Program EIR, which analyzed the potential environmental impacts that could result from the implementation of the MTP/SCS. The MTP/SCS encouraged growth within TPAs and thus the MTP/SCS EIR analyzed potential environmental impacts that could result from such growth. In accordance with CEQA Guidelines, Section 15168, many of the environmental impacts that could occur due to approval of Projects which are consistent with the MTP/SCS have already been analyzed in the MTP/SCS EIR. If a Project is determined to be consistent with the MTP/SCS, some of the potential environmental impacts of the Project may have already been addressed in the MTP/SCS EIR.

SB 375 Streamlining of TPA Projects

As discussed earlier, the MTP/SCS seeks to achieve the GHG reductions required by SB 375 for the planning area. Therefore, projects which are consistent with the MTP/SCS would also be consistent with SB 375, and would thus qualify for the CEQA streamlining benefits included in SB 375. Because projects that are consistent with the MTP/SCS and SB 375 would help to achieve an overall environmental goal of reducing GHG emissions, such projects are not required to discuss the following environmental impact areas:

- Aesthetics;
- Agricultural and Forestry Resources;
- Land Use;
- Mineral Resources;
- Population and Housing;
- Growth-inducing impacts; and
- Project specific or cumulative impacts from cars and light trucks generated by the project on GHG emissions or the regional roadway network.

Aesthetics

The proposed project qualifies as an infill mixed-use residential project and is located within a Transit Priority Area. The urban infill designation applies because the project site is “located within an urban area that has been previously developed” (California Public Resources Code Sections 21099[a] and 21099[d]). The Transit Priority Area designation also applies, as defined by the Sacramento Area Council of Governments (SACOG) in its Metropolitan Transportation Plan / Sustainable Communities Strategy (MTP/SCS). Aesthetic impacts of infill projects within Transit Priority Areas are not considered significant effects on the physical environment (California Public Resources Code Section 21099[d]), and thus the Project would not have a significant impact related to Aesthetics.

Agricultural Resources

The project site is in the Central City portion of Sacramento, where agricultural lands and forestry resources do not currently exist. Therefore, the Project would not have the potential to impact such resources.

Land Use

The project site is located in the Central City portion of Sacramento, northwest of the intersection of 19th and J Streets. The project site is developed with two existing commercial buildings (the Italian Importing Company and the former site of Metro Electronics), associated structures, and paved areas.

The project site vicinity consists of a mix of retail and commercial services; restaurants and bars; medical, dental, and other types of office; with some single- and multi-family residential development; parks, museums, places of worship, and other civic uses; and other complementary uses. Properties surrounding the project site are currently non-residential. The Project’s proposed incorporation of residential and commercial land uses is compatible with the mix of surrounding land uses. The Project does not propose new roads or any other type of infrastructure or

improvements that would physically divide any existing communities. Therefore, the Project would not result in any impacts related to Land Use.

However, in order for projects to qualify for the CEQA streamlining, the project must be shown to be consistent with the MTP/SCS.

SCEA Criteria: The following information demonstrates that the Project is a qualified transit priority project pursuant to the requirements of PRC Section 21155:

MTP/SCS Consistency

The Project must be consistent with the general land use designation, density, building intensity, and applicable policies specified for the Project area in the MTP/SCS, and the State Air Resources Board must agree that the MTP/SCS will achieve applicable greenhouse gas (GHG) emissions reductions targets (PRC Section 21155(a)).

The most recent MTP/SCS was adopted on February 18, 2016 by the SACOG Board of Directors.

The MTP/SCS identifies the subject property as falling within the multi-family and commercial growth assigned to Centers and Corridor Communities and the Sacramento County Transit Priority Area. The Project is consistent with this general land use description. Additionally, The MTP/SCS forecast includes 43,099 new housing units and 39,753 new employees by 2036 in the City of Sacramento. Development of the retail and residential components of the Project would not exceed the MTP/SCS build out assumptions for the City or the Center and Corridor Communities in the City.

SACOG has determined that the policies of the MTP/SCS are general in nature and integrated into the metrics, growth forecasts and land use modeling for which Project consistency is demonstrated above. Additional policies specifically applicable to this Project or Project area not known at this time.

Project consistency with the MTP/SCS is addressed more specifically in the attached Determination of MTP/SCS Consistency (see Appendix A), and below.

General Plan Consistency

To qualify as a TPP, the MTP/SCS requires that the Project be consistent with the General Plan Land Use Designation for the Project site.

The Project is located in the Urban Corridor High designation of the 2035 General Plan and is consistent with the guidelines allowing for an increased floor-area ratio through the Project's significant community benefits.

Mixed-Use Residential Land Use

To qualify as a TPP, the MTP/SCS requires that the Project contain at least 50 percent residential use, based on total building square footage. If a Project contains between 26 percent and 50 percent nonresidential uses, a floor area ratio (FAR) of not less than 0.75 is required (PRC Section 21155(b)(1)).

The Project is comprised of 7,176 sf of retail uses and 92,461 sf of residential uses. Residential use is 92 percent of the total building sf (92,461 sf residential ÷ 99,637 total sf), and thus would be consistent with the MTP/SCS requirement for land use.

Density

To qualify as a TPP, the MTP/SCS requires that the Project must provide a minimum net density of at least 20 du/ac (PRC Section 21155(b)(2)).

The proposed residential density of the project is 577 du/ac (173 du ÷ 0.3 ac), well above the 20 du/ac requirement.

Proximity to Transit

To qualify as a TPP, the MTP/SCS requires that the Project must be located within a Transit Priority Area studied within the MTP/SCS; and no more than 25 percent of the Project area can be farther than one-half mile from the major transit stop or high-quality transit corridor and no more than 10 percent of the residential units or 100 units (whichever is less) can be farther than one-half mile from the stop or corridor (PRC Section 21155(b)(3)).

The Project site is within a Transit Priority Area studied within the MTP/SCS.

The farthest point of the Project site from the J Street and 18th Street bus stop, is approximately 510 feet, or .10 miles. 100 percent of the Project site and proposed units are within 1/2 mile of the J Street and 18th Street bus stop (see Figure 6). Additionally, 16 other bus routes and three light rail stations service the Central City area of Sacramento, most of which are within one-mile of the Project site. The project site is also adjacent to the proposed route of a new streetcar line that will run east along J Street and turn south on 19th Street. Preliminary designs also call for a streetcar stop on the 1800 block of J Street, just west of the project site.

In accordance with the Determination of MTP/SCS Consistency Worksheet (Number 3, Letter C, see Appendix A), the project is “consistent with the use designation, density, building intensity, and applicable policies specified for the project area” in a Sustainable Communities Strategy which has been accepted by the Air Resources Board as meeting applicable greenhouse gas reduction targets (PRC § 21159.28).

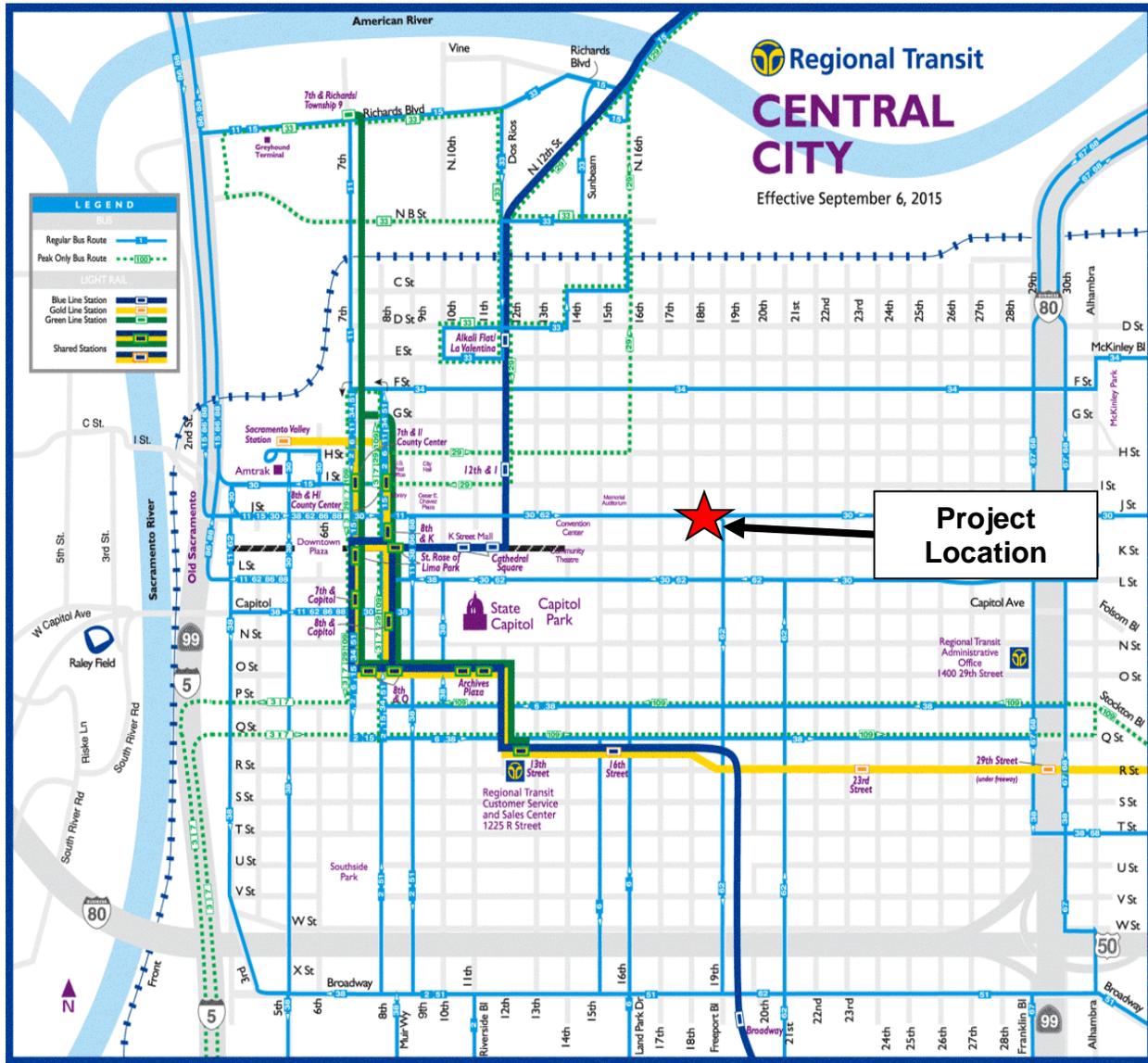
Mitigation Measures

To qualify as a TPP, the MTP/SCS requires that the Project must incorporate all feasible mitigation measures, performance standards, or criteria set forth in Findings of Fact for prior applicable EIRs including the MTP/SCS EIR and the City of Sacramento 2035 General Plan Master EIR (PRC Section 21155.2(a)).

In each impact section of the SCEA IS checklist below, applicable mitigation measures from the Findings of Fact for the MTP/SCS, City of Sacramento 2035 General Plan, and City of Sacramento 2035 General Plan Master EIR are identified, and where feasible, identified for incorporation into the Project.

Project Assumptions: The SCEA IS assumes compliance with all applicable State, federal, and local codes and regulations.

Figure 6
Transit Proximity



ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources |
| <input type="checkbox"/> Energy | <input checked="" type="checkbox"/> Geology and Soils | <input checked="" type="checkbox"/> Hazards and Hazardous Materials |
| <input type="checkbox"/> Hydrology and Water Quality | <input type="checkbox"/> Noise | <input checked="" type="checkbox"/> Public Services |
| <input checked="" type="checkbox"/> Recreation | <input type="checkbox"/> Transportation and Traffic | <input type="checkbox"/> Utilities and Service Systems |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Mandatory Findings of Significance | |

EVALUATION OF ENVIRONMENTAL IMPACTS:

Following is the environmental checklist form (also known as an “Initial Study”) presented in Appendix G of the State CEQA Guidelines. The checklist form is used to describe the impacts of the Project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures recommended as appropriate as part of the Project.

For this checklist, the following designations are used:

Potentially Significant: An impact that could be significant, and for which mitigation has not been identified. If any potentially significant impacts are identified, an EIR must be prepared. An SCEA cannot be used in the case of a project for which this conclusion is reached in any impact category.

Less Than Significant With Mitigation Incorporated: This designation applies where applicable and feasible mitigation measures previously identified in prior applicable EIRs or in the MTP/SCS EIR have reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact”, and pursuant to Section 21155.2 of the PRC, those measures are incorporated into the SCEA IS.

This designation also applies where the incorporation of new project-specific mitigation measures not previously identified in prior applicable EIRs or in the MTP/SCS EIR has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.”

Less Than Significant: Any impact that would not be considered significant under CEQA, relative to existing standards

No Impact: The project would not have any impact.

DETERMINATION:

On the basis of this initial evaluation:

- I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the 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 applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" 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 Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the Project, nothing further is required.
- I find that the Project is a qualified "transit priority project" that satisfies the requirements of Sections 21155 and 21155.2 of the Public Resources Code (PRC), and/or a qualified "residential or mixed use residential project" that satisfies the requirements of Section 21159.28(d) of the PRC, and although the Project could have a potentially significant effect on the environment, there will not be a significant effect in this case, because this Sustainable Communities Environmental Assessment (SCEA) Initial Study identifies measures that either avoid or mitigate to a level of insignificance all potentially significant or significant effects of the Project.



 Signature

10-7-16

 Date

Scott Johnson

 Printed Name

City of Sacramento

 For

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

ENVIRONMENTAL SETTING

The City of Sacramento is within Sacramento County, which is within the boundaries of the Sacramento Valley Air Basin (SVAB) and under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). Federal and State air quality standards have been established for six common air pollutants, known as criteria pollutants, which are pollutants that could be detrimental to human health or the health of the environment. The criteria pollutants include particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. At the federal level, Sacramento County is designated as severe nonattainment for the 8-hour ozone standard, nonattainment for the 24-hour PM_{2.5} standard, and attainment or unclassified for all other criteria pollutants. At the State level, the area is designated as a serious nonattainment area for the 1-hour ozone standard, nonattainment for the 8-hour ozone standard, nonattainment for the particulate matter 10 microns in diameter (PM₁₀) and particulate matter 2.5 microns in diameter (PM_{2.5}) standards, and attainment or unclassified for all other State standards.

Nearly all development projects in the Sacramento region have the potential to generate air pollutants that may increase the difficulty of attaining federal and State ambient air quality standards (AAQS). Therefore, for most projects, evaluation of air quality impacts is required to comply with CEQA. In order to help public agencies evaluate air quality impacts, SMAQMD has developed the *Guide to Air Quality Assessment in Sacramento County*. The SMAQMD's guide includes recommended thresholds of significance, which include mass emission thresholds for construction-related and operational ozone precursors, as the area is under nonattainment for the federal and State ozone AAQS.

In addition to criteria air pollutants, toxic air contaminants (TACs) are a category of environmental concern. TACs are present in many types of emissions with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different TACs. In terms of health risks, the most volatile contaminants are diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene and acetaldehyde. Gasoline vapors contain several TACs, including benzene, toluene, and xylenes. Public exposure to TACs can result from emissions from normal operations as well as accidental releases. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure, which typically are associated with long-term exposure and the associated risk of contracting cancer. Health effects of exposure to TACs other than cancer include birth defects, neurological damage, and death. The SMAQMD's guide includes screening criteria for localized carbon monoxide (CO) emissions and thresholds for new stationary sources of TACs.

Naturally-occurring asbestos (NOA) was identified as a TAC in 1986 by the California Air Resources Board (CARB). Earth disturbance activity could result in the release of NOA to the air. NOA is located in many parts of California and is commonly associated with ultramafic rocks. According to mapping prepared by the California Geological Survey, the only area within Sacramento County that is likely to contain NOA is eastern Sacramento County. The Project site is not located in an area identified as likely to contain NOA.

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. Existing sensitive receptors in the vicinity of the Project site include the single-family residences located approximately 120 feet northwest of the site.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact is considered significant if the Project would result in:

- Construction emissions of NO_x above 85 pounds per day;
- Operational emissions of NO_x or ROG above 65 pounds per day;
- Violation of any air quality standard or contribute substantially to an existing or projected air quality violation;
- Any increase in particulate matter (PM) concentrations, unless all feasible Best Available Control Technology (BACT) and Best Management Practices (BMPs) have been applied, then increases above 80 pounds per day or 14.6 tons per year for PM₁₀ or 82 pounds per day or 15 tons per year for PM_{2.5};
- CO concentrations that exceed the 1-hour state ambient air quality standard (i.e., 20.0 ppm) or the 8-hour state ambient standard (i.e., 9.0 ppm); or
- Exposure of sensitive receptors to substantial pollutant concentrations.

Ambient air quality standards have not been established for TACs. TAC exposure is deemed to be significant if:

- TAC exposures create a risk of 10 in 1 million for stationary sources, or substantially increase the risk of exposure to TACs from mobile sources.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

The Master EIR addressed the potential effects of the 2035 General Plan on ambient air quality and the potential for exposure of people, especially sensitive receptors such as children or the elderly, to unhealthful pollutant concentrations. See Master EIR, Chapter 4.2.

Policies in the 2035 General Plan in Environmental Resources were identified as mitigating potential effects of development that could occur under the 2035 General Plan. For example, Policy ER 6.1.1 calls for the City to work with the California Air Resources Board and the SMAQMD to meet state and federal air quality standards; Policy ER 6.1.12 requires the City to review proposed development projects to ensure that the projects incorporate feasible measures that reduce construction and operational emissions; Policy ER 6.1.11 calls for coordination of City efforts with SMAQMD; and Policy ER 6.1.15 requires the City to give preference to contractors using reduced-emission equipment.

The Master EIR identified exposure to sources of TACs as a potential effect. Policies in the 2035 General Plan would reduce the effect to a less-than-significant level. The policies include ER 6.1.4, requiring coordination with SMAQMD in evaluating exposure of sensitive receptors to TACs, and impose appropriate conditions on projects to protect public health and safety; as well as Policy LU 2.7.5 requiring extensive landscaping and design elements that provide proper filtering, ventilation, and exhaust of vehicle air emissions from buildings. Additionally, the Master EIR considers Policy ER 6.1.3, Emissions Reductions, to be a mitigation measure as the policy requires projects that exceed SMAQMD's ROG and NOx operational thresholds to incorporate design or operational features that reduce emissions by at least 15 percent from unmitigated project levels.

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 5 of the MTP/SCS EIR evaluates potential impact to Air Quality that may result from implementation of the proposed MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a. Applicable Air Quality Plan

The MTP/SCS EIR analyzed the potential impact related to conflicting with or obstructing an applicable air quality plan (Impact AIR-1). The MTP/SCS EIR identified regional growth and transportation as a major source of criteria air pollutants and determined that because the MTP/SCS promotes compact growth and encourages multi-modal transportation the MTP/SCS would result in a **less-than-significant** impact. The MTP/SCS EIR concluded that the MTP/SCS would not conflict with or obstruct the implementation of any applicable air quality plan for CAAQS or NAAQS; therefore, mitigation is not required.

b.c. Air Quality Standards

The MTP/SCS EIR analyzed the potential impact related to the MTP/SCS being inconsistent with, or exceeding, applicable thresholds of significance established by the local air district for short-term construction activities or long-term operational criteria air pollutant emissions (Impacts AIR-4A and AIR-4B). The MTP/SCS EIR concluded that construction of land uses and transportation projects included in the MTP/SCS would result in a **significant and unavoidable** impact because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures AIR-3 and Mitigation Measure AIR-4). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact.

d. Sensitive Receptors and TAC Concentrations

The MTP/SCS EIR analyzed the potential impact related to the MTP/SCS exposing sensitive receptors to substantial TAC concentrations (Impacts AIR-2). The MTP/SCS EIR concluded that construction of land uses and transportation projects included in the MTP/SCS could expose sensitive receptors to increased levels of TAC, which would result in a **significant and unavoidable** impact because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures AIR-1). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact.

e. Objectionable Odors

The MTP/SCS EIR analyzed the potential impact related to the MTP/SCS creating objectionable odors resulting from project operation or construction activities affecting a substantial number of people (Impacts AIR-3). The MTP/SCS EIR concluded that construction of land uses and transportation projects included in the MTP/SCS could create objectionable odors, which would result in a **significant and unavoidable** impact because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures AIR-2). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

The MTP/SCS EIR considers Impacts AIR-1, AIR-2, AIR-3, AIR-4A, and AIR-4B to be significant and unavoidable because SACOG cannot require an implementing agency to adopt these mitigation measures, and the lead agency is ultimately responsible to adopt mitigation. However, MTP/SCS EIR Mitigation Measures AIR-1, AIR-2, AIR-3, and AIR-4 may be applicable to the Project, could be feasibly implemented, and are hereby incorporated into this SCEA IS as requirements of the project.

MM AIR-1 Adhere to ARB Handbook siting guidance to the maximum extent possible.

Where sensitive land uses or TAC sources would be sited within the minimum ARB-recommended distances, a screening-level HRA, and, if warranted, a site-specific HRA shall be conducted to determine, based on site-specific and project-specific characteristics, and all feasible mitigation and best practices. Identified feasible mitigations and best practices shall be implemented. The HRA protocols of the applicable local air districts shall be followed or, where a district/office does not have adopted protocols, the protocol of SMAQMD or CAPCOA shall be followed. Best practices shall be applied as recommended and applicable, to reduce the impact to a less-than-significant level where feasible. The HRA should give particular attention to the nature of the receptor, recognizing that some receptors are particularly sensitive (e.g., schools, day care centers, assisted living and senior centers, and hospitals) and may require special measures. Examples of best practices that studies have suggested to be effective include:

- install, operate, and maintain in good working order a central heating, ventilation, and air conditioning (HVAC) system or other air intake system in the building, or in each individual unit, that meets or exceeds a minimum efficiency reporting value (MERV) of 13 and includes either high efficiency particulate air (HEPA) filters or American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) certified 85 percent or higher;
- install passive (drop-in) electrostatic filtering systems, especially those with low air velocities (i.e., 1 mile per hour [MPH]), as a part of the HVAC project HVAC system(s);
- maintain, repair, and/or replace the HVAC system on an ongoing and as needed basis or shall prepare an operation and maintenance manual for the HVAC system and the filter, for inclusion in the Covenants, Conditions and Restrictions (CC&Rs) for residential projects and a separate homeowners manual;
- orient air intakes away from TAC sources or provide shields or buffers to the maximum extent possible; maintain a vegetative barrier between new residential units consisting of tree species with year-round foliage and a porosity of 20 or 40 percent wherever feasible; and
- use tiered tree planting between roadways and sensitive receptors wherever feasible, using native, needled (coniferous) species, ensure a permanent irrigation source, and provide permanent funding to maintain and care for the trees.

Additionally, implementing agencies should contact SMAQMD and/or CAPCOA for the most current list of best practices for limiting exposure of sensitive receptors to substantial TAC concentrations consistent with the ARB Handbook.

MM AIR-2 Implementing agencies shall require assessment of new and existing odor sources for individual land use projects to determine whether sensitive receptors would be exposed to objectionable odors and apply recommended applicable mitigation measures as defined by the applicable local air district and best practices.

Examples of mitigation measures that may be applied where feasible and necessary to address site-specific impacts, include but are not limited to:

- Proposed industrial, commercial, or convenience land uses (e.g., fast-food

restaurants, painting operations) that have the potential to emit objectionable odors shall be located as far away as feasibly possible from existing and proposed sensitive receptors and oriented where possible to place buildings or other obstructions between the odor source and downwind receptors.

- The odor-producing potential of land uses shall be considered when the exact type of facility that would occupy industrial, commercial, or convenience areas is determined.
- If an odor-emitting facility is to occupy space in the industrial, commercial, or convenience area, the odor-producing potential of the source and potential control devices shall be determined in coordination with the local air district and shall be based on the number of complaints associated with existing sources of the same nature. Odor-control devices (e.g., wet chemical scrubbers, HVAC filters, activated carbon scrubbers, biologically active filters, enclosures) shall be identified in the improvement plans before the approval of building permits. The odor-control devices shall be installed before the issuance of certificates of occupancy for the potentially odor-producing use.
- Require notification to incoming property owners (e.g., real estate disclosures) regarding the existence of pre-existing odor-emitting facilities or operations (e.g., similar to aviation easements for noise).

Also, see specifically SMAQMD's Guide to Air Quality Assessment in Sacramento County (SMAQMD, 2009). Chapter 7 of the SMAQMD guide provides an extensive list of technology- and design based odor reduction measures.

MM AIR-3 Implementing agencies shall require recommended applicable mitigation measures as defined by the applicable local air district.

Implementing agencies shall require projects that exceed the long-term operational thresholds to mitigate the air quality impacts using all applicable and feasible mitigation.

Examples of mitigation measures include, but are not limited to:

- provide for the use of energy-efficient lighting and process systems (e.g., low-NOX water heaters, furnaces, and boiler units);
- use EPA Phase II-certified devices for all newly-installed woodburning devices;
- design streets to maximize pedestrian access to transit stops;
- include bus shelters at transit access points where deemed appropriate by local public transit operator in large residential, commercial, and industrial projects;
- contribute to traffic-flow improvements (e.g., right-of-way, capital improvements) that reduce traffic congestion;
- equip residential structures with electric outlets in the front and rear of the structure to facilitate use of electrical lawn and garden equipment;
- provide for, or contribute to, dedication of land for off-site Class I and Class II bicycle trails linking the project to designated bicycle commuting routes in accordance with the regional bikeway master plan;

- contribute to the provision of synchronized traffic signals on roadways affected by the project and as deemed necessary by the local public works department;
- provide transit-enhancing infrastructure that includes bus turnouts or bulbs, passenger benches, street lighting, route signs and displays, and shelters as demand and service routes warrant, subject to review and approval by local transportation planning agencies;
- provide pedestrian-enhancing infrastructure that includes sidewalks and pedestrian paths, direct pedestrian connections, street trees to shade sidewalks, pedestrian safety designs and infrastructure, street furniture and artwork, street lighting, pedestrian signalization and signage, and/or access between bus service and major transportation points within the project;
- include neighborhood park(s) or other recreational options, such as trails, within the development to minimize vehicle travel to off-site recreational and/or commercial uses;
- install solar water heaters;
- incorporate mixed uses, where permitted by local development regulations, to achieve a balance of commercial, employment, and housing options on the Project site;
- include neighborhood telecommunications or telework centers;
- contribute to traffic-flow improvements (e.g., right-of-way, capital improvements) that reduce traffic congestion and do not substantially increase roadway capacity;
- provide preferential parking spaces for carpool and vanpool vehicles, implement parking fees for single-occupancy vehicle commuters, and implement parking cash-out program for employees;
- use clean fuel vehicles in the vehicle fleet;
- require all employment centers to include an adequate number of on-site shower/locker facilities for bicycling and pedestrian commuters (typically one shower and three lockers for every 25 employees per shift);
- construct/contribute to bicycle and pedestrian facility improvements;
- provide ancillary services (e.g., cafeterias, health clubs, automatic tellers, and post offices) within walking distance of proposed development (no further than 1,500 feet) as appropriate and in compliance with local development regulations;
- provide park-and-ride lots as deemed feasible and appropriate by transportation planning agencies;
- employment centers that exceed a designated size, as measured by the number of employees, shall provide on-site child care and after-school facilities or contribute to off-site construction of such facilities within walking distance of employment land uses (for employment centers on or adjacent to industrial land uses, on-site child daycare centers shall be provided only if supported by the findings of a comprehensive HRA performed in consultation with the local air district);
- provide on-site pedestrian facility enhancements, such as walkways, benches, proper lighting, vending machines, and building access that are physically separated from parking lot traffic;

- offer alternative work schedules, where practical, that allow for work hours that are compressed into fewer than 5 days (e.g., 9/80, 4/40, or 3/36 schedules), or allow flextime schedules;
- provide transit amenities (e.g., on-site and off-site bus turnouts, passenger benches, or shelters) where deemed appropriate by local transportation planning agencies;
- contribute to the provision of synchronized traffic signals on roadways affected by the Project and as deemed necessary by the local public works department;
- provide video conferencing facilities;
- commit to support programs that include guaranteed ride home, subsidized transit passes, and rideshare matching;
- provide transportation (e.g., shuttles) to major transit stations and multimodal centers;
- require each employer employment center (more than 25 employees) to assign a transportation coordinator for the applicable Transportation Management Association (TMA);
- require all employers to install a permanent display in employee common areas of alternate transit information, as determined by the requirements of the TMA;
- require employers or employment centers (more than 25 employees) to implement a guaranteed ride home program;
- require employers or employment centers (more than 25 employees) to implement an incentive program for riding transit, carpooling, vanpooling, biking, and walking instead of driving a single-occupancy vehicle to work, and design and locate buildings to facilitate transit access;
- install Energy Star (or equivalent) cool roofing systems on all buildings;
- design shuttle and transit exits to adjoining streets to reduce time to reenter traffic from the Project site;
- increase wall and attic insulation to 20 percent above Title 24 requirements (residential and commercial);
- orient buildings to take advantage of solar heating and natural cooling, and use passive solar designs (residential, commercial, and industrial);
- provide energy-efficient windows (double pane and/or Low-E) and awnings or other shading mechanisms for windows, porches, patios, and walkways;
- consider passive solar cooling and heating designs, ceiling and whole house fans, and programmable thermostats in the design of heating and cooling systems; and
- use day lighting systems, such as skylights, light shelves, and interior transom windows.

See also SMAQMD's most recent version of the Recommended Guidance for Land Use Emission, currently version 3.2 (SMAQMD, 2015a).

MM AIR-4 Implementing agencies shall require project applicants to implement applicable, or equivalent, construction mitigation measures as defined by the applicable local air district.

Lead agencies shall require project applicants, prior to construction, to implement construction mitigation measures that, at a minimum, meet the requirements of the

applicable air district with jurisdiction over the area in which construction activity would occur if the project is anticipated to exceed thresholds of significance for short-term criteria air pollutant emissions. Projects that exceed these thresholds shall mitigate the air quality impacts using all applicable and feasible mitigation. For construction activity on the Project site that is anticipated to exceed thresholds of significance, the project applicant(s) shall require construction contractors to implement both Standard Mitigation Measures and Best Available Mitigation Measures for Construction Activity to reduce emissions to the maximum extent applicable and feasible for all construction activity performed in the plan area.

Examples of mitigation measures could include, but not limited to, the following:

- The applicant shall implement a Fugitive Dust Control Plan.
- All grading operations on a project shall be suspended when winds exceed 20 MPH or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.
- Construction sites shall be watered as directed by the local air district and as necessary to prevent fugitive dust violations.
- An operational water truck shall be on-site at all times. Water shall be applied to control dust as needed to prevent visible emissions violations and off-site dust impacts.
- On-site dirt piles or other stockpiled particulate matter shall be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce wind-blown dust emissions. The use of approved nontoxic soil stabilizers shall be incorporated according to manufacturers' specifications to all inactive construction areas.
- All transfer processes involving a free fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions.
- Approved chemical soil stabilizers shall be applied according to the manufacturers' specifications to all inactive construction areas (previously graded areas that remain inactive for 96 hours), including unpaved roads and employee/equipment parking areas.
- To prevent track-out, wheel washers shall be installed where project vehicles and/or equipment exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed before each trip. Alternatively, a gravel bed may be installed as appropriate at vehicle/equipment site exit points to effectively remove soil buildup on tires and tracks and prevent/diminish track-out.
- Paved streets shall be swept frequently (water sweeper with reclaimed water recommended; wet broom permitted) if soil material has been carried onto adjacent paved, public thoroughfares from the Project site.
- Temporary traffic control shall be provided as needed during all phases of construction to improve traffic flow, as deemed appropriate by the appropriate department of public works and/or California Department of Transportation (Caltrans), and to reduce vehicle dust emissions. An effective measure is to enforce vehicle traffic speeds at or below 15 MPH.
- Traffic speeds on all unpaved surfaces shall be reduced to 15 MPH or less, and unnecessary vehicle traffic shall be reduced by restricting access.

Appropriate training to truck and equipment drivers, on-site enforcement, and signage shall be provided.

- Ground cover shall be reestablished on the construction site as soon as possible and before final occupancy through seeding and watering.
- Open burning shall be prohibited at the Project site. No open burning of vegetative waste (natural plant growth wastes) or other legal or illegal burn materials (e.g., trash, demolition debris) may be conducted at the Project site. Vegetative wastes shall be chipped or delivered to waste-to-energy facilities (permitted biomass facilities), mulched, composted, or used for firewood. It is unlawful to haul waste materials off-site for disposal by open burning.
- The primary contractor shall be responsible for ensuring that all construction equipment is properly tuned and maintained before and for the duration of on-site operation.
- Existing power sources (e.g., power poles) or clean-fuel generators shall be used rather than temporary power generators.
- A traffic plan shall be developed to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Operations that affect traffic shall be scheduled for off-peak hours. Obstruction of through-traffic lanes shall be minimized. A flag person shall be provided to guide traffic properly and ensure safety at construction sites.
- The project proponent shall assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that will be used an aggregate of 40 or more hours for the construction project and provide a plan for approval by the local air district demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used for construction, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average 20 percent NOX reduction and 45 percent particulate reduction compared to the most recent ARB fleet average at the time of construction. These equipment emission reductions can be demonstrated using the most recent version of the Construction Mitigation Calculator developed by the SMAQMD. Acceptable options for reducing emissions may include use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary off-site mitigation projects, the provision of funds for air district off-site mitigation projects, and/or other options as they become available. In addition, implementation of these measures would also result in a 5 percent reduction in ROG emissions from heavy-duty diesel equipment. The local air district shall be contacted to discuss alternative measures.

Air districts provide similar recommendations to those listed above. Some air districts in the region (e.g., SMAQMD) also offer the option for paying off-site construction mitigation fees if the recommended actions do not reduce construction emissions to acceptable levels.

PROJECT-SPECIFIC IMPACT DISCUSSION

a,b. As discussed above, due to the nonattainment designations of the area, SMAQMD has developed plans to attain the State and federal standards for ozone and particulate matter. The plans include the 2013 Ozone Attainment Plan, the PM_{2.5} Implementation/Maintenance Plan, and the AQAP and Triennial Reports. Adopted SMAQMD rules and regulations, as well as the thresholds of significance, are consistent with the air quality plans. According to the SMAQMD Guide to Air Quality Assessment in Sacramento County, by exceeding the SMAQMD’s mass emission thresholds for operational emissions of ROG or NO_x, a project would be considered to conflict with or obstruct implementation of the SMAQMD’s air quality planning efforts.

In order to evaluate ozone and other criteria air pollutant emissions and support attainment goals for those pollutants that the area is designated nonattainment, SMAQMD has established recommended thresholds of significance, including mass emission thresholds for construction-related and operational ozone precursors, as the area is under nonattainment for ozone. The SMAQMD’s recommended thresholds of significance for ozone precursors, which are expressed in pounds per day (lbs/day), are presented in Table 1.

Table 1 SMAQMD Thresholds of Significance (lbs/day)		
Pollutant	Construction Thresholds	Operational Thresholds
NO _x	85	65
ROG	-	65

Source: SMAQMD, May 2015.

In addition, as the region is designated nonattainment for PM₁₀ and PM_{2.5}, SMAQMD has recently adopted mass emissions thresholds of significance for PM₁₀ and PM_{2.5}, which are presented in Table 2.

Table 2 SMAQMD Thresholds of Significance for PM₁₀ and PM_{2.5}			
Pollutant	Construction Thresholds (lbs/day)	Operational Thresholds (lbs/day)	Operational Thresholds (tons/yr)
PM ₁₀	80	80	14.6
PM _{2.5}	82	82	15

Source: SMAQMD, June 2015.

Projects that do not exceed the above thresholds are not necessarily considered to result in a less-than-significant impact. Rather, projects must also incorporate all basic construction emission control practices, known as Best Management Practices (BMPs), as required by District Rule 403. Additionally, the SMAQMD requires that all projects include Best Available Control Technologies (BACTs) where applicable. The application of BMPs and all relevant BACTs further reduces potential project emissions of ozone and other criteria pollutants.

Air quality modeling was performed in order to determine whether the Project would result in criteria air pollutant emissions in excess of the applicable thresholds of significance discussed above. The Project’s construction-related NO_x emissions, PM_{2.5} and PM₁₀, as well as operational ROG, PM_{2.5}, PM₁₀ and NO_x emissions have been estimated using the California Emissions Estimator Model (CalEEMod) version 2013.2.2 software - a statewide

model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. The model applies inherent default values for various land uses, including trip generation rates based on the Institute of Transportation Engineers (ITE) Manual, vehicle mix, trip length, average speed, etc. However, where project-specific data is available, such data should be input into the model. Accordingly, based on project-specific information provided by the project applicant, the following assumptions were made for the Project's modeling:

- Construction was assumed to commence in spring 2017 and the Project would be fully operational by 2019;
- The Project's inherent site and design features, including increase in density compared to surrounding uses, increase in diversity of uses compared to surrounding uses, improvement of destination accessibility (specifically to the Central City employment center), and proximity to nearest bus stop;
- The Project would not include any fireplaces;
- The default carbon dioxide (CO₂) intensity factor in the model was adjusted to reflect the Sacramento Municipal Utility District's (SMUD) progress towards Statewide renewable portfolio standard (RPS) goals;
- The Project's incorporation of on-site energy generation through rooftop photovoltaic solar panels as well as the Project's agreement with SMUD to off-set 100 percent of the remaining energy demand through the purchase of renewable energy credits;
- The Project is anticipated to exceed the current California Building Energy Efficiency Standards Code by 30 percent; and
- The Project is anticipated to be designed to reduce indoor water consumption by 25 percent and outdoor water use by 50 percent.

Construction Emissions

During construction of the Project, various types of equipment and vehicles would temporarily operate on the Project site. Construction exhaust emissions would be generated from construction equipment, demolition activities, and earth movement activities, construction workers' commute, and construction material hauling for the entire construction period. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants. Project construction activities also represent sources of fugitive dust, which includes PM₁₀ emissions.

Construction was assumed to commence in spring 2017 and is anticipated to occur over approximately 20 months. The Project is required to comply with all SMAQMD rules and regulations for construction, including, but not limited to, Rule 403 (Fugitive Dust), Rule 404 (Particulate Matter), and Rule 442 (Architectural Coatings). In addition, all projects are required to implement the SMAQMD's Basic Construction Emission Control Practices.

The Project's maximum estimated unmitigated emissions according to CalEEMod are presented in Table 3. As shown in the table, the Project's maximum unmitigated construction-related emissions would be below the SMAQMD threshold of significance for NO_x, PM₁₀, and PM_{2.5}.

Pollutant	Project Emissions (lbs/day)	SMAQMD Threshold of Significance (lbs/day)
NO _x	22.97	85
PM ₁₀	2.68	80
PM _{2.5}	1.58	82

Source: CalEEMod, August 2016 (see Appendix B).

Overall, development of the Project would not violate any air quality standards or contribute to an existing air quality violation (i.e., the region's nonattainment status of ozone or PM) during construction. Additionally, the proposed project would be required to implement all construction BMPs required by District Rule 403 (Fugitive Dust). Examples of such BMPs include:

- Watering all exposed surfaces two times daily;
- Covering or maintaining two feet of free board space on all haul trucks transporting loose materials;
- Removing trackout mud or dirt from adjacent public roads at least once a day;
- Limiting vehicle speeds on unpaved roads to 15 miles per hour; and
- Minimizing idling time for on- and off-road diesel powered equipment.

The application of the BMPs presented above, and all others required by District Rule 403, would ensure that actual construction related emissions of PM would be less than what is presented in Table 3.

Operational Emissions

Operational emissions of criteria pollutants would be generated by the Project from both mobile and stationary sources. Day-to-day activities such as future residents' vehicle trips to and from the Project site would make up the majority of the mobile emissions. Emissions would also occur from area sources such as natural gas combustion from heating mechanisms, landscape maintenance equipment exhaust, and consumer products (e.g., deodorants, cleaning products, spray paint, etc.).

As stated above, the Project is required to comply with all SMAQMD rules and regulations, such as those listed previously for construction, as well as those associated with operations, such as Rule 402 (Nuisance), Rule 404 (Particulate Matter), and Rule 417 (Wood Burning Appliances). Thus, the modeling performed for the Project included compliance with SMAQMD rules and regulations. The project-specific vehicle trip rates were based on information provided by the City of Sacramento Department of Public Works and applied to CalEEMod as well. The Project's estimated operational emissions for ROG and NO_x are presented in Table 4. As shown in the table, the Project's operational emissions would not exceed the applicable SMAQMD thresholds of significance.

Table 4 Maximum Unmitigated Project Operational Emissions		
Pollutant	Project Emissions (lbs/day)	SMAQMD Thresholds of Significance (lbs/day)
NO _x	4.37	65
ROG	6.75	65

Source: CalEEMod, August 2016 (see Appendix B).

Additionally, the Project’s estimated operational emissions for PM₁₀ and PM_{2.5} are presented in Table 5. As shown in the table, the Project’s operational emissions would not exceed the applicable SMAQMD thresholds of significance.

Table 5 Maximum Unmitigated Project Operational PM Emissions				
Pollutant	Project Operational Emissions (lbs/day)	Operational Thresholds (lbs/day)	Project Operational Emissions (tons/year)	Operational Thresholds (tons/yr)
PM ₁₀	3.10	80	0.54	14.6
PM _{2.5}	0.93	82	0.16	15

Source: CalEEMod, August 2016 (see Appendix B).

Overall, the Project would not violate any air quality standards or contribute to an existing air quality violation (i.e., the region’s nonattainment status of ozone or PM) during operations.

Conclusion

Because the Project would not result in emissions in excess of applicable thresholds of significance during construction or operation, the Project would not violate any air quality standards, contribute to an existing air quality violation, or be considered to conflict with or obstruct implementation of an applicable air quality plan. Because the Project would not exceed applicable emissions thresholds, City of Sacramento General Plan Policy ER 6.1.3, and the MTP/SCS EIR Mitigation Measures AIR-3 and AIR-4 would not be applicable to the proposed project. Therefore, impacts would be considered **less than significant**.

- c. Adopted SMAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with applicable air quality plans. As future attainment of AAQS is a function of successful implementation of SMAQMD’s planning efforts, according to the SMAQMD Guide, by exceeding the SMAQMD’s project-level thresholds for construction or operational emissions, a project could contribute to the region’s nonattainment status for ozone and PM emissions and could be considered to conflict with or obstruct implementation of the SMAQMD’s air quality planning efforts.

As discussed, the Project would result in construction and operational emissions below all applicable SMAQMD thresholds of significance. Therefore, the Project would not be considered to contribute to the region’s nonattainment status for ozone or PM emissions and would not conflict with or obstruct implementation of the SMAQMD’s air quality

planning efforts. Accordingly, the Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and impacts would be ***less than significant***.

- d. The Project involves the creation of new housing; thus, would introduce new sensitive receptors to the area. Accordingly, the Project would be considered a sensitive receptor. In addition, the existing residence approximately 120 feet to the northwest of the site, would be considered sensitive receptors. The major pollutant concentrations of concern are localized CO emissions and TAC emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Implementation of the Project would increase traffic volumes on streets near the Project site; therefore, the Project would be expected to increase local CO concentrations. Concentrations of CO approaching the ambient air quality standards are only expected where background levels are high, and traffic volumes and congestion levels are high. The SMAQMD's preliminary screening methodology for localized CO emissions provides a conservative indication of whether project-generated vehicle trips would result in the generation of CO emissions that contribute to an exceedance of the applicable threshold of significance. The first tier of SMAQMD's recommended screening criteria for localized CO states that a project would result in a less-than-significant impact to air quality for local CO if:

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

LOS is a measure of traffic operating conditions, which is based on the relationship between traffic demand on a roadway and the physical capacity of the roadway to accommodate the demand. The City of Sacramento's General Plan Background Report indicates that none of the nearby intersections or roadway sections currently operate at a LOS E or F. Additionally, the City of Sacramento Department of Public Works estimated the project-specific trip generation rates, which concluded that the Project would result in a total of 640 new daily vehicle trips, with 45 trips occurring in the AM peak hour and 60 occurring in the PM peak hour. The AM and PM peak hour trips fall below the City's Department of Public Works threshold for preparing a Traffic Impact Study. As such, the increase in trips associated with the Project is not anticipated to cause deterioration in LOS at any nearby intersection or substantially contribute to an intersection already operating at unacceptable LOS beyond the analysis in the 2035 General Plan EIR. Because the Project would not lead to the deterioration of any intersections to unacceptable levels, nor would the Project contribute traffic to an intersection already operating at LOS E or F, the Project would not be expected to result in the generation of localized CO emissions in excess of the applicable threshold of significance.

TAC Emissions

The CARB Handbook provides recommendations for siting new sensitive land uses near sources typically associated with significant levels of TAC emissions, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB

has identified DPM from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure.

Construction activities have the potential to generate DPM emissions related to the number and types of equipment typically associated with construction. Off-road heavy-duty diesel equipment used for site grading, paving, and other construction activities result in the generation of DPM. However, construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of the Project. In addition, only portions of the site would be disturbed at a time, with operation of construction equipment regulated by federal, State, and local regulations, including SMAQMD rules and regulations, and occurring intermittently throughout the course of a day. Thus, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low.

Operational-related emissions of TACs are typically associated with stationary diesel engines or land uses that involve heavy truck traffic or idling. The Project does not involve long-term operation of any stationary diesel engine or other major on-site stationary source of TACs. The CARB's Handbook includes facilities (distribution centers) with associated diesel truck trips of more than 100 trucks per day as a source of substantial TAC emissions. The Project is not a distribution center, would not involve heavy diesel truck traffic, and is not located near any existing distribution center. Therefore, overall, the Project would not expose any existing sensitive receptors to any new permanent or substantial TAC emissions.

The CARB, per its Handbook, recommends the evaluation of emissions when freeways are within 500 feet of sensitive receptors. Any project placing sensitive receptors within 500 feet of a major roadway or freeway may have the potential to expose those receptors to DPM. The Project is within the Central City area of Sacramento, and the closest major roadway or freeway is Business 80, which is over 4,000 feet to the east of the Project site. Therefore, the Project would not expose sensitive receptors to any new permanent or substantial TAC emissions.

The CARB Handbook also includes recommendations for siting sensitive receptors near rail yards, and recommends evaluation of emissions when railyards are within 1,000 feet of sensitive receptors. Railyards are considered major sources of DPM air pollution as their operation involves a large amount of railway traffic, train idling, and engine testing. Although UPRR tracks are approximately 280 feet away from the Project site, the UPRR tracks are not considered to be a rail yard, as trains pass by the Project site without typically stopping or idling for long periods of time. Therefore, the Project would not expose sensitive receptors to the to any new permanent or substantial TAC emissions.

As discussed above, the Project site is not located in eastern Sacramento County and is not in an area identified as likely to contain NOA. Thus, sensitive receptors would not be exposed to NOA as a result of the Project.

Conclusion

As discussed above, the Project would not cause or be exposed to substantial pollutant concentrations, including localized CO or TAC emissions, including DPM and NOA.

Because the project is not within minimum ARB-recommended setback distances from a known source of TACs, the Project would fulfill the MTP/SCS EIR's Mitigation Measure AIR-1. Therefore, exposure of sensitive receptors to substantial pollutant concentrations would not occur and a ***less than significant*** short-term impact would occur.

- e. Odors are generally regarded as an annoyance rather than a health hazard. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative methodologies to determine the presence of a significant odor impact do not exist. According to the CARB's Handbook, some of the most common sources of odor complaints received by local air districts are sewage treatment plants, landfills, recycling facilities, waste transfer stations, petroleum refineries, biomass operations, autobody shops, coating operations, fiberglass manufacturing, foundries, rendering plants, and livestock operations. The Project site is not located near any such land uses, and the project would not introduce any such land uses.

Diesel fumes from construction equipment are often found to be objectionable; however, construction is temporary and associated diesel emissions would be regulated per federal, State, and local regulation, including compliance with all applicable SMAQMD rules and regulations, which would help to control construction-related odorous emissions. Therefore, construction of the Project would not be expected to create objectionable odors affecting a substantial number of people.

The Project would include residential and mixed use land uses, which could include retail, office or restaurant land uses. Although residential, office, and retail land uses are not typically associated with the creation of substantial objectionable odors, restaurants often create odors, which can be found to be objectionable. Mitigation Measure AIR-2 requires that any new odor sources be assessed by the implementing agency, and applicable mitigation measures shall be applied where exposure of sensitive receptors to objectionable odors may occur. As a result, if proposals for commercial activity within the Project include sources of odors, such as restaurants, the application of mitigation measures to control such odors is required by Mitigation Measure AIR-2 of the MTP/SCS EIR and brought forward to the Project.

The SMAQMD regulates objectionable odors through Rule 402 (Nuisance), which prohibits any person or source from emitting air contaminants that cause detriment, nuisance, or annoyance to a considerable number of persons or the public. Rule 402 is enforced based on complaints. If complaints are received, the SMAQMD is required to investigate the complaint, as well as determine and ensure a solution for the source of the complaint, which could include operational modifications. Thus, although not anticipated, if odor complaints are made during construction or after the Project is developed, the SMAQMD would ensure that such odors are addressed and any potential odor effects reduced to less than significant.

For the aforementioned reasons, construction and operation of the Project would not create objectionable odors, nor would the Project site be affected by any existing sources of substantial objectionable odors, and a ***less-than-significant*** impact related to objectionable odors would result.

PROJECT-SPECIFIC MITIGATION MEASURES

None.

FINDINGS

Air pollutants are generated by nearly all developments and economic activity in the Sacramento region. Air pollution is regulated on the federal, state, and local level, and SMAQMD is the regional agency that oversees air pollution regulation, planning, and rulemaking. While air quality impacts usually result from regional trends, individual projects may contribute substantially to such regional trends. SMAQMD has established quantitative emissions screening levels, which allow for potential cumulative air quality impacts that may result from an individual project's emissions. As discussed above, the Project would not involve air quality emissions that would violate applicable SMAQMD regulations. Additionally, the Project would be required by SMAQMD to implement all relevant BMPs and BACTs, which would further reduce PM emissions. The Project would not be considered a source of TACs, nor is the Project located near a known source of TACs. Because the Project would not result in the emission of air pollutants in excess of SMAQMD standards, and the Project is not near to or creating a new source of TACS, MTP/SCS Mitigation Measures AIR-1, AIR-3, and AIR-4 as well as General Plan Policy ER 6.1.3 are not applicable to the Project. However, the Project may include restaurant uses, which could be considered to be sources of odors; therefore, Mitigation Measure AIR-2 has been brought forward and applied to the Project. The application of Mitigation Measure AIR-2 would ensure that the Project would not result in any additional environmental effects related to Air Quality.

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

ENVIRONMENTAL SETTING

The Project site currently consists of 9,780 sf of existing commercial space, ancillary buildings, and paved areas over an approximately 0.3-acre parcel. As such, the site is predominantly covered with impervious surfaces. The site is completely surrounded by existing developments including commercial developments adjacent to the Project site, as well as residential, governmental, and civic land uses in the surrounding areas.

Existing vegetation on the Project site is limited to two street trees along 19th Street, one larger street tree along J Street, and small sidewalk planters at the intersection of 19th and J Streets. Because the Project site is overlain by impermeable surfaces and within a highly developed area of the Central City, significant habitats or natural communities do not exist in proximity to the Project site. Additionally, water features do not exist on or in the vicinity of the Project site.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact is considered significant if the Project would:

- Substantial degradation of the quality of the environment, reduction of the habitat, reduction of population below self-sustaining levels of threatened or endangered species of plant or animal;
- Result in the loss or modification of riparian habitat, resulting in a substantial adverse effect;
- Result in the loss of CDFW-defined sensitive natural communities such as elderberry savanna, northern claypan vernal pool, and northern hardpan vernal pool;
- Have an adverse effect on state or federally protected wetlands and/or waters of the United States through direct removal, filling, or hydrological interruption; or
- Affect other species of special concern to agencies or natural resource organizations (such as regulatory waters and wetlands).

For the purposes of this environmental document, “special-status” has been defined to include those species, which are:

- Listed as endangered or threatened under the federal Endangered Species Act (or formally proposed for, or candidates for, listing);
- Listed as endangered or threatened under the California Endangered Species Act (CESA), or proposed for listing;
- Designated as endangered or rare, pursuant to California Fish and Game Code (Section 1901);
- Designated as fully protected, pursuant to California Fish and Game Code (Section 3511, 4700, or 5050);
- Designated as species of concern by U.S. Fish and Wildlife Service (USFWS), or as species of special concern to California Department of Fish and Wildlife (CDFW); or
- Plants or animals that meet the definition of rare or endangered under CEQA.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

Chapter 4.3 of the Master EIR evaluated the effects of the 2035 General Plan on biological resources within the City. The Master EIR identified potential impacts in terms of degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels of special-status birds, through the loss of both nesting and foraging habitat.

Policies in the 2035 General Plan were identified as mitigating the effects of development that could occur under the provisions of the 2035 General Plan. Policy ER 2.1.5 calls for the City to preserve the ecological integrity of creek corridors and other riparian resources; Policy ER 2.1.10 requires the City to consider the potential impact on sensitive plants for each project and to require pre-construction surveys when appropriate; and Policy ER 2.1.11 requires the City to coordinate its

actions with those of the California Department Fish and Wildlife, U.S. Fish and Wildlife Service, and other agencies in the protection of resources.

The Master EIR discussed biological resources in Chapter 4.3. The Master EIR concluded that policies in the General Plan, combined with compliance with the California Endangered Species Act, the Natomas Basin HCP (when applicable), and CEQA would minimize the impacts on special-status species to a less-than-significant level (see Impact 4.3-1), and that the General Plan policies, along with similar compliance with local, state and federal regulations, would reduce impacts to a less-than-significant level for habitat for special-status invertebrates, birds, amphibians and reptiles, mammals and fish (Impacts 4.3-3-6).

Given the prevalence of rivers and streams in the incorporated area, impacting riparian habitat is a common concern. Riparian habitats are known to exist throughout the City, especially along the Sacramento and American rivers and their tributaries. The Master EIR discussed impacts of development adjacent to riparian habitat that could disturb wildlife species that rely on these areas for shelter and food, and could also result in the degradation of these areas through the introduction of feral animals and contaminants that are typical of urban uses. The California Department of Fish and Wildlife (CDFW) regulates potential impacts on lakes, streams, and associated riparian (streamside or lakeside) vegetation through the issuance of Lake or Streambed Alteration Agreements (SAA) (per Fish and Game Code Section 1602), and provides guidance to the City as a resource agency. While federal regulations do not specifically mandate the protection of riparian vegetation, federal regulations set forth in Section 404 of the Clean Water Act address areas that potentially contain riparian-type vegetation, such as wetlands.

The General Plan calls for the City to preserve the ecological integrity of creek corridors, canals and drainage ditches that support riparian resources (Policy ER 2.1.5) and wetlands (Policy ER 2.1.6) and requires habitat assessments and impact compensation for projects (Policy ER 2.1.10). The City has adopted a standard that requires coordination with state and federal agencies if a project has the potential to affect other species of special concern or habitats (including regulatory waters and wetlands) protected by agencies or natural resource organizations (Policy 2.1.11).

Implementation of 2035 General Plan Policy ER 2.1.5 would reduce the magnitude of potential impacts by requiring a 1:1 replacement of riparian habitat lost to development. While this would help mitigate impacts on riparian habitat, large open areas of riparian habitat used by wildlife could be lost and/or degraded directly and indirectly through development under the 2035 General Plan. Given the extent of urban development designated in the General Plan, the preservation and/or restoration of riparian habitat would likely occur outside of the City limits. The Master EIR concluded that the permanent loss of riparian habitat would be a less-than-significant impact (Impact 4.3-7).

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 6 of the MTP/SCS EIR evaluated potential impacts to biological resources that may result from implementation of the MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a-c. Special-status Species, Riparian Habitats, Other Sensitive Natural Communities, and Federally Protected Wetlands

The MTP/SCS EIR analyzed the potential impact related to the MTP/SCS having a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species or on any riparian habitat, other sensitive natural communities or wetlands in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or the Army Corps of Engineers (Impact BIO-1). The MTP/SCS EIR concluded that construction of land uses and transportation projects included in the MTP/SCS would result in a **significant and unavoidable** impact because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures BIO-1a through BIO-1d). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact.

d. Movement of any Resident or Migratory Fish or Wildlife Species

The MTP/SCS EIR analyzed the potential impact related to the MTP/SCS interfering substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites (Impact BIO-2). The MTP/SCS EIR concluded that some construction of land uses and transportation projects included in the MTP/SCS would involve changes to areas mapped as Essential Connectivity Areas (ECA), and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures BIO-2). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact.

e. Tree Preservation Policy or Ordinance

The MTP/SCS EIR analyzed the potential impact related to the MTP/SCS conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Impact BIO-3). The MTP/SCS EIR concluded that construction of land uses and transportation projects included in the MTP/SCS would result in the removal of trees that are protected by local policies or ordinances, and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures BIO-3). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact.

f. Habitat Conservation Plan or Natural Conservation Community Plan

The MTP/SCS EIR analyzed the potential impact related to the MTP/SCS conflicting with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Conservation Community Plan (NCCP), or other approved local, regional, or State HCP (Impact BIO-6) and determined the impact to be **less-than-significant**. According to the MTP/SCS EIR, the North Natomas HCP

(NNHCP) is the only adopted HCP in the area and the MTP/SCS would not conflict with the adopted NNHCP; therefore, mitigation is not required.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

The MTP/SCS EIR considers Impacts BIO-1, BIO-2 and BIO-3 to be significant and unavoidable because SACOG cannot require an implementing agency to adopt these mitigation measures, and the lead agency is ultimately responsible to adopt mitigation. Mitigation Measures BIO-1 and BIO-2 concern migration corridors, wildlife nursery sites, and wetlands, and the applicability of these mitigation measures are discussed in greater depth in the Project Specific Impact Discussion below. However, MTP/SCS EIR Mitigation Measure BIO-3 is applicable to the Project, could be feasibly implemented, and is hereby incorporated into this SCEA IS as a requirement of the project.

MM BIO 3: Avoid, minimize, and mitigate for impacts on protected trees and other biological resources protected by local ordinances.

Measures that shall be implemented, where feasible and necessary to address site-specific impacts, to ensure that the Project is consistent with local ordinances protecting trees and other biological resources include but are not limited to:

- Projects covered by conservation plans or that are able to utilize take permits under such plans shall abide by the terms of the plan/permit. For all other projects and for non-covered species the following shall apply.
- A biological resources assessment for specific projects proposed will be prepared in areas containing, or likely to contain, protected trees or other locally protected biological resources (e.g., streams, wetlands, and sensitive natural communities).
- Implementing agencies should design projects such that they avoid and minimize direct and indirect impacts to protected trees and other locally protected resources where feasible, as defined in Section 15364 of the CEQA Guidelines.
- At a minimum, qualifying protected trees (or other resources) will be replaced at ratios included in the local general plan, local policies, city or county codes in locally approved mitigation sites.
- As part of project-level environmental review, implementing agencies will ensure that projects comply with the most recent general plans, policies, and ordinances, and conservation plans. Review of these documents and compliance with their requirements will be demonstrated in project-level environmental documentation.

Review of these documents and compliance with their requirements should be demonstrated in project-level environmental documentation.

PROJECT-SPECIFIC IMPACT DISCUSSION

a,d. The Project site consists of existing commercial structures, and is covered with impervious surfaces. The site is completely surrounded by existing development. Existing vegetation on or in the vicinity of the Project site consists of ornamental trees street trees and small sidewalk planters. The aforementioned street trees and planters represent the majority of

unpaved areas on the site. The existing vegetation provides little, if any, habitat for wildlife species. However, the existing mature street tree could be considered potential habitat for bats. The California Natural Diversity Database (CNDDDB) was queried for the nearest occurrence of bats to the project area. The nearest occurrence was an individual Hoary bat identified in 1991, over 1.75-miles from the Project site, on the west side of the Sacramento River. While Hoary bats use dense foliage for roosts, the bats typically require water, and the single mature street tree would not be considered to be high quality habitat. Because the nearest occurrence occurred 25 years ago, and was 1.75-miles away from the Project site and the on-site street trees are the only vegetation in the area, the Project site would be unlikely to provide habitat for bats.

Because the site is built out with urban uses and surrounded on all sides by existing development, the Project site would not provide a wildlife corridor, would not be used by migratory wildlife species, and would not be considered suitable habitat for a wildlife nursery. As a result, development of the Project would not 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. Implementation of the Project would not interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites. Therefore, Mitigation Measures BIO-1a, BIO-1b, and BIO-2 from the MTP/SCS EIR do not apply to the Project, and the Project would have a **less-than-significant** impact to protected species.

- b,c. The Project site consists of existing commercial structures and paved areas. As discussed above, the existing vegetation on or in the vicinity of the Project site predominantly consists of ornamental trees and landscaping. Water features are not present on the Project site. Accordingly, riparian habitat, wetlands, or any other sensitive natural community do not exist on the Project site. As a result, Mitigation Measures BIO-1c through BIO-1e from the MTP/SCS EIR do not apply to the Project and the Project would have **no impact** on riparian habitat or other sensitive natural communities, including wetlands.
- e. As discussed above, the existing vegetation on or in the vicinity of the Project site predominantly consists of ornamental trees and landscaping. The three trees slated for removal as part of the Project are considered street trees by the City of Sacramento City. City Ordinance Number 2016-0026 recently updated Chapter 12.56, Tree Planting, Maintenance and Conservation of the City Code. In accordance with the updated City Code, the Project would be required to obtain a tree removal permit. A tree removal permit requires the submittal of an application for tree removal to the City for review by the City's director of the Department of Public Works, the director of the Department of Parks or a designee. The Project currently includes the replacement of all three trees slated for removal. Replacement of such street trees would be completed at the discretion of the reviewing director or director's designee. Chapter 12.56 designates the granting of a tree removal permit as a discretionary action, and requires that the tree permit be processed under all applicable regulation contained in the City's Planning and Development Code. Compliance with the applicable sections of the City Code fulfills the requirements of MTP/SCS Mitigation Measure BIO-3. As a result, the Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, resulting in a **less-than-significant** impact.

- f. The Project site is not located within an area that is subject to an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the Project would have **no impact** related to a conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.

PROJECT-SPECIFIC MITIGATION MEASURES

None.

FINDINGS

The Project site has been previously developed for commercial land uses and is primarily covered by structures and pavement. Because the Project site is predominantly urbanized and lacking vegetation, the site has low habitat value, and low potential for the presence of special-status species. Mitigation Measure BIO-3 from the MTP/SCS EIR is applicable to the Project, and requires the project to comply with any applicable ordinances related to Biological Resources. The Project would comply with all relevant City regulations regarding Biological Resources, and thus would fulfill the requirements of Mitigation Measure BIO-3. As such, the Project would not result in additional significant environmental effects related to Biological Resources.

III. CULTURAL RESOURCES.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<i>Would the project:</i>				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource on site or unique geologic features?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ENVIRONMENTAL SETTING

The Project is located within the City of Sacramento, which is situated on alluvial valley land south of the American River and east of the Sacramento River. Elevation ranges from about five feet above mean sea level along the Sacramento and American river banks to about 35 feet in the highest downtown areas. The average elevation is approximately 15 to 20 feet above sea level. According to Figure 6.4-1 of the Master EIR, the project area is not within an area considered sensitive for archaeological resources.

The Project site currently consists of an existing 9,780-sf commercial building, which was constructed in approximately 1943, and associated paved area. As such, the site is predominantly covered with impervious surfaces. Existing development completely surrounds the site, including roadways and commercial development. Consequently, known cultural and archeological resources do not exist on the Project site or in the immediate vicinity.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact is considered significant if the Project would:

- Cause a substantial change in the significance of a historical or archaeological resource as defined in CEQA Guidelines Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource;
- Disturb any human remains, including those interred outside of formal cemeteries; or
- Cause a substantial adverse change in the significance of a tribal cultural resource.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

The Master EIR evaluated the potential effects of development under the 2035 General Plan on prehistoric and historic resources (see Chapter 4.4 of the 2035 General Plan Master EIR).

General Plan policies identified as reducing such effects call for identification of resources on Project sites (Policy HCR 2.1.1), implementation of applicable laws and regulations (Policy HCR 2.1.2), early consultation with owners and land developers to minimize effects (Policy HCR 2.1.10) and encouragement of adaptive reuse of historic resources (Policy HCR 2.1.14). Demolition of historic resources is deemed a last resort (Policy HCR 2.1.15).

The Master EIR concluded that implementation of the 2035 General Plan would have a significant and unavoidable effect on historic resources and archaeological resources (Impacts 4.4-1, 2).

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 7 of the MTP/SCS EIR evaluated potential impacts to cultural, historical, archaeological, tribal and paleontological resources that may result from implementation of the MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a-c., e. Paleontological, Tribal Cultural, Archeological, or Historical Resource

The MTP/SCS EIR analyzed the potential impact related to the MTP/SCS causing a substantial adverse change in the significance of a paleontological, tribal cultural, archeological, or historical resource as defined in Section 15064.5 (Impact CR-1, Impact CR-2, Impact CR-3, Impact CR-5). The MTP/SCS EIR concluded that construction of land use and transportation projects included in the MTP/SCS could result in an adverse change in the significance of paleontological, tribal cultural, archeological, or historical resources and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures CR-1, CR-2, CR-3, CR-4, CR-5, and CR-6). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact.

d. Disturb Human Remains

The MTP/SCS EIR analyzed the potential impact related to the MTP/SCS disturbing any human remains, including those interred outside of formal (Impact CR-4) and determined the impact to be **less-than-significant**. According to the MTP/SCS EIR, projects are required by law to conform with Section 7050.5 of the California Health and Safety Code. Section 7050.5 of the California Health and Safety Code states that, when human remains are discovered, further site disturbance shall not occur until the county coroner has determined that the remains are not subject to the provisions of section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the

recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, in the manner provided in section 5097.98 of the Public Resources Code. If the coroner determines that the remains are not subject to his or her authority and the remains are recognized to be those of a Native American, the coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours; therefore, mitigation is not required.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

The MTP/SCS EIR considers Impacts CR-1, CR-2, CR-3, CR-4, CR-5, and CR-6 to be significant and unavoidable because SACOG cannot require an implementing agency to adopt these mitigation measures, and the lead agency is ultimately responsible to adopt mitigation. The applicability of MTP/SCS EIR Mitigation Measures CR-3, CR-4, CR-5, and CR-6 are discussed in further depth in the Project Specific Impact Discussion below. However, MTP/SCS EIR Mitigation Measures CR-1 and CR-2 are applicable to the Project, could be feasibly implemented, and are hereby incorporated into this SCEA IS as a requirement of the project.

MM CR-1: Conduct project-specific historic built environment resource studies and identify and implement project-specific mitigation.

Measures that shall be implemented, where feasible and necessary to address site-specific impacts, include but are not limited to:

- As part of the project/environmental review of individual projects, a records search at the appropriate Information Center of the CHRIS and a review of literature and historic maps shall be conducted to determine whether the project area has been previously surveyed and whether historic built environment resources were identified.
- In the event the records indicate that no previous survey has been conducted within the last five years, a qualified architectural historian (36 Code Fed. Regs., § 61) shall conduct a study of the project area for the presence of historic built environment resources. The study will include conducting a field survey, necessary background, archival and historic research, consultation with local historical societies, museums or other interested parties as relevant, and preparation of a Historic Resource Assessment Report. The report will document the results of the survey and the historic context, evaluate the federal, state, or local significance of built environment resources greater than 45 years in age that may potentially be directly or indirectly impacted by project activities, recommend appropriate protection or mitigative treatment, if any, and include recordation of identified built environment resources on appropriate California Department of Parks and Recreation (DPR) series 523 forms. The final report and DPR forms will be filed by the architectural historian with the CHRIS. Recommended treatment for historical resources identified in the report shall be implemented.
- If no significant historic built environment resources are identified in the Historic Resource Assessment Report or prior survey of the project study area that may be directly or indirectly impacted by project activities, then mitigation for built environment resources is complete, and there is no adverse change to documented historical built environment resources for the project.

- If significant historic built environment resources are identified in the Historic Resource Assessment Report or prior survey of the project study area, the project sponsor and/or implementing agency should consider avoidance as the primary mitigation measure. If avoidance is possible, mitigation to documented historical built environment resources is complete.
- If avoidance of a significant built environment resource is not feasible, then the maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, or reconstruction of the historical resource, as recommended by a qualified architectural historian or historic architect (36 Code Fed. Regs., § 61) and conducted in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitation, Restoring, and Reconstructing Historic Buildings or Historic Landscapes* (Birnbaum and Peters 1996; Weeks and Grimmer 1995) will generally reduce impacts. If adherence to the *Secretary of the Interior's Standards* cannot avoid materially altering in an adverse manner the physical characteristics or historic character of the surrounding environmental setting that contribute to a resource's historic significance, additional mitigation may be required.
- If avoidance of or minimization of substantial adverse effects to a significant built environment resource is not feasible through project design or by adherence to the *Secretary of the Interior's Standards*, the project sponsor and/or implementing agency should ensure that Historic American Buildings Survey (HABS), Historic American Engineering Record (HAER), or Historic American Landscapes Survey (HALS) documentation is completed prior to demolition or significant material alteration of the resource's physical characteristics or setting. The HABS, HAER, and HALS programs formally document historical resources through the use of large-format photography, measured drawings, written architectural descriptions, and historical narratives. The level of documentation required as mitigation and preparation of the HABS, HAER, or HALS will be determined and prepared by a qualified architectural historian or historic architect (36 Code Fed. Regs., § 61). The documentation packages will be archived in appropriate public and secure repositories. Such documentation would not reduce the impact to a less than significant level.

MM CR-2: Conduct project-specific archaeological resource studies and identify and implement project-specific mitigation.

Measures that shall be implemented, where feasible and necessary to address site-specific impacts, include but are not limited to:

- As part of the appropriate project/environmental review of individual projects, the NAHC shall be consulted to determine whether known sacred sites are in the project area, and to identify Native Americans to contact to obtain information about the project area and relevant areas of cultural sensitivity. Additional consultation with relevant tribal representatives may be appropriate regarding known prehistoric sites, traditional cultural places, TCPs, project areas deemed highly sensitive for prehistoric or ethnohistoric

resources, or where avoidance of impacts to prehistoric or ethnohistoric resources may be infeasible.

- A records search at the appropriate Information Center of the CHRIS shall be conducted by a qualified archaeologist (36 Code Fed. Regs., § 61) as part of the appropriate project/environmental review of individual projects to determine whether the project area has been previously surveyed and whether archaeological resources were identified.
- In the event the records indicate that no previous survey has been conducted or the survey did not meet current professional standards or regulatory guidelines, the qualified archaeologist (36 Code Fed. Regs., § 61) or the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the project area for archaeological resources and current professional standards or regulatory guidelines.
- If a survey is considered warranted, the archaeological study of the project area by a qualified archaeologist will include conducting a field survey, necessary background research, a Sacred Lands search by the NAHC and consultation with local Native Americans identified by the NAHC, consultation with local historical societies, museums or other interested parties as relevant, and an Archaeological Survey Report. The confidential report will document the results of the survey and the cultural context, assess the federal, state, or local significance of prehistoric, traditional, or historic-era archaeological resources that may potentially be directly or indirectly impacted by project activities, provide appropriate management recommendations, and include recordation of identified archaeological resources on appropriate California DPR series 523 forms. Management recommendations may include but not be limited to additional studies to evaluate identified sites, treatment for documented historical resources, or archaeological monitoring during ground-disturbing construction activities at locations determined by the archaeologist to be sensitive for subsurface cultural resource deposits, including local Native American monitors if sensitive for prehistoric resources. The final confidential report and DPR forms would be filed by the archaeologist with the CHRIS. Recommended treatment for historical resources identified in the report should be implemented.
- If no archeological resources are identified in the Archeological Survey Report that may be directly or indirectly impacted by project activities, mitigation is complete as there would be no adverse change to documented archeological resources.
- When a project will impact a known archaeological site, the project sponsor and/or implementing agency shall determine whether the site is a historical resource (CEQA Guidelines § 15064.5 (c)(1)). If archaeological resources identified in the project area are considered potentially significant, the project sponsor and/or responsible implementing agency shall undertake additional studies overseen by a qualified archaeologist (36 Code Fed. Regs., § 61) to evaluate the resources eligibility for listing in the CRHR, NRHP, or local register and to recommend further mitigative treatment. Evaluations shall be based on, but not limited to, surface remains, subsurface testing, or archival and ethnographic resources, on the framework of the historic context and important research questions of the

project area, and on the integrity of the resource. If a site to be tested is prehistoric, local tribal representatives should be afforded the opportunity to monitor the ground-disturbing activities. Appropriate mitigation may include curation of artifacts removed during subsurface testing.

- If significant archaeological resources that meet the definition of historical or unique archaeological resources are identified in the project area, the preferred mitigation of impacts is preservation in place (CEQA Guidelines § 15126.4(b); Pub. Resources Code, § 21083.2). Preservation in place may be accomplished by, but is not limited to, avoidance by project design, incorporation within parks, open space or conservation easements, covering with a layer of sterile soil, or similar measures. If preservation in place is feasible, mitigation is complete. Additionally, where the implementing agency determines that an alternative mitigation method is superior to in-place preservation, the project sponsor and/or implementing agency may implement such alternative measures.
- When preservation in place or avoidance of historical or unique archaeological resources are infeasible, data recovery through excavation shall be required (CEQA Guidelines § 15126.4(b)). Data recovery would consist of approval of a Data Recovery Plan and archaeological excavation of an adequate sample of site contents so that research questions applicable to the site can be addressed. For prehistoric sites, local tribal representatives should be afforded the opportunity to monitor the ground-disturbing activities. If only part of a site will be impacted by a project, data recovery will only be necessary for that portion of the site. Data recovery will not be required if the implementing agency determines prior testing and studies have adequately recovered the scientifically consequential information from the resources. Studies and reports resulting from the data recovery shall be deposited with the appropriate CHRIS Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code or the provisions of NAGPRA on federal lands. Mitigation may include curation for artifacts removed during data recovery excavation.
- If archaeological resources are discovered during construction, all work near the find shall be halted and the project sponsor and/or implementing agency shall follow the steps described under CEQA Guidelines Section 15064.5(f), including an immediate evaluation of the find by a qualified archaeologist (36 Code Fed. Regs., § 61) and implementation of avoidance measures or appropriate mitigation if the find is determined to be a historical resource or unique archaeological resource. Consultation with or affording local tribal representatives the opportunity to monitor mitigative treatment may be appropriate. Should the find include human remains, the remains shall be treated in accordance with the provisions of Section 7050.5 of the Health and Safety Code or the provisions of NAGPRA on federal lands. During evaluation or mitigative treatment, ground disturbance and construction work could continue on other parts of the project area.

PROJECT-SPECIFIC IMPACT DISCUSSION

- a-e. The North Central Information Center (NCIC) was contacted to perform a records search of the California Historic Resources Information System (CHRIS) to determine the presence or absence of historic resources in the project area. The CHRIS search identified 78 historic-period cultural resources, in the surrounding area, most of which are structures. In addition, the Project site is not included on Table 6-7 of the City of Sacramento 2035 General Plan Background Report, which presents known Historical Resources in the City. However, the Project's location in proximity to historic resources led to the conclusion by the NCIC that there is a high potential for locating historic-period cultural resources in the vicinity of the Project. In particular, the nearest known historic resource is the John Ellis Garage, which is located opposite the Project site across Improv Alley. However, the City's Planning Division concluded that because the John Ellis Garage property is not included in the Project site boundaries, the Project would not directly alter the potentially historic John Ellis Garage structure.² The completion of a CHRIS search, and consultation with the City's Planning Division regarding nearby historic buildings satisfy the requirements of the MTP/SCS EIR's Mitigation Measure CR-1. Additionally, the Project would not reduce visibility of the John Ellis Garage, any other historical resource, or any archaeological resource from existing public vantage points. Because MTP/SCS EIR Mitigation Measure CR-3 protects the visibility of historical and archaeological resources, Mitigation Measure CR-3 would not be applicable to the Project

Construction of the Project would primarily be limited to above-ground improvements, but some subsurface improvements would likely be necessary for foundation improvements and sewer and water line connection purposes. However, the Project site has already been graded and heavily disturbed during construction of the existing building and paved area, and paleontological, prehistoric, cultural or historic resources are not known to have been previously found on the Project site. Accordingly, paleontological, prehistoric, cultural, or archaeological resources are not known or suspected at the site, and unique geologic features do not exist on the Project site or in the immediate vicinity; thus, such resources are not anticipated to be encountered during the limited construction activities proposed for the project, and the MTP/SCS EIR Mitigation Measure CR-4's requirement for paleontological site surveys is not applicable to the Project.

As discussed in the Geology and Soils section of this SCEA IS, the Project may rely on foundation systems that could result in the production of groundborne vibrations. Although the John Ellis Garage is 20 feet away from the project site, groundborne vibrations caused by foundation construction activities related to the Project would have a slight chance of damaging the historic John Ellis Garage. Thus, Project construction could potentially damage a historic resource.

A search of the Sacred Lands File by the Native American Heritage Commission, produced negative results for the Project site, and thus tribal cultural resources are not known to occur on the Project site. MTP/SCS EIR Mitigation Measures CR-5 and CR-6 concern the treatment of tribal cultural resources, however, since such resources are not present on the Project site, Mitigation Measures CR-5 and CR-6 are not applicable to the Project. The completion of an NAHC and CHRIS search for the Project fulfill the MTP/SCS EIR's Mitigation Measure CR-2 requirement that such searches be performed.

² Personal Communication, Roberta Deering, Preservation Director, City of Sacramento, Community Development Department Planning Division. Email. July 11, 2016.

Additionally, the City received a request for consultation under Assembly Bill (AB) 52 from the United Auburn Indian Community of the Auburn Rancheria. The City subsequently initiated consultation under AB 52, and will remain in contact with the United Auburn Indian Community of the Auburn Rancheria regarding the Project, as applicable.

Due to the disturbed nature of the Project site, the potential for encountering any significant cultural, historic, paleontological, prehistoric, archaeological, or tribal cultural resources during the on-site improvements associated with the project is relatively low. Although low, the potential does exist for previously unknown or unidentified cultural resources or human remains to be encountered below the surface that could be inadvertently damaged or lost during grading and construction of the project. Additionally, because the John Ellis Garage could be considered a historic structure, foundation construction activity associated with the Project could have the potential to impact the historic structure. Therefore, a **potentially significant** impact could occur related to damaging the John Ellis Garage during foundation construction activity, destruction of previously unknown cultural, historic, paleontological, prehistoric, archaeological, or tribal cultural resources, and the disturbance of human remains during grading and excavation activities.

PROJECT-SPECIFIC MITIGATION MEASURES

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

- III-1 The pre-existing condition of the John Ellis Garage structure shall be recorded in order to evaluate potential damage from construction activities. Fixtures and finishes within the John Ellis Garage structure shall be documented (photographically and in writing) prior to construction. Should damage occur, construction operations shall be halted and the problem activity shall be identified, and a qualified engineer shall establish vibration limits based on soil conditions and the proximity of the John Ellis Garage. The contractor shall monitor the buildings throughout the remaining construction period if there is any documented damage resulting from project construction activities, the project proponent shall be required to repair it back to its pre-existing condition to the satisfaction of the City of Sacramento Community Development Department.*
- III-2 In accordance with the MTP/SCS EIR's Mitigation Measure CR-2, if archaeological artifacts or unusual amounts of stone, bone, or shell are uncovered during construction activities, work within 50 feet of the specific construction site at which the suspected resources have been uncovered shall be suspended. At that time, the property owner shall retain a qualified professional archaeologist. The archaeologist shall conduct a field investigation of the specific site and recommend mitigation deemed necessary for the protection or recovery of any archaeological resources concluded by the archaeologist to represent significant or potentially significant resources as defined by CEQA. The mitigation shall be implemented by the property owner to the satisfaction of the Planning Division prior to resumption of construction activity.*
- III-3 In accordance with the MTP/SCS EIR's Mitigation Measure CR-2 and Section 7050.5 of the Health and Safety Code and Sections 5097.94 and 5097.98 of the Public Resources Code, if human remains are uncovered during project*

construction activities, work within 50 feet of the remains shall be suspended immediately, and the City of Sacramento Planning Division and the County Coroner shall be immediately notified. If the remains are determined by the Coroner to be Native American in origin, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The property owner shall also retain a professional archaeological consultant with Native American burial experience. The archaeologist shall conduct a field investigation of the specific site and shall consult with the tribal representative designated as the most likely descendant by the NAHC. As necessary, the archaeological consultant may provide professional assistance to the Most Likely Descendant including the excavation and removal of the human remains. The property owner shall implement any mitigation before the resumption of activities at the site where the remains were discovered.

FINDINGS

In accordance with Mitigation Measure CR-1 and CR-2 of the MTP/SCS EIR the North Central Information Center, the Native American Heritage Commission, and the City's Planning Division were consulted to investigate the Project's potential impacts related to historic, archaeological, paleontological, and tribal cultural resources. Additionally, the potential for the Project to disturb human remains was also considered. Considering that the Project site has been previously developed, any such resources that once existed on the site were likely damaged or destroyed. However, because the Project would include demolition, and further ground disturbance on the site, the possibility exist that archaeological resources or human remains could be disturbed or uncovered. As such this SCEA IS requires the Project to implement Mitigation Measure III-2 and III-3, which further fulfills the requirements of Mitigation Measure CR-1 and CR-2 of the MTP/SCS EIR. Concurrently, implementation of Mitigation Measure III-1 would ensure that the Project would not result in a significant impact to the nearby John Ellis Garage, which could potentially be considered a historic structure. With the implementation of the aforementioned mitigation measures the potential impacts to cultural resources would be reduced to a *less-than-significant* level.

IV. ENERGY	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<i>Would the project:</i>				
a. Develop land use patterns that cause wasteful, inefficient, and unnecessary consumption of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Require or result in the construction of new energy production and/or transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

ENVIRONMENTAL SETTING

The following background setting information focuses on the existing energy supply and usage, as well as the region’s existing mineral resources and mineral resource areas.

Energy

The Project site currently consists of an existing 9,780-sf commercial building and paved areas. Electricity is currently provided to the Project site by Sacramento Municipal Utility District (SMUD), and natural gas is provided by Pacific Gas and Electric Company (PG&E).

A number of regulations exist associated with reducing energy usage, one of the most prevalent being Parts 6 and 11 of the California’s building code (California Code of Regulations [CCR], Title 24). Part 6, the 2013 Building Energy Efficiency Standards, focuses on several key areas to improve the energy efficiency of newly constructed buildings as well as additions and alterations to existing buildings, and includes requirements that will enable both demand reductions and future solar electric and thermal system installations. The 2013 Building Energy Efficiency Standards also include updates to the energy efficiency divisions of Part 11, the 2013 California Green Building Standards (otherwise known as the CALGreen Code). A set of prerequisites has been established for both the residential and nonresidential standards, which include efficiency measures that should be installed in any building project striving to meet advanced levels of energy efficiency. The California Energy Commission estimates that implementation of the 2013 Building Energy Efficiency Standards may reduce statewide annual electricity consumption by approximately 613 gigawatt-hours per year, electrical peak demand by 195 megawatts, and natural gas consumption by 10 million therms per year.³

In addition, the 2035 General Plan includes goals (Energy Resources Goal U 6.1.1) and related policies to encourage energy-efficient technology by offering rebates and other incentives to commercial and residential developers, coordination with local utility providers, and recruitment of businesses that research and promote energy conservation and efficiency. The Project would exceed Title 24 energy efficiency standards by 30 percent and seeks a LEED Gold certification.

³ California Energy Commission. 2013 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. May 2012.

The Project would be required to comply with all applicable regulations associated with energy efficiency, including those discussed above as well as the applicable Master EIR policies.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact is considered significant if the Project would:

- Result in the wasteful, inefficient, and unnecessary consumption of energy;
- Require PG&E to secure a new gas source beyond their current supplies; or
- Result in the need for a new electrical source (e.g., hydroelectric and geothermal plants).

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

Chapter 6.3 of the Master EIR evaluated the potential effects of development under the 2035 General Plan on energy conservation, including electricity and natural gas. The Master EIR concluded that the 2035 General Plan would not result in the inefficient, wasteful, or unnecessary consumption of electricity or natural gas. Applicable General Plan policies include U 6.1.1 through U 6.1.16, which encourage use of renewable energy, spread of energy-efficient technology by offering rebates and other incentives, and allowing the City to work closely with utility providers and industries to promote and advance new energy conservation technologies.

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 8 of the MTP/SCS EIR evaluated potential impacts to energy and global climate change that may result from implementation of the proposed MTP/SCS. This section of the SCEA IS focuses on the MTP/SCS EIR's analysis of energy. For a summary of the MTP/SCS EIR's analysis of global climate change see Section VI Greenhouse Gas Emissions, of this SCEA IS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a. Conflict with the Goals of Decreasing Overall Per Capita Energy Consumption

The MTP/SCS EIR analyzed the potential impacts related to per capita energy consumption and determined the impact to be ***less-than-significant***. The MTP/SCS EIR concluded that the MTP/SCS land use changes would introduce higher densities, mixed uses, and a better balance of housing and job development, which would help decrease per capita vehicle miles traveled (VMT); therefore, mitigation is not required.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

None.

PROJECT-SPECIFIC IMPACT DISCUSSION

- a-b. As the Project site consists of an existing building, electricity and natural gas are currently provided to the Project site. The Project would involve demolition of the existing building and associated paved area and construction of a mixed-use residential and commercial development. The Project would intensify the development on the Project site by adding ten new stories of residential development, the implementation of the Project would result in an increase in energy usage at the site. However, the Project includes multiple design measures to reduce overall energy usage by the Project. Such measures include the exceedance of Title 24 energy standards by 30 percent, as well as the incorporation of photovoltaic solar panels on the roof of the proposed structure to generate on-site electricity. Additionally, the proposed Project would purchase renewable energy credits from SMUD to meet the energy demand that remains after the incorporation of photovoltaic panels. The combination of energy efficiency, as well as on- and off-site renewable energy production would allow the structure to attain NZEB status. Increasing energy efficiency and producing on-site electricity would lessen the Project's demand for energy, thus the demand on existing sources of energy associated with the Project would not be considered a substantial increase or require the development of new sources of energy. Additionally, the MTP/SCS identifies attached multi-family residential units as being 49 percent more efficient in terms of electricity and 45 percent more efficient in terms of natural gas consumption than detached single-family units. By locating more residences near the Central City employment center and in proximity to alternative transit, the Project would be considered an efficient land use by the MTP/SCS and SB 375. Therefore, the Project would not be considered an inefficient land use. Finally, as discussed in the Greenhouse Gas Emissions section of this SCEA IS, the Project would be consistent with the City's Climate Action Plan, and the Master EIR policies related to energy efficiency, which would ensure that the Project would not use electricity or natural gas resources in a wasteful or inefficient manner. Therefore, the Project's impacts to energy would be considered *less than significant*.

PROJECT-SPECIFIC MITIGATION MEASURES

None.

FINDINGS

The Project seeks to attain NZEB status. To qualify as an NZEB, the Project has included energy efficiency, as well as on- and off-site renewable energy measures into project design. Such measures would ensure that the Project would not result in the wasteful or inefficient consumption of energy, and that the amount of energy demanded by the project would be as low as possible and be met with clean, renewable energy. Additionally, the MTP/SCS EIR concluded that higher density developments typically reduce per capita VMT and energy consumption. As such, the Project would not result in any additional environmental impacts related to energy.

V. GEOLOGY AND SOILS.

Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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Would the project:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

ENVIRONMENTAL SETTING

The following background setting information focuses on the existing topography of the Project site, the underlying bedrock, and site seismicity, as well as the general conditions and expansiveness of the on-site soils. Information regarding area geology, and seismicity was procured from the City’s 2035 General Plan Master EIR and General Plan Background Report, while site specific soil and project information was provided by a site specific investigation by Wallace Kuhl & Associates.⁴

Geology

The City of Sacramento is located in the Great Valley geomorphic province of California. The Great Valley is generally considered less seismically active than other areas of California. The majority of significant, historic faulting (and groundshaking) in the vicinity of Sacramento has been generated along distant faults. Sacramento is surrounded by several faults in the San Andreas fault system to the west and the Eastern Sierra fault system to the east. A series of faults also run along the eastern base of the foothills west of the City.

⁴ Wallace Kuhl and Associates. *Geotechnical Engineering Report, 19th & J Streets 11-Story Mixed-Use Building*. September 1, 2016.

The Alquist-Priolo Special Studies Zone Act of December 1972 (AP Zone Act) regulates development near active faults so as to mitigate the hazard of surface fault rupture. The AP Zone Act requires that the State Geologist (Chief of the California Department of Mines and Geology [CDMG]) delineates “special study zones” along known active faults in California. Cities and counties affected by these zones must regulate certain development projects within these zones. The AP Zone Act prohibits the development of structures for human occupancy across the traces of active faults. According to the AP Zone Act, “active faults” have experienced surface displacement during the last 11,000 years. “Potentially” active faults are those that show evidence of surface displacement during the last 1.6 million years. A fault may be presumed to be inactive based on satisfactory geologic evidence; however, the evidence necessary to prove inactivity sometimes is difficult to obtain and locally may not exist.

Known faults do not exist within the greater Sacramento region and Planning Area identified in the Sacramento 2035 General Plan Master Draft EIR. The Master EIR indicates that Sacramento is located within an area of relatively low severity, due to the lack of known major faults and low historical seismicity in the region. The maximum expected earthquake intensity is between VII and VIII on the Modified Mercalli Intensity Scale. Buildings in the City are at varying degrees of risk for damage during such earthquakes. The 2035 General Plan further states that the earthquake resistance of any building is dependent upon an interaction of seismic frequency, intensity and duration with the structure’s height, condition, and construction materials.

Soils

Soil properties can affect the construction and maintenance of roads, building foundations, and infrastructure. The Natural Resources Conservation Service (NRCS, formerly the Soil Conservation Service) has mapped over 30 individual soil units in the City of Sacramento.⁵ The soils identified in the Master EIR represent soils in their native, undisturbed state and reflect conditions in 1993, when the soil survey was published. Since then, areas have been developed and could contain artificial fill materials. Given the soil types that occur in the planning area, the City of Sacramento may be susceptible to some soil hazards, such as erosion, shrink/swell potential (expansive soils), and subsidence.

Erosion refers to the removal of soil from exposed bedrock surfaces by water or wind. Although erosion occurs naturally, erosion is often accelerated by human activities that disturb soil and vegetation. Erosion potential is generally identified on a case-by-case basis, depending on factors such as climate, soil cover, slope conditions, and inherent soil properties.

Shrink/swell potential refers to soils that expand when wet and shrink when dry. Shrink/swell occurs primarily in soils with high clay content and can cause structural damage to foundations and roads that do not have proper structural engineering and are generally less suitable or desirable for development than non-expansive soils.

Subsidence is the sinking of land, usually occurring over broad areas, which can be either natural or induced by human activities such as the over-withdrawal of groundwater, oil, and natural gas and by peat oxidation. Subsidence could produce cracks in pavements and buildings, and may dislocate wells, pipelines, and water drains.

⁵ City of Sacramento. *2035 General Plan Background Report*. August 2104.

The Project site currently consists of an existing commercial building and associated paved area. Wallace Kuhl and Associates (WKA) conducted a Geotechnical investigation of the site and provided a Geotechnical Engineering Report,⁶ which includes site-specific information gained from three soil borings. The Geotechnical Information concluded that the soils were comprised of loos to very loose sandy silts with varying amounts of clay and gravel to depths of approximately 18 feet below the existing ground surface. Soils supporting this upper layer are dense to very dense, slightly silty, sandy gravel.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact is considered significant if it allows a project to be built that will either introduce geologic or seismic hazards by allowing the construction of the project on such a site without protection against those hazards.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

Chapter 4.5 of the Master EIR evaluated the potential effects related to seismic hazards, underlying soil characteristics, slope stability, erosion, existing mineral resources and paleontological resources in the City. Implementation of identified policies in the 2035 General Plan reduced all effects to a less-than-significant level. Policy EC 1.1.1 requires regular review of the City's seismic and geologic safety standards, and Policy EC 1.1.2 requires geotechnical investigations for Project sites to identify and respond to geologic hazards, when present.

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 9 of the MTP/SCS EIR evaluated potential impact to geology and soils that may result from implementation of the proposed MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a. Earthquake Risk, Strong Seismic Ground Shaking or Ground Failure Risk, and Landslide Risk

The MTP/SCS EIR analyzed the potential impacts related to earthquakes (GEO-1a), strong seismic ground shaking (GEO-1b), seismic related ground failure, including liquefaction (GEO-1c), as well as potential risks from landslides (GEO-1D) and determined the impacts to be **less-than-significant**. The MTP/SCS EIR concluded that the MTP/SCS plan area experiences relatively low levels of seismic activity and projects are required by law to conform with the current seismic design provisions of the Uniform Building Code (UBC) and California Building Code (CBC). Additionally, the plan area is mostly flat, and therefore has a low risk from landslides; thus, mitigation is not required.

⁶ Wallace Kuhl and Associates. *Geotechnical Engineering Report, 19th & J Streets 11-Story Mixed-Use Building*. September 1, 2016.

b. Substantial Soil Erosion or the Loss of Topsoil

The MTP/SCS EIR analyzed the potential impact related to substantial soil erosion or the loss of topsoil due to project implementation and during construction activities (Impact GEO-2). The MTP/SCS EIR concluded that construction of land uses and transportation projects included in the MTP/SCS could result in substantial soil erosion or topsoil loss and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures GEO-1). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact.

c. Location on a Geological Unit or on Soil that is Unstable

The MTP/SCS EIR analyzed the potential impact related to locating the project on a geologic unit or soil that is unstable, or that would become unstable (Impact GEO-3) and determined the impact to be **less-than-significant**. As a result, mitigation is not required.

d. Expansive Soils

The MTP/SCS EIR analyzed the potential impact related to locating the project on expansive soils and creating a substantial risk to life or property (Impact GEO-4) and determined the impact to be **less-than-significant**. The MTP/SCS EIR concluded that this impact is largely addressed through the integration of geotechnical information in the planning and design process for projects, in accordance with standard industry practices and State-provided guidance, such as the California Geological Survey Special Publication 117A and UBC and CBC requirements. As a result, mitigation is not required.

e. Soils Incapable of Supporting Septic Systems

The MTP/SCS EIR analyzed the potential impacts related to septic systems (Impact GEO-5) and determined the impact to be **less-than-significant**. The MTP/SCS EIR concluded that local jurisdictions have policies and implementation measures relevant to the use of septic tanks or alternative wastewater disposal where applicable. As a result, mitigation is not required.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

The MTP/SCS EIR considers Impact GEO-2 to be significant and unavoidable because SACOG cannot require an implementing agency to adopt these mitigation measures, and the lead agency is ultimately responsible to adopt mitigation. However, MTP/SCS EIR Mitigation Measure GEO-1 is applicable to the Project, could be feasibly implemented, and is hereby incorporated into this SCEA IS as a requirement of the Project.

MM GEO-1 The implementing agency should require the development and implementation of detailed erosion control measures, consistent with the CBC and UBC regulations and guidelines and/or local NPDES, to address erosion control specific to the Project site; revegetate sites to minimize soil loss and prevent significant soil erosion; avoid construction on unstable slopes and other areas subject to soil erosion where possible; require management techniques that minimize soil loss and erosion; manage grading to maximize the capture and retention of water runoff

through ditches, trenches, siltation ponds, or similar measures; and minimize erosion through adopted protocols and standards in the industry. The implementing agency should also require land use and transportation projects to comply with locally adopted grading, erosion, and/or sediment control ordinances beginning when any preconstruction or construction-related grading or soil storage first occurs, until all final improvements are completed.

If a local grading, erosion, and/or sediment control ordinance or other applicable plans or regulations do not exist, the jurisdiction should adopt ordinances substantially addressing the foregoing features and apply those ordinances to new development projects.

PROJECT-SPECIFIC IMPACT DISCUSSION

- ai-iv. The City of Sacramento's topography is relatively flat, the City is not located within an Alquist-Priolo Earthquake Fault Zone, and the City is not located in the immediate vicinity of an active fault. However, the 2035 General Plan indicates that groundshaking would occur periodically in Sacramento as a result of distant earthquakes. The 2035 General Plan further states that the earthquake resistance of any building is dependent on an interaction of seismic frequency, intensity, and duration with the structure's height, condition, and construction materials. Although the Project site is not located near any active or potentially active faults, strong groundshaking could occur at the Project site during a major earthquake on any of the major regional faults.

Due to the seismic activity in the State, construction is required to comply with Title 24 of the Uniform Building Code (UBC). Chapter 15.20 of the Sacramento City Code adopts the UBC and mandates compliance. All new construction and modifications to existing structures within the City are subject to the requirements of the UBC. The UBC contains standards to ensure that all structures and infrastructure are constructed to minimize the impacts from seismic activity, to the extent feasible, including exposure of people or structures to substantial, adverse effects as a result of strong groundshaking, seismic-related ground failure, liquefaction, lateral spreading, landslides, or lurch cracking. As a result, seismic activity in the area of the proposed development would not expose people or structures to substantial, adverse effects as a result of strong groundshaking and seismic-related ground failure. Therefore, the project's impact would be considered ***less than significant***.

- b. The Project site is flat and currently developed with a 9,780-sf commercial building and associated paved area. Because the Project site is currently developed, the Project would not increase the amount of impervious surfaces and would not increase the erosion rate at the site. While the proposed improvements would not require substantial ground disturbance, the demolition and construction activities could result in temporarily exposed soils. Exposed soil could be transported to downstream waterways when subject to wind and/or water.

The City of Sacramento has adopted standard measures to control erosion and sediment during construction. All projects in the City of Sacramento are required to comply with the City's Standard Construction Specifications for Erosion and Sediment Control. The Project would comply with the City's standards set forth in the "Administrative and Technical Procedures Manual for Grading and Erosion and Sediment Control." The City's grading ordinance (Chapter 15.88 of Sacramento City Code) specifies construction standards to

minimize erosion and runoff, with which the project would comply. Because the Project would comply with relevant City standards and City Code regulations regarding erosion control, the Project would fulfill the requirements of Mitigation Measure GEO-1 from the MTP/SCS. Therefore, the potential for erosion and/or topsoil loss at the Project site would not occur after construction of the site and would be minimized during construction through compliance with the City's standards and codes. Consequently, impacts associated with erosion, loss of topsoil, and expansive soil would be considered **less than significant**.

- c. The geotechnical investigation conducted by WKA included soil borings at the site to determine the subsurface soil conditions. In addition to the subsurface exploration, WKA also reviewed relevant research related to the liquefaction susceptibility of the area, previous reports of liquefaction in the Sacramento area during historic earthquake events, and the known groundwater levels of the area.

Liquefaction typically occurs in soils that are loose, saturated, and cohesionless. WKA concluded that while the majority of soils in the upper 50 feet below the site did not meet the aforementioned characteristics of liquefiable soils, the uppermost 18 to 20 feet of soil are relatively loose, sandy silt. Acknowledging the loose nature of near surface soils, WKA concluded that shallow foundation systems would only be feasible if supported by an improved subgrade consisting of rammed aggregate piers and/or vibratory Impact piers (or a similar system), and deep foundation system consisting of auger cast-in-place piles would also be feasible. Although WKA determined that improvements to the subgrade would allow for shallow foundation systems to be used, the presence of loose, sandy silt soils on the project site would expose unsupported shallow foundations to settlement and/or damage due to liquefaction. Therefore, the use of an unsupported mat foundation system could expose the proposed structures to damage or hazards due to liquefaction or settlement.

While the proposed project could be adequately supported on a deep foundation system or on improved near surface subgrade soils through the use of rammed aggregate piers and/or vibratory Impact piers (or a similar system), the underlying soils within the upper 18 to 20 feet of soil would pose a potential hazard to unsupported shallow foundations. As such, the Project could be located on an unstable geologic or soil unit, and settlement or liquefaction could pose a significant threat. Therefore, the Project would result in a **potentially significant** impact related to unstable geologic units or liquefaction.

- d. The soil exploration completed as part of the Geotechnical Engineering Report revealed near-surface soils consisted mostly of sandy silts and silty sands to approximately 18 feet below the existing ground surface. WKA concluded that based on the soils present during field operations the on-site soils have a very low to low expansion potential.⁷ Therefore, the Project would not be located on soils that would pose a significant threat due to soil expansion. Therefore, the Project would result in a **less-than-significant** impact related to the Project's location on potential expansive soils.
- e. The 0.3-acre site comprises of a 9,780 sf commercial building and associated paved area. Wastewater infrastructure exists under the parking lot. The project includes a connection to the existing sewer line. Therefore, **no impact** regarding the capability of soil to

⁷ Wallace Kuhl and Associates. *Geotechnical Engineering Report, 19th & J Streets 11-Story Mixed-Use Building*. September 1, 2016.

adequately support the use of septic tanks or alternative wastewater disposal systems would occur.

PROJECT-SPECIFIC MITIGATION MEASURES

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

- V-1 *Prior to the issuance of grading permits, the final grading plan shall be submitted to the Building Division for review to ensure the proposed project includes either a deep foundation system consisting of auger cast-in-place piles or a shallow foundation system (e.g. continuous and/or isolated spread footings or a mat foundation) supported on an improved subgrade consisting of Geopier® rammed aggregate piers [RAPs] and/or vibratory Impact® piers (or similar system).*

FINDINGS

The Project site is currently developed with single-story commercial uses and pavement, which cover nearly the entire site. However, during demolition and construction activities, soil would be exposed, which could result in erosion. The Project would be required to comply with the City's Grading and Erosion control standards, which would protect on-site soils from erosion and fulfill the requirements of the MTP/SCS EIR Mitigation Measure GEO-1. WKA conducted a site analysis and determined that given the regional geology, soil conditions, and subsurface conditions, the site would be generally suitable for the development proposed as part of the Project, but that such development would be limited by the relatively loose upper levels of soil. Given the limitation of near surface soils, WKA recommended the use of deep foundation systems, such as auger cast-in-place piles, or a shallow foundation supported on an improved subgrade. Mitigation Measure V-1 requires the use of recommended foundation systems, which would reduce potential hazards due to settlement or liquefaction to a less than significant level. As such, the Project would not result in any additional environmental effects.

VI. GREENHOUSE GAS EMISSIONS.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<i>Would the project:</i>				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

ENVIRONMENTAL AND REGULATORY SETTING

Greenhouse gases (GHGs) are components of earth’s atmosphere which affect the global climate by trapping and releasing thermal energy. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project’s GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

In September 2006, Assembly Bill (AB) 32 was enacted. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. AB 32 delegated the authority for implementation to the CARB and directs the CARB to enforce the statewide cap. In accordance with AB 32, CARB prepared the *Climate Change Scoping Plan* (Scoping Plan) for California, which was approved in 2008 and revised in in 2011. Following the passage of AB 32, SB 375 was enacted in 2008. As discussed earlier in this document, SB 375 focuses on the potential to reduce mobile sources of GHG emissions, such as emissions from automobiles and trucks, through the use of land use and transportation planning. SB 375 established regional targets for GHG emission reductions, and required metropolitan planning organizations to prepare sustainable communities strategies. The SACOG is the metropolitan planning organization for the project area and the MTP/SCS fulfills SACOG’s SB375 requirement to prepare a sustainable communities strategy.

The MTP/SCS focused on achieving GHG emissions reductions by encouraging a region wide transportation strategy, which would allow for a reduction of dependence on single passenger vehicles and an increase in alternative transit options. To accomplish the aforementioned transportation improvements, the MTP/SCS identified areas of the region where alternative transit options currently exist, and areas needing improvement. Areas with frequently recurring transit service and a plethora of alternative transportation options were identified in the MTP/SCS as being TPAs. The MTP/SCS concluded that further densification and growth in TPAs would lead to a greater proportion of the regional population living and working in areas that would provide easy access to alternative means of transportation, which would lead to a greater use of alternative means of transportation and a reduction in passenger vehicle dependence. The Central City, and the Project site therein, are identified in the MTP/SCS as being in a TPA, and thus further compact and mixed use development is encouraged by the MTP/SCS as a way to achieve regional GHG emissions reductions.

Projects within a TPA are identified by the MTP/SCS and SB 375 as being Transit Priority Projects (TPPs). Environmental documents for TPPs are not required to reference, describe or discuss: 1) growth inducing impacts, 2) impacts from car and light duty truck trips on climate change or regional transportation network, or a 3) reduced density alternative to the project. Discussions of the aforementioned environmental issue areas are not required of TPPs because such projects are consistent with regional transportation plans, the implementation of which would contribute to regional reductions in GHG emissions. Accordingly, the analysis of project effects on GHG emissions does not include a discussion of the Project's GHG emissions from mobile sources; however, the discussion will analyze the Project's GHG emissions resulting from construction and other operational activities.

In addition to the regional transportation focused MTP/SCS, the City of Sacramento adopted the City of Sacramento Climate Action Plan (CAP) on February 14, 2012 to comply with AB 32. The CAP identified how the City and the broader community could reduce Sacramento's GHG emissions and included reduction targets, strategies, and specific actions. In 2015, the City of Sacramento adopted the 2035 General Plan Update. The update incorporated measures and actions from the CAP into its overall policy framework and Appendix B, General Plan CAP Policies and Programs, of the General Plan Update. Appendix B includes all City-wide policies and programs that are supportive of reducing GHG emissions. A CAP Consistency Review Checklist has been prepared by the City in order to provide a streamlined review process for proposed development projects and is attached to this SCEA IS as Appendix C.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, a project is considered to have a significant effect relating to greenhouse gas emissions if it fails to satisfy the requirements of the City's Climate Action Plan or results in construction emissions exceeding SMAQMD's quantitative construction GHG emission threshold of significance.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

The Master EIR found that GHG emissions that would be generated by development consistent with the 2035 General Plan would contribute to climate change on a cumulative basis. Policies of the General Plan identified in the Master EIR that would reduce construction related GHG emissions include: ER 6.1.2, ER 6.1.11 requiring coordination with SMAQMD to ensure feasible mitigation measures are incorporated to reduce GHG emissions, and ER 6.1.15. The 2035 General Plan incorporates the GHG reduction strategy of the 2012 Climate Action Plan (CAP), which demonstrates compliance mechanism for achieving the City's adopted GHG reduction target of 15 percent below 2005 emissions by 2020. Policy ER 6.1.8 commits the City to assess and monitor performance of GHG emission reduction efforts beyond 2020, and progress toward meeting long-term GHG emission reduction goals, ER 6.1.9 also commits the City to evaluate the feasibility and effectiveness of new GHG emissions reduction measures in view of the City's longer-term GHG emission reductions goal. The discussion of GHG emissions and climate change in the 2035 General Plan Master EIR are incorporated by reference in this IS/MND. (CEQA Guidelines Section 15150)

The Master EIR identified numerous policies included in the 2035 General Plan that addressed GHG emissions and climate change. See Draft Master EIR, Chapter 4.14, and pages 4.14-1 et seq. The Master EIR is available for review at the offices of Development Services Department, 300 Richards Boulevard, 3rd Floor, Sacramento, CA during normal business hours, and is also available

online at:

<http://portal.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports>

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 8 of the MTP/SCS EIR evaluated potential impact to Global Climate Change that may result from GHG emissions related to the implementation of the proposed MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a, b. Compliance with AB 32 and SB 375

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS creating a significant impact related to substantial conflicts with achievement of goals within AB 32 and SB 375 and the increase of GHG emissions due to construction activity related to the MTP/SCS. The MTP/SCS EIR concluded that the MTP/SCS would result in a *less-than-significant* impact on GHG emissions because the MRP/SCS would not interfere with the achievement of goals within AB 32 and SB375 nor would the MTP/SCS lead to increased GHG emissions from construction. As discussed throughout this document, the MTP/SCS seeks to reduce GHG emissions in compliance with AB 32 and SB 375, through specific land use and transportation projects that would increase the efficiency of existing systems and allow for greater choice between transportation options, which would reduce GHG emissions from transportation sources. The MTP/SCS EIR found that per capita energy usage would decrease during the MTP/SCS planning period, and the decrease in reliance on single passenger vehicles that would result from the MTP/SCS would result in an overall reduction in GHG emissions, in compliance with AB 32 and SB 375.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

None.

PROJECT-SPECIFIC IMPACT DISCUSSION

a, b. Because the Project is a transit priority project, impacts from light vehicle traffic on global climate change are exempt from being addressed in the SCEA per Public Resources Code Section 21159.28(a). However, the remaining sources of GHG emissions must still be addressed. The major remaining sources of GHG would be from construction activities, waste disposal, energy production, water supply, and area sources. CalEEMod was used to estimate the amount of GHG emissions that would result from construction and operation of the Project. Emissions modeling was conducted using the same project-specific information as discussed in the Air Quality section of this SCEA IS. Table 6 and Table 7 below present the results of the CalEEMod GHG emissions modeling for the Project's construction and operation emissions.

TABLE 6	
ANNUAL CONSTRUCTION GHG EMISSIONS	
Year	CO_{2e} Emissions (MT/yr)
2017	324.91
2018	211.25
SMAQMD-Recommended Threshold	1,100
<i>Source: CalEEMod August 2016 (See Appendix B)</i>	

TABLE 7	
ANNUAL OPERATIONAL GHG EMISSIONS	
Source	CO_{2e} Emissions (MT/yr)
Area	2.98
Energy	51.62
Waste	39.55
Water	18.37
Total	112.52
SMAQMD-Recommended Threshold	1,100
<i>Source: CalEEMod August 2016 (See Appendix B)</i>	

As shown in Table 6 above, the estimated construction emissions for the proposed Project would be under the SMAQMD threshold of significance during either year of construction. Moreover, even if the total construction emissions from both years were summed, resulting in a total GHG emission level of 536.16 MTCO_{2e}, the construction related GHG emissions would still remain below the 1,100 MTCO_{2e} per year threshold. As such, the Project would not be considered by SMAQMD’s thresholds to generate significant amounts of GHG emissions during construction.

Using a similar methodology, the estimated operational GHG emissions per year can be compared to SMAQMD’s operational threshold of 1,100 MTCO_{2e}. As shown in Table 7 above, the operational emissions would total 112.52 MTCO_{2e}, which would fall well below the operational threshold of 1,100 MTCO_{2e}. Therefore, Project would not be considered by SMAQMD’s thresholds to generate significant amounts of GHG emissions during operation. However, because the Project is within the City of Sacramento, the Project must also prove compliance with relevant City policies concerning GHG emissions.

The City has developed a CAP Consistency Review Checklist to provide a streamlined review process for proposed development projects. Projects that demonstrate consistency with the CAP would be expected to result in a less-than-significant impact related to GHG emissions and global climate change. The Project’s CAP Consistency Review Checklist is included as Appendix C.

The City’s CAP includes multiple measures to encourage alternate modes of transportation, which, consistent with the conclusions of the MTP/SCS, would help the region meet AB 32 and SB 375 GHG emissions reductions goals. The Project is in a TPA, and would encourage the use of alternate modes of transportation by increasing the number of residents near existing and proposed means of alternative transit. Additionally, the Project’s location in the Central City employment area would allow employees that work in the surrounding commercial areas to walk or bike to work, eliminating the need for single passenger vehicle commutes, and thus reducing mobile GHG emissions. The Project would also offer a limited number of vehicle parking spaces, while exceeding the number of bicycle parking spaces,

to further discourage single passenger vehicle use while encouraging alternative modes of transit.

The City's CAP Consistency Review Checklist also includes measures aimed at reducing GHG emissions from energy production and conserving water. As discussed throughout this document, the Project would incorporate on-site renewable energy production, while also entering into an agreement with SMUD to purchase renewable energy credits for the balance of the Project's energy demand. The project would also exceed the current California Building Code's CalGreen Energy Efficiency Standards by 30 percent. Exceeding the CalGreen energy efficiency standards would satisfy the City's CAP Consistency requirements for renewable energy production or energy efficiency. The result of the combined energy efficiency measures, on-site renewable energy production, and SMUD renewable energy credits would be a significant reduction in GHG emissions from energy demand. Such an energy reduction would be sufficient to qualify the Project as a NZEB and earn the Project a LEED Gold certification. The Project would incorporate water efficiency measures that would reduce indoor and outdoor water use by 25 and 50 percent, respectively.

With the Project's incorporation of the above mentioned design components, the Project would be consistent with the City's CAP. Additionally, because the Project is within a TPA, and is consistent with the MTP/SCS, the Project would also be consistent with the SACOG's GHG reductions mandated by SB 375. Considering that the Project's operational and construction emissions would be below SMAQMD's quantitative thresholds and the Project would be consistent with the City's CAP and the MTP/SCS, the Project would not interfere with or impede the City's or SACOG's efforts to reduce GHG emissions, and impacts would be considered *less than significant*.

PROJECT-SPECIFIC MITIGATION MEASURES

None.

FINDINGS

The MTP/SCS was designed to help achieve regional GHG emissions reductions through the careful planning of transportation and land use projects. To assess the Project's compliance with the MTP/SCS the Project was analyzed in regards to potential construction and GHG emissions as well as the Project's consistency with the City's CAP. As discussed above, the Project would result in GHG emissions below the applicable SMAQMD threshold and would be consistent with the City's CAP. Such GHG emissions levels are attributable to the Project's energy and water efficiency measures, the inclusion of on- and off-site renewable energy, and the project's location near public transit, which would help reduce future residents' dependence on single-passenger vehicle travel. Because the Project would not exceed any thresholds of significance, and would be consistent with the MTP/SCS, the Project would not result in any additional environmental effects.

VII. HAZARDS AND HAZARDOUS MATERIALS.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact	
<i>Would the project:</i>					
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h.	Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

ENVIRONMENTAL AND REGULATORY SETTING

The Project site currently consists of an existing 9,780-sf commercial building, which was constructed in approximately 1943, and associated paved area. Lead-based paint was banned by the federal government in 1978. For buildings constructed prior to 1980, the Code of Federal Regulations (29 CFR 1926.1101) states that all thermal system insulation (boiler insulation, pipe lagging, and related materials) and surface materials must be designated as “presumed asbestos-containing material” unless proven otherwise through sampling in accordance with the standards of the Asbestos Hazard Emergency Response Act. Therefore, due to the age of the existing building, asbestos-containing material and lead-based paint may be present, which are both considered health hazards.

Existing development completely surrounds the site. According to a Phase I Environmental Site Assessment (ESA) performed by Analytical Environmental Services for the Project site in December 2015, the project area is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and the site is not known or expected to contain any existing contaminated soils. The Sacramento Executive Airport, which is the nearest airport to the Project site, is located nearly four miles south of the Project site. Washington Elementary School is located approximately 0.3 mile southwest of the Project site.

Federal regulations and rules adopted by SMAQMD apply to the identification and treatment of hazardous materials during demolition and construction activities. Failure to comply with these regulations regarding asbestos may result in a Notice of Violation being issued by SMAQMD and civil penalties under state and/or federal law, in addition to possible action by U.S. EPA under federal law. Federal law covers a number of different activities involving asbestos, including demolition and renovation of structures (40 CFR § 61.145).

SMAQMD’s Rule 902, related to regulated asbestos-containing material (RACM) associated with commercial renovations and demolitions, is discussed in further detail below.

SMAQMD Rule 902

The work practices and administrative requirements of SMAQMD’s Rule 902 apply to all commercial renovations and demolitions where the amount of RACM is greater than:

- 260 lineal feet of RACM on pipes, or
- 160 sf of RACM on other facility components, or
- 35 cubic feet of RACM that could not be measured otherwise.

The administrative requirements of Rule 902 apply to any demolition of commercial structures, regardless of the amount of RACM.

Asbestos Surveys

To determine the amount of RACM in a structure, Rule 902 requires that an asbestos survey be conducted prior to demolition or renovation unless:

- The structure is otherwise exempt from the rule, or
- Any material that has a propensity to contain asbestos (so-called "suspect material") is treated as if the material is RACM.

Surveys must be done by a licensed asbestos consultant and require laboratory analysis.

Removal Practices, Removal Plans, Notification, and Disposal

If the asbestos survey shows that asbestos-containing materials are present, the SMAQMD recommends leaving them in place. If disturbance of the asbestos is necessary as part of a renovation, remodel, repair or demolition, the California Occupational Safety and Health Administration (Cal-OSHA) and the Contractors State License Board require a licensed asbestos abatement contractor be used to remove the asbestos-containing material. Specific disposal requirements are included in Rule 902 for friable asbestos-containing material, including disposal at a licensed landfill. If the material is non-friable asbestos, any landfill willing to accept asbestos-containing material may be used to dispose of the material.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact is considered significant if the Project would:

- Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated soil during construction activities;
- Expose people (e.g., residents, pedestrians, construction workers) to asbestos-containing materials or other hazardous materials; or
- Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated groundwater during dewatering activities.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

The Master EIR evaluated effects of development on hazardous materials, emergency response and aircraft crash hazards. See Chapter 4.6. Implementation of the General Plan may result in the exposure of people to hazards and hazardous materials during construction activities, and exposure of people to hazards and hazardous materials during the life of the General Plan. Impacts identified related to construction activities and operations were found to be less than significant. Policies included in the 2035 General Plan, including PHS 3.1.1 (investigation of sites for contamination) and PHS 3.1.2 (preparation of hazardous materials actions plans when appropriate) were effective in reducing the identified impacts.

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 10 of the MTP/SCS EIR evaluated potential impact to hazards and hazardous materials that may result from implementation of the proposed MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a. Routine Transport or Disposal of Hazardous Materials

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS creating a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (Impact HAZ-1) and determined the impact to be **less-than-significant**. The MTP/SCS EIR concluded that projects are required by law to conform with the current requirements for the classification of materials, packaging, hazard communication, transportation, handling HAZMAT employee training, and incident reporting, is regulated through Title 49 of the C.F.R., Hazardous Materials Regulations; therefore, mitigation is not required.

b. Accidental Release of Hazardous Materials into the Environment

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS creating 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 (Impact HAZ-2a). The MTP/SCS EIR concluded existing federal, State, and local regulations regarding the oversight of crude oil transportation by rail do not adequately address the potential impacts that would result from reasonably foreseeable conditions of upset or release and a **significant and unavoidable** impact would result because The MTP/SCS EIR included Mitigation Measure HAZ-1, which has the potential to significantly lessen potential impacts, however, full implementation of Mitigation Measure HAZ-1 is outside the jurisdiction of SACOG and therefore, the level of impact of HAZ-2a remained **significant and unavoidable**. Additionally, Mitigation Measure HAZ-1 involves regulations concerning crude oil transport; such activity is outside of the scope of the Project, and thus Mitigation Measure HAZ-1 does not apply to the current Project.

c. Emit or Handle Hazardous Material Within One-quarter Mile of a School

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS emitting hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (Impact HAZ-3) and determined the impact to be **less-than-significant**. The MTP/SCS EIR concluded that with the extensive set of existing federal and State regulations controlling emissions and the handling of hazardous materials mitigation is not required.

d. Hazardous Materials List Pursuant to Government Code Section 65962.5

The MTP/SCS EIR analyzed the potential impacts related to development associated with the MTP/SCS, which could be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Impact HAZ-4). The MTP/SCS EIR concluded that construction of land use and transportation projects included in the MTP/SCS could create a significant hazard to the public or the environment, and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures HAZ-2). Implementation of the MTP/SCS EIR's required mitigation would result in a **less-than-significant** impact.

e, f. Airport Land Use Plan or Vicinity of a Private Airstrip

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area or within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area (Impacts HAZ-5 and HAZ-6) and determined the impact to be **less-than-significant**. The MTP/SCS EIR concluded that improvements included in the proposed MTP/SCS are more likely to improve safety (through improvements to the roadway network and public transportation) than cause hazards or interfere with airport operations; therefore, mitigation is not required.

g. Emergency Response or Evacuation Plan

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS impairing implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (Impact HAZ-7). The MTP/SCS EIR concluded that because emergency response or evacuation plans are often under local jurisdictions, which have different goals, standards, and polices, a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures HAZ-3). Implementation of the MTP/SCS EIR's required mitigation would result in a **less-than-significant** impact. Mitigation Measure HAZ-3 involves regional and local coordination regarding emergency plans that would be implemented by public agencies. Because Mitigation Measure HAZ-3 applies to public agencies, the Mitigation Measure would not apply to the Project.

h. Wildland Fires

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS exposing people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands (Impact HAZ-8) and determined the impact to be **less-than-significant**. The MTP/SCS EIR concluded that wildfire prevention is a shared responsibility between federal, State, and local agencies. Federal lands fall under Federal Responsibility Areas, and all incorporated areas and other unincorporated lands are classified as Local Responsibility Areas; therefore, mitigation is not required.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

The MTP/SCS EIR considers Impacts HAZ-2A, HAZ-4 and HAZ-7 to be significant and unavoidable because SACOG cannot require an implementing agency to adopt these mitigation measures, and the lead agency is ultimately responsible to adopt mitigation. While Mitigation Measures HAZ-1 and HAZ-3 are outside of the scope of this SCEA IS, MTP/SCS EIR Mitigation Measures HAZ-2 is applicable to the Project, could be feasibly implemented, and is hereby incorporated into this SCEA IS as a requirement of the project.

MM HAZ-2 Determine if Project sites are included on a government list of hazardous materials sites pursuant to Government Code Section 65962.5.

For any listed sites or sites that have the potential for residual hazardous materials as a result of historic land uses, project proponents shall prepare a Phase I ESA that meets ASTM standards. For any sites that are not listed and do not have the potential for residual hazardous materials as a result of historic land uses, no action is required unless unknown hazards are discovered during development. In that case, the implementing agency shall discontinue development until DTSC, RWQCB, local air district, and/or other responsible agency issues a determination, which would likely require a Phase 1 ESA as part of the assessment. Projects preparing a Phase I ESA, where required, shall fully implement the recommendations contained in the report. If a Phase I ESA indicates the presence or likely presence of contamination, the project proponent shall prepare a Phase II ESA, and recommendations of the Phase II ESA shall be fully implemented.

PROJECT-SPECIFIC IMPACT DISCUSSION

- a,b. The Project would involve demolition of the existing building and associated paved area and construction of a mixed-use residential and commercial development. Residential uses are not typically associated with the routine transport, use, or disposal of hazardous materials, nor does such development present a reasonably foreseeable release of hazardous materials. Any hazardous materials associated with the residential uses would consist primarily of typical household cleaning products and fertilizers, which would be utilized in small quantities and in accordance with label instructions, which are based on federal and/or State health and safety regulations. The proposed commercial development could involve a number of potential uses, including retail or restaurant, among others. The project applicant, builders, contractors, business owners, and others would be required to use, store, and transport hazardous materials in compliance with all applicable local, State, and federal regulations during operation of the commercial use. It should be noted that the transport of hazardous materials is regulated by the California Highway Patrol and Caltrans, and the use of hazardous materials is regulated by the Department of Toxic Substances Control (Title 22 of the CCR). Because the Project would be required by law to implement and comply with existing hazardous material regulations, operation of the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through the release of hazardous materials through reasonably foreseeable upset and accident conditions. In addition, according to the above Air Quality section of this SCEA IS, the Project site is not located in eastern Sacramento County and is not in an area identified as likely to contain NOA. Thus, sensitive receptors would not be exposed to NOA as a result of the Project.

Construction of the Project would primarily be limited to above-ground improvements. A few subsurface improvements would likely be necessary for site sewer and water line connection purposes as well as to prepare the site for the construction of foundations; however, such improvements are not likely to require dewatering. The ESA conducted for the Project site included an investigation of known nearby contaminated sites to determine if groundwater or soil contamination from those sites could impact the Project site. The Phase I ESA concluded that given the nature, distance, type of release, and monitoring data available, the Project site would be unlikely to be impacted by any known source of groundwater or soil contamination.

During construction, small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used and

removed from the Project site and transported to and from the site. Accidental releases of small quantities of these substances could contaminate soils and degrade the quality of surface water and groundwater, resulting in a public safety hazard. However, contractors would be required to transport, store, and handle hazardous materials required for construction in a manner consistent with relevant regulations and guidelines, including California Health and Safety Codes and local City ordinances.

Due to the age of the existing building, asbestos-containing material and lead-based paint may be present, which could become airborne during demolition activities. Thus, during demolition, the Project could potentially expose construction workers and/or nearby residents or pedestrians to the hazardous materials. Because the Project could create a hazard to the public or the environment through the potential upset or accidental condition involving the release of hazardous materials (i.e., asbestos and lead-based paint) into the environment, a **potentially significant** impact would occur.

- c. The Project site is located approximately 0.3 mile of the nearest school, Washington Elementary School. Because the Project is not within one-quarter of a mile from an existing or proposed school and considering that the Project would not involve the emission of hazardous materials during operations, the Project would not emit hazardous emission or handle hazardous or acutely hazardous materials, substances, or waste, and impacts would be considered **less than significant**.
- d. As stated above, the Phase I ESA concluded that the Project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Because the Project is not located on a hazardous materials site Mitigation Measure HAZ-2 would not apply to the Project. Therefore, the project would not create a significant hazard to the public or the environment, and **no impact** would occur.
- e,f. The nearest airport to the Project site is the Sacramento Executive Airport, which is located nearly four miles south of the Project site. As such, the Project site is not located within two miles of any public airports or private airstrips, and does not fall within an airport land use plan area. Therefore, **no impact** would occur.
- g. The Project would replace existing commercial land uses with residential mixed-use land uses that would be consistent with the General Plan Land Use designation for the site. Because the Project only includes the replacement of existing land uses with land uses anticipated by the General Plan, the Project would not change access to the Project site or the surrounding area. Additionally, the Project would comply with all City regulations regarding continued site access during construction. As such, the Project would not impair implementation of or physically interfere with any emergency response or evacuation plan, and a **less-than-significant** impact would occur.
- h. The primary threat related to wildland fire is due to open grasslands abutting residential developments. The Project site currently contains urban development with predominantly impervious surfaces. With implementation of the Project, urban development with predominantly impervious surfaces would still occur on the site. Existing development completely surrounds the site. As such, the Project is not located near any open grassland. In addition, the Project would be required to comply with all applicable fire safety standards set forth by the City. Therefore, the Project would have **no impact** with respect to exposing people or structures to the risk of loss, injury or death involving wildland fires.

PROJECT-SPECIFIC MITIGATION MEASURES

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

VII-1 Prior to issuance of a demolition permit for the existing on-site building, the Project applicant shall provide a site assessment that determines whether any structures to be demolished contain lead-based paint. If structures do not contain lead-based paint, further mitigation is not required. If lead-based paint is found, all loose and peeling paint shall be removed and disposed of by a licensed and certified lead paint removal contractor, in accordance with federal, State, and local regulations. The demolition contractor shall be informed that all paint on the buildings shall be considered as containing lead. The contractor shall take appropriate precautions to protect his/her workers, the surrounding community, and to dispose of construction waste containing lead paint in accordance with federal, State, and local regulations, subject to approval by the City. Upon completion of demolition, the soil at the site of the building shall be tested for contaminants and appropriately remediated, if required, prior to commencement of construction.

VII-2 Prior to issuance of a demolition permit for the existing on-site building, the Project applicant shall provide a site assessment that determines whether any structures to be demolished contain asbestos. If structures do not contain asbestos, further mitigation is not required. If any structures contain asbestos, the application for the demolition permit shall include an asbestos abatement plan consistent with federal, State, and local standards, subject to review and approval by the City. The plan shall demonstrate how the on-site asbestos-containing materials shall be removed and include the requirement that work shall be conducted by a Cal-OSHA registered asbestos abatement contractor in accordance with Title 8 CCR 1529 regarding asbestos training, engineering controls, and certifications. Upon completion of asbestos abatement, an asbestos consultant shall collect air samples and analyze them for the presence of asbestos fibers in order to further assure adequate air quality.

FINDINGS

Hazards related to development projects are typically related to the use of hazardous materials, the location of projects on a site that was previously exposed to hazardous materials, or the interference with adopted emergency response plans, among other factors. The Phase I ESA concluded that hazardous materials had not been used on the site, and nearby sites known to contain hazardous materials were not likely to impact the Project site. Residential and commercial land uses do not typically involve the use, transport or disposal of hazardous materials, and therefore would not create a risk associated with hazardous materials. Additionally, the Project site is already developed and surrounded by existing urban infrastructure. The Project would not alter or interfere with the City's existing circulation system, and would only involve construction activity within the Project site boundaries. Thus, the Project would not interfere with circulation in a way that could impact existing emergency response or evacuation plans. However, because the Project involves the demolition of structures that were built prior to the phase-out of ACM building materials and lead-based paints, the Project would have the potential to expose people and construction workers to lead and/or asbestos. For that reason, Mitigation Measures VI-1 and VI-2 would be required of the Project, and would reduce the threat of exposure due to ACMs and

lead based paints to *less-than-significant* levels. As such, the project would not result in any additional environmental effects related to Hazards and Hazardous Materials.

VIII. HYDROLOGY AND WATER QUALITY.

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

ENVIRONMENTAL SETTING

The Project site contains an existing 9,780-sf commercial building and associated paved area. The site is located approximately 1.4 miles east of the Sacramento River and 1.1 miles south of the American River; however, the site does not contain creeks, wetlands or other hydrologic features. The Project site is in a highly developed area of Sacramento. Currently the Project site is almost entirely comprised of impervious surfaces and as a result, stormwater is directed to on-site drains and ultimately to the City Combined Sewer System (CSS).

Flooding

The Federal Emergency Management Agency (FEMA) publishes Flood Insurance Rate Maps (FIRM) that delineate flood hazard zones for communities. The Project is located in the Flood zone designated as an X zone on the FEMA FIRMs (Community Panel Number 06067C0180J). The X zone is defined by FEMA as areas that are outside the 0.2 percent annual chance floodplain. Developments within the X zone, are not required to elevate or flood proof, as risk of flooding is considered low.

Watershed and Hydrological Characteristics

The Project site is located in the Sacramento River watershed. The Sacramento River is the main drainage in this watershed and originates near Mount Shasta in the Cascades Range. Tributaries to the Sacramento River include the Feather River, Cache Creek, Putah Creek, Dry Creek, American River, Arcade Creek, Morrison Creek, and Laguna Creek. The Sacramento River drains an area of approximately 27,100 square miles including all or parts of six landforms or physiographic provinces, including the Great Basin, the Middle Cascade Mountains, the Sierra Nevada, the Klamath Mountains, the Coast Ranges, and the Sacramento Valley. The Sacramento River flows south from the northern mountain ranges before discharging into the Sacramento-San Joaquin River Delta.

Surface Water Quality

Surface water quality in the Sacramento region is considered sufficient for municipal, agricultural, wildlife, and recreational uses; however, several of the larger water bodies in the Sacramento region are listed as impaired according to Section 303(d) of the Clean Water Act (CWA) of 1972 (33 U.S.C. §1251 et seq.). Beneficial use impairments can result from several factors but are generally a result of pollutant discharges from point and non-point sources. Point sources of pollutants include discharges of treated effluent from municipal wastewater treatment plants and wastewater discharges from industrial and commercial facilities. Non-point pollutant sources include urban runoff, construction runoff, livestock and animal wastes, and runoff from agricultural areas. Water quality is expected to reflect the land uses in the watershed. Urban land uses typically contribute sediment, hydrocarbons and metals, pesticides, and trash. The Project would be expected to contribute similar contaminants.

Groundwater and Groundwater Quality

The Project site is located within the South American groundwater basin, which is located in the southeastern portion of the Sacramento groundwater basin. According to the MTP/SCS EIR, the South American groundwater basin has a surface area of 388 square miles and is bounded on the west by the Sacramento River, on the south by the Cosumnes and Mokelumne Rivers, on the east by the Sierra Nevada, and on the north by the American River. Water-bearing formations in this basin consist of continental deposits of Quaternary and Late Tertiary age, including flood basin deposits, dredger tailings, stream channel deposits, older alluvium, and Miocene/Pliocene volcanics. The thickness of these deposits changes from a few hundred feet at Sierra Nevada foothills in the east to well over 2,500 feet in the western margin of the basin. Groundwater levels in this basin have fluctuated over the last several years as a result of dry years and well activity.

Existing groundwater levels are approximately 20 feet or less throughout the basin. Groundwater in the South American subbasin is generally of good to excellent quality.⁸

Water Supply

The City uses surface water from the Sacramento and American Rivers, and groundwater pumped from the North American and South American subbasins to meet the City's water demands.

Wastewater

The public wastewater collection system within the City includes a combined sewer system (CSS) in the older Central City area where the Project site is located, and a newer separated sewer system (sanitary sewer) in the remaining areas of the City. The CSS handles both sanitary sewage and storm drainage flows (combined sewer). Flows conveyed by the City's wastewater systems are routed to the Sacramento Regional Wastewater Treatment Plant (SRWWTP) for treatment and disposal by way of an interceptor system consisting of large diameter pipes and pump stations. The interceptor system and the SRWWTP, located just south of the City limits, are owned and operated by the independent Sacramento Regional County Sanitation District (SRCSD or Regional San).

The Stormwater Quality Improvement Plan (SQIP) (July 2007) outlines the priorities, key elements, strategies, and evaluation methods of the City's Stormwater Management program for 2007-2011. The Program is based on the National Pollutant Discharge Elimination System (NPDES) municipal stormwater discharge permit. The comprehensive Program includes pollution reduction activities for construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations. The Program also includes an extensive public education effort, target pollutant reduction strategy and monitoring program.

The Sacramento City Code Section 13.08.145 addresses mitigation of drainage impacts; design and procedures manual for water, sanitary sewer, storm drainage, and water quality facilities. The code requires that when a property contributes drainage to the storm drain system or CSS, all storm water and surface runoff drainage impacts resulting from the improvement or development must be fully mitigated to ensure that the improvement or development does not affect the function of the storm drain system or CSS, and that the improvement or development does not result in an increase in flooding or in water surface elevation that adversely affects individuals, streets, structures, infrastructure, or property. Because the CSS is considered at or near capacity, all additional inflow into the system is required to be mitigated. The Sewer Development Fee Fund is used to recover a share of the capital costs of the City's existing system facilities or improvements to the City's existing system facilities. A CSS mitigation fee is collected to recover a share of the capital costs to offset sewage impacts to the CSS. Revenues are generated from impact fees paid by developers and others whose projects add to the demand on the combined sewer collection systems. In order to connect with the SRCSD wastewater conveyance and treatment system, developers must pay impact fees that are associated with impacts to the treatment system.

⁸ City of Sacramento. *2035 General Plan Background Report*. August 2014.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact is considered significant if the Project would:

- Substantially degrade water quality and violate any water quality objectives set by the SWRCB, due to increases in sediments and other contaminants generated by construction and/or development of the Specific Plan; or
- Substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

Chapter 4.7 of the Master EIR evaluates the potential effects of the 2035 General Plan as they relate to surface water, groundwater, flooding, stormwater and water quality. Potential effects include water quality degradation due to construction activities (Impacts 4.7-1, 4.7-2), and exposure of people to flood risks (Impacts 4.7-3). Policies included in the 2035 General Plan, such as a directive for regional cooperation (Policies ER 1.1.2, EC 2.1.1), comprehensive flood management (Policy EC 2.1.23), and construction of adequate drainage facilities with new development (Policy ER 1.1.1 to ER 1.1.10) were identified by the Master EIR as effectively reducing all potential impacts to a less-than-significant level.

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 11 of the MTP/SCS EIR evaluated potential impact to hydrology and water quality that may result from implementation of the proposed MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a, e, f. Water Runoff and Water Quality

The MTP/SCS EIR analyzed the potential impacts related to water runoff and water quality (Impacts HYD-1, HYD-7, and HYD-8). The MTP/SCS EIR concluded that implementation of the proposed MTP/SCS would result in development beyond the existing urban footprint that could create additional sources of runoff. Local, State and federal policies and regulations are in place to provide adequate stormwater drainage capacity and control polluted runoff, and the MTP/SCS EIR included Mitigation Measures HYD-1 and HYD-2, which require projects to comply with such policies and regulations. Because SACOG cannot require other lead agencies to adopt the MTP/SCS EIR's mitigation measures, the MTP/SCS EIR concluded that the MTP/SCS would result in a **significant and unavoidable** impact. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures HYD-1 and HYD 2). Implementation of the MTP/SCS EIR required mitigation would result in a *less-than-significant* impact. Although Mitigation Measures HYD-1 would not be applicable to the Project, Mitigation Measure HYD-2 is included in this SCEA IS.

b. Groundwater

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS substantially depleting groundwater supplies or interfering substantially with groundwater recharge which could exacerbate land subsidence associated with groundwater use (Impact HYD-6). The MTP/SCS EIR concluded that construction of land use and transportation projects included in the MTP/SCS could result in the depletion of groundwater supply or interference with groundwater recharge, and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures HYD-5 and HYD-6). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact. Mitigation Measure HYD-5 requires the implementation of Mitigation Measure PS-1. Mitigation Measure PS-1 is discussed in the Public Services section of this SCEA IS, and thus Mitigation Measure HYD-5 is not necessary. Additionally, Mitigation Measure HYD-6 applies to areas potentially subject to land subsidence, because the Project would not be located on a geologic unit subject to subsidence, Mitigation Measure HYD-6 does not apply to the Project and is not included in this SCEA IS.

c, d. Drainage

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS substantially altering the existing drainage pattern (Impact HYD-2). The MTP/SCS EIR concluded that construction of land use and transportation projects included in the MTP/SCS could substantially alter the existing drainage pattern of the study area, and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures HYD-3). Mitigation Measure HYD-3 requires the implementation of Mitigation Measure GEO-1, which has previously been applied to this Project by the SCEA IS. Therefore, implementation of HYD-3 is unnecessary and HYD-3 is not included in this SCEA IS.

g, h. 100-year Floodplain

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS increasing the amount of housing in flood hazard areas (Impact HYD-3). The MTP/SCS EIR concluded that construction of land use and transportation projects included in the MTP/SCS could place structures within a 100-year floodplain within the study area, and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures HYD-4). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact. Mitigation Measure HYD-4 applies to projects within a floodplain; however, the Project is not located within a floodplain and thus Mitigation Measure HYD-4 is not included in this SCEA IS.

i. Failure of a Levee or Dam

The MTP/SCS EIR analyzed the potential impacts related to exposing people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam (Impact HYD-4) and determined the impact to be ***less-than-significant***. The MTP/SCS EIR concluded that based on State and federal regulations potential exposure of people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; mitigation is not required.

j. Inundation by Seiche, Tsunami, or Mudflow

The MTP/SCS EIR analyzed the potential impacts related to the inundation by seiche, tsunami, or mudflow (Impact HYD-5) and determined the impact to be ***less-than-significant***. The MTP/SCS EIR concluded that given the region's absence of tsunamis and low level of earthquake risk, a low probability of seiche occurrence; mitigation is not required.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

The MTP/SCS EIR considers Impacts HYD-3, HYD-2, and HYD-6 to be significant and unavoidable because SACOG cannot require an implementing agency to adopt these mitigation measures, and the lead agency is ultimately responsible to adopt mitigation. However, MTP/SCS EIR Mitigation Measure HYD-2 is applicable to the Project, could be feasibly implemented, and is hereby incorporated into this SCEA IS as requirement of the project

MM HYD-2 Use best management practices to treat water quality.

The implementing agency should require the use of BMPs or equivalent measures to treat water quality on-site, prior to leaving the Project site, and/or at the municipal system as necessary to achieve local or other applicable standards. This should be demonstrated by requiring consistency with local standards and practices for water quality control and management of erosion and sedimentation, and/or other applicable standards, including the CBC and UBC regulations and guidelines and/or local NPDES. Implementation of Mitigation Measure GEO-1 will also help mitigate this impact.

PROJECT-SPECIFIC IMPACT DISCUSSION

a.f. The Project site is currently developed and contains impervious surfaces such as pavement and roofing. Therefore, all the stormwater that falls on the Project site flows to existing drains and feeds into the existing City CSS. Post construction, the Project would continue to include impervious services and the storm drainage would continue to flow into the City CSS. However, following demolition of existing site structures and prior to the overlay of the Project site with impervious surfaces, construction activities associated with the Project would create the potential to degrade water quality from increased sedimentation associated with storm water runoff.

Demolition of the on-site structures could increase the potential for erosion from storm water. The State Water Resources Control Board (SWRCB) adopted a statewide general NPDES permit for storm water discharges associated with construction activity. Dischargers whose projects disturb one or more acres of soil are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with

Construction Activity Construction General Permit Order 2009- 0009-DWQ. The proposed project is less than one acre, and thus would not be subject to coverage under the aforementioned Construction General Permit.

The City's SQIP contains a Construction Element that guides in implementation of the NPDES Permit for Storm Water Discharges Associated with Construction Activity. This General Construction Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list best management practices (BMPs) the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutant to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP. Compliance with City requirements to protect storm water inlets would require the developer to implement BMPs such as the use of straw bales, sandbags, gravel traps, and filters; erosion control measures such as vegetation and physical stabilization; and sediment control measure such as fences, dams, barriers, berms, traps, and basins. City staff also inspect and enforce the erosion, sediment and pollution control requirements in accordance with City codes (Grading, Erosion and Sediment Control ordinance).

Conformance with City regulations and permit requirements along with implementation of BMPs, construction activities under the Project would result in a less-than-significant impact related to storm water absorption rates, discharges, flows, and water quality associated with construction. Because the Project would incorporate BMPs, the conditions of the applicable MTP/SCS Mitigation Measures (MM HYD-2 and HYD-3) would be fulfilled. Additionally, the Project would develop the Project site for residential and commercial land uses. Neither residential or commercial land uses are commonly associated with the discharge of pollutants, which could degrade water quality or violate waste discharge requirements.

Therefore, conformance with City regulations and permit requirements would result in a **less-than-significant** impact related to the degradation of water quality or the violation of waste discharge requirements.

- b. The Project would not utilize groundwater resources for domestic or irrigation water needs. Rather, the City of Sacramento mainly utilizes surface water from the Sacramento and American Rivers. The South American groundwater basin is not used by the City as a substantial source of groundwater, and pumping activity in the Central City area is limited, thus development of the site would not be expected to increase the use of groundwater or substantially impact groundwater supplies. Furthermore, groundwater recharge does not currently occur on-site because the relatively small, 0.3-acre site is predominantly paved, which currently inhibits the infiltration of water. As a result, the project would have a **less-than-significant** impact with respect to groundwater depletion and recharge.
- c-e. Existing water bodies or features do not exist on the Project site or in the immediate vicinity. The Project site contains an existing commercial building and pavement area. As a result, the Project site is predominantly comprised of impervious surface area.

Stormwater runoff from the existing impervious surface area on the Project site currently flows into parking lot drain inlets without detention and then into the City's CSS. Because the site is currently paved, the Project would not be expected to significantly alter the existing drainage pattern of the Project site or area. Thus, the rate or amount of surface runoff on- or off-site would not change from existing conditions.

Because the project would not create or replace one or more acres of impervious area, flow control measures for stormwater runoff are not required for the project. As a result of the pre-existing impervious nature of the site, the project would have a **less-than-significant** impact with respect to creating or contributing runoff water which would exceed the capacity of existing or planned stormwater drainage systems. For these reasons the project would also have a less-than-significant impact relative to altering the existing drainage pattern in a manner which would result in substantial erosion, siltation, or flooding on- or off-site.

- g-i. As described above, the Project site is located in Flood zone designated as an X zone on the FEMA FIRMs. Developments within the X zone, are not required to elevate or flood proof, as risk of flooding is considered low. The Project site is not within 50 feet of a levee, therefore would not be subject to levee setback limitations (General Plan Policy EC 2.1.15), nor would the Project obstruct access to levees (General Plan Policy EC 2.1.21). Additionally, the General Plan includes Policy EC 2.1.5 that ensures funding to meet a minimum level of 200-year regional flood protection is obtained as quickly as possible. Future development is required to comply with Policies EC 2.1.8, EC 2.1.1, and EC 2.1.2 which require the City to maintain eligibility under the National Flood Insurance Program (NFIP) and cooperate with regional flood planning efforts, and update the City's Floodplain Management Plan.

The City of Sacramento is within the inundation area for dam failure of the Folsom Dam. However, as discussed in the MTP/SCS EIR, and summarized above, state and federal regulations exist, which would mitigate against potential exposure of people or structures to risk from levee or dam failure.

Localized flooding caused by failure of the storm drainage system, which typically results in street flooding, could occur as a result of the Project due to increased storm water runoff. Implementation of General Plan Policy ER 1.1.5 requires that there be no net increase in storm water runoff peak flows over existing conditions associated with a 100-year storm event. Implementation of General Plan Policy U 4.1.6 requires new development proponents to submit drainage studies that adhere to City storm water design requirements and incorporate measures to prevent on- or offsite flooding (Sacramento City Code Title 13, Chapter 13.08, Article III(A)). As a result, the project would not place structures within the 100-year floodplain, nor expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. Therefore, a **less-than-significant** flooding impact would result.

- j. The project area is located over 50 miles from the Pacific Ocean. Tsunamis typically affect coastlines and areas up to one-quarter of a mile inland. Due to the project's distance from the coast, potential impacts related to a tsunami are minimal. Additionally, the Project site is not susceptible to impacts resulting from a seiche because of the Project's distance from any enclosed bodies of water. The nearest enclosed body of water to the Project site is the Lake Natomas, which is located approximately 15-miles northeast of the Project site. Because steep slopes are not located in close proximity to the site, mudflows would

not pose an issue. Therefore, a *less-than-significant* impact would occur related to inundation by seiche, tsunami, or mudflow.

PROJECT-SPECIFIC MITIGATION MEASURES

None.

FINDINGS

When development occurs in undeveloped areas, changes to site hydrology can lead to the degradation of water quality, the depletion of water quality and the exposure of structures and people to flood risk. The MTP/SCS encourages development in previously urbanized areas, and the Project would include densification of an existing developed site. Because the Project site has already been developed, the hydrology of the site would remain fairly constant. The Project would involve the demolition of the existing structures, which would expose site soils to erosion; however, MTP/SCS Mitigation Measures HYD-2 and HYD-3 requires that BMPS be implemented to control erosion, and the Project would fulfill such requirements through adherence to the City's Grading, Erosion and Sediment Control ordinance. Additionally, the Project site is not located in an area at major risk of flooding, and thus would not increase the risk of flooding to people or structures. Therefore, the Project would not result in any additional environmental effects related to Hydrology or Water Quality.

IX. NOISE.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<i>Would the project result in:</i>				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

ENVIRONMENTAL SETTING

The Project is in the City of Sacramento’s Central City area, surrounded by commercial development on all sides. The noise environment of the Project site would be considered typical for an urban setting, with regular traffic and street noise. Nearby commercial activities would operate during the day and for portions of the night, adding to the ambient noise levels of the project area. Elevated ambient noise levels are typical for urban environments, where the density of residents and commercial activity concentrate traffic and pedestrian activity. An existing Union Pacific rail line runs parallel to and in between 19th Street and 20th Street, which would affect the ambient noise levels, and contribute a source of groundborne vibrations.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact is considered significant if the Project would:

- Result in exterior noise levels at existing or new urban infill residential uses of 70 dBA L_{dn} or greater;
- Result in exterior incremental noise level increases of 1 dB or greater where existing noise levels are 70 dB L_{dn} or less;

- Result in interior noise levels of 45 dBA L_{dn} or greater at existing or new residences;
- Result in construction noise levels that exceed the standards in the City of Sacramento Noise Ordinance;
- Permit existing and/or planned residential and commercial areas to be exposed to vibration-peak-particle velocities greater than 0.5 inches per second due to project construction;
- Permit adjacent residential and commercial areas to be exposed to vibration peak particle velocities greater than 0.5 inches per second due to highway traffic and rail operations; or
- Permit historic buildings and archaeological sites to be exposed to vibration-peak-particle velocities greater than 0.2 inches per second due to project construction and highway traffic.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

The Master EIR evaluated the potential for development under the 2035 General Plan to increase noise levels in the community. New noise sources include vehicular traffic, aircraft, railways, light rail and stationary sources. The General Plan policies establish exterior (Policy EC 3.1.1) and interior (Policy EC 3.1.3) noise standards. A variety of policies provide standards for the types of development envisioned in the General Plan. Policy EC 3.1.8 requires mixed-use, commercial, and industrial projects to mitigate operational noise impacts to adjoining sensitive uses when operational noise thresholds are exceeded, and Policy 3.1.9 calls for the City to limit hours of operation for parks and active recreation areas in residential areas to minimize disturbance to residences. Moreover, the Master EIR considered Policy 3.1.6, which requires the City to consider potential effects of vibration when reviewing new residential and commercial projects that are proposed in the vicinity of rail lines or light rail lines, as a mitigation measure that would reduce the impact of existing sources of vibration on proposed developments. Notwithstanding application of the General Plan policies, noise impacts for exterior noise levels (Impact 4.8-1) and interior noise levels (Impact 4.8-2), and vibration impacts (Impact 4.8-4) were found to be significant and unavoidable.

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 13 of the MTP/SCS EIR evaluated potential impact to noise that may result from implementation of the proposed MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a. Exceed Noise Threshold

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS resulting in noise levels that exceed the Community Type L_{dn} thresholds (Impact NOI-1). The MTP/SCS EIR determined that urban areas are currently subject to higher noise levels, and these elevated noise levels are generally accepted as being a component of urban living. Because the MTP/SCS promotes compact infill growth within central and community corridor areas, the MTP/SCS EIR concluded that the MTP/SCS would result in a **significant and unavoidable** impact related to

the exceedance of noise thresholds. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures NOI-1). Implementation of the MTP/SCS EIR required mitigation would result in a *less-than-significant* impact.

b. Vibration and Groundborne Noise

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS resulting in excessive vibration and groundborne noise (Impact NOI-2). The MTP/SCS EIR determined that the development of most land uses, including commercial and residential, would not create substantial groundborne vibrations or noise nor be subject to excessive groundborne vibrations or noise, even when such land uses were cited near vehicle transportation corridors, such as major highways. Nevertheless, the MTP/SCS EIR concluded that the railway improvements included in the MTP/SCS could lead to increased vibration and groundborne noise impacts throughout the planning area, resulting in a **significant and unavoidable** impact. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures NOI-2). Implementation of the MTP/SCS EIR required mitigation would result in a *less-than-significant* impact. Mitigation Measure NOI-2 applies to projects involving rail systems; because the Project is a mixed-use project that does not involve rail systems NOI-2 does not apply to the Project and is not included in this SCEA IS.

d. Construction Noise

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS resulting in construction noise levels that exceed the Community Type L_{dn} thresholds (Impact NOI-3). The MTP/SCS EIR concluded that construction of land use and transportation projects included in the MTP/SCS could result in construction noise, which could violate local standards, and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures NOI-3). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

The MTP/SCS EIR considers Impacts NOI-1, NOI-2, and NOI-3 to be significant and unavoidable because SACOG cannot require an implementing agency to adopt these mitigation measures, and the lead agency is ultimately responsible to adopt mitigation. Although Mitigation Measure NOI-2 is not applicable to the Project, MTP/SCS EIR Mitigation Measures NOI-1 and NOI-3 are applicable to the Project, could be feasibly implemented, and are hereby incorporated into this SCEA IS as requirements of the project

MM NOI-1 Employ measures to reduce noise from new land uses and transportation projects.

For projects that have not undergone previous noise study and that exceed acceptable noise thresholds, the implementing agency shall require a project-level evaluation of noise impacts in accordance with applicable federal, state, and local noise standards. Where significant impacts are identified, applicable mitigation measures shall be implemented, to reduce noise to be in compliance with

applicable noise standards. Measures that shall be implemented, where feasible and necessary to address site-specific impacts, include but are not limited to:

- constructing barriers in the form of sound walls, buildings, or earth berms to attenuate noise at adjacent residences;
- using land use planning measures, such as zoning, restrictions on development, site design, and buffers to ensure that future development is compatible with adjacent transportation facilities and land uses;
- constructing roadways so that they are depressed below-grade of the existing sensitive land uses to create an effective barrier between new roadway lanes, roadways, rail lines, transit centers, park-n-ride lots, and other new noise generating facilities;
- maximizing the distance between noise-sensitive land uses and new noise-generating facilities and transportation systems;
- improving the acoustical insulation of dwelling units where setbacks and sound barriers do not sufficiently reduce noise; and
- using rubberized asphalt or “quiet pavement” to reduce road noise for new roadway segments, roadways in which widening or other modifications require re-pavement, or normal reconstruction of roadways where re-pavement is planned.

MM NOI-3 Reduce noise, vibration, and groundborne noise generated by construction activities.

Measures that shall be implemented to reduce noise, vibration, and groundborne noise generated by construction activities, where feasible and necessary to address site-specific considerations, include but are not limited to:

- restrict construction activities to permitted hours in accordance with local jurisdiction regulations;
- properly maintain construction equipment and outfit construction equipment with the best available noise suppression devices (e.g., mufflers, silencers, wraps);
- prohibit idling of construction equipment for extended periods of time in the vicinity of sensitive receptors;
- locate stationary equipment such as generators, compressors, rock crushers, and cement mixers as far from sensitive receptors as possible; and
- predrill pile holes to the maximum feasible depth, provided that pile driving is necessary for construction.

PROJECT-SPECIFIC IMPACT DISCUSSION

a,c. The Project site is surrounded by commercial development on all sides. Currently, the main sources of noise in the project area would be from traffic and the nearby UPRR tracks. While traffic would contribute heightened levels of noise to the project area, as indicated in the MTP/SCS EIR, such noise is often considered a facet of urban life, and would not be considered to be a substantial impact of the Project. The MTP/SCS EIR's conclusion that urban noise levels are generally higher than other residential areas is supported by the fact that the City Code contains exterior noise standards of 50 to 55 dBA

for residential properties, but the significance threshold for new infill development used while evaluating such projects in the City is 70 dBA L_{dn} . Considering that infill development often occurs in urbanized areas, the allowance of higher levels of noise at such infill locations indicates that the City recognizes that urban areas typically experience higher noise levels than most residential properties.

The City of Sacramento General Plan Background Report however, concludes noise from passing trains and railway crossing warning bells can impact ambient noise levels in neighborhoods surrounding railways throughout the City. As such, the City included Policy EC 3.1.6 in the 2035 General Plan, which requires new commercial or residential projects to consider potential impacts resulting from proximity to existing rail lines. Appendix C of the Background Report quantifies the noise level at various distances from the center of the rail line. The Project site is approximately 280 feet away from the center of the rail line, which would subject the Project to an exterior noise level of 65 dBA. Therefore, the Project would not result in the exposure of new infill residents to noise levels of 70 dBA or greater, and the requirements of General Plan Policy EC 3.1.6 have been fulfilled for the Project.

The City of Sacramento's General Plan Master EIR identified traffic noise contours throughout the City, including noise contours on J Street from 3rd Street to 7th Street and separately from 21st Street to 29th Street. Under 2035 build-out scenario 3rd Street to 7th Street would experience 63.5 dBA, while the 21st Street to 29th Street area would experience 64.2 dBA. The Project could impact such noise levels if the Project would result in significant increases in traffic levels from what would be anticipated without the Project. The Project site is currently used for commercial developments, which currently induces traffic to and from the site. As discussed in the Transportation and Circulation section of this document, the City's Department of Public Works estimated that the Project would generate 640 total net new trips to and from the Project site with 45 of those trips occurring in the AM peak hour and 68 occurring in the PM peak hour. Because the Project would result in fewer than 100 new AM or PM peak hour trips, the Project is not anticipated to create significant impacts to traffic, which would increase the amount of traffic noise. In the absence of an increase in traffic noise caused by the Project, the Project site would be anticipated to experience a maximum of 64.2 dBA of traffic noise, and thus the Project would not result in the exposure of new infill residents to noise levels of 70 dBA or greater.

Additionally, the Project would be subject Section 17.600.150 of the City Code, which includes specific design measures to reduce noise transmission to the interior of the structure. Such design measures include specific standards for sound transmission class rated windows, skylights, and doors, as well as requirements for HVAC systems as specified in the Uniform Building Code. Section 17.600.150 also allows alternative methods and materials for use in projects, as long as such methods and materials achieves a noise level of 45 dB L_{dn} . Because the Project would be required to comply with Section 17.600.150 of the City Code, the inside noise level of the Project would remain within acceptable noise levels, at or below the 45 dB L_{dn} level, would ensure that noise levels within the proposed residential portion of the structure would remain within acceptable levels. Additionally, the portion of MTP/SCS Mitigation Measure NOI-1 regarding acoustical insulation and noise reduction would be applicable to the Project, and would act in concert with specific regulations within Section 17.600.150 of the City Code to ensure acceptable sound levels within the proposed structure.

The Project involves the operation of residential and commercial land uses. Commercial land uses currently surround the Project site, and the Project's commercial use would

replace the commercial use that currently operates on the Project site. Therefore, the Project’s incorporation of commercial land uses would not be considered a new source of noise, and would be expected to generate noise levels of a similar intensity as currently existing in the project area. While the residential portion of the Project would be a new land use for the Project site, residential land uses are not typically considered to be a noise generating type of land use. As such, the residential portion of the project would not be expected to significantly alter the ambient noise levels of the project area.

Additionally, all land uses within the City of Sacramento are subject to the requirements of City Code Chapter 8.68, Noise Control. Chapter 8.68 establishes noise standards for residential and commercial land uses, and would ensure that operation of the Project would not lead to significant impacts to ambient noise levels in the project area.

Given the Project site’s existing ambient noise environment, the land uses included in the Project, existing noise regulations, and the Project’s compliance with NOI-1 the Project would not expose persons to or generate noise levels in excess of local standards, nor would the project result in a substantial permanent increase in ambient noise levels in the project vicinity. As such, the Project would result in a **less-than-significant** impact.

- b. The primary vibration-generating activities associated with the Project would occur during construction when activities such as demolition, grading and utility placement. Construction vibration impacts include human annoyance and building structural damage. Building damage can take the form of cosmetic or structural. As stated above, the threshold for significant impacts from vibrations on structures ranges from 0.2 to 0.5 in/sec p.p.v, and the general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v. Table 8 shows the typical vibration levels produced by construction equipment.

Table 8			
Vibration Levels for Varying Construction Equipment			
Type of Equipment	Peak Particle Velocity @ 25 feet (inches/second)	Peak Particle Velocity @ 50 feet (inches/second)	Peak Particle Velocity @ 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026
<i>Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006</i>			

Sensitive receptors could be impacted by construction related vibrations, especially vibratory compactors/rollers. The nearest sensitive receptors to the project site would be the residential buildings approximately 100 feet to the north east of the project site. As shown in Table 8, at a distance of 100 feet, construction equipment would result in peak particle velocities below the 0.1 in/sec p.p.v. threshold of human annoyance, and thus nearby persons would not be subjected to excessive vibrations or groundborne noise.

Additionally, the Project would be required to comply with Mitigation Measure NOI-3 from the MTP/SCS, which requires that all feasible measures are taken to reduce groundborne vibrations and noise resulting from construction activity. Furthermore, the *Geotechnical Engineering Report* prepared for the project-site by WKA indicated that the foundation options being explored would not be anticipated to generate excessive vibrations.⁹ Therefore, given the professional opinion of WKA and the application of MTP/SCS Mitigation Measure NOI-3, construction activity would not expose persons to excessive groundborne vibrations and/or noise, and implementation of the Project would have a **less-than-significant** impact related to vibration.

- d. During the construction of the project including demolition, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 9, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Type of Equipment	Maximum Level, dB at 50 feet
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: *Roadway Construction Noise Model User's Guide*. Federal Highway Administration. FHWA-HEP-05-054. January 2006.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A substantial project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

The City of Sacramento Municipal Code Section 8.68.080 exempts construction-generated noise as outlined below:

Noise sources due to the erection (including excavation), demolition, alteration or repair of any building or structure between the hours of seven a.m. and six p.m., on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday, and between nine a.m. and six p.m. on Sunday; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order. The director of building inspections, may permit work to be

⁹ Wallace Kuhl and Associates. *Geotechnical Engineering Report, 19th & J Streets 11-Story Mixed-Use Building*. September 1, 2016.

done during the hours not exempt by this subsection in the case of urgent necessity and in the interest of public health and welfare for a period not to exceed three days. Application for this exemption may be made in conjunction with the application for the work permit or during progress of the work.

These exemptions are typical of City and County Noise Ordinances and reflect the recognition that construction-related noise is temporary in character, is generally acceptable when limited to daylight hours, and is part of what residents of urban areas expect as part of a typical urban noise environment (along with sirens, pedestrian noise, etc.). Additionally, WKA concluded that construction of the Project would not require the use of pile driving equipment, which, if used, would generate significant amounts of noise and vibrations.

Demolition and construction activities would be temporary in nature, would occur during normal daytime working hours listed above, and would comply with the requirements of the City of Sacramento Noise Ordinance. Therefore, construction noise would be considered a **less than significant** impact.

- e,f. The Project site is not located near an existing airport and is not within an area covered by an existing airport land use plan. The nearest airport is the Sacramento Executive Airport located approximately 4.0 miles southwest of the Project site. Although aircraft-related noise could occasionally be audible at the Project site, noise would be extremely minimal. Exterior and interior noise levels resulting from aircraft would be compatible with the Project. Therefore, a **less-than-significant** impact would occur.

PROJECT-SPECIFIC MITIGATION MEASURES

None.

FINDINGS

Urban environments tend to include various sources of noise such as vehicle traffic, trains, buses, pedestrians, and sirens. Project construction would add to this noise environment through demolition, site preparation and construction activities. However, such construction noise is allowable, during normal daytime hours, under the City of Sacramento Noise Ordinance. Additionally, given the application of Mitigation Measure NOI-3 and the conclusions reached by WKA, the Project is unlikely to generate significant groundborne vibrations or noise during construction that could impact nearby people or structures. Operation of the Project would involve commercial and residential land uses. Residential land uses are not typically considered to be a noise producing land use, and commercial activity already occurs on and around the Project site, thus Project operations would generate similar noise levels to surrounding land uses. However, the Project's location near the Central City and nearby rail lines creates a potential for the existing noise environment to subject future residents to excess noise levels. As discussed above, the Sacramento City Code includes specific requirements for the construction of mixed-use structures to reduce interior sound levels, and Mitigation Measure NOI-1 from the MTP/SCS EIR applies similar requirements to the Project. Application of the City Code and relevant mitigation measures from the MTP/SCS EIR would ensure that the Project adheres to all relevant regulations regarding noise. As such, the Project would not result in any additional environmental effects related to noise.

X. PUBLIC SERVICES.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<i>Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:</i>				
a. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Schools?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Parks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ENVIRONMENTAL SETTING

The City of Sacramento provides fire, police, and parks and recreation services in the vicinity of the Project site.

The Sacramento Fire Department (SFD) provides fire protection services to the entire City and some small areas just outside the City boundaries within the County limits. SFD provides fire protection and emergency medical services to the project area. The nearest fire station to the Project site is Station 2, located at 1229 I Street, approximately 0.5-mile west of the Project site.

The Sacramento Police Department (SPD) is principally responsible for providing police protection services within the jurisdictional limits of the City of Sacramento. In addition, the Sacramento County Sheriff’s Department, California Highway Patrol, University of California Davis Medical Center Police Department, and Regional Transit Police Department support SPD to provide police protection in the greater Sacramento area.

According to the 2015 Annual Report, SPD was staffed in 2015 by 1,032 full-time and part-time employees, of whom 740 were sworn officers. The department uses a variety of data including, geographic information system (GIS) based data, call and crime frequency information, and records of available personnel, in order to rebalance the SPD’s deployment on an annual basis to meet the changing demands of the City. According to the 2035 General Plan Master EIR, SPD maintains an internal goal of 2.0 to 2.5 sworn police officers per 1,000 City residents and one civilian support staff member per two sworn officers. Based on the most current information the ratio of sworn officers per 1,000 residents is 1.54, which is below SPD’s internal goal.

Patrol and specialized teams are deployed from three substations serving four command areas: North, Central, East, and South. The Project site is within Police District 3. First response to the Project site would be provided by SPD Central Command, which serves Downtown, Midtown, the Richards Boulevard corridor, and the Railyards. Central Command is located at 300 Richards Boulevard, approximately 1.6 miles northwest of the Project site.¹⁰

¹⁰ City of Sacramento. 2035 General Plan Background Report. August 2014.

The Project site is within the Sacramento City Unified School District (SCUSD). SCUSD is the 11th largest school district in California and serves over 42,000 students on more than 80 campuses. The nearest school is Washington Elementary School, which is located approximately 0.3-mile northwest of the Project site.

The City of Sacramento Department of Parks and Recreation manages more than 3,108 acres of parkland, including more than 222 parks within the City. The closest parks to the Project site are Capitol Park and Washington Park, both of which are located approximately 0.3-mile away from the Project site to the southwest and northwest, respectively.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact is considered significant if the Project would:

- Impede achievement of acceptable levels of service for police protection, fire protection, emergency response, school, library, social, parks and recreation, and/or other public services, including capital capacity, programming, equipment, and personnel.
- Result in impacts associated with the construction of new or the expansion of existing facilities required to maintain adequate capital capacity for police protection, fire protection, emergency response, school, library, social, park and recreation services, and/or other public services.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

The Master EIR evaluated the potential effects of the 2035 General Plan on various public services, including police, fire protection, schools, libraries and emergency services (Chapter 4.10).

The General Plan provides that adequate staffing levels for police and fire are important for the long-term health, safety and well-being of the community (Goal PHS 1.1, PHS 2.1). The Master EIR concluded that effects of development that could occur under the General Plan would be less than significant.

General Plan policies that call for the City to consider impacts of new development on schools (see, for example, Policy ERC 1.1.2 setting forth locational criteria, and Policy ERC 1.1.4 that encourages joint-use development of facilities) reduce impacts on schools to a less-than-significant level. (Impacts 4.10-3, 4) Impacts on library facilities were considered less than significant (Impact 4.10-5).

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 15 of the MTP/SCS EIR evaluated potential impact to public services that may result from implementation of the proposed MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a-d. Public Services

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS resulting in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services (Impact PS-1 and Impact PS-2). The MTP/SCS EIR concluded that construction of land use and transportation projects included in the MTP/SCS could result in the need for new or physically altered government facilities, which could cause significant environmental impacts, and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures PS-1 and PS-2). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact. Mitigation Measure PS-2 requires the implementation of construction related mitigation measures included in the rest of the MTP/SCS EIR. Because all applicable mitigation measures from the MTP/SCS EIR, Mitigation Measure PS-2 is not included in this SCEA IS.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

The MTP/SCS EIR considers Impacts PS-1 and PS-2 to be significant and unavoidable because SACOG cannot require an implementing agency to adopt these mitigation measures, and the lead agency is ultimately responsible to adopt mitigation. Although Mitigation Measure PS-2 is not included in this SCEA IS, MTP/SCS EIR Mitigation Measure PS-1 is applicable to the Project, could be feasibly implemented, and is hereby incorporated into this SCEA IS as a requirement of the project.

MM PS-1 Ensure adequate public services and utilities will be available to satisfy applicable service levels.

The implementing agency shall ensure that public services and utilities will be available to meet or satisfy applicable service levels. This shall be documented in the form of a capacity analysis or provider will-serve letter.

PROJECT-SPECIFIC IMPACT DISCUSSION

- a. The Project would include development of a mixed-use residential and commercial development. The Project consists of a 173-unit, 11-story, mixed use structure with ground floor commercial and a second story parking garage. As noted above, the SFD currently serves the Project site and the nearest fire station to the Project site is Station 2, located at located at 1229 I Street, approximately 0.5-mile west of the Project site. The Project would be expected to increase the SFD service demand for the Project site. According to

the General Plan Master EIR, the SFD requires a ratio of one fire station per 16,000 residents. However, the Project is consistent with the land use designation in the 2035 General Plan; The General Plan Master EIR concluded that at full buildout of the General Plan, including the Project site, the City would be required to provide approximately 12 new fire stations and additional fire personnel to accommodate the increase in population. Furthermore, the Project would include fire protection features as required in the City Code including fire alarm systems, fire extinguisher systems and exit illumination. Therefore, impacts to fire service from the Project have already been accounted for, and the project would comply with the requirements of the City Code, and General Plan policies regarding adequate fire protection services. As a result, the need for new or physically altered facilities would not be induced by the Project and a **less-than-significant** impact would occur.

- b. Similar to the SFD, the added population from the Project would create an increased demand in police services to the project area. As noted above, the Project site is currently within Police District 3, which is serviced by the SPD Central Command located at 300 Richards Boulevard, approximately 3.25 miles northwest of the Project site. Implementation of the Project would increase the service population for the SPD, which currently operates at a 1.54 officer to resident ratio (currently below the SPD’s internal goal of 2.0 to 2.5). However, the Project applicant would be required to pay fees for the provision of public services. Additionally, the location of the Project would be consistent with established service areas in the Sacramento General Plan. Therefore, the need for new or physically altered facilities would not be induced by the Project and a **less-than-significant** impact would occur.
- c. The Project consists of a 173-unit mixed-use structure, which would generate additional students in the area. Based on the student generation rates from the General Plan Master EIR, the 173-unit proposed residential units would generate approximately 45 students that would require accommodation in local SCUSD schools (see Table 10).

Table 10			
Students Generation Projections For 19J Project			
Grade Levels	SCUSD Student Generation Factor per Household	# of Units	New Students
Elementary	0.19	173	33
Middle	0.03	173	5
High	0.04	173	7
Total			45
<i>Source: Sacramento 2035 General Plan Master EIR, August 2014.</i>			

The SCUSD’s assignment locator indicated that the students generated by 19J would be distributed throughout multiple schools in the area. Schools in the project area that students could attend include William Land, Washington, and Theodore Judah Elementary, Sutter Middle, and C.K. McClatchy High School. Enrollment information and design capacities of several nearby schools are presented in Table 11 below.

School	Grade Level	Enrollment	Designed Capacity	Remaining Capacity
Washington	Elementary	-	706	-
William Land	Elementary	453	641	188
Theodore Judah	Elementary	595	859	264
Sutter	Middle	1,153	1,403	250
C.K. McClatchy	High	2,155	2,775	620
<p><i>Note: Washington Elementary School will reopen for the 2016-2017 school year, as such enrollment and updated capacity information was not yet available for the school.</i></p> <p><i>Source: Sacramento City Unified School District. Sacramento Unified School District Board Of Education Business and Financial Information. March 3, 2016</i></p> <p><i>Sacramento City Unified School District. Sacramento Unified School District Board Of Education District Right-Sizing: Closure of Under-Enrolled School Facilities (Resolution No. 2734). February 21, 2013.</i></p>				

As shown in Table 11, and given the relatively small number of total student demand generated by the Project, sufficient capacity exists in nearby schools, where such information is available, to accommodate the 45 new students anticipated due to the Project.

The Project would be required to pay statutory developer fees under California SB 50. Without payment of such fees the Project may result in impacts through increased demand school services. As such, the Project would result in a **potentially significant** impact related to schools.

- d. The Project consists of constructing 173 new residential units, which would increase the population in the area. Based on the City of Sacramento Housing Element the City averages approximately 2.6 persons per household, using this average the Project is expected to increase the total population by approximately to 450 persons (173 units x 2.6 persons per household = 450). General Plan policies have been adopted to ensure adequate parks and recreational facilities are provided to accommodate the increase in new residents. For example, Policy ERC 1.1.4 and Policy ERC 1.1.2, as presented above. It should be noted that according to the City’s Parks and Recreation Master Plan (PRMP), the City-wide/Regionally serving park service goal is to provide 8.0 acres per 1,000 persons by 2010. Because the Project would increase the number of residents in the area and increase the demand on park facilities, a **potentially significant** impact would occur.

PROJECT-SPECIFIC MITIGATION MEASURES

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

- X-1 *Prior to the issuance of a building permit, the project applicant shall pay the applicable SB 50 School Impact Fees to the SCUSD, and provide proof of payment of said SB 50 School Impact Fees to the City of Sacramento Community Development Department for verification.*

X-2 *Prior to issuance of a building permit, and consistent with General Plan Policy ERC 2.5.4 and Chapter 18.44 of the Sacramento City Code, the project applicant shall pay the City of Sacramento in-lieu fees and/or development impact fees for park facilities. The Sacramento City Council, by resolution, shall establish the specific initial and subsequent amounts of the park development impact fees pursuant Section 18.44.050 of the Sacramento City Code.*

FINDINGS

Impacts related to public services typically occur when a development has not been anticipated by a jurisdiction and the increase in demand for police or fire protection, schools, or parks overwhelms the capacity of existing public services and requires the construction of new or expanded facilities. Such new or expanded facilities could result in their own environmental impacts due to development. Thus the Project was analyzed to determine whether sufficient capacity existed in public service systems to serve the Project. Because the Project was determined to be consistent with the City's General Plan, the increase in demand for police and fire protection, and schools has been anticipated and planned for by the City. As a result, capacity exists to meet the increased demand of the Project, as the aforementioned public services have been adequately sized to accommodate growth within the City. However, because the Project would involve an increase in City residents, but would not provide parkland, adequate parkland may not exist to meet the increased demand for such services. As such, Mitigation Measure X-1 and X-2 of this SCEA IS requires the Project to pay impact or in-lieu fees in accordance with Sacramento City Code and General Plan policies. Additionally, Mitigation Measure PS-1 from the MTP/SCS EIR is relevant and applicable to the Project, and would ensure that adequate public services and utilities exist to serve the Project. Given the above discussion and the application of the aforementioned mitigation measures, the Project would not be expected to result in any additional environmental effects related to Public Services.

XI. RECREATION.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<i>Would the project:</i>				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ENVIRONMENTAL SETTING

Diverse natural resources provide a wide range of recreational opportunities for residents in the vicinity of the Project site. As of 2013, the Sacramento region contains approximately 921,655 acres of parks, recreation, and open space.¹¹ The Project site is within one mile of City and State parks including, Fremont, Zapata, J. Neely Johnson, Grant, Discovery, McKinley, Marshall, and Roosevelt Parks, as well as the Capitol Park, and Sutter’s Fort State Historic Park among others.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact is considered significant if the Project would:

- Cause or accelerate substantial physical deterioration of existing area parks or recreational facilities; or
- Create a need for construction or expansion of recreational facilities beyond what was anticipated in the 2035 General Plan.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

Chapter 4.9 of the Master EIR considered the effects of the 2035 General Plan on the City’s existing parkland, urban forest, recreational facilities and recreational services. The General Plan identified a goal of providing an integrated park and recreation system in the City (Goal ERC 2.1). New residential development will be required to dedicate land, pay in-lieu fees or otherwise contribute a fair share to the acquisition and development of parks and recreation facilities (Policy ERC 2.2.5). Impacts were considered less than significant after application of the applicable policies. (Impacts 4.9-1 and 4.9-2)

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

¹¹ MTP/SCS EIR. Chapter 15, Public Services and Recreation.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 15 of the MTP/SCS EIR evaluated potential impact to recreational facilities that may result from implementation of the proposed MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a, b. Recreational Facilities

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS impeding the achievement of acceptable levels of service for parks and recreation (Impact PS-1). The MTP/SCS EIR concluded that construction of land uses included in the MTP/SCS could impede the achievement of acceptable levels of service for parks and recreation, and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures PS-1 and PS-2). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

See Public Service section above.

PROJECT-SPECIFIC IMPACT DISCUSSION

a,b. The Project includes 173 residential units and 7,000 sf of commercial space. The project does not include construction of parks or other recreational facilities. The project residents would likely utilize the existing parks in the vicinity, as discussed above. However, because the project would not dedicate land for parks as required by the City per Chapter 16 of the Zoning Code, the project would result in a **potentially significant** impact related to causing or accelerating substantial physical deterioration of existing area parks and creating a need for construction or expansion of recreational facilities beyond what was anticipated in the General Plan.

PROJECT-SPECIFIC MITIGATION MEASURES

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

XI-1. Implement Mitigation Measure X-1.

FINDINGS

The Project's inclusion of residential development would increase demand on local parks, and recreational facilities. Such an increase in demand could increase the use of existing facilities, which would contribute to the deterioration of such facilities or could require the physical expansion or construction of new facilities. Such deterioration, expansion or new construction would have negative environmental impacts. However, Mitigation Measure XI-1 of this SCEA IS requires the Project pay impact or in-lieu fees in accordance with Sacramento City Code and General Plan policies, and Mitigation Measure PS-1 from the MTP/SCS EIR requires that

adequate public services be available for any proposed Project to be approved. The payment of in-lieu or impact fees would defray the costs of deterioration of existing parks in the area. As such the Project would not result in any additional environmental effects related to Recreation.

XII. TRANSPORTATION AND CIRCULATION	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<i>Would the project:</i>				
a. Roadway segments: degrade peak period Level of Service (LOS) from acceptable (without the project) to unacceptable (with project) or the LOS (without project) is F, and project generated traffic increases the Volume to Capacity Ratio (V/C ratio) by 0.02 or more?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Intersections: degrade peak period level of service from acceptable (without project) to unacceptable (with project) or the LOS (without project) is F, and project generated traffic increases the peak period average vehicle delay by five seconds or more?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Freeway facilities: off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway; project traffic increases that cause any ramp's merge/diverge level of service to be worse than the freeway's level of service; project traffic increases that cause the freeway level of service to deteriorate beyond level of service threshold defined in the Caltrans Route Concept Report for the facility; or the expected ramp queue is greater than the storage capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Transit: adversely affect public transit operations or fail to adequately provide for access to public transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Bicycle facilities: adversely affect bicycle travel, bicycle paths or fail to adequately provide for access by bicycle?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Pedestrian: adversely affect pedestrian travel, pedestrian paths or fail to adequately provide for access by pedestrians?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

ENVIRONMENTAL SETTING

The Project qualifies as a TPP under SB 375. Environmental documents for TPPs are not required to reference, describe or discuss impacts from car and light duty truck trips on the regional transportation network. Accordingly, analysis of project effects on major regional highways within the study area was not necessary because the major highways are part of the regional transportation network. In addition, according to the MTP/SCS, Center and Corridor communities generate 23 percent less vehicle miles travelled (VMT) in Sacramento County than the regional average. Because the Project would be located in a Center and Corridor community the project would be expected to generate a similarly reduced amount of VMT. Thus, further analysis of VMT is not necessary. As discussed in the introduction to this SCEA IS, the Project site is within a TPA identified by the MTP/SCS. TPAs are characterized by allowing access to multiple forms of

transportation including alternative means of transportation such as transit, bicycle infrastructure and pedestrian infrastructure.

Roadway System

The Project site is located at the intersection of two arterial streets, 19th Street and J Street. The City of Sacramento defines arterial streets as providing mobility for high traffic volumes within the City and regionally. Arterials often link freeways to collector streets and local streets, and J Street accomplishes this by connecting both to I-5 and I-80 (Capitol City Freeway). Both 19th Street and J Street are one-way roadways, with traffic flowing north to south and west to east, respectively. The Project does not include any physical alterations to the surrounding circulation system, and would provide vehicle access from Improv Alley on the north side of the Project site.

The City of Sacramento used level of service (LOS) calculations to evaluate the condition of roadways in the planning area for the 2035 General Plan. LOS seeks to provide a quantitative measure for the condition of roadways by describing the relationship between traffic demand and the capacity of the roadway.¹² Once the relationship is quantified, a letter grade is assigned to the studied intersection or roadway ranging from A, which would describe a free-flowing roadway without significant delays, to F which is characterized by severe traffic delay and a constricted flow of traffic. Both 19th Street and J Street currently operate at a LOS D or better, which is considered an acceptable level of operation by the City. In the Core Area (Central City Community Plan Area) LOS F is allowed per 2035 General Plan Policy M 1.2.2.

Bicycle System

Bicycle infrastructure in the Central City portion of Sacramento consists mainly of Class II bike lanes. Class II lanes are classified as having signage and pavement markings denoting the lanes. A Class II lane currently exists on 19th Street. Although Class III bike lanes, which are classified as sharing the road with motorized vehicles, exist on portions of J Street within the Central City; however, bicycle infrastructure does not exist on the portion of J Street adjacent to the Project site.

Pedestrian System

All roadways in the area of the Project have sidewalk infrastructure, and the signalized intersection of 19th Street and J Street has pedestrian phases and signal heads. The City of Sacramento 2035 General Plan Background Report indicates that across the City, 3.1 percent of commuters walk to work, which is 0.4 percent higher than the state average. However, the percentage of total commuters that walk as a primary means of transportation to their location of employment varies within the City. Due to the Central City's dense system of gridded streets, mixed use developments, and existing pedestrian infrastructure, the Central City's percentage of total commuters who walk to work is higher than the citywide average.

Transit System

Transit service in the project area includes bus service, light rail, and train service. Bus service within the Sacramento area is provided by both the Sacramento Regional Transit District (RT) and Yolobus. As discussed earlier in this document, over 17 bus lines and three light rail lines have stations or stops within one-mile of the Project site. In particular, bus stops for lines 30 and 62 are within 0.10 mile of the Project site.

¹² City of Sacramento. *2035 General Plan Background Report*. August 2014.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact is considered significant if the Project would:

- Generate traffic that would degrade peak period LOS from acceptable (without the project) to unacceptable (with project);
- Increase the Volume to Capacity Ratio (V/C ratio) of a roadway experiencing a LOS of F by 0.02 or more;
- Increase peak period average vehicle delay by five seconds or more at an intersection already experiencing a LOS of F;
- Adversely affect public transit operations, bicycle paths, or pedestrian paths; or
- Fail to adequately provide for access to public transit, bicycles, or pedestrian infrastructure.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

Transportation and circulation were discussed in the Master EIR in Chapter 4.12. Various modes of travel were included in the analysis, including vehicular, transit, bicycle, pedestrian and aviation components. The analysis included consideration of roadway capacity and identification of levels of service, and effects of the 2035 General Plan on the public transportation system. Provisions of the 2035 General Plan that provide substantial guidance include Mobility Goal 1.1, calling for a transportation system that is effectively planned, managed, operated and maintained, promotion of multimodal choices (Policy M 1.2.1), identification of level of service standards (Policy M 1.2.2), support for state highway expansion and management consistent with the Sacramento Area Council of Governments Metropolitan Transportation Plan/Sustainable Communities Strategy (SACOG MTP/SCS) (Policy M 1.5.6) and development that encourages walking and biking (Policy LU 4.2.1). In particular, Policy M 1.5.6, which involves support for state highway expansion is considered to be a mitigation measure, related to regional transportation, by the Master EIR. However, due to the programmatic nature of the above Policy M 1.5.6, the policy does not specifically apply to the currently proposed Project, and is not considered a project specific mitigation measure.

While the General Plan includes numerous policies that direct the development of the City's transportation system, the Master EIR concluded that the General Plan development would result in significant and unavoidable effects. See Impacts 4.12-3 (roadway segments in adjacent communities, and Impact 4.12-4 (freeway segments) of the Master EIR.

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 16 of the MTP/SCS EIR evaluated potential impact to transportation that may result from implementation of the proposed MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a. Traffic Increase

The MTP/SCS EIR analyzed the potential impact related to the MTP/SCS causing an increase in VMT per capita that exceeds the applicable baseline average and the baseline on congested roadways (Impacts TRN-1 and TRN-2) and determined the impact to be ***less-than-significant***. According to the MTP/SCS EIR, implementation of the MTP/SCS would result in a seven percent household-generated VMT decrease by 2036, relative to 2012, in Transit Priority Areas of Sacramento County; therefore, mitigation was not required.

In addition, the MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS resulting in construction activities that interfere with the ongoing operations of the regional or local area transportation system (Impact TRN-9). The MTP/SCS EIR concluded that the land use and transportation projects included in the MTP/SCS would lead to construction activities that have the potential to interfere with local or regional transportation systems, and a ***significant and unavoidable*** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures TRN-2). Implementation of the MTP/SCS EIR's required mitigation would result in a *less-than-significant* impact.

f. Public Transit, Bicycle, and Pedestrian Facilities

The MTP/SCS EIR analyzed the potential impact related to the MTP/SCS conflicting with public transit, bicycle, and pedestrian facilities (Impacts TRN-3, TRN-4, and TRN-5) and determined the impact to be ***less-than-significant***. According to the MTP/SCS EIR, connectivity of the public transit, bicycle, and pedestrian systems would improve with the implementation of the MTP/SCS; therefore, mitigation is not required.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

Compliance with the applicable policies, regulations, and implementation of MTP/SCS EIR Mitigation Measure TRN-2, which requires the use of best practice strategies, would reduce the project-level impacts related the localized impact from construction activities on the transportation system (Impact TRN-9), to a *less-than-significant* level.

MM TRN-2 Apply best practice strategies to reduce the localized impact from construction activities on the transportation system.

Implementing agencies shall require implementation of best practice strategies regarding construction activities on the transportation system and apply recommended applicable mitigation measures as defined by state and federal agencies. Examples of mitigation measures should include, but are not limited to, the following:

- Apply special construction techniques to minimize impacts to traffic flow and provide adequate access to important destinations in the area.
 - Develop circulation and detour plans to minimize impacts to local street impacts from construction activity on nearby major arterials. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone.

- Establish truck “usage” routes that minimize truck traffic on local roadways to the extent possible.
- Schedule truck trips outside of peak morning and evening commute hours.
- Route truck trips to avoid roadway segments with at risk or failed pavement conditions.
- Limit the number of lane closures during peak hours to the extent possible.
- Identify detours for bicycles and pedestrians in all areas potentially affected by project construction and provide adequate signage to mark these routes.
- Install traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones.
- Develop and implement access plans for potentially impacted local services such as police and fire stations, transit stations, hospitals, schools and parks. The access plans should be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions should be asked to identify detours for emergency vehicles, which will then be posted by the contractor.
- Store construction materials only in designated areas that minimize impacts to nearby roadways.
- Coordinate with local transit agencies for temporary relocation of routes or bus stops in works zones, as necessary.
- Conduct a public information campaign about how to use transit and other methods to reduce single-occupant vehicle use.

PROJECT-SPECIFIC IMPACT DISCUSSION

- a-c. Figure 3-2 of the City of Sacramento General Plan Background Report shows that all roadway sections in the project area operate at acceptable LOS levels. However, the Project could have a significant environmental impact if it would result in a significant increase in peak hour traffic and thus degrade the existing LOS of nearby roadways. To assess the Project’s potential impacts on the surrounding roadways, the City of Sacramento Department of Public Works estimated the expected trip generation for the Project’s retail and residential land uses, and has indicated that Projects that would add less than 100 new trips to the AM or PM peak hours would not be expected to result in significant impacts. The results of the City’s traffic generation are presented in **Error! Reference source not found.**

The Institute of Transportation Engineers (ITE) *Trip Generation, 9th Edition* trip generation rates are used for the proposed project trip calculations. Table 12 includes the proposed project trip generation estimate according to the ITE. Additional trip adjustments are given for the other trips modes such as transit, pedestrian and bicycle and internal trip reduction similar to ones applied for other projects downtown.

The trip generation credit was applied for the existing commercial uses that are still operating, such as Italian Grocer and Deli.

Land Use	Quantity	ITE Land Use Code	Trips ¹						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Retail	7,000 sq ft	820	299	4	3	7	13	13	26
<i>Mode Split Trip Adjustment (-30%)²</i>			-90	-1	-1	-2	-4	-4	-8
<i>Net Retail</i>			209	3	2	5	9	9	18
Residential	173 units	220	1,172	18	71	89	73	39	112
<i>Mode Split Trip Adjustment (-55%)²</i>			-645	-10	-39	-49	-40	-22	-62
<i>Net Residential</i>			527	8	32	40	33	17	50
Total Proposed Uses			736	11	34	45	42	26	68
<i>Credit for the Existing Retail³</i>			-96	0	0	0	-4	-4	-8
Total Net New Trips			640	11	34	45	38	22	60
Notes: 1 Trip rates from <i>Trip Generation</i> (ITE, 2012). Due to limited sample size, Retail (820) trip generation is based on average rates, rather than regression equations. 2 SACSIM mode split trip adjustment similar to other projects downtown (Ice Blocks, Yamanee, and others). 3 The credit given for Italian Grocer and Deli store only. No credit given for AM peak hour trips since the store is open 9 AM – 5 PM during workdays. Source: City of Sacramento Department of Public Works									

As shown in Table 12, the Project would result in 640 new daily vehicle trips, with 45 new AM peak hour trips and 60 new PM peak hour trips. As such, the Project would not add 100 or more AM or PM peak hour trips to any nearby intersections, or roadway sections. Therefore, the Project would not be expected to degrade peak period LOS at any nearby intersections of roadway sections and a **less-than-significant** impact would result.

- d-f. As discussed above, the Project is in close proximity to existing Regional Transit bus stops, pedestrian infrastructure, and bicycle infrastructure. The Project site is indicated as being in a TPA by the MTP/SCS due to the Project site’s proximity to existing transit and employment centers. Projects that are within a TPA and determined to be consistent with the MTP/SCS (see Appendix A) would support alternative means of transportation by siting new residences near existing transit infrastructure. Additionally, the Project does not include any alterations to existing transit, bicycle, or pedestrian infrastructure. As such, the Project would not be expected to cause any significant adverse effects to public transit operations, bicycle travel, or pedestrian travel, and a **less-than-significant** impact would result.

PROJECT-SPECIFIC MITIGATION MEASURES

None.

FINDINGS

A central goal of the MTP/SCS is the combination of transportation and land use planning to decreased reliance on single-passenger vehicles, and increase the use of alternative means of transportation such as buses, trains, bicycles and walking. The MTP/SCS concluded that increased densification of existing urban areas would help support these goals by placing more people in proximity to existing mass transportation infrastructure and in closer proximity to employment centers, which would reduce VMT. The Project is located in a TPA, and as such, the Project's location would allow residents to use alternate means of transportation, which would decrease the use of single passenger vehicles. Increasing ridership of existing alternative transit options would support such systems while also reducing the amount of single-passenger vehicle traffic that would otherwise be created by area population growth related to the Project. Additionally, Mitigation Measure TRN-2 would ensure that temporary construction activity related to the Project would not impact traffic in the area. Given the above discussion, and the Project's consistency with the MTP/SCS the Project would not be expected to result in any additional environmental effects related to Transportation and Circulation.

XIII. UTILITIES AND SERVICE SYSTEMS.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
<i>Would the project:</i>				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

ENVIRONMENTAL SETTING

The Project site contains an existing 9,780-sf commercial building and associated paved areas. The Project site is in a highly developed area of Sacramento. As described above, water service for the project would be provided by the City of Sacramento. The City of Sacramento uses surface water from the Sacramento and American Rivers to meet the majority of the City's water demands. Wastewater collection service would be provided by the City of Sacramento. Wastewater treatment service would be provided by the SRCSD. Currently the Project site is almost entirely comprised of impervious surfaces and as a result, stormwater is directed to on-site drains and ultimately to the City storm drain system.

The City's DOU is responsible for providing and maintaining water, sewer collection, storm drainage, and flood control services along with solid waste removal for residents and businesses within the city limits.

Wastewater

The Sacramento Area Sewer District (SASD) provides sewer collection services to residents and businesses within the city limits. The public wastewater collection system within the City includes a CSS in the older Central City area where the Project site is located, and a newer separated sewer system (sanitary sewer) in the remaining areas of the City. The CSS is composed of about 345 miles of 4- to 120-inch diameter vitrified clay, reinforced concrete and brick pipes that drain to the west to two large pump station facilities known as Pump Station 1/1A/1B and Pump Station 2/2A, located near the Sacramento River. Pump Stations 1B and 2A are the primary pumping stations at each facility, operating continuously throughout the year, while Pump Stations 1/1A and 2 only operate during large storms.

Flows conveyed by the City's wastewater systems are routed to the SRWWTP for treatment and disposal via an interceptor system consisting of large diameter pipes and pump stations. The interceptor system and the SRWWTP, located just south of the City limits, are owned and operated by the SRCSD. The City has an agreement with the SRCSD whereby the City could convey a maximum of 60 million gallons per day (mgd) to the SRWWTP for secondary treatment prior to discharge to the Sacramento River. This capacity is sufficient to treat all CSS dry weather sanitary flows (about 17 to 18 mgd) and stormwater from low-intensity storms. During moderate to large storms when the CSS flows are greater than 60 mgd, the flows greater than 60 mgd are routed to Combined Wastewater Treatment Plant (CWTP), Pioneer Reservoir, and other facilities for temporary storage. When flows exceed storage capacity, the excess flows are released to the Sacramento River after receiving primary treatment, including chlorination and de-chlorination. When the storage and treatment capacities are reached, additional CSS flows are discharged directly to the Sacramento River from Sump 1 and/or Sump 2.

Other City facilities include an off-line storage facility known as Pioneer Reservoir that also serves as a primary treatment plant and the CWTP, which is another primary treatment plant with a capacity of 130 mgd. Pioneer Reservoir has a peak hydraulic capacity of approximately 350 mgd and a treatment capacity of about 250 mgd.

Water

The City uses surface water from the Sacramento and American Rivers, and groundwater pumped from the North American and South American subbasins to meet the City's water demands. However, the City does not pump a substantial amount of groundwater south of the American River. The City brings over 46 billion gallons of water to over 130,000 customers. The City operates and maintains two water intakes and treatment plants, 1,600 miles of pipelines, and fire hydrants, valves, and backflow devices. The projected water demand for the City of Sacramento is 260,984 acre feet per year (AFY) by 2035, which is less than the amount authorized under the City's water right permits and USBR contract of 326,800 AFY.¹³

Solid Waste

The City is responsible for the collection of solid waste from residential customers. Waste is then brought to the Sacramento Recycling and Transfer Station or the North Area Recovery Station before being hauled to the Sacramento County Kiefer Landfill. Commercial waste is collected by private haulers before disposal at various locations throughout the region. The Kiefer Landfill is anticipated to have adequate capacity to serve the area until the year 2065. In addition, the City

¹³ City of Sacramento. *Sacramento 2035 General Plan Draft Master EIR*. August 2014.

assumes responsibility for solid waste removal and disposal. The Sacramento General Plan Master EIR indicates that the City landfills have sufficient capacity for full buildout.

STANDARDS OF SIGNIFICANCE

For the purposes of this environmental document, an impact would be considered significant if the Project resulted in the need for new or altered utilities or service systems beyond what was anticipated in the 2035 General Plan:

- Result in an increased demand for surface or groundwater in excess of available supply.
- Exceed the capacity of existing or planned water storage, conveyance, distribution, and treatment facilities.
- Exceed the capacity of utility infrastructure, including sewage, storm drainage, fire flows, solid waste, power, and telecommunications.
- Result in the need for the expansion of existing utilities and service system infrastructure required to maintain adequate sewer, wastewater treatment, fire flows, solid waste, power, and telecommunications systems.
- Be out of compliance with federal, state, and local statutes and regulations related to solid waste.

SUMMARY OF ANALYSIS UNDER THE 2035 GENERAL PLAN MASTER EIR AND APPLICABLE GENERAL PLAN POLICIES

The Master EIR evaluated the effects of development under the 2035 General Plan on water supply, sewer and storm drainage, solid waste, electricity, natural gas and telecommunications (see Chapter 4.11 of the Master EIR).

The Master EIR evaluated the impacts of increased demand for water that would occur with development under the 2035 General Plan. Policies in the General Plan would reduce the impact generally to a less-than-significant level (see Impact 4.11-1) but the Master EIR concluded that the potential increase in demand for potable water in excess of the City's existing diversion and treatment capacity, and which could require construction of new water supply facilities, would result in a significant and unavoidable effect (Impact 4.11-2). The potential need for expansion of wastewater treatment facilities was identified as having a less-than-significant effect (Impact 4.11-4). Impacts on solid waste facilities were less than significant (Impact 4.11-5). Implementation of energy efficient standards as set forth in Titles 20 and 24 of the California Code of Regulations for residential and non-residential buildings, would reduce effects for energy to a less-than-significant level.

MITIGATION MEASURES FROM 2035 GENERAL PLAN MASTER EIR THAT MAY APPLY TO THE PROJECT

None.

SUMMARY OF ANALYSIS UNDER THE METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY (MTP/SCS) EIR

Chapter 17 of the MTP/SCS EIR evaluated potential impact to utilities and service systems that may result from implementation of the proposed MTP/SCS. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

a-c,e. Utilities and Service System Infrastructure

The MTP/SCS EIR analyzed the potential impacts related to wastewater, stormwater, and water infrastructure (Impact USS-3 and Impact USS-4). The MTP/SCS EIR concluded that construction of land use and transportation projects included in the MTP/SCS could result in the need for new or expanded utilities and service systems for water, wastewater, or stormwater, and a **significant and unavoidable** impact would result because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (Mitigation Measures USS-3 and USS-4). Implementation of Mitigation Measure USS-4 would result in a *less-than-significant* impact in regards to expanded utilities or service infrastructure, but Impact USS-3 would remain *significant and unavoidable* even with the application of Mitigation Measure USS-3. Mitigation Measure USS-3 applies to new utility facilities; because the Project involves construction of a mixed-use structure and is not a utility facility, Mitigation Measure USS-3 is not applicable to the Project and is not included in this SCEA IS. Mitigation Measure USS-4 requires the implementation of other construction related mitigations from the MTP/SCS EIR. Such construction related mitigation measures have been incorporated throughout this SCEA IS and as such, Mitigation Measure USS-4 is not included in this SCEA IS.

d. Water Supply

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS having sufficient water supplies available to serve the project from existing entitlements and resources, or resulting in the capacity of existing and planned water infrastructure being exceeded (Impacts USS-1 and USS-2). The MTP/SCS EIR determined that the urban growth associated with the implementation of the MTP/SCS could lead to an increased demand for water and a need for expanded water infrastructure, which would result in a **significant and unavoidable** impact because SACOG does not have the authority to require implementing agencies to adopt mitigation measures included in the MTP/SCS EIR. However, the MTP/SCS EIR requires that any project taking advantage of the CEQA Streamlining must implement the mitigation measures discussed in the MTP/SCS EIR where feasible and necessary (USS-1 and USS-2). Implementation of Mitigation Measure USS-1 and USS-2 would result in a *less-than-significant* impact in regards to sufficient water supplies and the need for expanded water infrastructure. Mitigation Measures USS-1 and USS-2 require implementation of MTP/SCS EIR Mitigation Measures PS-1 and PS-2. Because Mitigation Measures PS-1 has been applied to the Project by this SCEA IS and PS-2 was determined to be fulfilled by other sections of this SCEA IS, Mitigation Measures USS-1 and USS-2 have already been fulfilled and are not included in this SCEA IS.

f, g. Solid Waste

The MTP/SCS EIR analyzed the potential impacts related to the MTP/SCS being out of compliance with federal, state, and local regulations related to solid waste (Impact USS-5). The MTP/SCS EIR determined that the land use and transportation projects in the MTP/SCS would be regulated by various federal, state, and local regulations, which would ensure that the MTP/SCS would result in a **less-than-significant** impact related to compliance with regulations regarding solid waste.

MITIGATION MEASURES FROM THE MTP/SCS EIR THAT MAY APPLY TO THE PROJECT

None.

PROJECT-SPECIFIC IMPACT DISCUSSION

- a. The Project includes a 173-unit, 11-story, mixed use building with ground floor commercial and a second level parking garage, on the corner of 19th Street and J Street. The existing commercial developments on the Project site are connected to the CSS, and wastewater is treated at the SRWWTP. Wastewater from the commercial and residential land uses would continue to flow into the CSS and be treated at the SRWWTP. The CVRWQCB and State Water Resources Control Board have ordered SRCSD to reduce total nitrogen and ammonia levels in the discharged effluent by 2021. SRCSD has begun construction activities to meet the updated requirements, which would improve effluent water quality. Because wastewater from the Project would be treated by the SRWWTP, and SRCSD is anticipated to meet the new waste water effluent requirements imposed by the State and regional water control boards, wastewater from the Project would not exceed wastewater treatment requirements of the CVRWQCB; and the project would have a ***less-than-significant*** impact.
- b,c,e. The Project site is currently developed and contains impervious services, all the stormwater that falls on the Project site flows to existing drains and also feeds into the existing City CSS. Post construction, the Project would include the same amount of impervious services and the storm drainage would continue to flow into the City's CSS.

The Project would raise the density of development at the Project site, which would increase demand for wastewater services at the Project site. While the Project site currently contains 9,780 sf of commercial space, the Project would demolish the existing structure and replace the structure with a 173-unit mixed use building with 7,176 sf of commercial space. Using flow estimation calculations from the City's Sewer System Management Plan, the existing commercial development is estimated to generate 607.6 gallons of wastewater per day, while the proposed commercial portion of the mixed-use Project would be estimated to generate 444.9 gallons of wastewater per day, which would be a reduction of 162.7 gallons per day. However, the proposed 173 units would be estimated to generate approximately 40,222 gallons of wastewater per day. Both the commercial and residential wastewater generation estimates would be reduced due to water conservation strategies that would reduce water consumption by 25 percent. Reducing water use would proportionally reduce the amount of wastewater generated; therefore, the Project would be expected to generate approximately 30,500 gallons of wastewater per day.¹⁴

The 2015 *State of the District* report released by the SRCSD concluded that the approximately 150 million gallons of wastewater are treated every day.¹⁵ The report further concluded that the district has a permitted capacity of 181 million gallons of wastewater per day for average dry weather flows. Given the Project's generation of 30,500 gallons of wastewater per day (approximately 0.0305 million gallons per day) and the available capacity of 31 million gallons per day, the Project would not exceed SRCSD's treatment capacity.

Additionally, improvements to the wastewater infrastructure of the area would be subject to City review per chapter 13.08 of the Sacramento City Code. City review would ensure adequate sizing of all proposed connections, and would assess development fees, where

¹⁴ City of Sacramento Department of Utilities. *Sewer System Management Plan 2013-2014*.

¹⁵ Sacramento Regional County Sanitation District. *State of the District*. Published 2015.

applicable, in accordance with the Sewer System Development Fee Program. The Sewer Development fee serves to defray potential costs related to increased wastewater flows that may result from proposed infill development.

Because adequate capacity exists in SRCSD's wastewater treatment capacity, and the wastewater infrastructure would be evaluated by the City in accordance with the City Code chapter 13.085, the Project would not result in the need for new or expanded stormwater or wastewater facilities. Therefore, the Project would result in a **less-than-significant** impact.

- d. As noted above, the City uses surface water from the Sacramento and American Rivers, and groundwater pumped from the North American and South American subbasins to meet the City's water demands. However, the City does not pump a substantial amount of groundwater south of the American River. Commercial land uses currently exist on the Project site, which currently and historically have created water demand on the site. The Project would maintain commercial land uses on the site, and thus the water demand from the commercial portion of the Project would remain constant.

As discussed in the Public Service section, the Project is anticipated to house approximately 450 residents. The City of Sacramento's 2015 Urban Water Management Plan (UWMP) indicates that current per capita water use is 158 gallons per person per day, which is 50 gallons lower than the 208 gallons per person per day projected by the 2013 Water Master Plan.¹⁶ To estimate the total water demand of the Project, the higher per capita water use rate is used, which gives a per day water use for the residential portion of the Project of 93,600 gallons per day, and a yearly water use rate of approximately 105 acre feet (af) of water per year. The 2015 UWMP includes supply and demand comparisons for the City during multiple dry years. The Project would result in a significant impact if the yearly water demand could not be met by existing entitlements and water sources during the worst-case scenario of the third year of multiple dry years. The UWMP projects that in 2035 the available water supply in the third dry year would be 294,419 af and the demand would be 149,213 af. As such, the Project's increased demand of 105 af, could be met with existing and projected entitlements and the Project would have a **less-than-significant** impact related to water supply

- f, g. The Project includes the construction of a 173-unit, 11-story, mixed use building with ground floor commercial uses. The Project would generate an increased amount of solid waste from what is currently on-site; however, the projected solid waste generation of the Project was included in the regional estimates of the Sacramento Master EIR. The Master EIR determined that the remaining capacity and expected lifespan at the Lockwood and Kiefer Landfills, combined with the use of the existing transfer stations and development of one new transfer station in the North Sacramento area would not exceed the capacity of the landfills at full buildout of the 2035 General Plan. Because the Project is consistent with regional growth estimates in the General Plan, impacts related to solid waste from regional growth have already been accounted for in the Master EIR, and determined to be insignificant. The Project would be required to comply with all relevant City regulations regarding solid waste management including Chapter 13.10 of the City's Code. The provisions of Chapter 13.10 would ensure that the increased waste generation on the Project site would be served by adequate waste collection service. In addition, the Project would be required to comply with Title 17.72 of the City of Sacramento City Code, which

¹⁶ City of Sacramento. 2015 Urban Water Management Plan. Adopted June 2016.

addresses recycling and solid waste disposal requirements for new and existing developments. Such requirements include compliance with all federal, State, and local statutes and regulations related to waste reduction and recycling, including the requirement that all planning documents prepared for the Project be submitted to the City Solid Waste Division for approval. Therefore, a ***less-than-significant*** impact would occur related to solid waste disposal.

PROJECT-SPECIFIC MITIGATION MEASURES

None.

FINDINGS

Utilities and Service Systems are planned for on a regional scale, to accommodate area growth. Therefore, from a regional perspective, the Project would have been included in growth projections used in relevant planning documents related to wastewater, water, and solid waste. As discussed above, the sufficient capacity exists in the water, wastewater, and solid waste utilities to accommodate the Project without the need for constructing new or physically expanded utility related facilities. Because the Project would not require the construction of new utility infrastructure, the Project would not be considered to result in any additional environmental impacts related to Utilities and Service Systems.

XIV. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Does the project 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PROJECT-SPECIFIC IMPACT DISCUSSION

- a. As described in Section II, Biological Resources, and Section III, Cultural Resources, of this SCEA IS, the Project would not reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal. However, as discussed in the Cultural Resources section of this SCEA IS, the Project may result in impacts related to cultural, historic, paleontological, prehistoric, archaeological, or tribal cultural resources and the disturbance of human remains during grading and excavation activities. However, the implementation of the included mitigation measures would reduce such potential impacts to a **less-than-significant** level.
- b, c. The Project was anticipated by and would be consistent with regional growth projections included in the City of Sacramento 2035 General Plan, 2035 General Plan Master EIR, the MTP/SCS, and the MTP/SCS EIR. In particular, the MTP/SCS was designed to encourage development of the region in a manner that would promote more sustainable community design and reduce regional GHG emissions. Because the Project would be consistent with the MTP/SCS, the Project would contribute to the cumulative environmental goals of the MTP/SCS. Additionally, the Project was analyzed throughout this SCEA IS for additional environmental impacts that could cause cumulatively considerable impacts or result in adverse effects on human beings. Mitigation Measures from the MTP/SCS and Project-specific measures from this SCEA IS, would reduce all impacts to less-than-significant levels, and ensure that the Project would not result in

cumulative environmental impacts. Because the Project would be consistent with the MTP/SCS and would not result in any additional environmental impacts, the project would not be expected to result in a considerable cumulative contribution to impacts on the environment or impacts on human beings. Therefore, with the implementation of mitigation measures discussed throughout this document the Project would result in a *less-than-significant* impact.

PROJECT-SPECIFIC MITIGATION MEASURES

None.

FINDINGS

As discussed throughout this document the Project involves the demolition of existing structures and the construction of a new mixed-use structure in the Central City area of Sacramento. Such development inherently reduces many potential impacts commonly associated with development. For example, because the site has already been developed with structures and impervious surfaces, the site provides little habitat value, and redevelopment of the site would not be anticipated to impact special-status species. On the other hand, the increase in density that would result from the Project could cause more severe impacts in some cases. The potential for more severe impacts to occur because of the Project was considered and analyzed throughout this SCEA IS. The conclusion of this document is that where more severe impacts would occur, such impacts could be reduced to *less-than significant* levels with the implementation of project specific and MTP/SCS EIR mitigation measures. Therefore, the Project would not result in any additional environmental impacts.

SOURCES

All the technical reports and modeling results prepared for the project analysis are available upon request at the City of Sacramento City of Sacramento Community Development Department. The following documents are referenced information sources utilized for purposes of this SCEA IS:

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2. California Department of Conservation, California Geological Survey. *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California*. 2006.
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4. California Energy Commission. *2013 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*. November 25, 2013.
5. City of Sacramento. *2015 Urban Water Management Plan*. June 2016.
6. City of Sacramento. *City of Sacramento 2013-2021 Housing Element*. Adopted December 17, 2013.
7. City of Sacramento. *City of Sacramento Parks and Recreation Master Plan 2005-2010*. Adopted April 21, 2009.
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9. City of Sacramento. *Sacramento 2035 General Plan Background Report*. August 2014.
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12. City of Sacramento. *Stormwater Quality Improvement Program*. Available at: <http://www.cityofsacramento.org/Utilities/Stormwater/About-Us/Program-Information>. Accessed on August 15, 2016.
13. Federal Emergency Management Agency. *Flood Insurance Rate Map Number 06067C0180J*. June 16, 2015. Available at: <https://msc.fema.gov/portal/search>. Accessed on August 6, 2016.
14. Personal Communication, Roberta Deering, Preservation Director, City of Sacramento, Community Development Department Planning Division. Personal Communication: Email. July 11, 2016.
15. Sacramento Area Council of Governments. *2016 Metropolitan Transportation Plan/Sustainable Communities Strategy*. February 18, 2016.
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17. Sacramento City Unified School District. *Sacramento Unified School District Board of Education Business and Financial Information*. March 3, 2016.
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20. Sacramento Metropolitan Air Quality Management District. *Guide to Air Quality Assessment in Sacramento County*. December 2009 (latest revision in June 2014).

Available at: <http://www.airquality.org/ceqa/ceqaguideupdate.shtml>. Accessed August 2016.

21. Sacramento Metropolitan Air Quality Management District. *PM_{2.5} Implementation/Maintenance Plan and Re-Designation Request for Sacramento PM_{2.5} Nonattainment Area*. October 24, 2013.
22. Sacramento Metropolitan Air Quality Management District. *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways*. March 2011.
23. Sacramento Metropolitan Air Quality Management District. *Rules and Regulations*. April 10, 2014. Available at: <http://www.airquality.org/rules/index.shtml>. Accessed August 2016.
24. Sacramento Metropolitan Air Quality Management District. *SMAQMD Thresholds of Significance Table*. Available at: <http://www.airquality.org/ceqa/CH2ThresholdsTables5-2015.pdf>. May 2015. Accessed August 2016.
25. Sacramento Regional County Sanitation District. *State of the District*. Published 2015.
26. Wallace Kuhl and Associates. *Geotechnical Engineering Report, 19th & J Streets 11-Story Mixed-Use Building*. September 1, 2016.

APPENDIX A

MTP/SCS CONSISTENCY WORKSHEET

DETERMINATION OF MTP/SCS CONSISTENCY WORKSHEET
For Qualifying Transit Priority Projects and Residential/Mixed-Use
Residential Projects
As of July 31, 2012ⁱ

Background: Pursuant to SB 375, streamlined CEQA review and analysis is available to Transit Priority Projects (TPPs) and residential or mixed-use residential projects that are consistent with the SCS. The SCS was adopted by the Sacramento Area Council of Governments (SACOG) Board as part of the Metropolitan Transportation Plan/Sustainable Communities Strategy for 2035 on April 19, 2012. The California Air Resources Board issued an Acceptance of GHG Quantification Determination for the SACOG SCS on June 12, 2012.

Streamlined CEQA review available to TPPs consists of one of the following: 1) a Sustainable Communities Environmental Assessment (SCEA) pursuant to Public Resources Code (PRC) § 21155.2(b) or 2) an EIR pursuant to PRC § 21155.2(c).ⁱⁱ

Streamlined CEQA review available to residential or mixed-use residential projects consists of an EIR pursuant to PRC § 21159.28(a).

Purpose: The purpose of this worksheet is to provide lead agencies with assistance on three issues:

1. Whether a proposed project qualifies as a TPP;
2. Whether a proposed project qualifies as a residential or mixed-use residential project (at least 75 percent of the total building square footage is residential);
3. Whether the TPP or residential/mixed-use residential project is consistent with the general land use designation, density, intensity and applicable policies of the MTP/SCS for 2035 adopted by the Sacramento Area Council of Governments (SACOG).

The lead agency has responsibility to make the final determination on these matters and to determine the applicable and appropriate CEQA streamlining, if any.

Directions: This worksheet should be completed by the lead agency, relying on the project description of the proposed project, MTP/SCS Chapters 3 and 4, and MTP/SCS Appendix E-3. Regardless of whether this worksheet is used, pursuant to PRC § 21155(a) and PRC § 21159.28(a), a project can only be consistent with the MTP/SCS if it is consistent with the general land use designation, density, building intensity, and applicable policies specified for the project area in the adopted SCS. This worksheet only applies to the MTP/SCS for 2035 (adopted April 19, 2012); subsequent MTP/SCS adoptions may require updates to this form.

Lead agencies are welcome to contact SACOG for assistance in completing this worksheet. For assistance, contact Kacey Lizon at klizon@sacog.org or 916-340-6265.

Project Title: 19J (DR16-202)

Proposed project is located in (city/county name): City of Sacramento

DETERMINATION OF MTP/SCS CONSISTENCY WORKSHEET

As of July 31, 2012

1. Transit Priority Project Designation (PRC § 21155(b))

A project must meet the requirements of items **1.A**, **1.B**, **1.C**, **and 1.D**, below, to qualify as a Transit Priority Project. **For items 1.C and 1.D**, the definition of an MTP/SCS Transit Priority Area is: the area within one-half mile of a rail station stop or a high-quality transit corridor included in the MTP/SCS. A high-quality transit corridor has fixed route bus service with service intervals of 15 minutes or less during peak commute hours. See MTP/SCS Chapter 3 for the map of Transit Priority Areas.

- 1.A.** The Project has a minimum net densityⁱⁱⁱ of 20 dwelling units per acre.

Calculation:

$$\begin{aligned} & \text{Total housing units proposed in Project } \underline{173} \div \text{Total Project parcel area (in net}^{\text{ii}} \text{ acres)} \underline{0.29} \\ & = \underline{597 \text{ du/ac}} \quad (\text{Should be } \geq 20 \text{ du/ac}) \end{aligned}$$

- 1.B.** At least 50 percent of the Project's total building square footage is in residential use, **AND**,

- The total building square footage of the Project has 25 percent or less non-residential use, or, if it has between 26 and 50 percent in non-residential use, has a minimum FAR of 0.75.

Calculations:

$$\begin{aligned} & \text{Total Project residential square footage } \underline{92,461} \div \text{Total Project building square footage } \underline{99,637} \\ & = \underline{92\%} \quad (\text{Should be } \geq 50\%) \end{aligned}$$

$$\begin{aligned} & \text{Total Project building square footage } \underline{99,637} \div \text{Total Project parcel(s) area square footage } \underline{12,800} \\ & = \underline{7.78} \quad (\text{Should be } \geq 0.75) \end{aligned}$$

- 1.C.** The Project is located within an MTP/SCS Transit Priority Area and the qualifying transit service is (*transit route name/applicable street name/number or light rail stop name as identified in the adopted MTP/SCS*): _____

There are two Regional Transit bus routes on the project site which is located on J Street, a high-quality transit corridor. Bus Route 30 and 62 contain stops one block west at 18th and J.

- 1.D.** No more than 25 percent of the area of the Project parcels are farther than one-half mile from the TPA transit stop/corridor and no more than 10 percent of the residential units or 100 units, whichever is less, in the project are farther than one-half mile from the TPA transit stop/corridor.

DETERMINATION OF MTP/SCS CONSISTENCY WORKSHEET

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Calculations:

Project area outside of ½ mile TPA 0 ÷ Total Project area 0
= 0 (Should be ≤ 25%)

Project residential units outside of ½ mile TPA 0 ÷ Total Project units 0
= 0 (Should be ≤ 10% or less than 100 units)

SECTION 1 CONCLUSION:

- The proposed project meets the requirements of 1.A, 1.B, 1.C, and 1.D and therefore qualifies as a Transit Priority Project.
- The proposed project does not meet all the requirements of 1.A, 1.B, 1.C, and 1.D and therefore does not qualify as a Transit Priority Project.

2. Residential or Mixed-Use Residential Project Designation for Projects Located Outside of an MTP/SCS TPA 21159.28(a)

A residential or mixed-use residential project using the streamlined CEQA review to complete an EIR pursuant to PRC § 21159.28(a) must meet the following requirement:

- 2.A. At least 75 percent of the total building square footage of the project consists of residential use.

Calculation:

92,461
Total Project residential square footage 92,461 ÷ Total Project building square footage 99,637
= 92% (Should be ≥ 75%)

SECTION 2 CONCLUSION:

- The proposed project meets the requirements of 2.A and therefore qualifies as a residential or mixed-use residential project.
- The proposed project does not meet the requirements of 2.A and therefore does not qualify as a residential or mixed-use residential project.

IF A PROJECT DOES NOT QUALIFY AS EITHER A TRANSIT PRIORITY PROJECT (UNDER SECTION 1) OR A RESIDENTIAL OR MIXED-USE RESIDENTIAL PROJECT (UNDER SECTION

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As of July 31, 2012

2), THE PROJECT DOES NOT QUALIFY FOR SB 375 CEQA STREAMLINING. DO NOT PROCEED TO SECTION 3.

3. Required Consistency with the SCS: General Use Designation, Density and Intensity, and Applicable MTP/SCS Policies (PRC § 21155(a) and PRC § 21159.28(a))

3.A. Applicable MTP/SCS Policies. For the purposes of determining SCS consistency, the policies of the MTP/SCS are embedded in the metrics and growth forecast assumptions of the MTP/SCS. Projects consistent with the growth forecast assumptions of the MTP/SCS, as determined by application of items 3.B. and 3.C, are consistent with the MTP/SCS and its policies.

3.B. Applicable Community Type. The MTP/SCS land use forecast is illustrated using Community Types. In order to determine the general use designation, density and intensity of the Project area within the MTP/SCS, the Project must be located within a Community Type designated in the MTP/SCS. The MTP/SCS defines density/building intensity in terms of the amount of growth (residential and non-residential) forecasted and the amount of build out potential within each Community Type area. SACOG monitors development activity on an annual basis to check that the amount of development is consistent with the growth forecast of the MTP/SCS.

For the purposes of the lead agency's determination of SCS consistency, use MTP/SCS Appendix E-3 to identify the Community Type for the Project and fill in the applicable information, below for 3.B.1 and 3.B.2.

3.B.1. The Project is located in the following Community Type:

- Center and Corridor Community
- Established Community
- Developing Community (*list the specific name of the Developing Community as identified in the jurisdiction narrative in Appendix E-3*): _____
- Rural Residential Community

3.B.2 Development from the project when added to other entitled projects will not exceed the MTP/SCS build out assumptions for the area within this Community Type, which is 43,099 new housing units and 39,753 new employees^{iv}.

DETERMINATION OF MTP/SCS CONSISTENCY WORKSHEET

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3.C. General Use Designation, Density and Building Intensity. The foundation of the land use designations for the MTP/SCS is adopted and proposed local general plans, community plans, specific plans and other local policies and regulations. A project is consistent with the MTP/SCS if its uses are identified in the applicable MTP/SCS Community Type **and** its uses meet the general density and building intensity assumptions for the Community Type. The proposed project does not have to include all allowed uses in the MTP/SCS.

3.C.1. Determine consistency of the Project using one of the methods below:

Option A:

The Project is located in a **Center and Corridor Community or an Established Community** and the Project uses are consistent with the allowed uses of the applicable adopted local land use plan as it existed in 2012 and are at least 80 percent of the allowed density or intensity of the allowed uses. Therefore, the Project is consistent with the MTP/SCS.^v

OR

Option B:

The Project is located in a **Center and Corridor Community or an Established Community** and the Project uses have been reviewed in the context of, and are found to be consistent with, the general land use, density, and intensity information provided for this Community Type in Appendix E-3 of the MTP/SCS. Therefore, the Project is consistent with the MTP/SCS.

OR

Option C:

The Project is located in a **Rural Residential Community** and the Project residential density does not exceed the maximum density of one unit per acre as specified in the MTP/SCS, and employment development in the Project is at least 80 percent of the allowed intensity of the land use designations of the adopted general plan. Therefore, the Project is consistent with the MTP/SCS.

OR

Option D:

The Project is located in a **Developing Community** and the Project's average net density meets or exceed the average net density described for this specific Developing Community (as referenced by name of applicable specific plan,

DETERMINATION OF MTP/SCS CONSISTENCY WORKSHEET

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master plan, or special plan in MTP/SCS Appendix E-3) and employment development in the Project is consistent with the general employment land uses described for this specific Developing Community.^{vi} Therefore, the Project is consistent with the MTP/SCS.

SECTION 3 CONCLUSION:

The proposed project is consistent with the General Use Designation, Density and Intensity, and Applicable MTP/SCS Policies for the following reasons (*summarize findings on use designation, density and intensity for the Project evaluation completed in Section 3*):

The proposed project is consistent with the City of Sacramento 2035 General Plan, the 10,000 housing unit initiative, as well as the MTP/SCS policies. The project is located in the MTP/SCS Center and Corridor community, which encompasses the higher density urban center of Sacramento.

The project is in a Transit Priority Area with two major bus route stops (Bus Route 30 and 62) within a 1/2 mile (one block west at 18th and J St) and the proposed streetcar line stop across the street from the project site. The proposed project has a minimum density of 20 units per acre (at 567 units per acre) and it includes at least 50% residential use of total building square footage (at 92% residential use).

As a transit priority project, 19J meets the MTP/SCS by providing much-needed workforce housing along transit routes, increasing ridership and reducing dependency on car ownership. The project aims to reduce dependency on car ownership by providing rent incentives for residents who do not own cars and have the desire to live close to their work. 19J has excess bike storage, car sharing and bike sharing programs for residents. The project meets the downtown housing initiative goals by providing workforce housing in a location that reduces the need for cars and increases transit ridership to work.

19J is located in the Urban Corridor High designation of the 2035 General Plan and is consistent with the guidelines allowing for an increased floor-area ratio through its significant community benefits. The project provides the community with density that enables more affordable workforce housing in the central city within walking/biking distance of over 94,000 jobs.

ⁱ This document may be updated as users provide feedback on its utility.

ⁱⁱ If a TPP complies with an additional series of requirements set forth in PRC § 21155.1, it qualifies as a Sustainable Communities Project and becomes eligible for a complete exemption from CEQA. This worksheet does not address Sustainable Communities Projects.

ⁱⁱⁱ *Net density* is not defined in PRC §2115(b). In the MTP/SCS, net density is defined as follows: Housing units divided by the acres on which housing is built, exclusive of public rights-of-ways, parks, schools and public areas (MTP/SCS Appendix E-3, pg. 34).

^{iv} The MTP/SCS build out for each Community Type assumes development that is entitled as of January 1, 2008. SACOG monitors housing permits on an annual basis and will ensure that housing and employment projects relying on the SB 375 CEQA benefits will not exceed the capacity assumed in the MTP/SCS.

^v The MTP/SCS general land use, density and intensity in Center and Corridor Communities and Established Communities is based on 80 percent of the allowed density or intensity of the land use designations in adopted general plans as they existed in 2012, unless otherwise noted in Appendix E-3.

DETERMINATION OF MTP/SCS CONSISTENCY WORKSHEET

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^{vi} The MTP/SCS land use forecast in Developing Communities was modeled according to adopted and proposed specific plans, master plans, and special plans as they existed in 2012, and is based on the housing and employment totals and the average net density of these plans, as outlined in Appendix E-3.

APPENDIX B

CALEEMOD RESULTS

19J
Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	50.00	Space	0.00	20,000.00	0
Apartments High Rise	173.00	Dwelling Unit	0.29	135,434.00	462
Strip Mall	7.00	1000sqft	0.00	7,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.5	Precipitation Freq (Days)	58
Climate Zone	6			Operational Year	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	470.36	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on SMUD progress towards RPS goal

Land Use - Mixed Use building

Construction Phase - Applicant Information

Off-road Equipment - Applicant Information

Off-road Equipment - *

Demolition - Applicant Info

Grading - Applicant Information

Vehicle Trips - Based on Traffic Information from City

Energy Use - *

Construction Off-road Equipment Mitigation - Applicant Info

Mobile Land Use Mitigation - Applicant Information

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	305.00
tblConstructionPhase	NumDays	100.00	305.00
tblConstructionPhase	NumDays	10.00	21.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	21.00
tblConstructionPhase	NumDays	1.00	11.00
tblConstructionPhase	PhaseEndDate	9/2/2019	7/16/2018
tblConstructionPhase	PhaseStartDate	7/3/2018	5/16/2017
tblGrading	AcresOfGrading	0.00	0.29
tblGrading	AcresOfGrading	5.50	0.00
tblGrading	MaterialExported	0.00	1,500.00
tblGrading	MaterialExported	0.00	200.00

tblGrading	MaterialImported	0.00	1,500.00
tblLandUse	LandUseSquareFeet	173,000.00	135,434.00
tblLandUse	LotAcreage	0.45	0.00
tblLandUse	LotAcreage	2.79	0.29
tblLandUse	LotAcreage	0.16	0.00
tblOffRoadEquipment	UsageHours	4.00	9.00
tblProjectCharacteristics	CO2IntensityFactor	590.31	470.36
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	40.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	15.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	45.00	100.00
tblVehicleTrips	ST_TR	7.16	3.05
tblVehicleTrips	ST_TR	42.04	29.86
tblVehicleTrips	SU_TR	6.07	3.05
tblVehicleTrips	SU_TR	20.43	29.86
tblVehicleTrips	WD_TR	6.59	3.05
tblVehicleTrips	WD_TR	44.32	29.86

2.0 Emissions Summary

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7929	0.0208	1.7937	9.0000e-005		9.8300e-003	9.8300e-003		9.8300e-003	9.8300e-003	0.0000	2.9157	2.9157	2.8600e-003	0.0000	2.9759
Energy	9.5200e-003	0.0815	0.0355	5.2000e-004		6.5800e-003	6.5800e-003		6.5800e-003	6.5800e-003	0.0000	275.9062	275.9062	0.0130	4.0500e-003	277.4333
Mobile	0.3918	0.9059	4.2193	0.0105	0.7409	0.0130	0.7539	0.1985	0.0120	0.2105	0.0000	755.0516	755.0516	0.0293	0.0000	755.6665
Waste						0.0000	0.0000		0.0000	0.0000	17.6460	0.0000	17.6460	1.0429	0.0000	39.5458
Water						0.0000	0.0000		0.0000	0.0000	4.1714	18.0771	22.2485	0.0155	9.3000e-003	25.4570
Total	1.1942	1.0081	6.0484	0.0112	0.7409	0.0294	0.7703	0.1985	0.0284	0.2269	21.8174	1,051.9506	1,073.7679	1.1035	0.0134	1,101.0784

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	0.7929	0.0208	1.7937	9.0000e-005		9.8300e-003	9.8300e-003		9.8300e-003	9.8300e-003	0.0000	2.9157	2.9157	2.8600e-003	0.0000	2.9759
Energy	5.1800e-003	0.0444	0.0193	2.8000e-004		3.5800e-003	3.5800e-003		3.5800e-003	3.5800e-003	0.0000	51.3052	51.3052	9.8000e-004	9.4000e-004	51.6174
Mobile	0.3570	0.6820	3.3436	7.4800e-003	0.5186	9.4600e-003	0.5281	0.1389	8.7300e-003	0.1477	0.0000	535.7057	535.7057	0.0214	0.0000	536.1555
Waste						0.0000	0.0000		0.0000	0.0000	17.6460	0.0000	17.6460	1.0429	0.0000	39.5458
Water						0.0000	0.0000		0.0000	0.0000	3.1285	12.8375	15.9660	0.0116	6.9700e-003	18.3686
Total	1.1550	0.7471	5.1565	7.8500e-003	0.5186	0.0229	0.5415	0.1389	0.0221	0.1611	20.7745	602.7640	623.5385	1.0797	7.9100e-003	648.6632

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	3.28	25.89	14.75	29.60	30.00	22.26	29.70	30.00	22.07	29.01	4.78	42.70	41.93	2.16	40.75	41.09

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	2/1/2017	3/1/2017	5	21	
2	Site Preparation	Site Preparation	3/2/2017	3/16/2017	5	11	
3	Grading	Grading	3/17/2017	3/31/2017	5	11	
4	Paving	Paving	4/1/2017	5/1/2017	5	21	
5	Building Construction	Building Construction	5/2/2017	7/2/2018	5	305	
6	Architectural Coating	Architectural Coating	5/16/2017	7/16/2018	5	305	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.29

Acres of Paving: 0

Residential Indoor: 274,254; Residential Outdoor: 91,418; Non-Residential Indoor: 40,500; Non-Residential Outdoor: 13,500 (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	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Aerial Lifts	1	9.00	62	0.31
Building Construction	Cranes	1	9.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	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	4	10.00	0.00	44.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	25.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	188.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	135.00	23.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	27.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 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					5.0200e-003	0.0000	5.0200e-003	7.6000e-004	0.0000	7.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0127	0.1100	0.0901	1.3000e-004		7.6300e-003	7.6300e-003		7.2800e-003	7.2800e-003	0.0000	11.2763	11.2763	2.2200e-003	0.0000	11.3230
Total	0.0127	0.1100	0.0901	1.3000e-004	5.0200e-003	7.6300e-003	0.0127	7.6000e-004	7.2800e-003	8.0400e-003	0.0000	11.2763	11.2763	2.2200e-003	0.0000	11.3230

3.2 Demolition - 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	5.0000e-004	5.0500e-003	7.0600e-003	2.0000e-005	3.7000e-004	7.0000e-005	4.4000e-004	1.0000e-004	7.0000e-005	1.7000e-004	0.0000	1.4215	1.4215	1.0000e-005	0.0000	1.4217
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	3.8000e-004	3.9300e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.8000e-004	2.1000e-004	1.0000e-005	2.1000e-004	0.0000	0.6610	0.6610	3.0000e-005	0.0000	0.6617
Total	8.1000e-004	5.4300e-003	0.0110	3.0000e-005	1.1400e-003	8.0000e-005	1.2200e-003	3.1000e-004	8.0000e-005	3.8000e-004	0.0000	2.0825	2.0825	4.0000e-005	0.0000	2.0834

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.2600e-003	0.0000	2.2600e-003	3.4000e-004	0.0000	3.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0127	0.1100	0.0901	1.3000e-004		7.6300e-003	7.6300e-003		7.2800e-003	7.2800e-003	0.0000	11.2763	11.2763	2.2200e-003	0.0000	11.3230
Total	0.0127	0.1100	0.0901	1.3000e-004	2.2600e-003	7.6300e-003	9.8900e-003	3.4000e-004	7.2800e-003	7.6200e-003	0.0000	11.2763	11.2763	2.2200e-003	0.0000	11.3230

3.2 Demolition - 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	5.0000e-004	5.0500e-003	7.0600e-003	2.0000e-005	3.7000e-004	7.0000e-005	4.4000e-004	1.0000e-004	7.0000e-005	1.7000e-004	0.0000	1.4215	1.4215	1.0000e-005	0.0000	1.4217
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	3.8000e-004	3.9300e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.8000e-004	2.1000e-004	1.0000e-005	2.1000e-004	0.0000	0.6610	0.6610	3.0000e-005	0.0000	0.6617
Total	8.1000e-004	5.4300e-003	0.0110	3.0000e-005	1.1400e-003	8.0000e-005	1.2200e-003	3.1000e-004	8.0000e-005	3.8000e-004	0.0000	2.0825	2.0825	4.0000e-005	0.0000	2.0834

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					2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9800e-003	0.0698	0.0398	5.0000e-005		4.2400e-003	4.2400e-003		3.9000e-003	3.9000e-003	0.0000	4.7693	4.7693	1.4600e-003	0.0000	4.8000
Total	6.9800e-003	0.0698	0.0398	5.0000e-005	2.0000e-005	4.2400e-003	4.2600e-003	0.0000	3.9000e-003	3.9000e-003	0.0000	4.7693	4.7693	1.4600e-003	0.0000	4.8000

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	2.8000e-004	2.8700e-003	4.0100e-003	1.0000e-005	2.1000e-004	4.0000e-005	2.5000e-004	6.0000e-005	4.0000e-005	1.0000e-004	0.0000	0.8076	0.8076	1.0000e-005	0.0000	0.8078
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	8.0000e-005	1.0000e-004	1.0300e-003	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.1731	0.1731	1.0000e-005	0.0000	0.1733
Total	3.6000e-004	2.9700e-003	5.0400e-003	1.0000e-005	4.1000e-004	4.0000e-005	4.5000e-004	1.1000e-004	4.0000e-005	1.6000e-004	0.0000	0.9808	0.9808	2.0000e-005	0.0000	0.9811

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9800e-003	0.0698	0.0398	5.0000e-005		4.2400e-003	4.2400e-003		3.9000e-003	3.9000e-003	0.0000	4.7693	4.7693	1.4600e-003	0.0000	4.8000
Total	6.9800e-003	0.0698	0.0398	5.0000e-005	1.0000e-005	4.2400e-003	4.2500e-003	0.0000	3.9000e-003	3.9000e-003	0.0000	4.7693	4.7693	1.4600e-003	0.0000	4.8000

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	2.8000e-004	2.8700e-003	4.0100e-003	1.0000e-005	2.1000e-004	4.0000e-005	2.5000e-004	6.0000e-005	4.0000e-005	1.0000e-004	0.0000	0.8076	0.8076	1.0000e-005	0.0000	0.8078
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	8.0000e-005	1.0000e-004	1.0300e-003	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.1731	0.1731	1.0000e-005	0.0000	0.1733
Total	3.6000e-004	2.9700e-003	5.0400e-003	1.0000e-005	4.1000e-004	4.0000e-005	4.5000e-004	1.1000e-004	4.0000e-005	1.6000e-004	0.0000	0.9808	0.9808	2.0000e-005	0.0000	0.9811

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					4.6000e-003	0.0000	4.6000e-003	2.3400e-003	0.0000	2.3400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6300e-003	0.0576	0.0472	7.0000e-005		4.0000e-003	4.0000e-003		3.8100e-003	3.8100e-003	0.0000	5.9067	5.9067	1.1600e-003	0.0000	5.9311
Total	6.6300e-003	0.0576	0.0472	7.0000e-005	4.6000e-003	4.0000e-003	8.6000e-003	2.3400e-003	3.8100e-003	6.1500e-003	0.0000	5.9067	5.9067	1.1600e-003	0.0000	5.9311

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	2.1300e-003	0.0216	0.0302	7.0000e-005	1.5800e-003	3.1000e-004	1.8900e-003	4.3000e-004	2.8000e-004	7.2000e-004	0.0000	6.0735	6.0735	4.0000e-005	0.0000	6.0743
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	2.0000e-004	2.0600e-003	0.0000	4.0000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3462	0.3462	2.0000e-005	0.0000	0.3466
Total	2.2900e-003	0.0218	0.0322	7.0000e-005	1.9800e-003	3.1000e-004	2.3000e-003	5.4000e-004	2.8000e-004	8.3000e-004	0.0000	6.4197	6.4197	6.0000e-005	0.0000	6.4209

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0700e-003	0.0000	2.0700e-003	1.0500e-003	0.0000	1.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6300e-003	0.0576	0.0472	7.0000e-005		4.0000e-003	4.0000e-003		3.8100e-003	3.8100e-003	0.0000	5.9067	5.9067	1.1600e-003	0.0000	5.9311
Total	6.6300e-003	0.0576	0.0472	7.0000e-005	2.0700e-003	4.0000e-003	6.0700e-003	1.0500e-003	3.8100e-003	4.8600e-003	0.0000	5.9067	5.9067	1.1600e-003	0.0000	5.9311

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	2.1300e-003	0.0216	0.0302	7.0000e-005	1.5800e-003	3.1000e-004	1.8900e-003	4.3000e-004	2.8000e-004	7.2000e-004	0.0000	6.0735	6.0735	4.0000e-005	0.0000	6.0743
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	2.0000e-004	2.0600e-003	0.0000	4.0000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3462	0.3462	2.0000e-005	0.0000	0.3466
Total	2.2900e-003	0.0218	0.0322	7.0000e-005	1.9800e-003	3.1000e-004	2.3000e-003	5.4000e-004	2.8000e-004	8.3000e-004	0.0000	6.4197	6.4197	6.0000e-005	0.0000	6.4209

3.5 Paving - 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	0.0109	0.1033	0.0761	1.2000e-004		6.3200e-003	6.3200e-003		5.8500e-003	5.8500e-003	0.0000	10.1821	10.1821	2.8300e-003	0.0000	10.2415
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0109	0.1033	0.0761	1.2000e-004		6.3200e-003	6.3200e-003		5.8500e-003	5.8500e-003	0.0000	10.1821	10.1821	2.8300e-003	0.0000	10.2415

3.5 Paving - 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	5.6000e-004	6.8000e-004	7.0700e-003	2.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1898	1.1898	6.0000e-005	0.0000	1.1911
Total	5.6000e-004	6.8000e-004	7.0700e-003	2.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1898	1.1898	6.0000e-005	0.0000	1.1911

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	0.0109	0.1033	0.0761	1.2000e-004		6.3200e-003	6.3200e-003		5.8500e-003	5.8500e-003	0.0000	10.1821	10.1821	2.8300e-003	0.0000	10.2415
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0109	0.1033	0.0761	1.2000e-004		6.3200e-003	6.3200e-003		5.8500e-003	5.8500e-003	0.0000	10.1821	10.1821	2.8300e-003	0.0000	10.2415

3.5 Paving - 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	5.6000e-004	6.8000e-004	7.0700e-003	2.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1898	1.1898	6.0000e-005	0.0000	1.1911
Total	5.6000e-004	6.8000e-004	7.0700e-003	2.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1898	1.1898	6.0000e-005	0.0000	1.1911

3.6 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	0.1508	1.5994	0.9550	1.4500e-003		0.0958	0.0958		0.0882	0.0882	0.0000	134.9896	134.9896	0.0414	0.0000	135.8581
Total	0.1508	1.5994	0.9550	1.4500e-003		0.0958	0.0958		0.0882	0.0882	0.0000	134.9896	134.9896	0.0414	0.0000	135.8581

3.6 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	0.0230	0.1499	0.3015	4.2000e-004	0.0114	2.2300e-003	0.0137	3.2600e-003	2.0500e-003	5.3200e-003	0.0000	37.1253	37.1253	2.8000e-004	0.0000	37.1312
Worker	0.0349	0.0420	0.4393	1.0300e-003	0.0863	6.3000e-004	0.0869	0.0229	5.9000e-004	0.0235	0.0000	73.9378	73.9378	3.7500e-003	0.0000	74.0166
Total	0.0579	0.1919	0.7408	1.4500e-003	0.0977	2.8600e-003	0.1005	0.0262	2.6400e-003	0.0289	0.0000	111.0631	111.0631	4.0300e-003	0.0000	111.1478

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	0.1508	1.5994	0.9550	1.4500e-003		0.0958	0.0958		0.0882	0.0882	0.0000	134.9894	134.9894	0.0414	0.0000	135.8580
Total	0.1508	1.5994	0.9550	1.4500e-003		0.0958	0.0958		0.0882	0.0882	0.0000	134.9894	134.9894	0.0414	0.0000	135.8580

3.6 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	0.0230	0.1499	0.3015	4.2000e-004	0.0114	2.2300e-003	0.0137	3.2600e-003	2.0500e-003	5.3200e-003	0.0000	37.1253	37.1253	2.8000e-004	0.0000	37.1312
Worker	0.0349	0.0420	0.4393	1.0300e-003	0.0863	6.3000e-004	0.0869	0.0229	5.9000e-004	0.0235	0.0000	73.9378	73.9378	3.7500e-003	0.0000	74.0166
Total	0.0579	0.1919	0.7408	1.4500e-003	0.0977	2.8600e-003	0.1005	0.0262	2.6400e-003	0.0289	0.0000	111.0631	111.0631	4.0300e-003	0.0000	111.1478

3.6 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0966	1.0425	0.6860	1.0900e-003		0.0595	0.0595		0.0547	0.0547	0.0000	99.9641	99.9641	0.0311	0.0000	100.6176
Total	0.0966	1.0425	0.6860	1.0900e-003		0.0595	0.0595		0.0547	0.0547	0.0000	99.9641	99.9641	0.0311	0.0000	100.6176

3.6 Building Construction - 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	0.0143	0.1017	0.2047	3.1000e-004	8.5900e-003	1.5500e-003	0.0101	2.4600e-003	1.4200e-003	3.8800e-003	0.0000	27.4343	27.4343	2.1000e-004	0.0000	27.4387
Worker	0.0235	0.0284	0.2972	7.8000e-004	0.0649	4.7000e-004	0.0654	0.0173	4.3000e-004	0.0177	0.0000	53.5615	53.5615	2.6000e-003	0.0000	53.6161
Total	0.0378	0.1301	0.5019	1.0900e-003	0.0735	2.0200e-003	0.0756	0.0197	1.8500e-003	0.0216	0.0000	80.9959	80.9959	2.8100e-003	0.0000	81.0548

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	0.0966	1.0425	0.6860	1.0900e-003		0.0595	0.0595		0.0547	0.0547	0.0000	99.9639	99.9639	0.0311	0.0000	100.6175
Total	0.0966	1.0425	0.6860	1.0900e-003		0.0595	0.0595		0.0547	0.0547	0.0000	99.9639	99.9639	0.0311	0.0000	100.6175

3.6 Building Construction - 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	0.0143	0.1017	0.2047	3.1000e-004	8.5900e-003	1.5500e-003	0.0101	2.4600e-003	1.4200e-003	3.8800e-003	0.0000	27.4343	27.4343	2.1000e-004	0.0000	27.4387
Worker	0.0235	0.0284	0.2972	7.8000e-004	0.0649	4.7000e-004	0.0654	0.0173	4.3000e-004	0.0177	0.0000	53.5615	53.5615	2.6000e-003	0.0000	53.6161
Total	0.0378	0.1301	0.5019	1.0900e-003	0.0735	2.0200e-003	0.0756	0.0197	1.8500e-003	0.0216	0.0000	80.9959	80.9959	2.8100e-003	0.0000	81.0548

3.7 Architectural Coating - 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					
Archit. Coating	0.5566					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0273	0.1792	0.1532	2.4000e-004		0.0142	0.0142		0.0142	0.0142	0.0000	20.9367	20.9367	2.2100e-003	0.0000	20.9831
Total	0.5839	0.1792	0.1532	2.4000e-004		0.0142	0.0142		0.0142	0.0142	0.0000	20.9367	20.9367	2.2100e-003	0.0000	20.9831

3.7 Architectural Coating - 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	6.5800e-003	7.9100e-003	0.0828	1.9000e-004	0.0163	1.2000e-004	0.0164	4.3200e-003	1.1000e-004	4.4400e-003	0.0000	13.9377	13.9377	7.1000e-004	0.0000	13.9526
Total	6.5800e-003	7.9100e-003	0.0828	1.9000e-004	0.0163	1.2000e-004	0.0164	4.3200e-003	1.1000e-004	4.4400e-003	0.0000	13.9377	13.9377	7.1000e-004	0.0000	13.9526

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	0.5566					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0273	0.1792	0.1532	2.4000e-004		0.0142	0.0142		0.0142	0.0142	0.0000	20.9367	20.9367	2.2100e-003	0.0000	20.9831
Total	0.5839	0.1792	0.1532	2.4000e-004		0.0142	0.0142		0.0142	0.0142	0.0000	20.9367	20.9367	2.2100e-003	0.0000	20.9831

3.7 Architectural Coating - 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	6.5800e-003	7.9100e-003	0.0828	1.9000e-004	0.0163	1.2000e-004	0.0164	4.3200e-003	1.1000e-004	4.4400e-003	0.0000	13.9377	13.9377	7.1000e-004	0.0000	13.9526
Total	6.5800e-003	7.9100e-003	0.0828	1.9000e-004	0.0163	1.2000e-004	0.0164	4.3200e-003	1.1000e-004	4.4400e-003	0.0000	13.9377	13.9377	7.1000e-004	0.0000	13.9526

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	0.4786					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0211	0.1414	0.1307	2.1000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	18.0005	18.0005	1.7100e-003	0.0000	18.0364
Total	0.4996	0.1414	0.1307	2.1000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	18.0005	18.0005	1.7100e-003	0.0000	18.0364

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	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	0.0000
Worker	5.0500e-003	6.1200e-003	0.0640	1.7000e-004	0.0140	1.0000e-004	0.0141	3.7200e-003	9.0000e-005	3.8100e-003	0.0000	11.5300	11.5300	5.6000e-004	0.0000	11.5418	
Total	5.0500e-003	6.1200e-003	0.0640	1.7000e-004	0.0140	1.0000e-004	0.0141	3.7200e-003	9.0000e-005	3.8100e-003	0.0000	11.5300	11.5300	5.6000e-004	0.0000	11.5418	

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	0.4786					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0211	0.1414	0.1307	2.1000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	18.0005	18.0005	1.7100e-003	0.0000	18.0364
Total	0.4996	0.1414	0.1307	2.1000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	18.0005	18.0005	1.7100e-003	0.0000	18.0364

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	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	0.0000
Worker	5.0500e-003	6.1200e-003	0.0640	1.7000e-004	0.0140	1.0000e-004	0.0141	3.7200e-003	9.0000e-005	3.8100e-003	0.0000	11.5300	11.5300	5.6000e-004	0.0000	11.5418	
Total	5.0500e-003	6.1200e-003	0.0640	1.7000e-004	0.0140	1.0000e-004	0.0141	3.7200e-003	9.0000e-005	3.8100e-003	0.0000	11.5300	11.5300	5.6000e-004	0.0000	11.5418	

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Destination Accessibility

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.3570	0.6820	3.3436	7.4800e-003	0.5186	9.4600e-003	0.5281	0.1389	8.7300e-003	0.1477	0.0000	535.7057	535.7057	0.0214	0.0000	536.1555
Unmitigated	0.3918	0.9059	4.2193	0.0105	0.7409	0.0130	0.7539	0.1985	0.0120	0.2105	0.0000	755.0516	755.0516	0.0293	0.0000	755.6665

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	527.65	527.65	527.65	1,524,993	1,067,495
Enclosed Parking with Elevator	0.00	0.00	0.00		
Strip Mall	209.02	209.02	209.02	465,249	325,674
Total	736.67	736.67	736.67	1,990,242	1,393,170

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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 High Rise	10.00	5.00	6.50	46.50	12.50	41.00	100	0	0
Enclosed Parking with Elevator	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Strip Mall	10.00	5.00	6.50	16.60	64.40	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	181.6842	181.6842	0.0112	2.3200e-003	182.6379
NaturalGas Mitigated	5.1800e-003	0.0444	0.0193	2.8000e-004		3.5800e-003	3.5800e-003		3.5800e-003	3.5800e-003	0.0000	51.3052	51.3052	9.8000e-004	9.4000e-004	51.6174
NaturalGas Unmitigated	9.5200e-003	0.0815	0.0355	5.2000e-004		6.5800e-003	6.5800e-003		6.5800e-003	6.5800e-003	0.0000	94.2219	94.2219	1.8100e-003	1.7300e-003	94.7954

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					
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
Strip Mall	39550	2.1000e-004	1.9400e-003	1.6300e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	2.1105	2.1105	4.0000e-005	4.0000e-005	2.1234
Apartments High Rise	1.7261e+006	9.3100e-003	0.0795	0.0339	5.1000e-004		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	92.1114	92.1114	1.7700e-003	1.6900e-003	92.6720
Total		9.5200e-003	0.0815	0.0355	5.2000e-004		6.5800e-003	6.5800e-003		6.5800e-003	6.5800e-003	0.0000	94.2219	94.2219	1.8100e-003	1.7300e-003	94.7954

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					
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
Strip Mall	21378	1.2000e-004	1.0500e-003	8.8000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1408	1.1408	2.0000e-005	2.0000e-005	1.1478
Apartments High Rise	940044	5.0700e-003	0.0433	0.0184	2.8000e-004		3.5000e-003	3.5000e-003		3.5000e-003	3.5000e-003	0.0000	50.1644	50.1644	9.6000e-004	9.2000e-004	50.4696
Total		5.1900e-003	0.0444	0.0193	2.9000e-004		3.5800e-003	3.5800e-003		3.5800e-003	3.5800e-003	0.0000	51.3052	51.3052	9.8000e-004	9.4000e-004	51.6174

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	625981	133.5542	8.2300e-003	1.7000e-003	134.2553
Enclosed Parking with Elevator	134800	28.7598	1.7700e-003	3.7000e-004	28.9108
Strip Mall	90790	19.3702	1.1900e-003	2.5000e-004	19.4719
Total		181.6842	0.0112	2.3200e-003	182.6379

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.7929	0.0208	1.7937	9.0000e-005		9.8300e-003	9.8300e-003		9.8300e-003	9.8300e-003	0.0000	2.9157	2.9157	2.8600e-003	0.0000	2.9759
Unmitigated	0.7929	0.0208	1.7937	9.0000e-005		9.8300e-003	9.8300e-003		9.8300e-003	9.8300e-003	0.0000	2.9157	2.9157	2.8600e-003	0.0000	2.9759

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	0.1035					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6344					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0550	0.0208	1.7937	9.0000e-005		9.8300e-003	9.8300e-003		9.8300e-003	9.8300e-003	0.0000	2.9157	2.9157	2.8600e-003	0.0000	2.9759
Total	0.7929	0.0208	1.7937	9.0000e-005		9.8300e-003	9.8300e-003		9.8300e-003	9.8300e-003	0.0000	2.9157	2.9157	2.8600e-003	0.0000	2.9759

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	0.1035					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6344					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0550	0.0208	1.7937	9.0000e-005		9.8300e-003	9.8300e-003		9.8300e-003	9.8300e-003	0.0000	2.9157	2.9157	2.8600e-003	0.0000	2.9759
Total	0.7929	0.0208	1.7937	9.0000e-005		9.8300e-003	9.8300e-003		9.8300e-003	9.8300e-003	0.0000	2.9157	2.9157	2.8600e-003	0.0000	2.9759

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.9660	0.0116	6.9700e-003	18.3686
Unmitigated	22.2485	0.0155	9.3000e-003	25.4570

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	11.2716 / 7.10604	21.2765	0.0148	8.8900e-003	24.3440
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.518508 / 0.317795	0.9720	6.8000e-004	4.1000e-004	1.1130
Total		22.2485	0.0155	9.3000e-003	25.4570

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	8.45373 / 3.55302	15.2671	0.0111	6.6600e-003	17.5641
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.388881 / 0.158898	0.6989	5.1000e-004	3.1000e-004	0.8046
Total		15.9660	0.0116	6.9700e-003	18.3686

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	17.6460	1.0429	0.0000	39.5458
Unmitigated	17.6460	1.0429	0.0000	39.5458

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	79.58	16.1540	0.9547	0.0000	36.2022
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	7.35	1.4920	0.0882	0.0000	3.3436
Total		17.6460	1.0429	0.0000	39.5458

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	79.58	16.1540	0.9547	0.0000	36.2022
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	7.35	1.4920	0.0882	0.0000	3.3436
Total		17.6460	1.0429	0.0000	39.5458

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

19J
Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	50.00	Space	0.00	20,000.00	0
Apartments High Rise	173.00	Dwelling Unit	0.29	135,434.00	462
Strip Mall	7.00	1000sqft	0.00	7,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.5	Precipitation Freq (Days)	58
Climate Zone	6			Operational Year	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	470.36	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on SMUD progress towards RPS goal

Land Use - Mixed Use building

Construction Phase - Applicant Information

Off-road Equipment - Applicant Information

Off-road Equipment - *

Demolition - Applicant Info

Grading - Applicant Information

Vehicle Trips - Based on Traffic Information from City

Energy Use - *

Construction Off-road Equipment Mitigation - Applicant Info

Mobile Land Use Mitigation - Applicant Information

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	305.00
tblConstructionPhase	NumDays	100.00	305.00
tblConstructionPhase	NumDays	10.00	21.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	21.00
tblConstructionPhase	NumDays	1.00	11.00
tblConstructionPhase	PhaseEndDate	9/2/2019	7/16/2018
tblConstructionPhase	PhaseStartDate	7/3/2018	5/16/2017
tblGrading	AcresOfGrading	0.00	0.29
tblGrading	AcresOfGrading	5.50	0.00
tblGrading	MaterialExported	0.00	1,500.00
tblGrading	MaterialExported	0.00	200.00

tblGrading	MaterialImported	0.00	1,500.00
tblLandUse	LandUseSquareFeet	173,000.00	135,434.00
tblLandUse	LotAcreage	0.45	0.00
tblLandUse	LotAcreage	2.79	0.29
tblLandUse	LotAcreage	0.16	0.00
tblOffRoadEquipment	UsageHours	4.00	9.00
tblProjectCharacteristics	CO2IntensityFactor	590.31	470.36
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	40.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	15.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	45.00	100.00
tblVehicleTrips	ST_TR	7.16	3.05
tblVehicleTrips	ST_TR	42.04	29.86
tblVehicleTrips	SU_TR	6.07	3.05
tblVehicleTrips	SU_TR	20.43	29.86
tblVehicleTrips	WD_TR	6.59	3.05
tblVehicleTrips	WD_TR	44.32	29.86

2.0 Emissions Summary

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425
Energy	0.0522	0.4464	0.1944	2.8500e-003		0.0360	0.0360		0.0360	0.0360		569.1063	569.1063	0.0109	0.0104	572.5698
Mobile	2.4423	4.6187	24.6979	0.0629	4.2144	0.0714	4.2858	1.1258	0.0659	1.1917		4,942.348 2	4,942.348 2	0.1775		4,946.075 4
Total	6.9774	5.2314	39.2416	0.0665	4.2144	0.1861	4.4005	1.1258	0.1805	1.3063	0.0000	5,537.166 6	5,537.166 6	0.2137	0.0104	5,544.887 7

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425
Energy	0.0284	0.2431	0.1058	1.5500e-003		0.0196	0.0196		0.0196	0.0196		309.8863	309.8863	5.9400e-003	5.6800e-003	311.7723
Mobile	2.2382	3.4875	18.8710	0.0446	2.9501	0.0519	3.0020	0.7881	0.0479	0.8359		3,503.778 6	3,503.778 6	0.1298		3,506.505 0
Total	6.7496	3.8967	33.3261	0.0469	2.9501	0.1501	3.1002	0.7881	0.1461	0.9342	0.0000	3,839.377 0	3,839.377 0	0.1610	5.6800e-003	3,844.519 8

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	3.27	25.51	15.07	29.48	30.00	19.31	29.55	30.00	19.06	28.49	0.00	30.66	30.66	24.63	45.54	30.67

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	2/1/2017	3/1/2017	5	21	
2	Site Preparation	Site Preparation	3/2/2017	3/16/2017	5	11	
3	Grading	Grading	3/17/2017	3/31/2017	5	11	
4	Paving	Paving	4/1/2017	5/1/2017	5	21	
5	Building Construction	Building Construction	5/2/2017	7/2/2018	5	305	
6	Architectural Coating	Architectural Coating	5/16/2017	7/16/2018	5	305	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.29

Acres of Paving: 0

Residential Indoor: 274,254; Residential Outdoor: 91,418; Non-Residential Indoor: 40,500; Non-Residential Outdoor: 13,500 (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	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Aerial Lifts	1	9.00	62	0.31
Building Construction	Cranes	1	9.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	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	4	10.00	0.00	44.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	25.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	188.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	135.00	23.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	27.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 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	lb/day										lb/day					
Fugitive Dust					0.4779	0.0000	0.4779	0.0724	0.0000	0.0724			0.0000			0.0000
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930		1,183.813 1	1,183.813 1	0.2333		1,188.711 8
Total	1.2049	10.4761	8.5825	0.0120	0.4779	0.7266	1.2045	0.0724	0.6930	0.7654		1,183.813 1	1,183.813 1	0.2333		1,188.711 8

3.2 Demolition - 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	lb/day										lb/day					
Hauling	0.0440	0.4514	0.5998	1.5100e-003	0.0363	6.8400e-003	0.0432	9.9400e-003	6.2900e-003	0.0162		149.3792	149.3792	1.0000e-003		149.4001
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0357	0.0322	0.4320	9.7000e-004	0.0761	5.4000e-004	0.0766	0.0202	5.0000e-004	0.0207		76.7899	76.7899	3.5200e-003		76.8639
Total	0.0797	0.4837	1.0319	2.4800e-003	0.1124	7.3800e-003	0.1198	0.0301	6.7900e-003	0.0369		226.1691	226.1691	4.5200e-003		226.2640

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2151	0.0000	0.2151	0.0326	0.0000	0.0326			0.0000			0.0000
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930	0.0000	1,183.8131	1,183.8131	0.2333		1,188.7118
Total	1.2049	10.4761	8.5825	0.0120	0.2151	0.7266	0.9417	0.0326	0.6930	0.7256	0.0000	1,183.8131	1,183.8131	0.2333		1,188.7118

3.2 Demolition - 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	lb/day										lb/day					
Hauling	0.0440	0.4514	0.5998	1.5100e-003	0.0363	6.8400e-003	0.0432	9.9400e-003	6.2900e-003	0.0162		149.3792	149.3792	1.0000e-003		149.4001
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0357	0.0322	0.4320	9.7000e-004	0.0761	5.4000e-004	0.0766	0.0202	5.0000e-004	0.0207		76.7899	76.7899	3.5200e-003		76.8639
Total	0.0797	0.4837	1.0319	2.4800e-003	0.1124	7.3800e-003	0.1198	0.0301	6.7900e-003	0.0369		226.1691	226.1691	4.5200e-003		226.2640

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	lb/day										lb/day					
Fugitive Dust					3.7600e-003	0.0000	3.7600e-003	5.7000e-004	0.0000	5.7000e-004			0.0000			0.0000
Off-Road	1.2694	12.6852	7.2319	9.3300e-003		0.7705	0.7705		0.7089	0.7089		955.8663	955.8663	0.2929		962.0167
Total	1.2694	12.6852	7.2319	9.3300e-003	3.7600e-003	0.7705	0.7743	5.7000e-004	0.7089	0.7094		955.8663	955.8663	0.2929		962.0167

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	lb/day										lb/day					
Hauling	0.0477	0.4897	0.6507	1.6400e-003	0.0394	7.4200e-003	0.0468	0.0108	6.8200e-003	0.0176		162.0332	162.0332	1.0800e-003		162.0559
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0179	0.0161	0.2160	4.9000e-004	0.0380	2.7000e-004	0.0383	0.0101	2.5000e-004	0.0103		38.3950	38.3950	1.7600e-003		38.4320
Total	0.0656	0.5058	0.8667	2.1300e-003	0.0774	7.6900e-003	0.0851	0.0209	7.0700e-003	0.0279		200.4282	200.4282	2.8400e-003		200.4878

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.6900e-003	0.0000	1.6900e-003	2.6000e-004	0.0000	2.6000e-004			0.0000			0.0000
Off-Road	1.2694	12.6852	7.2319	9.3300e-003		0.7705	0.7705		0.7089	0.7089	0.0000	955.8663	955.8663	0.2929		962.0167
Total	1.2694	12.6852	7.2319	9.3300e-003	1.6900e-003	0.7705	0.7722	2.6000e-004	0.7089	0.7091	0.0000	955.8663	955.8663	0.2929		962.0167

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	lb/day										lb/day					
Hauling	0.0477	0.4897	0.6507	1.6400e-003	0.0394	7.4200e-003	0.0468	0.0108	6.8200e-003	0.0176		162.0332	162.0332	1.0800e-003		162.0559
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0179	0.0161	0.2160	4.9000e-004	0.0380	2.7000e-004	0.0383	0.0101	2.5000e-004	0.0103		38.3950	38.3950	1.7600e-003		38.4320
Total	0.0656	0.5058	0.8667	2.1300e-003	0.0774	7.6900e-003	0.0851	0.0209	7.0700e-003	0.0279		200.4282	200.4282	2.8400e-003		200.4878

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	lb/day										lb/day					
Fugitive Dust					0.8371	0.0000	0.8371	0.4253	0.0000	0.4253			0.0000			0.0000
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930		1,183.8131	1,183.8131	0.2333		1,188.7118
Total	1.2049	10.4761	8.5825	0.0120	0.8371	0.7266	1.5637	0.4253	0.6930	1.1183		1,183.8131	1,183.8131	0.2333		1,188.7118

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	lb/day										lb/day					
Hauling	0.3589	3.6824	4.8929	0.0123	0.2963	0.0558	0.3521	0.0811	0.0513	0.1323		1,218.4898	1,218.4898	8.1200e-003		1,218.6603
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0357	0.0322	0.4320	9.7000e-004	0.0761	5.4000e-004	0.0766	0.0202	5.0000e-004	0.0207		76.7899	76.7899	3.5200e-003		76.8639
Total	0.3946	3.7146	5.3249	0.0133	0.3724	0.0563	0.4287	0.1012	0.0518	0.1530		1,295.2797	1,295.2797	0.0116		1,295.5242

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3767	0.0000	0.3767	0.1914	0.0000	0.1914			0.0000			0.0000
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930	0.0000	1,183.8131	1,183.8131	0.2333		1,188.7118
Total	1.2049	10.4761	8.5825	0.0120	0.3767	0.7266	1.1033	0.1914	0.6930	0.8844	0.0000	1,183.8131	1,183.8131	0.2333		1,188.7118

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	lb/day										lb/day					
Hauling	0.3589	3.6824	4.8929	0.0123	0.2963	0.0558	0.3521	0.0811	0.0513	0.1323		1,218.4898	1,218.4898	8.1200e-003		1,218.6603
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0357	0.0322	0.4320	9.7000e-004	0.0761	5.4000e-004	0.0766	0.0202	5.0000e-004	0.0207		76.7899	76.7899	3.5200e-003		76.8639
Total	0.3946	3.7146	5.3249	0.0133	0.3724	0.0563	0.4287	0.1012	0.0518	0.1530		1,295.2797	1,295.2797	0.0116		1,295.5242

3.5 Paving - 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	lb/day										lb/day					
Off-Road	1.0406	9.8344	7.2432	0.0111		0.6018	0.6018		0.5572	0.5572		1,068.9366	1,068.9366	0.2968		1,075.1698
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0406	9.8344	7.2432	0.0111		0.6018	0.6018		0.5572	0.5572		1,068.9366	1,068.9366	0.2968		1,075.1698

3.5 Paving - 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003			138.3550
Total	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003			138.3550

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.0406	9.8344	7.2432	0.0111		0.6018	0.6018		0.5572	0.5572	0.0000	1,068.9366	1,068.9366	0.2968			1,075.1698
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Total	1.0406	9.8344	7.2432	0.0111		0.6018	0.6018		0.5572	0.5572	0.0000	1,068.9366	1,068.9366	0.2968			1,075.1698

3.5 Paving - 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003		138.3550
Total	0.0643	0.0580	0.7776	1.7500e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		138.2218	138.2218	6.3400e-003		138.3550

3.6 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	lb/day										lb/day					
Off-Road	1.7334	18.3834	10.9766	0.0167		1.1015	1.1015		1.0134	1.0134		1,710.3506	1,710.3506	0.5241		1,721.3556
Total	1.7334	18.3834	10.9766	0.0167		1.1015	1.1015		1.0134	1.0134		1,710.3506	1,710.3506	0.5241		1,721.3556

3.6 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.2396	1.6360	2.9024	4.8000e-003	0.1351	0.0255	0.1607	0.0385	0.0234	0.0619		472.1207	472.1207	3.5200e-003			472.1946
Worker	0.4824	0.4351	5.8321	0.0131	1.0269	7.2900e-003	1.0342	0.2724	6.7300e-003	0.2791		1,036.6638	1,036.6638	0.0476			1,037.6626
Total	0.7220	2.0711	8.7346	0.0179	1.1621	0.0328	1.1949	0.3109	0.0302	0.3411		1,508.7845	1,508.7845	0.0511			1,509.8572

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.7334	18.3834	10.9766	0.0167		1.1015	1.1015		1.0134	1.0134	0.0000	1,710.3506	1,710.3506	0.5241			1,721.3556
Total	1.7334	18.3834	10.9766	0.0167		1.1015	1.1015		1.0134	1.0134	0.0000	1,710.3506	1,710.3506	0.5241			1,721.3556

3.6 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.2396	1.6360	2.9024	4.8000e-003	0.1351	0.0255	0.1607	0.0385	0.0234	0.0619		472.1207	472.1207	3.5200e-003			472.1946
Worker	0.4824	0.4351	5.8321	0.0131	1.0269	7.2900e-003	1.0342	0.2724	6.7300e-003	0.2791		1,036.6638	1,036.6638	0.0476			1,037.6626
Total	0.7220	2.0711	8.7346	0.0179	1.1621	0.0328	1.1949	0.3109	0.0302	0.3411		1,508.7845	1,508.7845	0.0511			1,509.8572

3.6 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.4741	15.9155	10.4737	0.0167		0.9078	0.9078		0.8352	0.8352		1,682.3131	1,682.3131	0.5237			1,693.3114
Total	1.4741	15.9155	10.4737	0.0167		0.9078	0.9078		0.8352	0.8352		1,682.3131	1,682.3131	0.5237			1,693.3114

3.6 Building Construction - 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1992	1.4747	2.5328	4.7800e-003	0.1351	0.0235	0.1586	0.0385	0.0216	0.0600		463.4068	463.4068	3.4300e-003			463.4789
Worker	0.4328	0.3920	5.2604	0.0131	1.0269	7.1500e-003	1.0341	0.2724	6.6100e-003	0.2790		997.5486	997.5486	0.0438			998.4677
Total	0.6319	1.8667	7.7932	0.0179	1.1620	0.0306	1.1926	0.3109	0.0282	0.3390		1,460.9553	1,460.9553	0.0472			1,461.9465

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.4741	15.9155	10.4737	0.0167		0.9078	0.9078		0.8352	0.8352	0.0000	1,682.3131	1,682.3131	0.5237			1,693.3114
Total	1.4741	15.9155	10.4737	0.0167		0.9078	0.9078		0.8352	0.8352	0.0000	1,682.3131	1,682.3131	0.5237			1,693.3114

3.6 Building Construction - 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1992	1.4747	2.5328	4.7800e-003	0.1351	0.0235	0.1586	0.0385	0.0216	0.0600		463.4068	463.4068	3.4300e-003			463.4789
Worker	0.4328	0.3920	5.2604	0.0131	1.0269	7.1500e-003	1.0341	0.2724	6.6100e-003	0.2790		997.5486	997.5486	0.0438			998.4677
Total	0.6319	1.8667	7.7932	0.0179	1.1620	0.0306	1.1926	0.3109	0.0282	0.3390		1,460.9553	1,460.9553	0.0472			1,461.9465

3.7 Architectural Coating - 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	lb/day										lb/day						
Archit. Coating	6.7880					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297			282.0721
Total	7.1203	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297			282.0721

3.7 Architectural Coating - 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0965	0.0870	1.1664	2.6300e-003	0.2054	1.4600e-003	0.2069	0.0545	1.3500e-003	0.0558		207.3328	207.3328	9.5100e-003			207.5325
Total	0.0965	0.0870	1.1664	2.6300e-003	0.2054	1.4600e-003	0.2069	0.0545	1.3500e-003	0.0558		207.3328	207.3328	9.5100e-003			207.5325

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Archit. Coating	6.7880					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297			282.0721
Total	7.1203	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297			282.0721

3.7 Architectural Coating - 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0965	0.0870	1.1664	2.6300e-003	0.2054	1.4600e-003	0.2069	0.0545	1.3500e-003	0.0558		207.3328	207.3328	9.5100e-003			207.5325
Total	0.0965	0.0870	1.1664	2.6300e-003	0.2054	1.4600e-003	0.2069	0.0545	1.3500e-003	0.0558		207.3328	207.3328	9.5100e-003			207.5325

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	lb/day										lb/day						
Archit. Coating	6.7880					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267			282.0102
Total	7.0866	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267			282.0102

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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0866	0.0784	1.0521	2.6300e-003	0.2054	1.4300e-003	0.2068	0.0545	1.3200e-003	0.0558		199.5097	199.5097	8.7500e-003			199.6935
Total	0.0866	0.0784	1.0521	2.6300e-003	0.2054	1.4300e-003	0.2068	0.0545	1.3200e-003	0.0558		199.5097	199.5097	8.7500e-003			199.6935

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Archit. Coating	6.7880					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267			282.0102
Total	7.0866	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267			282.0102

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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0866	0.0784	1.0521	2.6300e-003	0.2054	1.4300e-003	0.2068	0.0545	1.3200e-003	0.0558		199.5097	199.5097	8.7500e-003			199.6935
Total	0.0866	0.0784	1.0521	2.6300e-003	0.2054	1.4300e-003	0.2068	0.0545	1.3200e-003	0.0558		199.5097	199.5097	8.7500e-003			199.6935

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Destination Accessibility

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.2382	3.4875	18.8710	0.0446	2.9501	0.0519	3.0020	0.7881	0.0479	0.8359		3,503.7786	3,503.7786	0.1298		3,506.5050
Unmitigated	2.4423	4.6187	24.6979	0.0629	4.2144	0.0714	4.2858	1.1258	0.0659	1.1917		4,942.3482	4,942.3482	0.1775		4,946.0754

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	527.65	527.65	527.65	1,524,993	1,067,495
Enclosed Parking with Elevator	0.00	0.00	0.00		
Strip Mall	209.02	209.02	209.02	465,249	325,674
Total	736.67	736.67	736.67	1,990,242	1,393,170

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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 High Rise	10.00	5.00	6.50	46.50	12.50	41.00	100	0	0
Enclosed Parking with Elevator	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Strip Mall	10.00	5.00	6.50	16.60	64.40	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0284	0.2431	0.1058	1.5500e-003		0.0196	0.0196		0.0196	0.0196		309.8863	309.8863	5.9400e-003	5.6800e-003	311.7723
NaturalGas Unmitigated	0.0522	0.4464	0.1944	2.8500e-003		0.0360	0.0360		0.0360	0.0360		569.1063	569.1063	0.0109	0.0104	572.5698

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
Strip Mall	108.356	1.1700e-003	0.0106	8.9200e-003	6.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004		12.7478	12.7478	2.4000e-004	2.3000e-004	12.8254
Apartments High Rise	4729.05	0.0510	0.4358	0.1855	2.7800e-003		0.0352	0.0352		0.0352	0.0352		556.3585	556.3585	0.0107	0.0102	559.7444
Total		0.0522	0.4464	0.1944	2.8400e-003		0.0361	0.0361		0.0361	0.0361		569.1063	569.1063	0.0109	0.0104	572.5698

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
Strip Mall	0.0585699	6.3000e-004	5.7400e-003	4.8200e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.8906	6.8906	1.3000e-004	1.3000e-004	6.9325
Apartments High Rise	2.57546	0.0278	0.2374	0.1010	1.5100e-003		0.0192	0.0192		0.0192	0.0192		302.9958	302.9958	5.8100e-003	5.5500e-003	304.8398
Total		0.0284	0.2431	0.1058	1.5400e-003		0.0196	0.0196		0.0196	0.0196		309.8863	309.8863	5.9400e-003	5.6800e-003	311.7723

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425
Unmitigated	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.4761					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4396	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786		25.7120	25.7120	0.0253		26.2425
Total	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.4761					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4396	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786		25.7120	25.7120	0.0253		26.2425
Total	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

19J
Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	50.00	Space	0.00	20,000.00	0
Apartments High Rise	173.00	Dwelling Unit	0.29	135,434.00	462
Strip Mall	7.00	1000sqft	0.00	7,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.5	Precipitation Freq (Days)	58
Climate Zone	6			Operational Year	2019
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	470.36	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Based on SMUD progress towards RPS goal

Land Use - Mixed Use building

Construction Phase - Applicant Information

Off-road Equipment - Applicant Information

Off-road Equipment - *

Demolition - Applicant Info

Grading - Applicant Information

Vehicle Trips - Based on Traffic Information from City

Energy Use - *

Construction Off-road Equipment Mitigation - Applicant Info

Mobile Land Use Mitigation - Applicant Information

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	305.00
tblConstructionPhase	NumDays	100.00	305.00
tblConstructionPhase	NumDays	10.00	21.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	21.00
tblConstructionPhase	NumDays	1.00	11.00
tblConstructionPhase	PhaseEndDate	9/2/2019	7/16/2018
tblConstructionPhase	PhaseStartDate	7/3/2018	5/16/2017
tblGrading	AcresOfGrading	0.00	0.29
tblGrading	AcresOfGrading	5.50	0.00
tblGrading	MaterialExported	0.00	1,500.00
tblGrading	MaterialExported	0.00	200.00

tblGrading	MaterialImported	0.00	1,500.00
tblLandUse	LandUseSquareFeet	173,000.00	135,434.00
tblLandUse	LotAcreage	0.45	0.00
tblLandUse	LotAcreage	2.79	0.29
tblLandUse	LotAcreage	0.16	0.00
tblOffRoadEquipment	UsageHours	4.00	9.00
tblProjectCharacteristics	CO2IntensityFactor	590.31	470.36
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	40.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	15.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	45.00	100.00
tblVehicleTrips	ST_TR	7.16	3.05
tblVehicleTrips	ST_TR	42.04	29.86
tblVehicleTrips	SU_TR	6.07	3.05
tblVehicleTrips	SU_TR	20.43	29.86
tblVehicleTrips	WD_TR	6.59	3.05
tblVehicleTrips	WD_TR	44.32	29.86

2.0 Emissions Summary

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425
Energy	0.0522	0.4464	0.1944	2.8500e-003		0.0360	0.0360		0.0360	0.0360		569.1063	569.1063	0.0109	0.0104	572.5698
Mobile	2.2533	5.2617	25.3612	0.0567	4.2144	0.0718	4.2862	1.1258	0.0662	1.1921		4,478.5668	4,478.5668	0.1776		4,482.2970
Total	6.7884	5.8743	39.9048	0.0603	4.2144	0.1865	4.4009	1.1258	0.1809	1.3067	0.0000	5,073.3851	5,073.3851	0.2138	0.0104	5,081.1093

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425
Energy	0.0284	0.2431	0.1058	1.5500e-003		0.0196	0.0196		0.0196	0.0196		309.8863	309.8863	5.9400e-003	5.6800e-003	311.7723
Mobile	2.0627	3.9582	20.6793	0.0403	2.9501	0.0523	3.0024	0.7881	0.0482	0.8363		3,177.5606	3,177.5606	0.1300		3,180.2900
Total	6.5740	4.3675	35.1344	0.0426	2.9501	0.1505	3.1006	0.7881	0.1465	0.9345	0.0000	3,513.1589	3,513.1589	0.1612	5.6800e-003	3,518.3048

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	3.16	25.65	11.95	29.43	30.00	19.27	29.55	30.00	19.02	28.48	0.00	30.75	30.75	24.62	45.54	30.76

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	2/1/2017	3/1/2017	5	21	
2	Site Preparation	Site Preparation	3/2/2017	3/16/2017	5	11	
3	Grading	Grading	3/17/2017	3/31/2017	5	11	
4	Paving	Paving	4/1/2017	5/1/2017	5	21	
5	Building Construction	Building Construction	5/2/2017	7/2/2018	5	305	
6	Architectural Coating	Architectural Coating	5/16/2017	7/16/2018	5	305	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.29

Acres of Paving: 0

Residential Indoor: 274,254; Residential Outdoor: 91,418; Non-Residential Indoor: 40,500; Non-Residential Outdoor: 13,500 (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	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Aerial Lifts	1	9.00	62	0.31
Building Construction	Cranes	1	9.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	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	4	10.00	0.00	44.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	25.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	188.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	135.00	23.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	27.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 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	lb/day										lb/day					
Fugitive Dust					0.4779	0.0000	0.4779	0.0724	0.0000	0.0724			0.0000			0.0000
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930		1,183.813 1	1,183.813 1	0.2333		1,188.711 8
Total	1.2049	10.4761	8.5825	0.0120	0.4779	0.7266	1.2045	0.0724	0.6930	0.7654		1,183.813 1	1,183.813 1	0.2333		1,188.711 8

3.2 Demolition - 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	lb/day										lb/day						
Hauling	0.0540	0.4919	0.8005	1.5100e-003	0.0363	6.8600e-003	0.0432	9.9400e-003	6.3100e-003	0.0163		149.0151	149.0151	1.0100e-003			149.0363
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0309	0.0399	0.3869	8.5000e-004	0.0761	5.4000e-004	0.0766	0.0202	5.0000e-004	0.0207		67.4098	67.4098	3.5200e-003			67.4838
Total	0.0848	0.5319	1.1874	2.3600e-003	0.1124	7.4000e-003	0.1198	0.0301	6.8100e-003	0.0369		216.4249	216.4249	4.5300e-003			216.5201

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					0.2151	0.0000	0.2151	0.0326	0.0000	0.0326			0.0000			0.0000	
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930	0.0000	1,183.8131	1,183.8131	0.2333			1,188.7118
Total	1.2049	10.4761	8.5825	0.0120	0.2151	0.7266	0.9417	0.0326	0.6930	0.7256	0.0000	1,183.8131	1,183.8131	0.2333			1,188.7118

3.2 Demolition - 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	lb/day										lb/day						
Hauling	0.0540	0.4919	0.8005	1.5100e-003	0.0363	6.8600e-003	0.0432	9.9400e-003	6.3100e-003	0.0163		149.0151	149.0151	1.0100e-003			149.0363
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0309	0.0399	0.3869	8.5000e-004	0.0761	5.4000e-004	0.0766	0.0202	5.0000e-004	0.0207		67.4098	67.4098	3.5200e-003			67.4838
Total	0.0848	0.5319	1.1874	2.3600e-003	0.1124	7.4000e-003	0.1198	0.0301	6.8100e-003	0.0369		216.4249	216.4249	4.5300e-003			216.5201

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	lb/day										lb/day						
Fugitive Dust					3.7600e-003	0.0000	3.7600e-003	5.7000e-004	0.0000	5.7000e-004			0.0000				0.0000
Off-Road	1.2694	12.6852	7.2319	9.3300e-003		0.7705	0.7705		0.7089	0.7089		955.8663	955.8663	0.2929			962.0167
Total	1.2694	12.6852	7.2319	9.3300e-003	3.7600e-003	0.7705	0.7743	5.7000e-004	0.7089	0.7094		955.8663	955.8663	0.2929			962.0167

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	lb/day										lb/day					
Hauling	0.0585	0.5336	0.8683	1.6400e-003	0.0394	7.4400e-003	0.0469	0.0108	6.8400e-003	0.0176		161.6382	161.6382	1.1000e-003		161.6613
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0154	0.0200	0.1935	4.3000e-004	0.0380	2.7000e-004	0.0383	0.0101	2.5000e-004	0.0103		33.7049	33.7049	1.7600e-003		33.7419
Total	0.0740	0.5536	1.0618	2.0700e-003	0.0774	7.7100e-003	0.0852	0.0209	7.0900e-003	0.0280		195.3431	195.3431	2.8600e-003		195.4032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.6900e-003	0.0000	1.6900e-003	2.6000e-004	0.0000	2.6000e-004			0.0000			0.0000
Off-Road	1.2694	12.6852	7.2319	9.3300e-003		0.7705	0.7705		0.7089	0.7089	0.0000	955.8663	955.8663	0.2929		962.0167
Total	1.2694	12.6852	7.2319	9.3300e-003	1.6900e-003	0.7705	0.7722	2.6000e-004	0.7089	0.7091	0.0000	955.8663	955.8663	0.2929		962.0167

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	lb/day										lb/day					
Hauling	0.0585	0.5336	0.8683	1.6400e-003	0.0394	7.4400e-003	0.0469	0.0108	6.8400e-003	0.0176		161.6382	161.6382	1.1000e-003		161.6613
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0154	0.0200	0.1935	4.3000e-004	0.0380	2.7000e-004	0.0383	0.0101	2.5000e-004	0.0103		33.7049	33.7049	1.7600e-003		33.7419
Total	0.0740	0.5536	1.0618	2.0700e-003	0.0774	7.7100e-003	0.0852	0.0209	7.0900e-003	0.0280		195.3431	195.3431	2.8600e-003		195.4032

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	lb/day										lb/day					
Fugitive Dust					0.8371	0.0000	0.8371	0.4253	0.0000	0.4253			0.0000			0.0000
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930		1,183.8131	1,183.8131	0.2333		1,188.7118
Total	1.2049	10.4761	8.5825	0.0120	0.8371	0.7266	1.5637	0.4253	0.6930	1.1183		1,183.8131	1,183.8131	0.2333		1,188.7118

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	lb/day										lb/day					
Hauling	0.4401	4.0128	6.5297	0.0123	0.2963	0.0560	0.3523	0.0811	0.0515	0.1325		1,215.5196	1,215.5196	8.2500e-003		1,215.6927
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0309	0.0399	0.3869	8.5000e-004	0.0761	5.4000e-004	0.0766	0.0202	5.0000e-004	0.0207		67.4098	67.4098	3.5200e-003		67.4838
Total	0.4710	4.0527	6.9167	0.0132	0.3724	0.0565	0.4289	0.1012	0.0520	0.1532		1,282.9294	1,282.9294	0.0118		1,283.1765

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3767	0.0000	0.3767	0.1914	0.0000	0.1914			0.0000			0.0000
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930	0.0000	1,183.8131	1,183.8131	0.2333		1,188.7118
Total	1.2049	10.4761	8.5825	0.0120	0.3767	0.7266	1.1033	0.1914	0.6930	0.8844	0.0000	1,183.8131	1,183.8131	0.2333		1,188.7118

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	lb/day										lb/day					
Hauling	0.4401	4.0128	6.5297	0.0123	0.2963	0.0560	0.3523	0.0811	0.0515	0.1325		1,215.5196	1,215.5196	8.2500e-003		1,215.6927
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0309	0.0399	0.3869	8.5000e-004	0.0761	5.4000e-004	0.0766	0.0202	5.0000e-004	0.0207		67.4098	67.4098	3.5200e-003		67.4838
Total	0.4710	4.0527	6.9167	0.0132	0.3724	0.0565	0.4289	0.1012	0.0520	0.1532		1,282.9294	1,282.9294	0.0118		1,283.1765

3.5 Paving - 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	lb/day										lb/day					
Off-Road	1.0406	9.8344	7.2432	0.0111		0.6018	0.6018		0.5572	0.5572		1,068.9366	1,068.9366	0.2968		1,075.1698
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0406	9.8344	7.2432	0.0111		0.6018	0.6018		0.5572	0.5572		1,068.9366	1,068.9366	0.2968		1,075.1698

3.5 Paving - 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003			121.4708
Total	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003			121.4708

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.0406	9.8344	7.2432	0.0111		0.6018	0.6018		0.5572	0.5572	0.0000	1,068.9366	1,068.9366	0.2968			1,075.1698
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Total	1.0406	9.8344	7.2432	0.0111		0.6018	0.6018		0.5572	0.5572	0.0000	1,068.9366	1,068.9366	0.2968			1,075.1698

3.5 Paving - 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003			121.4708
Total	0.0556	0.0719	0.6965	1.5400e-003	0.1369	9.7000e-004	0.1379	0.0363	9.0000e-004	0.0372		121.3376	121.3376	6.3400e-003			121.4708

3.6 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	lb/day										lb/day						
Off-Road	1.7334	18.3834	10.9766	0.0167		1.1015	1.1015		1.0134	1.0134		1,710.3506	1,710.3506	0.5241			1,721.3556
Total	1.7334	18.3834	10.9766	0.0167		1.1015	1.1015		1.0134	1.0134		1,710.3506	1,710.3506	0.5241			1,721.3556

3.6 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.3125	1.7527	4.3868	4.7800e-003	0.1351	0.0259	0.1610	0.0385	0.0238	0.0623		467.9910	467.9910	3.6300e-003			468.0673
Worker	0.4167	0.5393	5.2237	0.0115	1.0269	7.2900e-003	1.0342	0.2724	6.7300e-003	0.2791		910.0323	910.0323	0.0476			911.0311
Total	0.7292	2.2920	9.6105	0.0163	1.1621	0.0332	1.1953	0.3109	0.0305	0.3414		1,378.0233	1,378.0233	0.0512			1,379.0984

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.7334	18.3834	10.9766	0.0167		1.1015	1.1015		1.0134	1.0134	0.0000	1,710.3506	1,710.3506	0.5241			1,721.3556
Total	1.7334	18.3834	10.9766	0.0167		1.1015	1.1015		1.0134	1.0134	0.0000	1,710.3506	1,710.3506	0.5241			1,721.3556

3.6 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.3125	1.7527	4.3868	4.7800e-003	0.1351	0.0259	0.1610	0.0385	0.0238	0.0623		467.9910	467.9910	3.6300e-003			468.0673
Worker	0.4167	0.5393	5.2237	0.0115	1.0269	7.2900e-003	1.0342	0.2724	6.7300e-003	0.2791		910.0323	910.0323	0.0476			911.0311
Total	0.7292	2.2920	9.6105	0.0163	1.1621	0.0332	1.1953	0.3109	0.0305	0.3414		1,378.0233	1,378.0233	0.0512			1,379.0984

3.6 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.4741	15.9155	10.4737	0.0167		0.9078	0.9078		0.8352	0.8352		1,682.3131	1,682.3131	0.5237			1,693.3114
Total	1.4741	15.9155	10.4737	0.0167		0.9078	0.9078		0.8352	0.8352		1,682.3131	1,682.3131	0.5237			1,693.3114

3.6 Building Construction - 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.2546	1.5789	4.0404	4.7600e-003	0.1351	0.0238	0.1589	0.0385	0.0219	0.0603		459.3370	459.3370	3.5500e-003			459.4115
Worker	0.3703	0.4854	4.6736	0.0115	1.0269	7.1500e-003	1.0341	0.2724	6.6100e-003	0.2790		875.6117	875.6117	0.0438			876.5308
Total	0.6248	2.0643	8.7140	0.0163	1.1620	0.0309	1.1930	0.3109	0.0285	0.3394		1,334.9486	1,334.9486	0.0473			1,335.9423

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.4741	15.9155	10.4737	0.0167		0.9078	0.9078		0.8352	0.8352	0.0000	1,682.3131	1,682.3131	0.5237			1,693.3114
Total	1.4741	15.9155	10.4737	0.0167		0.9078	0.9078		0.8352	0.8352	0.0000	1,682.3131	1,682.3131	0.5237			1,693.3114

3.6 Building Construction - 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.2546	1.5789	4.0404	4.7600e-003	0.1351	0.0238	0.1589	0.0385	0.0219	0.0603		459.3370	459.3370	3.5500e-003			459.4115
Worker	0.3703	0.4854	4.6736	0.0115	1.0269	7.1500e-003	1.0341	0.2724	6.6100e-003	0.2790		875.6117	875.6117	0.0438			876.5308
Total	0.6248	2.0643	8.7140	0.0163	1.1620	0.0309	1.1930	0.3109	0.0285	0.3394		1,334.9486	1,334.9486	0.0473			1,335.9423

3.7 Architectural Coating - 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	lb/day										lb/day						
Archit. Coating	6.7880					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297			282.0721
Total	7.1203	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297			282.0721

3.7 Architectural Coating - 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0834	0.1079	1.0447	2.3000e-003	0.2054	1.4600e-003	0.2069	0.0545	1.3500e-003	0.0558		182.0065	182.0065	9.5100e-003			182.2062
Total	0.0834	0.1079	1.0447	2.3000e-003	0.2054	1.4600e-003	0.2069	0.0545	1.3500e-003	0.0558		182.0065	182.0065	9.5100e-003			182.2062

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Archit. Coating	6.7880					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297			282.0721
Total	7.1203	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297			282.0721

3.7 Architectural Coating - 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0834	0.1079	1.0447	2.3000e-003	0.2054	1.4600e-003	0.2069	0.0545	1.3500e-003	0.0558		182.0065	182.0065	9.5100e-003			182.2062
Total	0.0834	0.1079	1.0447	2.3000e-003	0.2054	1.4600e-003	0.2069	0.0545	1.3500e-003	0.0558		182.0065	182.0065	9.5100e-003			182.2062

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	lb/day										lb/day						
Archit. Coating	6.7880					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267			282.0102
Total	7.0866	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267			282.0102

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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0741	0.0971	0.9347	2.3000e-003	0.2054	1.4300e-003	0.2068	0.0545	1.3200e-003	0.0558		175.1223	175.1223	8.7500e-003			175.3062
Total	0.0741	0.0971	0.9347	2.3000e-003	0.2054	1.4300e-003	0.2068	0.0545	1.3200e-003	0.0558		175.1223	175.1223	8.7500e-003			175.3062

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Archit. Coating	6.7880					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267			282.0102
Total	7.0866	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267			282.0102

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0741	0.0971	0.9347	2.3000e-003	0.2054	1.4300e-003	0.2068	0.0545	1.3200e-003	0.0558		175.1223	175.1223	8.7500e-003		175.3062
Total	0.0741	0.0971	0.9347	2.3000e-003	0.2054	1.4300e-003	0.2068	0.0545	1.3200e-003	0.0558		175.1223	175.1223	8.7500e-003		175.3062

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Destination Accessibility

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0627	3.9582	20.6793	0.0403	2.9501	0.0523	3.0024	0.7881	0.0482	0.8363		3,177.5606	3,177.5606	0.1300		3,180.2900
Unmitigated	2.2533	5.2617	25.3612	0.0567	4.2144	0.0718	4.2862	1.1258	0.0662	1.1921		4,478.5668	4,478.5668	0.1776		4,482.2970

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	527.65	527.65	527.65	1,524,993	1,067,495
Enclosed Parking with Elevator	0.00	0.00	0.00		
Strip Mall	209.02	209.02	209.02	465,249	325,674
Total	736.67	736.67	736.67	1,990,242	1,393,170

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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 High Rise	10.00	5.00	6.50	46.50	12.50	41.00	100	0	0
Enclosed Parking with Elevator	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Strip Mall	10.00	5.00	6.50	16.60	64.40	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504051	0.067969	0.178847	0.146822	0.044632	0.006327	0.021095	0.016719	0.002306	0.002274	0.006223	0.000559	0.002177

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0284	0.2431	0.1058	1.5500e-003		0.0196	0.0196		0.0196	0.0196		309.8863	309.8863	5.9400e-003	5.6800e-003	311.7723
NaturalGas Unmitigated	0.0522	0.4464	0.1944	2.8500e-003		0.0360	0.0360		0.0360	0.0360		569.1063	569.1063	0.0109	0.0104	572.5698

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
Strip Mall	108.356	1.1700e-003	0.0106	8.9200e-003	6.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004		12.7478	12.7478	2.4000e-004	2.3000e-004	12.8254
Apartments High Rise	4729.05	0.0510	0.4358	0.1855	2.7800e-003		0.0352	0.0352		0.0352	0.0352		556.3585	556.3585	0.0107	0.0102	559.7444
Total		0.0522	0.4464	0.1944	2.8400e-003		0.0361	0.0361		0.0361	0.0361		569.1063	569.1063	0.0109	0.0104	572.5698

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
Strip Mall	0.0585699	6.3000e-004	5.7400e-003	4.8200e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.8906	6.8906	1.3000e-004	1.3000e-004	6.9325
Apartments High Rise	2.57546	0.0278	0.2374	0.1010	1.5100e-003		0.0192	0.0192		0.0192	0.0192		302.9958	302.9958	5.8100e-003	5.5500e-003	304.8398
Total		0.0284	0.2431	0.1058	1.5400e-003		0.0196	0.0196		0.0196	0.0196		309.8863	309.8863	5.9400e-003	5.6800e-003	311.7723

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425
Unmitigated	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.4761					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4396	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786		25.7120	25.7120	0.0253		26.2425
Total	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.4761					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.4396	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786		25.7120	25.7120	0.0253		26.2425
Total	4.4829	0.1662	14.3493	7.5000e-004		0.0786	0.0786		0.0786	0.0786	0.0000	25.7120	25.7120	0.0253	0.0000	26.2425

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

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Sacramento County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Aerial Lifts	Diesel	No Change	0	1	No Change	0.00
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Cement and Mortar Mixers	Diesel	No Change	0	4	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	2	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Forklifts	Diesel	No Change	0	2	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	1	No Change	0.00
Rollers	Diesel	No Change	0	1	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	2	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	8	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Aerial Lifts	7.78000E-003	1.29970E-001	1.84750E-001	2.80000E-004	4.19000E-003	3.86000E-003	0.00000E+000	2.61137E+001	2.61137E+001	8.06000E-003	0.00000E+000	2.62829E+001
Air Compressors	4.83000E-002	3.20580E-001	2.83900E-001	4.50000E-004	2.48300E-002	2.48300E-002	0.00000E+000	3.89372E+001	3.89372E+001	3.92000E-003	0.00000E+000	3.90195E+001
Cement and Mortar Mixers	1.85000E-003	1.16100E-002	9.71000E-003	2.00000E-005	4.60000E-004	4.60000E-004	0.00000E+000	1.44357E+000	1.44357E+000	1.50000E-004	0.00000E+000	1.44672E+000
Concrete/Industrial Saws	9.29000E-003	6.81800E-002	5.99900E-002	1.00000E-004	4.91000E-003	4.91000E-003	0.00000E+000	8.60250E+000	8.60250E+000	7.60000E-004	0.00000E+000	8.61840E+000
Cranes	1.04570E-001	1.24468E+000	4.51580E-001	9.70000E-004	5.48500E-002	5.04600E-002	0.00000E+000	8.92252E+001	8.92252E+001	2.75300E-002	0.00000E+000	8.98032E+001
Forklifts	4.50300E-002	3.93040E-001	2.82010E-001	3.50000E-004	3.20100E-002	2.94500E-002	0.00000E+000	3.22059E+001	3.22059E+001	9.94000E-003	0.00000E+000	3.24145E+001
Graders	5.24000E-003	5.30300E-002	2.66100E-002	3.00000E-005	2.98000E-003	2.74000E-003	0.00000E+000	3.18132E+000	3.18132E+000	9.70000E-004	0.00000E+000	3.20179E+000
Pavers	3.31000E-003	3.70300E-002	2.60600E-002	4.00000E-005	1.82000E-003	1.68000E-003	0.00000E+000	3.85078E+000	3.85078E+000	1.18000E-003	0.00000E+000	3.87555E+000
Rollers	2.86000E-003	2.66600E-002	1.82900E-002	2.00000E-005	1.93000E-003	1.78000E-003	0.00000E+000	2.23508E+000	2.23508E+000	6.80000E-004	0.00000E+000	2.24946E+000
Rubber Tired Dozers	2.38000E-003	2.63900E-002	1.98800E-002	2.00000E-005	1.23000E-003	1.13000E-003	0.00000E+000	1.65109E+000	1.65109E+000	5.10000E-004	0.00000E+000	1.66172E+000
Tractors/Loaders/Backhoes	1.02240E-001	9.91890E-001	8.15250E-001	1.07000E-003	7.30900E-002	6.72500E-002	0.00000E+000	9.85789E+001	9.85789E+001	3.03900E-002	0.00000E+000	9.92170E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Aerial Lifts	7.78000E-003	1.29970E-001	1.84750E-001	2.80000E-004	4.19000E-003	3.86000E-003	0.00000E+000	2.61137E+001	2.61137E+001	8.06000E-003	0.00000E+000	2.62829E+001
Air Compressors	4.83000E-002	3.20580E-001	2.83900E-001	4.50000E-004	2.48300E-002	2.48300E-002	0.00000E+000	3.89371E+001	3.89371E+001	3.92000E-003	0.00000E+000	3.90194E+001
Cement and Mortar Mixers	1.85000E-003	1.16100E-002	9.71000E-003	2.00000E-005	4.60000E-004	4.60000E-004	0.00000E+000	1.44357E+000	1.44357E+000	1.50000E-004	0.00000E+000	1.44672E+000
Concrete/Industrial Saws	9.29000E-003	6.81800E-002	5.99900E-002	1.00000E-004	4.91000E-003	4.91000E-003	0.00000E+000	8.60249E+000	8.60249E+000	7.60000E-004	0.00000E+000	8.61838E+000
Cranes	1.04570E-001	1.24468E+000	4.51580E-001	9.70000E-004	5.48500E-002	5.04600E-002	0.00000E+000	8.92251E+001	8.92251E+001	2.75300E-002	0.00000E+000	8.98031E+001
Forklifts	4.50300E-002	3.93040E-001	2.82010E-001	3.50000E-004	3.20100E-002	2.94500E-002	0.00000E+000	3.22058E+001	3.22058E+001	9.94000E-003	0.00000E+000	3.24145E+001
Graders	5.24000E-003	5.30300E-002	2.66100E-002	3.00000E-005	2.98000E-003	2.74000E-003	0.00000E+000	3.18132E+000	3.18132E+000	9.70000E-004	0.00000E+000	3.20179E+000
Pavers	3.31000E-003	3.70300E-002	2.60600E-002	4.00000E-005	1.82000E-003	1.68000E-003	0.00000E+000	3.85077E+000	3.85077E+000	1.18000E-003	0.00000E+000	3.87555E+000
Rollers	2.86000E-003	2.66600E-002	1.82900E-002	2.00000E-005	1.93000E-003	1.78000E-003	0.00000E+000	2.23508E+000	2.23508E+000	6.80000E-004	0.00000E+000	2.24946E+000
Rubber Tired Dozers	2.38000E-003	2.63900E-002	1.98800E-002	2.00000E-005	1.23000E-003	1.13000E-003	0.00000E+000	1.65109E+000	1.65109E+000	5.10000E-004	0.00000E+000	1.66171E+000
Tractors/Loaders/Backhoes	1.02240E-001	9.91890E-001	8.15250E-001	1.07000E-003	7.30900E-002	6.72500E-002	0.00000E+000	9.85788E+001	9.85788E+001	3.03900E-002	0.00000E+000	9.92169E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Aerial Lifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.14882E-006	1.14882E-006	0.00000E+000	0.00000E+000	1.14143E-006
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.02730E-006	1.02730E-006	0.00000E+000	0.00000E+000	1.28141E-006
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.16245E-006	1.16245E-006	0.00000E+000	0.00000E+000	2.32062E-006
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.23284E-006	1.23284E-006	0.00000E+000	0.00000E+000	1.11355E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.31508E-007	9.31508E-007	0.00000E+000	0.00000E+000	1.23402E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.59688E-006	2.59688E-006	0.00000E+000	0.00000E+000	0.00000E+000
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	6.01786E-006
Tractors/Loaders/Balkhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21730E-006	1.21730E-006	0.00000E+000	0.00000E+000	1.20947E-006

Fugitive Dust Mitigation

Yes/No Mitigation Measure Mitigation Input Mitigation Input Mitigation Input

No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.03	0.01	0.03	0.01	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.17	0.05	0.17	0.05	0.00	0.00
Demolition	Fugitive Dust	0.01	0.00	0.00	0.00	0.55	0.55
Demolition	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Fugitive Dust	0.00	0.00	0.00	0.00	0.55	0.55
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.00	0.00	0.00	0.00	0.50	0.00
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	8.89	24.71	20.75	29.03	27.29	27.25	0.00	29.05	29.05	26.84	0.00	29.05
Natural Gas	45.48	45.54	45.57	44.23	45.59	45.59	0.00	45.55	45.55	45.86	45.66	45.55
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	25.00	28.98	28.24	25.27	25.05	27.84
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Urban Center

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
Yes	Land Use	Increase Density	5.15	567.00	0.00	
Yes	Land Use	Increase Diversity	0.07	0.26		
No	Land Use	Improve Walkability Design	0.00	0.00		
Yes	Land Use	Improve Destination Accessibility	0.19	0.70		
Yes	Land Use	Increase Transit Accessibility	0.24	0.03		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.30			

No	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site	
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
Yes	Parking Policy Pricing	Limit Parking Supply	0.00	0.00	
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00	
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00	
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00	0.00	
No	Transit Improvements	Expand Transit Network	0.00	0.00	
No	Transit Improvements	Increase Transit Frequency	0.00		0.00
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.30		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"	7.70		
No	Commute	Workplace Parking Charge		0.00	
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00
No	Commute	Provide Ride Sharing Program	15.00		
	Commute	Commute Subtotal	0.00		

No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.30		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
Yes	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	55.00	
No	Install High Efficiency Lighting	0.00	
Yes	On-site Renewable	20.00	100.00

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher	15.00
Fan	50.00
Refrigerator	15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Apply Water Conservation on Strategy	25.00	50.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

APPENDIX C

CAP CONSISTENCY REVIEW CHECKLIST

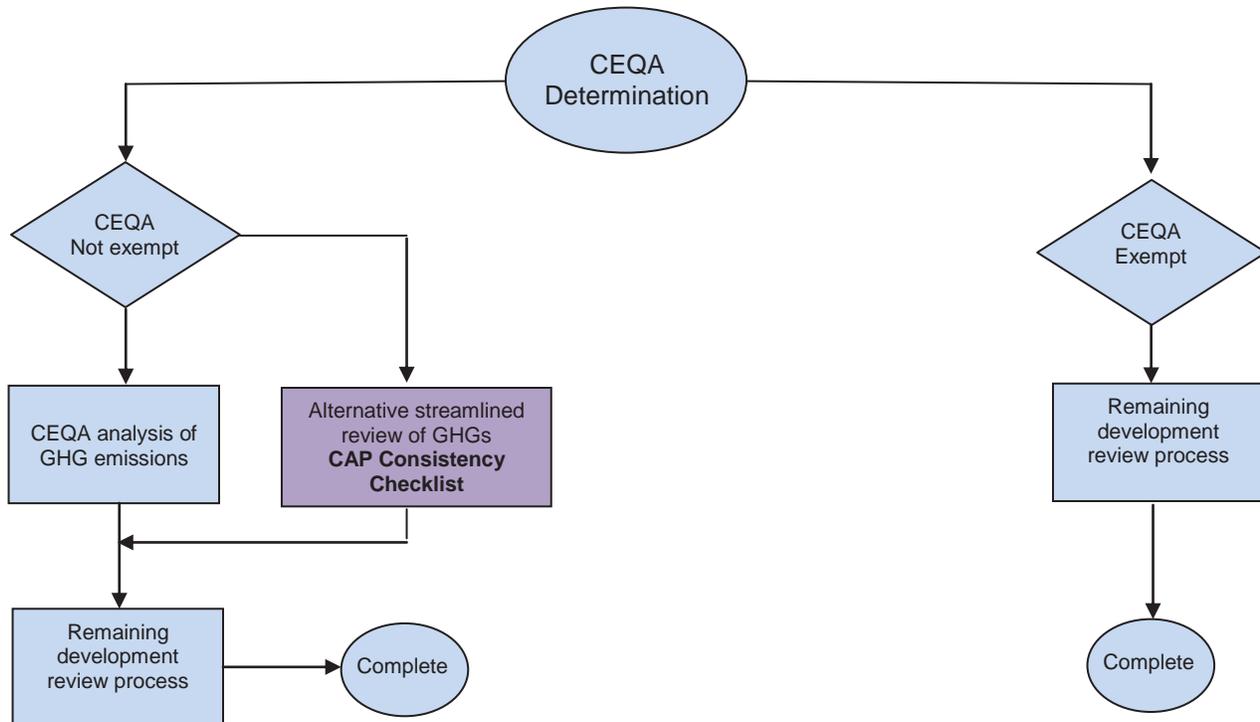
CLIMATE ACTION PLAN – CONSISTENCY REVIEW CHECKLIST

The purpose of the Climate Action Plan Consistency Review Checklist (CAP Consistency Review Checklist) is to provide a streamlined review process for proposed new development projects which are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA)..

CEQA Guidelines require the analysis of greenhouse gas (GHG) emissions and potential climate change impacts from new development. The Sacramento Climate Action Plan qualifies under section 15183.5 of the CEQA Guidelines as a plan for the reduction of GHG emissions for use in cumulative impact analysis pertaining to development projects. This allows projects that demonstrate consistency with the CAP to be eligible for this streamlining procedure. Projects that demonstrate consistency with the CAP and the Sacramento 2030 General Plan may be able to answer “No additional significant environmental effect” in the City’s initial study checklist. Projects that do not demonstrate consistency may, at the City’s discretion, prepare a more comprehensive project-specific analysis of GHG emissions consistent with CEQA requirements. (See FAQ about the CAP Consistency Review Checklist for more details.)

The diagram below shows the context for the CAP Consistency Review Checklist within the planning review process framework.

Streamlined Review of GHG Emissions in Development Projects



CLIMATE ACTION PLAN – CONSISTENCY REVIEW CHECKLIST

Application Submittal Requirements

1. The CAP Consistency Review Checklist is required only for proposed new development projects which are subject to CEQA review (non-exempt projects)
2. If required, the CAP Consistency Review Checklist must be submitted in addition to the basic set of requirements set forth in the Universal Application and the Planning Application Submittal Matrix.
3. The applicant shall work with staff to meet the requirements of this checklist. These requirements will be reflected in the conditions of approval and/or mitigation measures.
4. All conditions of approval and mitigation measures from this checklist shall be shown on full-size sheets for building plan check submittals.

Application Information

Project Number: DR16-202

Address of Property: 1827 and 1831 J Street, Sacramento, CA

Was a special consultant retained to complete this checklist? Yes No. If yes, complete following

Consultant Name*: Rod Stinson, Division Manager / Air Quality Specialist

Company: Raney Planning and Management, Inc.

Phone: 916-372-6100 E-Mail: rods@raneymanagement.com

CAP Consistency Checklist Form for Projects that are Not Exempt from CEQA

Checklist Item (Check the appropriate box, and provide explanation for your answer).	Yes	No*
1. Is the proposed project substantially consistent with the City's over-all goals for land use and urban form, allowable floor area ratio (FAR) and/or density standards in the City's 2035 General Plan, as it currently exists?	<input checked="" type="checkbox"/>	
<p>Please explain how proposed project compares to 2035 General Plan with respect to density standards, FAR, land use and urban form. (See directions for filling out CAP Checklist)</p> <p>The proposed project consists of construction of a 173-unit mixed-use building with ground floor commercial uses. The General Plan Land Use designation for the project site is Urban Corridor High (UCH) and the site is zoned Urban Commercial with a Urban Neighborhood overlay zone (C-2-UN). The General Plan states that development in the UCH is intended to be compact with retail and other pedestrian-oriented uses located on the street level, and an overall focus on integrating residential, office, and retail uses. The proposed project would achieve such development goals by maintaining pedestrian oriented commercial uses on the ground floor, and integrating high density residential units in close proximity to existing commercial uses and employment centers in the surrounding Central City area.</p>		

2. Would the project incorporate traffic calming measures? (Examples of traffic calming measures include, but are not limited to: curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers.)	Yes	NA
		<input checked="" type="checkbox"/>
<p>Please explain how the proposed project meets this requirement (list traffic calming measures). If "not applicable" (NA), explain why traffic calming measures were not required.</p> <p>The proposed project would include one vehicle access point along Improv Alley. Other than the aforementioned off-street access point, the existing and planned infrastructure in the area is sufficient to accommodate the proposed project without any on-street or transportation facility improvements. Therefore, the need for traffic calming measures does not apply to the proposed project.</p>		

*If "No", equivalent or better GHG reduction must be demonstrated as part of the project and incorporated into the conditions of approval.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

Checklist Item (Check the appropriate box, and provide explanation for your answer).	Yes	NA
3. Would the project incorporate pedestrian facilities and connections to public transportation consistent with the City's Pedestrian Master Plan?	X	
<p>Please explain how the proposed project meets this requirement. If "not applicable" (NA), explain why this was not required.</p> <p>The proposed project is bordered by sidewalks on 19th Street and J Street, and the nearest intersection is signalized with pedestrian crossing signals. The project site is approximately 0.3-mile away from a bus stop on J Street and less than a mile away from three light rail stations and over 16 bus lines. The proposed project would not alter or impede any of the nearby transportation measures. Additionally, the project is identified as being located within a Transportation Priority Area (TPA) by the regional Metropolitan Transportation Plan/Sustainable Communities Strategy. TPAs are areas that include existing public transportation options, and are identified as areas where further compact development would lead to greater use of existing public transportation. As such, the proposed project would not conflict with the City's Pedestrian Master Plan.</p>		

4. Would the project incorporate bicycle facilities consistent with the City's Bikeway Master Plan, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen?	Yes	NA
	<p>Please explain how the proposed project meets this requirement. If "not applicable" (NA), explain why this was not required.</p> <p>Bicycle lanes currently exist adjacent to the project site on 19th Street. The proposed project does not include significant modifications or alterations to the existing bicycle infrastructure on the surrounding roadways. For the combined residential and retail use the City's zoning code requires 89 long-term and 21 short-term bicycle parking spaces. The proposed project would provide 128 long-term and 37 short-term bicycle parking spaces, which would exceed the City's zoning requirements. Therefore, the proposed project would be consistent with the City's Bikeway Master Plan and with applicable bicycle facility requirements, and would exceed the City's zoning code requirements for bicycle parking.</p>	

*If "No", equivalent or better GHG reduction must be demonstrated as part of the project and incorporated into the conditions of approval.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

Checklist Item (Check the appropriate box, and provide explanation for your answer).	Yes	No*	NA
<p>5. For residential projects of 10 or more units, commercial projects greater than 25,000 square feet, or industrial projects greater than 100,000 square feet, would the project include on-site renewable energy systems (e.g., photovoltaic systems) that would generate at least a minimum of 15% of the project's total energy demand on-site? (CAP Actions: 3.4.1 and 3.4.2)</p>	X		
<p>Please explain how the proposed project meets this requirement. If "not applicable" (NA), explain why this was not required. If project does not meet requirements, see DIRECTIONS FOR FILLING OUT CAP CONSISTENCY REVIEW CHECKLIST re: alternatives to meeting checklist requirements.</p> <p>The proposed project would include the installation of rooftop solar photo-voltaic panels, which would produce 20 kWh of energy. Additionally, the proposed project includes an agreement with SMUD to provide the remaining energy demand from the proposed mixed use building through the purchase of renewable energy credits. As a result, 100% of the project's operational energy demand would be met by on-site and off-site renewable sources. Furthermore, the proposed project would exceed the current Title 24 energy efficiency requirements by 30%. Therefore, the proposed project would be in compliance with the energy efficiency portion of the City's CAP.</p> <p>Attach a copy of the CalEEMod input and output. Record the model and version here _____. Do NOT select the "use historical" box in CalEEMod for energy demand analysis related to this requirement.</p>			
<p>6. Would the project (if constructed on or after January 1, 2014) comply with minimum CALGreen Tier 1 water efficiency standards?</p>	Yes	NA	X
<p>Please explain how the proposed project meets this requirement. If "not applicable" (NA), explain why this was not required.</p> <p>At the time of environmental analysis, insufficient information existed to assess the proposed project's compliance with CALGreen Tier 1 water efficiency standards. However, planning approval would include the condition that the proposed project meet CALGreen Tier 1 standards. By conditioning the approval of the project on compliance with the CALGreen Tier 1 standard, the proposed project would be required to comply with the minimum CALGreen Tier 1 water efficiency standards. Additionally, at the time of environmental analysis, the proposed project is planned to apply water conservation strategies to reduce indoor water use by 25% and outdoor water use by 50%.</p>			

*If "No", equivalent or better GHG reduction must be demonstrated as part and incorporated into the conditions of approval.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

Certification

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability and that the facts, statements and information presented are true and correct to the best of my knowledge and belief.

Signature: _____ Date: _____

DIRECTIONS FOR FILLING OUT CAP CONSISTENCY REVIEW CHECKLIST

General Plan Consistency & Sustainable Land Use

1. Is the proposed project substantially consistent with the land use and urban form designation, allowable floor area ratio (FAR) and/or density standards in the City's [2035 General Plan](#)?

Consistency with the General Plan land use and urban form designation, FAR and/or density standards is a key determining factor in whether or not the CAP Consistency Review procedure can be used. This is because future growth and development consistent with the General Plan was used to estimate business as usual emission forecasts, as well as emission reductions from actions that would be applicable to new development.

Refer to the 2035 General Plan, Land Use and Urban Form Designations and Development Standards starting on page 2-29. If a project is not fully consistent with the General Plan, the project still may qualify for consistency with the CAP, but this determination will need to be closely coordinated with the City. The City will determine whether the proposed land uses under consideration could be found consistent with the growth projections and assumptions used to develop the GHG emissions inventory and projections in the CAP.

Mobility

2. Would the project incorporate traffic calming measures? (Applicable CAP Action: 2.1.1)

List the traffic calming measures that have been incorporated into the project. These may include, but are not limited to: curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers.

The project proponent and City staff should consult with staff in the Department of Public Works-Transportation Division to verify that traffic calming measures are adequate and in compliance with the City's Street Design Standards.

If the proposed project does not include any roadway or facility improvements, traffic calming measures may not apply. For example, certain infill projects may not result in on-street or transportation facility improvements because sufficient infrastructure already exists.

3. Would the project incorporate pedestrian facilities and connections to public transportation consistent with the City's Pedestrian Master Plan? (Applicable CAP Action: 2.2.1)

List the pedestrian facilities and connections to public transportation that have been included in the proposed project on the Checklist. These may include, but are not limited to: sidewalks on both sides of streets, marked crosswalks, count-down signal timers, curb extensions, median islands, transit shelters, street lighting.

The project proponent and City staff should consult with Department of Public Works-Transportation Division staff to verify that pedestrian facilities are consistent with the [Pedestrian Master Plan](#). As in the previous example, if "not applicable", an explanation shall be documented in the Checklist. For example, certain infill projects may not require on-street or transportation facility improvements because sufficient infrastructure already exists.

The “Pedestrian Review Process Guide” ([Appendix A to the Master Plan](#)) will be used to determine consistency, as follows:

- For typical infill development projects where existing streets will serve the site (no new streets are proposed): the level of pedestrian improvements necessary to determine Pedestrian Master Plan consistency will be measured according to the “Basic, Upgrade or Premium” categories defined in Appendix A to the Pedestrian Master Plan, which are based on project location, surrounding land uses, proximity to transit, etc. If the proposed project does not include the minimum level of improvements per the assigned category for the project’s location, the project will be required as a condition of approval to include appropriate features, per the approval of the Department of Public Works-Transportation Division.
- For new “greenfield” projects and/or larger infill development projects where new streets are proposed as part of the project, the following will apply:
 - “Basic, Upgrade or Premium” levels of improvement will be required based on the proposed project’s location and context, where applicable, consistent with the criteria defined in the Master Plan. If the proposed project does not include the minimum level of improvements per the assigned category, the project will be required as a condition of approval to include appropriate features, per the approval of the Department of Public Works-Transportation Division.
 - The “Pedestrian Smart Growth Scorecard” (Appendix A to the Master Plan) will be required to be completed for the project, and a minimum score of 3 or better will need to be achieved. If the proposed project cannot achieve the minimum score, changes to the proposed project may be required, and/or the project may be required as a condition of approval to include certain improvements such that the average score will meet 3 or better. (Note: an Excel version of the Pedestrian Smart Growth Scorecard is available, to assist in automating the rating & scoring process)

4. Would the project incorporate bicycle facilities consistent with the City’s Bikeway Master Plan, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen? (Applicable CAP Action: 2.3.1)

List the bicycle facilities that are incorporated into the proposed project on the Checklist. These include, but are not limited to: Class I bike trails and Class II bike lanes connecting the project site to an existing bike network and transit stations, bike parking [bike racks, indoor secure bike parking, bike lockers], end-of-trip facilities at non-residential land uses [showers, lockers].

The project proponent and City staff should consult with staff in the Transportation Division of the Department of Public Works to verify that such facilities are consistent with the [Bikeway Master Plan](#) and meet or exceed Zoning Code and CALGreen standards. Generally, the following guidelines will be used:

- If existing on-street and off-street bikeways are already present and determined to be consistent with the Bikeway Master Plan, no additional on-street bikeways will be required. Check the “not applicable” box if appropriate. However, on-site facilities shall still be required to meet or exceed minimum Zoning and CALGreen requirements.
- If not applicable, fully document the reasons why using the Checklist.

- If on-street bicycle facilities are not present or are only partially consistent with the Master Plan, the project will be required as a condition of approval to construct or pay for its fair-share of on-street and/or off-street bikeways described in the Master Plan, in addition to meeting or exceeding minimum on-site facilities.
- In some cases, a combination of new or upgraded on-street and off-street bikeways may be used to determine consistency with the Master Plan, at the discretion of the Department of Public Works-Transportation Division staff.

Energy Efficiency and Renewable Energy

- 5. For residential projects of 10 or more units, commercial projects greater than 25,000 square feet, or industrial projects greater than 100,000 square feet, would the project include on-site renewable energy systems (e.g., solar photovoltaic, solar water heating etc.) that would generate at least 15% of the project's total energy demand? (CAP Actions: 3.4.1 and 3.4.2)**

For projects of the minimum size specified in this measure, a commitment in the project description or in a mitigation measure that the project shall generate a minimum of 15% of the project's energy demand on-site is sufficient to demonstrate consistency with this measure. However, the project conditions of approval or mitigation measures should specify the intended renewable energy technology to be used (e.g. solar photovoltaic, solar water heating, wind, etc.) and estimated size of the systems to meet project demand based on the project description.

"Total energy demand" refers to the energy (electricity and natural gas) consumed by the built environment (including HVAC systems, water heating systems, and lighting systems) as well as uses that are independent of the construction of buildings, such as office equipment and other plug-ins.

Applicants may estimate the total energy demand of their projects using California Emissions Estimator Model (CalEEMod 2013.2), the same software used to estimate greenhouse gas emissions. **For CalEEMod estimates of energy demand to meet this specific requirement, the user should NOT select the "use historical" box, otherwise they will be "double-counting" emissions reductions that have already been counted.** CalEEMod outputs for electricity demand are provided in annual kWh, and natural gas demand is provided in annual kBtu.

The energy demand estimate by CalEEMod is based on two datasets:

- The California Commercial End Use Survey (CEUS);
- The Residential Appliance Saturation Survey (RASS)

CalEEMod takes energy use intensity data (above) and forecasts energy demand based on climate zone, land use subtype (such as "hospital", "arena", or "apartments, mid rise"), building area, and the number of buildings or units. This is an appropriate level of analysis for use at the planning submittal stage, but it may not provide an accurate picture of actual project energy demand because it does not factor project specifics such as building design.

Therefore, the applicant is advised (but not required) to run a more comprehensive energy simulation once project-specific details are known: basic building design, square-footage, building envelope, lighting design (at least rudimentary), and the mechanical system (at least minimally zoned). Some of the energy simulation programs that are appropriate for this level of analysis include: DOE 2.2, Trace 700, and Energy Pro.

The U.S. DOE maintains a list of energy simulation programs that are available.

http://apps1.eere.energy.gov/buildings/tools_directory/subjects.cfm/pagename=subjects/pagename_menu=whole_building_analysis/pagename_submenu=energy_simulation

The applicant may then revise the estimate and make a final determination regarding the size of the PV system that is required.

Substitutions: Projects may substitute a quantity of energy efficiency for renewable energy, as long as the substituted GHG reduction does not “double count” GHG reductions already taken by the CAP. In other words, substitutions must reduce GHG emissions from the project beyond what is already accounted for in the CAP (to avoid double-counting).

- Additional mitigation may include equivalent or better GHG reduction from individual measures or a combination of:
- In lieu of installing PV systems that would generate 15% of the projects total energy, the project may exceed energy efficiency standards of Title 24, part 6 of the California Building Code, such as building to CALGreen Tier 1 energy standards. (Residential projects shall exceed the 2013 Title 24 energy efficiency by a minimum of 10% and commercial projects shall exceed 2013 Title 24 energy efficiency by a minimum of 5%).

6. Would the project comply with minimum CALGreen Tier I water efficiency standards? (CAP Action: 5.1.1)

The [California Green Building Standards Code \(CALGreen\)](#) includes mandatory green building measures, as well as voluntary measures that local jurisdictions may choose to adopt to achieve higher performance tiers, at either Tier 1 or Tier 2 compliance levels. Sacramento has adopted Tier 1 Water Efficiency Standards to be required on or after January 1, 2014. Currently, in order to meet the Tier 1 Water Efficiency Standards, buildings are required to implement all mandatory water efficiency and conservation measures as well as certain Tier 1 specific measures that exceed minimum mandatory measures (e.g. 30% increase in indoor water efficiency). Specific Tier 1 provisions can be found in the CALGreen Code at <http://www.bsc.ca.gov/Home/CALGreen.aspx>.

The City recognizes that project construction details are often not known at the environmental review stage, and it may be premature for a project proponent to identify compliance with precise requirements of CALGreen. A condition of approval requiring the project to comply with minimum CALGreen Tier 1 water efficiency and conservation standards is sufficient to demonstrate consistency with this criterion.

Planning approval of your project will include the following condition:

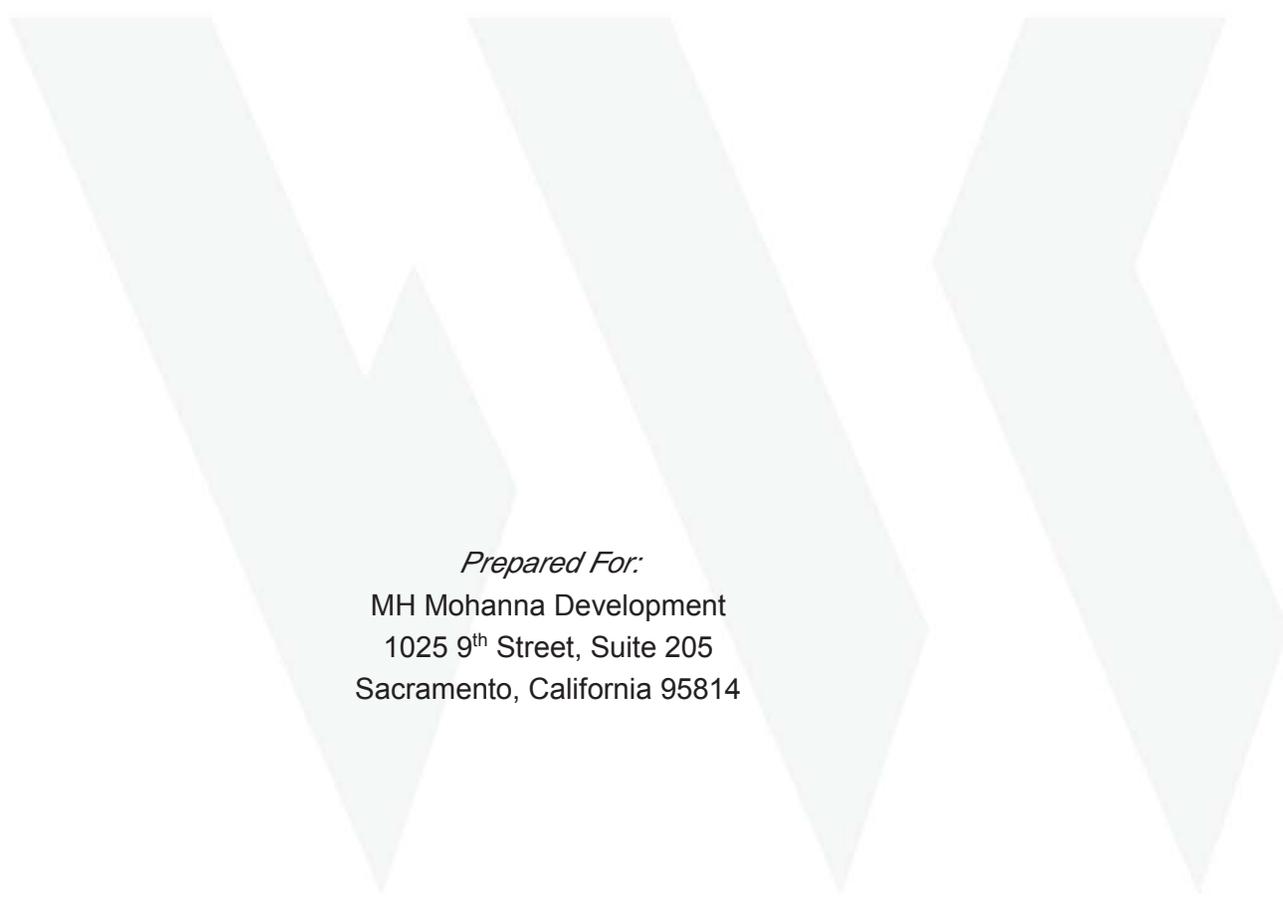
Project must meet CALGreen Tier 1 water efficiency and conservation standards. Copies of the appropriate CalGreen checklist (see FAQ) shall be included on the full-size sheets for building plan check submittals.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

APPENDIX D

GEOTECHNICAL ENGINEERING REPORT

Geotechnical Engineering Report
19th & J STREETS
11-STORY MIXED-USE BUILDING
WKA No. 11050.01
September 1, 2016



Prepared For:
MH Mohanna Development
1025 9th Street, Suite 205
Sacramento, California 95814

Geotechnical Engineering Report
19th & J STREETS – 11-STORY MIXED-USE BUILDING
 Sacramento, California
 WKA No. 11050.01

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Geotechnical Engineering Report
19th & J STREETS – 11-STORY MIXED-USE BUILDING
Sacramento, California
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Geotechnical Engineering Report

19th & J STREETS – 11-STORY MIXED-USE BUILDING

Sacramento, California

WKA No. 11050.01

September 1, 2016

INTRODUCTION

We have completed a geotechnical engineering study for the proposed 11-story mixed-use building to be constructed northwest of the intersection of 19th and J Streets in Sacramento, California. The purposes of this study have been to explore the existing site, soil and groundwater conditions at the site, and to provide geotechnical engineering conclusions and recommendations for the design and construction of the proposed mixed-use building. This report presents the results of our study.

Scope of Services

Our scope of services for this project has included the following tasks:

1. Perform a site reconnaissance;
2. Review of a previous geotechnical study located about 1,000 feet northwest of the project site;
3. Review of a United States Geological Survey (USGS) topographic map, historical aerial photographs and available groundwater information;
4. Perform subsurface explorations, including the drilling and sampling of three borings to depths ranging from about 19 to 32 feet below the existing site grades;
5. Collect representative bulk samples of near-surface soils;
6. Perform laboratory testing of selected soil samples;
7. Perform engineering analyses; and,
8. Prepare this report.

Please note, a site-specific spectra response analysis for the project was beyond the scope of our study. We would be pleased to submit a proposal to provide these services upon request.

Supplemental Information

Supplemental information used in the preparation of this report included review of the following report prepared for the Cooper Union building, located southeast of the intersection of 16th & H Streets in Sacramento, California: Wallace-Kuhl & Associates, Inc., *Geotechnical Engineering Report* (WKA Inc. No. 6074.01, dated July 28, 2004). We also reviewed available groundwater

information on the State Water Resource Control Board (SWRCB) GeoTracker website for the vicinity of the site.

Figures and Attachments

A Vicinity Map showing the location of the site is included as Figure 1. A Site Plan showing the approximate boring locations included in this study is included as Figure 2. The Logs of Soil Borings are presented as Figures 3 through 5. An explanation of the symbols and classification system used on the boring logs appears in Figure 6. Appendix A contains general information regarding project concepts, exploratory methods used during our study, and laboratory test results that are not included on the boring logs. *Guide Earthwork Specifications* and *Guide Specifications for Auger Cast-In-Place (ACIP) Piles*, both of which may be used in the preparation of contract documents, are included as Appendix B and C, respectively.

Proposed Development

We understand the project will include the razing of several existing structures and pavements at the site. Following the demolition activities, we understand that an 11-story, mixed-use building will be constructed at the site. The upper nine floors of the mixed-use building will be constructed of light steel framing supported on a cast-in-place (CIP), reinforced concrete, two-story podium structure. We understand that the first floor of the building will be used for retail/commercial purposes; the second floor will be used for automobile parking; and, the upper nine floors will be developed with lofts/apartments. Below-grade floors are not planned for this project. Structural loads for the building are anticipated to be relatively moderate to heavy based on this type of construction. Associated development will include construction of underground utilities, exterior flatwork, and landscaped areas.

A grading plan was not available at the time this report was prepared; however, based on the existing site topography and our understanding of the project, we anticipate cuts and fills may be on the order of two to four feet, depending on the extent of disturbance caused by removal of the existing structures and pavements.

FINDINGS

Site Description

The project site is located northwest of the intersection of 19th and J Streets in Sacramento, California (see Figure 1). The rectangular-shaped site covers an area of about 13,000 square feet and is comprised of Sacramento County Assessor's Parcel Number (APN) 007-0012-011.



The site is bounded to the north by a paved alley, beyond which is an auto body shop; to the east by 19th Street, beyond which is commercial development; to the south by J Street, beyond which is commercial development; and to the west by commercial development (see Figure 2).

The topography of the site is relatively flat. Based on topography data shown on an undated site plan drawing provided by M.H. Mohanna Development on July 13, 2016, the elevation at the site ranges from about +20 to +21 feet relative to mean sea level (msl). This information is consistent with topography data for the site shown on the *USGS 7.5-Minute Topographic Map of the Sacramento East Quadrangle, California*, dated 2015.

At the time of our field explorations, performed between July 8 and 20, 2016, the site was developed with four, single-story buildings, asphalt concrete pavements and exterior flatwork. The eastern portion of the site supported a vacant building that was previously occupied by Metro Electronics. The southwestern portion of the site supported a building occupied by an Italian grocery store, the Italian Importing Company. Two relatively small storage structures were observed in the northwestern portion of the site. Evidence of various underground utilities was observed throughout the site. Evidence of a two-chamber underground structure, possibly a grease interceptor, was observed adjacent to the north of the Italian Importing Company. Overhead utilities were observed along the northern and eastern boundaries of the site.

Historical Document Review

We reviewed historical aerial photographs of the site available from our files and the Google Earth software. Available photographs were taken in the years 1961, 1990, 1993, 1998, 2002 through 2015.

Review of the photograph taken in 1961 shows the eastern and southwestern portions of the site developed with two structures. These structures are consistent in shape, size and location with the commercial and grocery store structures observed at the site during the time our field explorations were performed. The remaining portions of the site were shown to be vacant. Review of the photograph taken in 1990 shows two new, relatively small structures in the northwestern portion of the site. These structures are consistent in shape, size, and location with the storage structures observed at the site during the time our field explorations were performed. Review of the remaining photographs shows the site has generally remained unchanged since at least 1990.

Subsurface Soil Conditions

As part of this study, the subsurface exploration included the drilling and sampling of three borings (D1 through D3), performed between July 8 and 20, 2016 at the approximate locations



shown in Figure 2. Borings D1 and D2 were performed using a truck-mounted drill rig (CME 75) equipped with hollow stem augers and mud rotary equipment. Boring D3 was performed using our John Deere 6x6 Gator drill rig equipped with solid stem augers. The three borings were terminated due to auger refusal at depths ranging from about 19 to 32 feet below existing site grades.

The borings were drilled through interior and exterior concrete slabs approximately three to four inches thick. The subsurface soil conditions encountered below the slabs consisted of fill soils to a depth of about one foot. The fill soils consisted of relatively loose, silty sand. The silty sand was underlain by very loose to loose, sandy silt with varying amounts of clay and gravel to depths ranging from about 17 to 18 feet below existing site grades. At boring D2, the sandy silt was underlain by loose to dense, silty sand with varying amounts of gravel. Soil conditions beneath these soils generally consisted of dense to very dense, slightly silty, sandy gravel to the explored depths ranging from 19 to 32 feet below existing site grades.

These subsurface soil conditions are consistent with soils encountered in borings included in the study for the Cooper Union building, located about 1,000 feet northwest of the site. For specific information regarding the soil conditions at a specific boring location, please refer to the Logs of Soil Borings, Figures 3 through 5.

Groundwater

Groundwater was observed in boring D1, performed on July 8, 2016, at a depth of about 18 feet below existing site grades. However, this boring was not left open long enough for groundwater to reach static equilibrium.

To supplement our groundwater data, we reviewed available groundwater information at the California Department of Water Resources (DWR) website. The DWR periodically monitors groundwater levels in wells across the state. Their website shows a well located approximately one-mile northeast of the site, which is identified as Well No. 08N05E06H001M with a ground surface elevation of about +25 feet msl, similar to the project site. Groundwater data for this well was recorded from March 13, 1968 to at least November 15, 2002. Data shows the highest recorded groundwater elevation was about +11 feet msl at the well on March 14, 1983. The lowest recorded groundwater elevation was about -13 feet msl at the well on October 11, 1968. Therefore, groundwater levels at the site from 1968 to 2002 likely fluctuated from elevations ranging from about -13 to +11 feet msl, translating to depths ranging from about nine to 34 feet below existing site grades. These groundwater elevations are consistent with groundwater levels observed at boring D1 performed for this study and a boring included in the referenced study for the Cooper Union building.



The above groundwater elevations are also consistent with available groundwater information on the SWRCB Geotracker website for several groundwater monitoring wells previously located at 908 20th Street in Sacramento, California, about 500 feet east of the project site. The documents we reviewed indicate these wells were monitored from June of 1994 to at least December of 2010 and that the groundwater levels at the wells during this time period generally fluctuated from elevations ranging from about +0 to +10 feet msl.

CONCLUSIONS

Effect of Previous Construction on Proposed Development

The site currently supports four single-story structures, pavements, exterior flatwork, and various underground and overhead utilities. From a geotechnical standpoint, the most effective method of mitigating the impact of existing structures, pavements, exterior flatwork, and utilities on new construction is to completely remove these items and any other surface and subsurface structures present within new construction areas, including associated backfill soils. Any resulting excavations should be restored to grade using engineered fill in accordance with the recommendations included in this report. Specific site clearing recommendations to remove existing surface and subsurface structures are included in this report.

Bearing Capacity and Structural Support

The near-surface soils at the site will become significantly disturbed during the razing of the existing structures and other site clearing activities. Sub-excavation, processing, and compaction of the disturbed, near-surface soils will be required to improve the support quality of these materials. Complete removal of the disturbed soils and proper backfilling of the excavations will be important to minimize total and differential settlements under the proposed structure.

Field and laboratory test results indicate the upper 18 to 20 feet of soil at the site are in a relatively loose condition and lack the shear strength necessary to support the anticipated structural loads for the proposed mixed-use building without experiencing significant total and differential settlements. In our opinion, the underlying relatively dense, sandy gravel stratum is considered capable of supporting the anticipated structural loads for the proposed building. Therefore, shallow foundations supported on an improved subgrade or a deep foundation system extending into competent soils will be necessary to support the proposed building.



Foundation Alternatives

We explored the option of using a mat foundation supported on the in-place, near-surface soils. However, the upper 18 to 20 feet of relatively loose, sandy silt soils possess relatively low shear strength, are compressible, and would settle a significant amount. Based on our field observations and testing and laboratory testing results, even with a relatively low allowable “net” soil bearing pressure of 2000 pounds per square foot (psf), a mat foundation would experience total static settlement on the order of 3 to 4 inches. In addition, such mat foundation would have the potential for additional settlement due to liquefaction (see discussion in the Liquefaction Potential section of this report). Therefore, it is our opinion that this foundation alternative is not feasible.

Based on the proposed development and the subsurface soil and groundwater conditions revealed by the subsurface exploration, in our opinion the two most feasible alternatives to support the mixed-use building are: a shallow foundation system (e.g. continuous and/or isolated spread footings or a mat foundation) supported on an improved subgrade consisting of Geopier® rammed aggregate piers [RAPs] and/or vibratory Impact® piers (or similar system) or a deep foundation system consisting of auger cast-in-place (ACIP) piles. We have provided recommendations for these foundation systems in the Foundation Design section of this report. These foundation systems will increase the support capacity of the near-surface soils and reduce total and differential settlements that are considered critical to the performance of the mixed-use building.

Driven piles and cast-in-place piers (drilled piers) were also considered as foundation systems to support the mixed-use building. However, due to the noise, vibrations, close proximity to existing development, and cost, driven piles are not considered practical. Due to existing subsurface soil conditions and relatively shallow groundwater levels at the site, in our opinion, drilled piers are also not considered practical for this project, as the piers would be required to be fully cased for construction, and have a much lower allowable bearing capacity and have a higher cost than ACIP piles. Upon request, we can provide recommendations for alternative foundation systems if desired.

Effect of New Construction on Existing Previous Development

For the purposes of this study, we assume that the mixed-use building will be supported on deep foundation elements that will extend to at least the relatively dense, sandy gravel stratum (Geopier® RAPs and/or vibratory Impact® piers) or at least three feet into the sandy gravel stratum (ACIP piles), which was encountered at depths ranging from about 18 to 20 feet below existing site grades. Based on this assumption, surcharge loading on existing foundations



associated with the structure located adjacent to the west of the site due to new construction should not be a significant factor.

Excavations associated with the proposed construction should not encroach into the zone extending outward at a one horizontal to one vertical (1H:1V) inclination from below the bottom of existing foundations, slabs or pavements.

2013 CBC/ASCE 7-10 Seismic Design Criteria

Based on the soil conditions encountered at the borings performed at the site and its near vicinity and our experienced in the downtown Sacramento area, in our opinion the soils at the site can be designated as Site Class D in determining seismic design forces for this project in accordance with Section 1613A.3.2 of the 2013 *California Building Code* (CBC), which references Chapter 20 of *American Society of Civil Engineers* (ASCE) *Standard 7-10* (ICC, 2013).

The seismic design parameters provided below are based on the site latitude and longitude using the United States Seismic Design Maps public domain computer program developed by the USGS. The 2013 CBC parameters provided in Table 1 should be used for seismic design of the mixed-use building and associated improvements.

TABLE 1 - 2013 CBC/ASCE 7-10 SEISMIC DESIGN PARAMETERS

Latitude: 38.5774° N Longitude: 121.4814° W	ASCE 7-10 Table/Figure	2013 CBC Table/Figure	Factor/ Coefficient	Value
Short-Period MCE at 0.2-seconds	Figure 22-1	Figure 1613.3.1(1)	S _s	0.667 g
1.0-second Period MCE	Figure 22-2	Figure 1613.3.1(2)	S ₁	0.291 g
Soil Class	Table 20.3-1	Section 1613.3.2	Site Class	D
Site Coefficient	Table 11.4-1	Table 1613.3.3(1)	F _a	1.266
Site Coefficient	Table 11.4-2	Table 1613.3.3(2)	F _v	1.817
Adjusted MCE Spectral Response Parameters	Equation 11.4-1	Equation 16-37	S _{MS}	0.845 g
	Equation 11.4-2	Equation 16-38	S _{M1}	0.529 g
Design Spectral Acceleration Parameters	Equation 11.4-3	Equation 16-39	S _{DS}	0.563 g
	Equation 11.4-4	Equation 16-40	S _{D1}	0.353 g
Seismic Design Category	Table 11.6-1	Section 1613.3.5(1)	Risk Category I to IV	D
	Table 11.6-2	Section 1613.3.5(2)	Risk Category I to IV	D

Notes: MCE = Maximum Considered Earthquake

g = Gravity



Liquefaction Potential

Liquefaction is a soil strength and stiffness loss phenomenon that typically occurs in loose, saturated cohesionless soils as a result of strong ground shaking during earthquakes. The potential for liquefaction at a site is usually determined based on the results of a subsurface geotechnical investigation and the groundwater conditions beneath the site. Hazards to buildings associated with liquefaction include bearing capacity failure, lateral spreading, and differential settlement of soils below foundations, which can contribute to structural damage or collapse. Provided the mixed-use building is supported on a shallow foundation system supported on improved, near-surface subgrade soils consisting of Geopier® rammed aggregate piers [RAPs] and/or vibratory Impact® piers (or similar system) or a deep foundation system consisting of ACIP piles bearing into the dense gravel stratum, in accordance with the recommendations included in this report, it is our opinion the soils beneath the deep foundation elements do not meet the liquefaction susceptibility criteria described above.

We reviewed *Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, California*, produced by the USGS in cooperation with the California Geological Survey (CGS), dated 2006, which characterize liquefaction susceptibility in select northern California counties. Our review revealed the location of the project site is not shown on the liquefaction hazard maps. In addition, to our knowledge, there have been no reported instances of liquefaction having occurred within the Sacramento area during the major earthquake events of 1892 (Vacaville-Winters), 1906 (San Francisco), 1989 (Loma Prieta) and 2014 (American Canyon). Based on this information, the recommended foundation systems for the proposed building, and our experience in the local area, it is our opinion the potential for liquefaction beneath the site is very low. However, if a mat foundation system supported on unimproved near-surface soils were to be selected for the proposed building, additional analysis of potential seismic induced settlement due to liquefaction should be performed. Such analysis may require additional site exploration (borings, cone penetration test soundings, etc.).

Expansive Soils

Laboratory testing performed on a sample of near-surface sandy silt soil collected from boring D1 revealed the silt soils possess a “very low” expansion potential when tested in accordance with ASTM D4829 (see Figure A5). Based on these test results, special reinforcement of foundations and floor slabs, or special moisture conditioning during site grading to mitigate soil expansion pressures, are not considered necessary for this project.



Groundwater Effect on Development

Groundwater was observed in boring D1 performed on July 8, 2016, at a depth of about 18 feet below existing site grades. However, this boring was not left open long enough for groundwater to reach static equilibrium. Review of available groundwater data revealed groundwater depths at the site likely fluctuated from about nine to 34 feet below existing site grades (approximate elevations of -13 to +11 feet msl) from 1968 to at least 2010. Groundwater levels at the site should be expected to fluctuate throughout the year based on variations in seasonal precipitation, time of year, water levels of nearby rivers, and other factors.

Based on explorations performed at the site and it's near vicinity and available groundwater data, we anticipate excavations extending below an elevation of +11 feet msl may encounter groundwater and require dewatering (depending on the time of year). For planning purposes, groundwater should be anticipated at an elevation of +11 feet msl. If groundwater is encountered, the use of sumps, submersible pumps, deep wells or a well point system could be used as methods to lower the groundwater level. The dewatering method used will depend on the soil conditions, depth of the excavation and amount of groundwater present within the excavation. Dewatering, if required, should be the contractor's responsibility. The dewatering system should be designed and constructed by a dewatering contractor with local experience. We recommend the selected dewatering system lower the groundwater level to at least two feet below the bottom of the proposed excavations.

Geopier® RAPs, vibratory Impact® piers or ACIP piles used for foundation support will likely extend into groundwater. Therefore, the RAP, vibratory pier or ACIP pile contractor should provide proper equipment and materials to handle the anticipated groundwater depths.

Seasonal Moisture

During the wet season, infiltrating surface runoff water will create a saturated surface condition of the near-surface soils. It is probable that grading operations attempted following the onset of winter rains and prior to prolonged drying periods will be hampered by high soil moisture contents. Such soil, intended for use as engineered fill, will require a prolonged period of dry weather and/or considerable aeration to reach a moisture content that allows achieving the required compaction. This should be considered in the construction schedule for the project.

Excavation Conditions

The near-surface soils at the site should be readily excavatable with conventional earthmoving and trenching equipment. Existing pavements, exterior flatwork, and surface and subsurface remnants from previous development of the site may be slow to excavate with a standard,



rubber-tired backhoe; however, experience has shown that excavators can remove these materials with moderate effort.

Based on explorations performed at the site and its near vicinity and available groundwater data, we anticipate excavations extending below an elevation of +11 feet msl may encounter groundwater and require dewatering. Dewatering conclusion and recommendations for excavations extending below an elevation of +11 feet msl are included in the Groundwater Effect on Development section of this report.

Excavations associated with shallow trenches for utilities, and other excavations less than five feet deep associated with the proposed construction, should stand vertically for short periods of time (i.e. less than one day) required for construction, unless cohesionless, saturated or disturbed soils are encountered. These unstable conditions may result in caving or sloughing; therefore, the contractor should be prepared to brace or shore the excavations, if necessary. Excavations left open for more than a day may also be susceptible to caving or sloughing; therefore, such excavations should be evaluated by the contractor on a daily basis and determine if it is necessary to brace or shore the excavations.

Excavations or trenches exceeding five feet in depth that will be entered by workers should be sloped, braced or shored to conform to current California Occupational Safety and Health Administration (Cal/OSHA) requirements. The contractor must provide an adequately constructed and braced shoring system in accordance with federal, state and local safety regulations for individuals working in an excavation that may expose them to the danger of moving ground.

Temporarily sloped excavations less than 20 feet in height, if any, should be constructed no steeper than a one-and-a-half horizontal to one vertical (1½H:1V) inclination. Temporary slopes likely will stand at this inclination for the short-term duration of construction, provided significant pockets of loose and/or saturated granular soils are not encountered. Flatter slopes would be required if these conditions are encountered.

Excavated materials should not be stockpiled directly adjacent to an open excavation to prevent surcharge loading of the excavation sidewalls. Excessive truck and equipment traffic should be avoided near excavations. If material is stored or heavy equipment is stationed and/or operated near an excavation, a shoring system must be designed to resist the additional pressure due to the superimposed loads.



On-site Soil Suitability for Fill

From a geotechnical standpoint, the existing on-site soils, including the fill soils, are considered suitable for use as engineered fill provided that they do not contain significant quantities of organics, rubble and deleterious debris, and are at a proper moisture content to achieve the desired degree of compaction.

Soils beneath existing concrete slabs and pavements will likely be at an elevated moisture content regardless of the time of year of construction and may require drying before compaction or use as engineered fill.

Existing pavements and other concrete slabs/structures designated for removal are also considered suitable for use as engineered fill, provided they are broken up or pulverized to in accordance with recommendations included in this report and approved by the owner.

Soil Corrosion Potential

One bulk sample of near-surface soil collected from the upper five feet at boring D1 was submitted to Sunland Analytical of Rancho Cordova, California for testing to determine minimum resistivity, pH, and chloride and sulfate concentrations to help evaluate the potential for corrosive attack upon reinforced concrete and buried metal. The results of the corrosivity testing are summarized in Table 2; copies of the corrosion test reports are presented in Figures A6 and A7.

TABLE 2 – CORROSION TEST RESULTS

Analyte	Test Method	D1 (1' – 5')
pH	CA DOT 643 Modified*	7.64
Minimum Resistivity	CA DOT 643 Modified*	2,630 Ω-cm
Chloride	CA DOT 422	13.0 ppm
Sulfate	CA DOT 417	14.5 ppm
	ASTM D516	13.9 ppm

Notes: * = Small cell method CA DOT = California Department of Transportation
 Ω-cm = Ohm-centimeters ppm = Parts per million

The *California Department of Transportation Corrosion and Structural Concrete Field Investigation Branch, Corrosion Guidelines*, considers a site to be corrosive to foundation elements if one or more of the following conditions exists for the representative soil and/or water samples taken: has a chloride concentration greater than or equal to 500 ppm, sulfate concentration greater than or equal to 2000 ppm, or the pH is 5.5 or less. Based on this



criterion, the on-site soils tested are not considered corrosive to steel reinforcement properly embedded within Portland cement concrete (PCC).

Table 19.3.1.1 – *Exposure Categories and Classes*, of American Concrete Institute (ACI) 318-14, Section 19.3 – *Concrete Design and Durability Requirements*, as referenced in Section 1904.1 of the 2013 CBC, indicates the severity of sulfate exposure for the sample tested is Exposure Class S0 (water-soluble sulfate concentration in contact with concrete is low and injurious sulfate attack is not a concern). Ordinary Type I-II Portland cement is considered suitable for use on this project, assuming a minimum concrete cover as detailed in ACI 318-14 is maintained for all reinforcement.

Wallace-Kuhl & Associates are not corrosion engineers. Therefore, if it is desired to further define the soil corrosion potential at the site a corrosion engineer should be consulted.

RECOMMENDATIONS

General

The recommendations presented below are appropriate for typical construction in the late spring through fall months. The on-site soils likely will be saturated by rainfall in the winter and early spring months, and will not be compactable without drying by aeration or chemical treatment. Should the construction schedule require work to begin during the wet months, additional recommendations can be provided, as conditions dictate.

Site preparation should be accomplished in accordance with the provisions of this report and the appended guide specifications. A representative of the Geotechnical Engineer should be present during all earthwork operations to evaluate compliance with our recommendations and the guide specifications included in this report. The Geotechnical Engineer of Record referenced herein should be considered the Geotechnical Engineer that is retained to provide geotechnical engineering observation and testing services during construction.

Demolition and Site Clearing

Prior to grading, pavements and concrete slabs at the site designated for removal should be demolished and construction areas should be cleared of other existing surface and sub-surface structures associated with previous site development, including but not limited to existing buildings, foundations, remnants of structures associated with previous development, underground utilities, etc. to expose firm and stable soils, as determined by the Geotechnical Engineer's representative. The area of removal should extend at least five feet beyond the



footprint of the proposed building, where practical. Demolition debris should be removed from the site, or used as engineered fill, provided it is processed per the recommendations in this report. Existing underground utilities designated to be removed or relocated should include all trench backfill and be replaced with engineered fill. On-site wells, septic systems/tanks, and/or grease interceptors associated with previous development, if any, should be properly abandoned or removed in accordance with Sacramento County Environmental Management Department requirements.

Special care should be used when excavating next to existing foundations associated with the building adjacent to the west of the site as to not damage or crack the foundations. Excavations associated with the proposed construction should not encroach upon a one horizontal to one vertical projection (1H:1V) from the bottom of existing foundations to remain.

Adequate removal of debris and roots associated with trees adjacent to the site may require laborers and handpicking to clear the subgrade soils to the satisfaction of the Geotechnical Engineer's on-site representative.

Existing pavements, concrete slabs, and other concrete structures designated for removal may be broken up, pulverized and reused as engineered fill, or removed from the site. If pavement/concrete rubble is to be reused as engineered fill, it should be pulverized to fragments less than three inches in largest dimension, contain sufficient intermediate sized particles to form a compactable mixture, and must be approved by the owner.

Depressions resulting from site clearing activities should be cleaned of loose, soft, disturbed, saturated, or organically contaminated soils, as identified by the Geotechnical Engineer's representative, and properly backfilled with engineered fill in accordance with the recommendations of this report. It is important that the Geotechnical Engineer's representative be present during clearing operations to verify adequate removal of the surface and subsurface items, as well as the proper backfilling of resulting excavations.

Subgrade Preparation

Following demolition and site clearing activities, the exposed surface soils should be sub-excavated from all structural areas of the site, such as the building pad, exterior flatwork areas, etc. to a depth of at least 12 inches below the final soil subgrade elevation, or existing site grades, whichever is deeper. The final subgrade elevation is defined as the surface on which capillary break gravel or aggregate base are placed for slab concrete. The sub-excavation should extend at least five feet beyond the edge of the building print, including adjacent exterior flatwork, and at least two feet beyond other structural areas, where practical. After the sub-



excavation operations have been performed, the Geotechnical Engineer's representative should evaluate the degree of disturbance within the exposed subgrade soils and determine if additional sub-excavation is required.

Any debris exposed by the recommended sub-excavation operations described above should be removed from the site, and the resulting excavation should be restored to grade with engineered fill compacted in accordance with the recommendation in this report.

The soils exposed following the recommended sub-excavation operations described above, as well as any other surfaces to received fill, achieved by excavation or remain at grade, should be scarified to a depth of at least 12 inches, thoroughly moisture conditioned to at least the optimum moisture content, and uniformly compacted to no less than 90 percent relative compaction. Relative compaction should be based on the maximum dry density as determined in accordance with the ASTM D 1557 Test Method.

It is possible that soils present at the bottom of required excavations will initially be too wet to properly compact and will require a period of drying and/or considerable aeration for the soils to dry to a workable moisture content. Alternative recommendations to stabilize the bottom of excavations can be provided upon request based on actual field conditions. The use of chemical stabilization or use of geotextile fabrics or geogrids is typically recommended to stabilize soils during construction.

Compaction of all soil subgrades should be performed using a heavy, self-propelled, sheepfoot compactor capable of achieving the required degree of compaction and must be performed in the presence of the Geotechnical Engineer's representative who will evaluate the performance of subgrade under compactive load. Difficulty in achieving subgrade compaction may be an indication of loose, soft or unstable soils conditions associated with previous site development. If these conditions exist, the loose, soft, or unstable materials should be excavated to expose firm and stable soils. The resulting excavations should be backfilled with engineered fill compacted in accordance with the recommendations in this report. **Special care and adequate equipment should be used when compaction operations are performed next to the existing structure located adjacent to the west of the site as to not damage any structural elements.**

Engineered Fill Construction

Engineered fill consisting of on-site or import materials should be placed in lifts not exceeding six inches in compacted thickness, with each lift being thoroughly moisture conditioned to at least the optimum moisture content, maintained in that condition, and uniformly compacted to at least 90 percent relative compaction.



From a geotechnical standpoint, the on-site soils encountered at our boring locations are considered suitable for use as engineered fill, provided these materials are at a workable moisture content to achieve required compaction, and do not contain significant quantities of rubbish, rubble, deleterious debris, and organics.

Imported fill materials should be compactable, well-graded, granular soils with a Plasticity Index of 15 or less when tested in accordance with ASTM D 4318; an Expansion Index of 20 or less when tested in accordance with ASTM D 4829, and should not contain particles greater than three inches in maximum dimension. In addition, we recommend that the contractor supply a certification for any imported fill materials that designates the fill materials do not contain known contaminants per Department of Toxic Substances Control's guidelines for clean fill, and have corrosion characteristics within acceptable limits. Imported soils should be approved by the Geotechnical Engineer prior to being transported to the site.

The upper 24 inches of final subgrade for interior and exterior concrete slabs shall be compacted to at least 90 percent relative compaction at no less than the optimum moisture content, regardless of whether final subgrade elevation is completed by excavation, filling, or left at grade.

Subgrades for support of interior and exterior concrete slab should be protected from disturbance until covered by capillary break material or aggregate base. Disturbed subgrade soils may require additional moisture conditioning, scarification and recompaction, depending on the level of disturbance.

Excavations near existing improvements should not encroach on the zone within a one horizontal to one vertical (1:1) plane extending down and away from foundations, slabs or pavements. Shoring or underpinning existing improvements will be required where excavations may undermine the improvements or structures.

All earthwork operations should be accomplished in accordance with the recommendations contained within this report and the *Guide Earthwork Specifications* provided in Appendix B. We recommend the Geotechnical Engineer's representative be present on a regular basis during all earthwork operations to observe and test the engineered fill and to verify compliance with the recommendations of this report and the project plans and specifications.

Utility Trench Backfill

Utility trench backfill should be mechanically compacted as engineered fill in accordance with the following recommendations. Bedding and initial backfill around and over the pipe should



conform to the pipe manufacturers recommendations and applicable sections of the governing agency standards.

We recommend that on-site soil be used as trench backfill, especially within the footprint of the proposed building. Utility trench backfill should be placed in maximum 12-inch thick loose lifts, thoroughly moisture conditioned to at least the optimum moisture content, and compacted to at least 90 percent relative compaction.

Materials excavated from trenches may be at elevated moisture contents and may require significant aeration or a period of drying to reach a compactable moisture content. We recommend bid documents contain a unit price for the removal and drying of saturated soils, or replacement with approved import soils.

We recommend that all underground utility trenches aligned nearly parallel with existing and new foundations be at least three feet from the outer edge of foundations, wherever possible. As a general rule, trenches should not encroach into the zone extending outward at a one horizontal to one vertical (1H:1V) inclination below the bottom of existing or new foundations. Additionally, trenches parallel to foundations should not remain open longer than 72 hours. The intent of these recommendations is to prevent loss of both lateral and vertical support of foundations, resulting in possible settlement.

Foundation Design

The proposed mixed-use building may be supported a shallow foundation system (e.g. continuous and/or isolated spread footings or a mat foundation) supported on an improved subgrade consisting of Geopier® rammed aggregate piers [RAPs] or vibratory Impact® piers (or similar system), or a deep foundation system consisting of auger cast-in-place (ACIP) piles. Preliminary recommendations for shallow foundations supported on an improved subgrade consisting of RAPs or vibratory piers and recommendations for ACIP piles are provided below. Alternative foundations may be considered at the site and can be evaluated on a case-by-case basis upon request.

Shallow Foundations on Geopier® Rammed Aggregate Piers/Vibratory Impact® Piers

Geopier® RAPs or vibratory Impact® piers (or similar system) extending through the upper 18 to 20 feet at the site and bearing directly on the competent, relatively dense sandy gravel are considered capable of densifying the on-site, subsurface soils and provide adequate support for conventional shallow foundations and the proposed building. Continuous and/or isolated spread foundations, or a mat foundation, supported on a RAP or vibratory Impact® pier system will increase the allowable bearing capacity and result in significantly less post-construction



foundation settlement, compared to a mat foundation supported on unimproved, subsurface soils encountered at the site.

A qualified Geopier® RAP/vibratory Impact® pier contractor licensed in the State of California should be contacted directly to provide final recommendations for the Geopier® RAP/*vibratory Impact® pier* system, including allowable capacities and post-construction foundation settlements.

Continuous and/or isolated spread foundations, or a mat foundation, supported on a Geopier® RAP/vibratory Impact® pier improved subgrade should extend at least 18 inches below the lowest adjacent soil grade, provided the subgrade has been prepared in accordance with the Subgrade Preparation and Engineered Fill Construction sections of this report. Lowest soil grade is defined as either the adjacent exterior soil grade or the soil subgrade beneath the structure, whichever is lower. Continuous foundations should maintain a minimum width of 12 inches and isolated spread foundations should be at least 24 inches in plan dimension.

A mat slab foundation may be more feasible than continuous/isolated spread foundations for support of the mixed-use building depending upon the magnitude of structural loads and the resulting soil contact pressure. However, mat-slab foundations are generally more expensive than conventional spread foundations. The thickness of a mat slab may be on the order of two to three feet; however, the mat-slab thickness should be determined by the structural engineer. Typically, mat-slabs are designed using relatively higher strength concrete containing heavy reinforcement to resist both compressive and tensile forces. Mat-slab foundations, if selected for support of the mixed-use building, should be designed by the structural engineer to transmit the building loads in relatively uniform manner across the entire slab. The mat foundation may be designed using a soil modulus of subgrade reaction (k_s) of 200 kips per square foot per foot.

Preliminary design information indicates the allowable bearing capacity of conventional foundations constructed over RAPs or vibratory piers would be on the order of 3000 to 7000 pounds per square foot (psf) for dead plus live load condition, assuming properly installed Geopier® RAPs/ vibratory Impact® piers. The RAP/vibratory pier layout, final bearing pressures and cell capacities will depend on the actual loading conditions for the proposed building and should be determined by the RAP/vibratory pier designer using an appropriate factor of safety. The weight of foundation concrete extending below adjacent soil grade may be disregarded in sizing computations. We recommend that all foundations be adequately reinforced to provide structural continuity, mitigate cracking and permit spanning of local soil irregularities. The project structural engineer should determine final foundation reinforcement.



Preliminary resistance to lateral foundation displacement for shallow foundations supported on RAPs/vibratory piers may be computed using an allowable friction factor of 0.30, which may be multiplied by the effective vertical load on each foundation. Additional lateral resistance may be computed using an allowable passive earth pressure of 300 psf per foot of depth, acting against vertical projections of the foundations. These two modes of resistance should not be added unless the frictional value is reduced by 50 percent since full mobilization of these resistances typically occurs at different degrees of horizontal movement, effectively reducing the frictional resistance.

Auger Cast-in-Place (ACIP) Concrete Piles

The mixed-use building may also be supported upon ACIP piles. ACIP piles are constructed by using a specially designed drill that displaces soil rather than returning it to the surface. The shaft formed in the soil is filled with pressurized grout as the drill is withdrawn causing further densification of the surrounding soil. Reinforcement is placed into the wet grout immediately. We anticipate total settlements on the order of one-inch and differential settlements on the order of ½-inch for ACIP pile foundations.

ACIP piles for the mixed-use building should extend to a minimum of three feet into competent material consisting of relatively dense sandy gravel, which was encountered in the boring performed at the site at depths ranging from about 18 to 20 feet below existing site grades. Drilled ACIP piles may be designed utilizing the maximum allowable loads per pile with appropriate factor of safety as summarized in Table 3.

TABLE 3 - ALLOWABLE ACIP PILE CAPACITIES

Loading Conditions		24-inch Diameter		36-inch Diameter	
		Allowable Pile Capacity (kips)	Ultimate Pile Capacity (kips)	Allowable Pile Capacity (kips)	Ultimate Pile Capacity (kips)
Axial Compression	DL (F.S. = 3)	60	200	100	320
	DL + LL (F.S. = 2)	100	200	160	320
	Total Load (F.S. = 1.5)	130	200	200	320
Axial Uplift (Tension)	Total Load (F.S. = 1.5)	30	45	50	75

Notes: DL = Dead Load LL = Live Load F.S. = Factor of Safety



Reductions in pile capacity for consideration of group action are unnecessary, provided piles are spaced no closer (center-to-center) than three times the diameter of the pile.

The indicated uplift pile capacity is based upon the assumption that the piles will be properly reinforced to transfer pullout forces to the pile tip.

Lateral loading information was not available at the time this report was prepared. A lateral resistance analysis for the ACIP piles may be performed using the lateral pile analysis program LPILE and the parameters provided below, Table 4.

TABLE 4 – LPILE PARAMETERS

Soil Type	Approximate Depth Below Ground Surface (ft.)	Approximate Ground Surface Elevation (ft. msl)	Effective Unit Weight (pcf)	Friction Angle (degrees)	Undrained Cohesion (psf)	Soil Modulus, k-value (pci)
Sandy Silt	0 to 9	+20 to +11	120	32	0	25
Submerged Sandy Silt	9 to 18	+11 to +2	58	32	0	20
Submerged Sandy Gravel	18 to 21	+2 to -1	53	38	0	125

Notes: ft. = feet
 pcf = pounds per cubic foot
 pci = pounds per cubic inch
 ft. msl = feet relative to mean sea level
 psf = pounds per square foot

The weight of pile cap concrete extending below grade and the weight of each pile may be disregarded in determinations of the net compressive load transmitted to the supporting soil.

Concurrent lateral resistance derived in friction between the slab and the supporting subgrade layer may be computed using an allowable friction factor of 0.30 at the interface between the slab and the subgrade.

The allowable capacities for the ACIP piles are recommended with the stipulation that a pile load-testing program be performed prior to the commencement of production pile construction. A representative of the Geotechnical Engineer must be present during all pile construction activities to record and document construction of each pile.



Pile Load Testing Program

If ACIP piles are used for support of the mixed-use building, a pile loading testing program conducted prior to installation of production piles will be necessary to determine and verify the appropriate length of pile to achieve the **ultimate capacity** of the piles summarized in Table 3. The pile load test program should include both “quick” (static) load tests and pile driving analyzer (PDA) tests. The purpose of the PDA testing for the pre-construction piles would be to develop a correlation between the static load test results and the PDA testing that would be used during the construction of production piles in lieu of “quick” load tests. The advantage of PDA testing over the “quick” load pile testing is the savings in time to set up the load test frame that typically takes three to five days, and a “quick” load test program often takes about eight hours per pile to complete. All other construction activities at the site would have to be temporarily stopped during the load testing programs.

Static “Quick” Load Testing

The pile load test frame and supply of the personnel and equipment necessary to conduct the load tests should be constructed in accordance with the latest version of ASTM Test Method D1143 for compressive loads, ASTM Test Method D3689 for tensile loads, and ASTM Test Method D3966 for lateral loads as delineated in the *Guide Specifications for Auger Cast Piles* provided as Appendix C.

Three test piles should be cast-in-place to reach a minimum tip elevation of at least 21 feet below the existing site grades and at least three feet into the relatively dense sandy gravel stratum. Additional test piles will be required if multiple pile sizes are used in the design or if alternate pile capacities are being considered. The reaction system should be capable of resisting forces from tests on the test piles in axial compression and tension within an appropriate factor of safety as specified in Table 3. We intend to test the test pile in compression and tension, and to perform a lateral load test between adjacent piles. The pile may be loaded to failure in any of the test configurations.

Submittals for the load testing frame, hydraulic pumps, hydraulic jacks, dial indicators, and calibration documentation must be provided by the pile contractor in accordance with the project plans and specifications.

Prior to beginning load tests, the pile concrete should achieve a minimum compressive strength of 4,000 pounds per square inch (psi) when tested in accordance with ASTM C09. Construction activities must be restricted during the load-testing program. Construction activities may proceed during the setup of the load frame and installation of the test piles. However, excessive vibration of the ground near the load test can cause movement of the test frame and the



sensitive pile deflection measurement devices. Using the ASTM “quick” (static) load testing method, the compression tests will run for about eight hours for each pile; the tension testing will run for about four hours per pile.

Final pile construction criteria will be determined from the results of the load-testing program. It is intended that the pile load test setup will be located outside the location of any permanent pile caps or grade beams, and that the test piles and reaction piles will be abandoned upon completion of the testing.

Pile Driving Analyzer Testing

Following the “quick” load testing program, the test pile will be subjected to PDA testing, provided the pile is not damaged during the “quick” load testing. PDA testing involves instrumenting piles and recording the response of the pile during dynamic loading. PDA testing consists of dropping a heavy weight from a certain height on to the pile head and monitoring the response of the pile. The capacity of the piles can be computed from the analyses of the PDA test.

Additional PDA testing can be performed during construction of production piles in the event that as-built pile dimensions differ from the recommended dimensions, which could result from refusal to auger penetration, or in random areas across the site to verify that the earth materials are supporting the piles as indicated by the load test program.

Surveillance/Protection

We recommend that photographic and written records be kept of both the pre-existing condition and new damage (if any) sustained by improvements in and around the site. The elevation of sidewalks and buildings adjacent to the construction site should be measured prior to construction activities. The elevations of selected survey points should be measured at least on a weekly basis during the initial stages of construction. Elevation of improvements and photographs should include basic data for determining the validity of claims lodged by nearby property owners or tenants.

Interior Slab-on-Grade Support

Interior concrete slabs-on-grade floors can be supported upon the soil subgrade prepared in accordance with the recommendations in this report and maintained in that condition (at least the optimum moisture content), provided the subgrade is protected from disturbance.



Interior concrete slab-on-grade for the proposed mixed-use building should be at least four inches thick. We recommend that interior slabs-on-grade be adequately reinforced to provide structural continuity, mitigate cracking and permit spanning of local soil irregularities. The project structural engineer should determine final floor slab thickness, reinforcement and joint spacing. Temporary loads exerted during construction from vehicle traffic, construction equipment, storage of palletized construction materials, etc. should be considered in the design of the thickness and reinforcement of the interior slab-on-grade floor.

Floor slabs that will receive moisture sensitive floor coverings (e.g. vinyl covering, wood laminate, etc.) should be underlain by a layer of free-draining gravel/crushed rock, serving as a deterrent to migration of capillary moisture. If used, the gravel/crushed rock layer should be at least four inches thick and graded such that 100 percent passes a one-inch sieve and less than five percent passes a No. 4 sieve. Additional moisture protection may be provided by placing a water vapor retarder (at least 10-mils thick) directly over the gravel/crushed rock. If used, the water vapor retarder membrane should meet or exceed the minimum specifications as outlined in ASTM E1745 and be installed in strict conformance with the manufacturer's recommendations.

Floor slab construction practice over the past 30 years or more has included placement of a thin layer of sand over the vapor retarder membrane. The intent of the sand is to aid in the proper curing of the slab concrete. However, recent debate over excessive moisture vapor emissions from floor slabs includes concern of water trapped within the sand. As a consequence, we consider use of the sand layer as optional. The concrete curing benefits should be weighed against efforts to reduce slab moisture vapor transmission.

The recommendations presented above should reduce significant soils-related movement of the slab-on-grade floors. Also important to the performance and appearance of a Portland cement concrete slab is the quality of the concrete, the workmanship of the concrete contractor, the curing techniques utilized and spacing of control joints.

Floor Slab Moisture Penetration Resistance

It is likely the floor slab subgrade soils will become saturated at some time during the life of the building, especially when slabs are constructed during the wet season, or when constantly wet ground or poor drainage conditions exist adjacent to structures. For this reason, it should be assumed that all interior slabs require protection against moisture or moisture vapor penetration. Standard practice includes placing a layer of gravel/crushed rock and a vapor retarder membrane (and possibly a layer of sand) as discussed above. Recommendations contained in this report concerning foundation and floor slab design are presented as minimum requirements only from the geotechnical engineering standpoint.



The use of gravel/crushed rock and a vapor retarder membrane will not "moisture proof" the slab, nor does it assure that slab moisture vapor transmission levels will be low enough to prevent damage to floor coverings or other building components. It is emphasized that we are not slab moisture proofing or moisture protection experts. The sub-slab gravel/crushed rock and vapor retarder membrane simply offer a first line of defense against soil-related moisture. If increased protection against moisture vapor penetration of the slab is desired, a concrete moisture protection specialist should be consulted. It is commonly accepted that maintaining the lowest practical water-cement ratio in the slab concrete is one of the most effective ways to reduce future moisture vapor penetration of the completed slab.

Retaining Wall Design (Elevator Pits)

We assume that retaining walls associated with elevator shafts will be fixed at the top. Such walls should be capable of resisting "at-rest" lateral earth pressure equal to an equivalent fluid pressure of 60 psf per foot of wall backfill, assuming horizontal backfill and fully drained conditions.

Retaining walls at the site less than five feet in height that will be allowed to slightly rotate about their base (unrestrained at the top or sides) should be capable of resisting "active" lateral earth pressure equal to an equivalent fluid pressure of 40 psf per foot of wall backfill, assuming horizontal backfill and fully drained conditions. Walls at the site supporting sloping backfill (if any), up to a 2H:1V inclination, should be designed adding an additional 20 psf per foot of wall to the pressures presented above.

We anticipate groundwater at the site may rise up to an elevation of +11 feet msl (depending on the time of year). We do not anticipate retaining walls at the site extending below an elevation of +11 feet msl. If retaining wall do extend below an elevation of +11 feet msl, retaining walls should be designed to account for hydrostatic pressure caused by groundwater. Retaining walls that extend below an elevation of +11 feet msl, if any, should be capable of resisting an "active" lateral earth pressure equal to an equivalent fluid pressure of 80 psf per foot of wall backfill. For "at rest" conditions, retaining walls that extend below an elevation of +11 feet msl should be capable of resisting a lateral earth pressure equal to an equivalent fluid pressure of 90 psf per foot of wall backfill.

Lateral resistance may be computed using an allowable "passive" earth pressure of 300 psf per foot of depth above an elevation of +11 feet msl and 200 psf per foot of depth below an elevation of +11 feet msl.



Retaining walls will experience additional surcharge loading if vehicles are parked, equipment is stored, or foundations are within a one horizontal to one vertical (1H:1V) projection from the bottom of the retaining wall. Surcharge loading under these circumstances should be evaluated by the wall designer on a case-by-case basis and be included in the design of the wall, in addition to the lateral earth pressures described above. The surcharge load distribution, magnitude of the surcharge resultant force to be applied on the wall and the location of where the resultant force should be applied will depend on the specific surcharge load type (e.g. point load, distributed load, etc.) and the distance away from the retaining wall.

Backfill behind retaining walls should be fully drained to prevent the build-up of hydrostatic pressures behind the wall. Retaining walls should be provided with a drainage blanket of Class 2 permeable material, Caltrans Standard Specification, Section 68-2.02F(3), at least one foot wide extending from the base of wall to within one foot of the top of the wall. The top foot above the drainage layer should consist of compacted on-site materials, unless covered by a concrete slab or pavement. Weep holes or perforated rigid pipe, as appropriate, should be provided at the base of the wall to collect accumulated water. Drainpipes, if used, should slope to discharge at no less than a one percent fall to suitable drainage facilities. Open-graded ½- to ¾-inch crushed rock may be used in lieu of the Class 2 permeable material, if the rock and drain pipe are completely enveloped in an approved non-woven, geotextile filter fabric.

If efflorescence (discoloration of the wall face) or moisture penetration of the wall is not acceptable, waterproofing measures should be applied to the back face of the wall. A specialist in protection against moisture penetration should be consulted to determine specific waterproofing measures.

Structural backfill materials for retaining walls (other than the drainage layer) should consist of non-expansive (Expansion Index < 20), compactable granular material that does not contain significant quantities of rubbish, rubble, organics and rock over six inches in size. Clays, pea gravel and/or crushed rock should not be used for wall backfill. Structural backfill should be placed in lifts not exceeding eight inches in compacted thickness, moisture conditioned to at least the optimum moisture content, and should be mechanically compacted to at least 90 percent relative compaction.

Exterior Flatwork Construction (Non-Pavement)

Soil subgrade areas to support exterior concrete flatwork should be prepared in accordance with the Subgrade Preparation and Engineered Fill Construction recommendations included in this report. Exterior flatwork subgrade soils should be maintained in a moist condition (at least the optimum moisture content) and protected from disturbance.



Exterior flatwork concrete should be at least four inches thick. Consideration should be given to thickening the edges of the slabs to at least twice the slab thickness where wheel traffic is expected over the slabs. Expansion joints should be provided to allow for minor vertical movement of the flatwork. Exterior flatwork should be constructed independent of perimeter building foundations by the placement of a layer of felt material between the flatwork and the foundation. The slab designer should determine the final thickness, strength and joint spacing of exterior slab-on-grade concrete. The slab designer should also determine if slab reinforcement for crack control is required and determine final slab reinforcing requirements.

Areas adjacent to new exterior flatwork should be landscaped to maintain more uniform soil moisture conditions adjacent to and under flatwork. We recommend final landscaping plans not allow fallow ground adjacent to exterior concrete flatwork.

Practices recommended by the Portland Cement Association (PCA) for proper placement, curing, joint depth and spacing, construction, and placement of concrete should be followed during exterior concrete flatwork construction.

Site Drainage

Final site grading should be accomplished to provide positive drainage of surface water away from the building and prevent ponding of water adjacent to foundations or slabs. The subgrade adjacent to building should be sloped away from foundations at a minimum two percent gradient for at least five feet, where possible. We recommend connecting all roof drains to solid PVC pipes which are connected to available drainage features to convey water away from the building, or discharging the drains onto paved or hard surfaces that slope away from the foundations. Discharging or ponding of surface water should not be allowed adjacent to the building or exterior flatwork. Landscape berms, if planned, should not be constructed in such a manner as to promote drainage toward the building.

Geotechnical Engineering Observation and Testing During Earthwork

Site preparation should be accomplished in accordance with the recommendations of this report and the *Guide Earthwork Specifications* provided in Appendix B. Geotechnical testing and observation during construction is considered a continuation of our geotechnical engineering investigation. Wallace-Kuhl & Associates should be retained to provide testing and observation services during site clearing, earthwork, and foundation construction at the project to verify compliance with this geotechnical report and the project plans and specifications, and to provide consultation as required during construction. These services are beyond the scope of work authorized for this investigation. We would be pleased to submit a proposal to provide these services upon request.



Section 1803A.5.8 Compacted Fill Material of the 2013 CBC requires that the geotechnical engineering report provide a number and frequency of field compaction tests to determine compliance with the recommended minimum compaction. Many factors can effect the number of tests that should be performed during the course of construction, such as soil type, soil moisture, season of the year and contractor operations/performance. Therefore, it is crucial that the actual number and frequency of testing be determined by the Geotechnical Engineer during construction based on their observations, site conditions, and difficulties encountered.

In the event that Wallace-Kuhl & Associates is not retained to provide geotechnical engineering observation and testing services during construction, the Geotechnical Engineer retained to provide these services should indicate in writing that they agree with the recommendations of this report, or prepare supplemental recommendations as necessary. A final report by the “Geotechnical Engineer” should be prepared upon completion of the project.

Additional Services

We recommend that Wallace-Kuhl & Associates be retained to review the final plans and specifications to determine if the intent of our recommendations has been implemented in those documents. We would be pleased to submit a proposal to provide these services upon request.

LIMITATIONS

Our recommendations are based upon the information provided regarding the proposed project, combined with our analysis of site conditions revealed by the field exploration and laboratory testing programs. We have used engineering judgment based upon the information provided and the data generated from our investigation. This report has been prepared in substantial compliance with generally accepted geotechnical engineering practices that exist in the area of the project at the time the report was prepared. No warranty, either express or implied, is provided.

If the proposed construction is modified or relocated or if it is found during construction that subsurface conditions differ from those we encountered at the boring locations, we should be afforded the opportunity to review the new information or changed conditions to determine if our conclusions and recommendations must be modified.

We emphasize that this report is applicable only to the proposed construction and the investigated site. This report should not be utilized for construction on any other site. The conclusions and recommendations of this report are considered valid for a period of three years.



If design is not completed and construction has not started within three years of the date of this report, the report must be reviewed and updated, if necessary.

Wallace - Kuhl & Associates



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Senior Engineer



Street data courtesy of Sacramento County.
 Hydrography courtesy of the U.S. Geological Survey
 acquired from the GIS Data Depot, December, 2007.
 Projection: NAD 83, California State Plane, Zone II



VICINITY MAP
19th & J STREETS - 11 STORY MIXED-USE BUILDING
 Sacramento, California

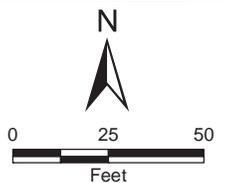
FIGURE 1	
DRAWN BY	RWO
CHECKED BY	ML
PROJECT MGR	DAR
DATE	08/16
WKA NO. 11050.01	



Aerial provided by ESRI.
 Projection: NAD 83, California State Plane, Zone II

Legend

-  Site Boundary
-  Approximate Boring Location



SITE PLAN

19th & J STREETS - 11 STORY MIXED-USE BUILDING

Sacramento, California

FIGURE 2

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CHECKED BY	ML
PROJECT MGR	DAR
DATE	08/16

WKA NO. 11050.01



Project: 19th & J Street 11-Story Mixed-use Building

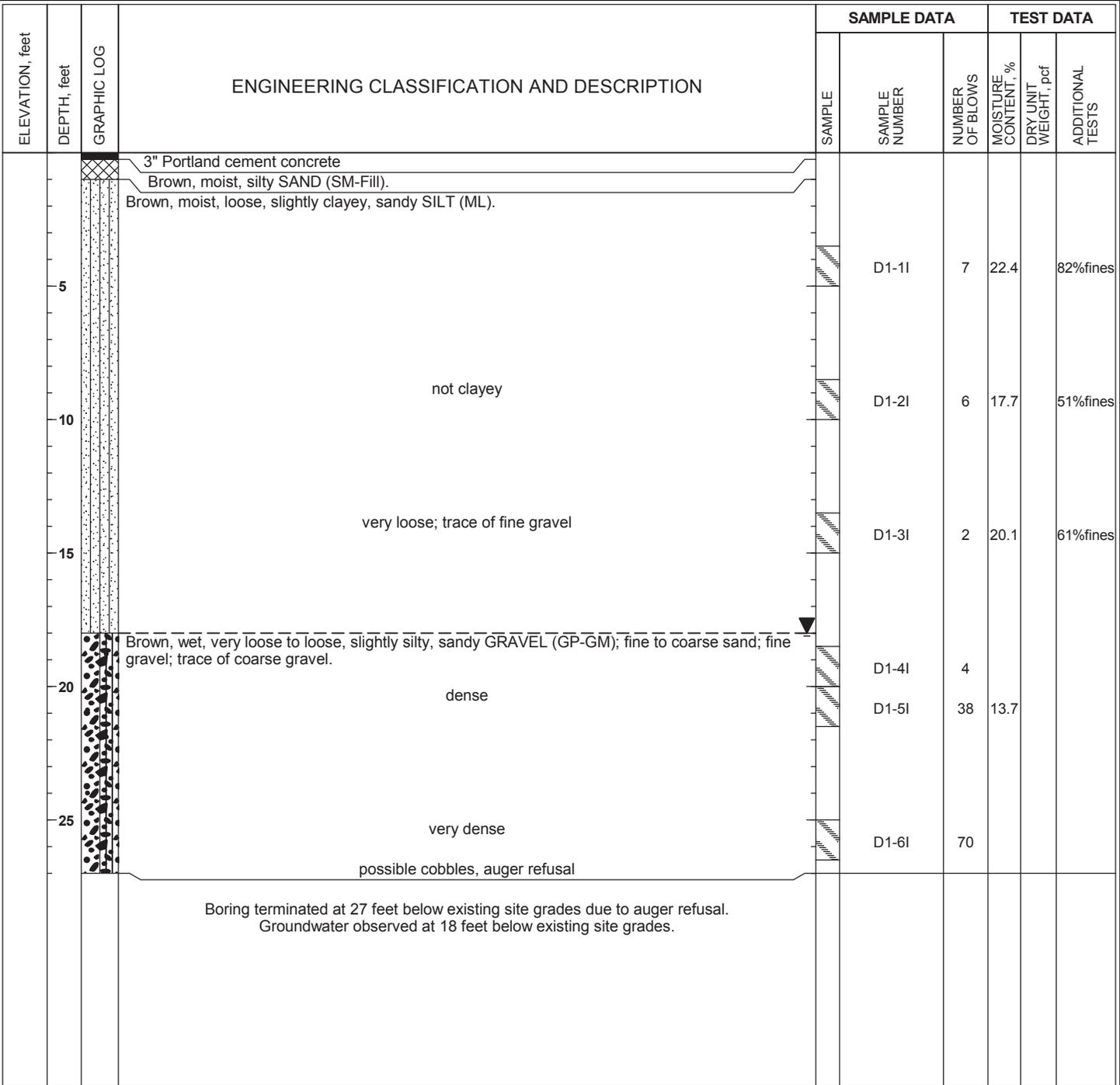
Project Location: Sacramento, CA

WKA Number: 11050.01

LOG OF SOIL BORING D1

Sheet 1 of 1

Date(s) Drilled	7/8/16	Logged By	ML	Checked By	DAR
Drilling Method	Hollow Stem Auger/Mud Rotary	Drilling Contractor	V&W Drilling, Inc.	Total Depth of Drill Hole	27.0 feet
Drill Rig Type	CME-75	Diameter(s) of Hole, inches	8	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet	18.0	Sampling Method(s)	SPT	Drill Hole Backfill	Neat Cement
Remarks	Bulk sample (1' - 5').			Driving Method and Drop	140-lb hammer; 30-inch drop



BORING LOG 11050.01 - 19TH & J STREETS 11-STORY MIXED-USE BUILDING.GPJ_WKA.GDT 9/1/16 12:26 PM

Project: 19th & J Street 11-Story Mixed-use Building

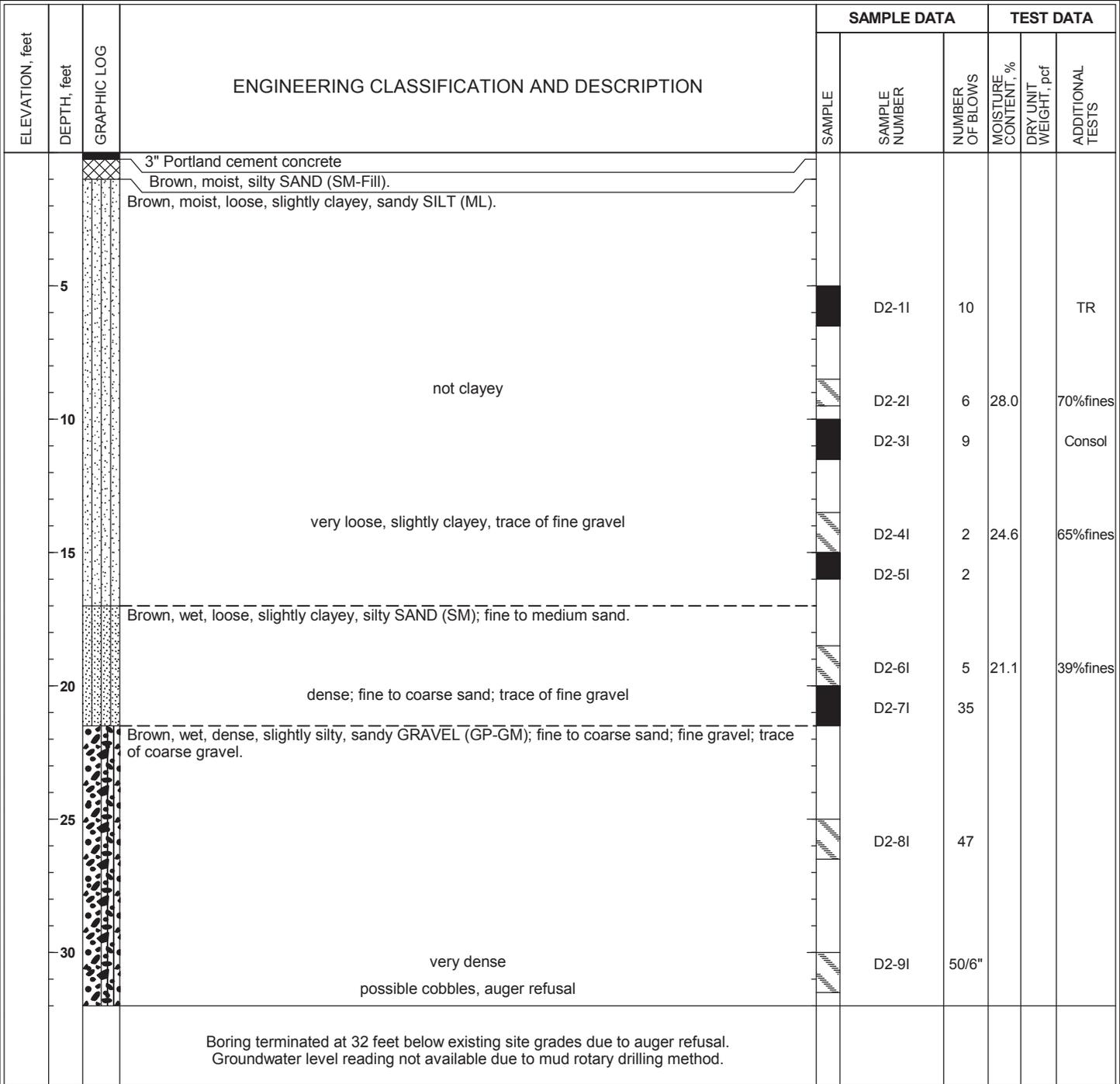
Project Location: Sacramento, CA

WKA Number: 11050.01

LOG OF SOIL BORING D2

Sheet 1 of 1

Date(s) Drilled	7/13/16	Logged By	ML	Checked By	DAR
Drilling Method	Mud Rotary	Drilling Contractor	V&W Drilling, Inc.	Total Depth of Drill Hole	32.0 feet
Drill Rig Type	CME-75	Diameter(s) of Hole, inches	4	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet	N/A	Sampling Method(s)	Modified California/SPT	Drill Hole Backfill	Neat Cement
Remarks	Bulk sample (1' - 5'). Groundwater level reading not available due to mud rotary drilling method.			Driving Method and Drop	140-lb hammer; 30-inch drop



BORING LOG 11050.01 - 19TH & J STREETS 11-STORY MIXED-USE BUILDING.GPJ_WKA.GDT 9/1/16 12:26 PM

Project: 19th & J Street 11-Story Mixed-use Building

Project Location: Sacramento, CA

WKA Number: 11050.01

LOG OF SOIL BORING D3

Sheet 1 of 1

Date(s) Drilled	7/20/16	Logged By	ML	Checked By	DAR
Drilling Method	Solid Stem Auger	Drilling Contractor	Wallace Kuhl & Associates	Total Depth of Drill Hole	19.0 feet
Drill Rig Type	WKA John Deere 4x6 Gator	Diameter(s) of Hole, inches	4	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet	Not Observed	Sampling Method(s)	Modified California	Drill Hole Backfill	Soil Cuttings
Remarks				Driving Method and Drop	Manual (70-lb slide hammer)

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA			TEST DATA	
				SAMPLE	SAMPLE NUMBER	NUMBER OF BLOWS	MOISTURE CONTENT, %	DRY UNIT WEIGHT, pcf
			4" Portland cement concrete					
			Brown, moist, silty SAND (SM-Fill).					
			Brown, moist, slightly clayey, sandy SILT (ML).					
5			not clayey	■	D3-11			
				■	D3-21			TR
10				■	D3-31			
15								
			Brown, moist, slightly silty, sandy GRAVEL (GP-GM); fine to coarse sand; fine gravel; trace of coarse gravel.					
			Boring terminated at 19 feet below existing site grades due to auger refusal. Groundwater not observed.					

BORING LOG 11050.01 - 19TH & J STREETS 11-STORY MIXED-USE BUILDING.GPJ_WKA.GDT 9/1/16 12:26 PM

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS	SYMBOL	CODE	TYPICAL NAMES	
COARSE GRAINED SOILS <small>(More than 50% of soil > no. 200 sieve size)</small>	GRAVELS	GW	Well graded gravels or gravel - sand mixtures, little or no fines	
	<small>(More than 50% of coarse fraction > no. 4 sieve size)</small>	GP		Poorly graded gravels or gravel - sand mixtures, little or no fines
		GM		Silty gravels, gravel - sand - silt mixtures
		GC		Clayey gravels, gravel - sand - clay mixtures
		SANDS	SW	
	<small>(50% or more of coarse fraction < no. 4 sieve size)</small>	SP		Poorly graded sands or gravelly sands, little or no fines
		SM		Silty sands, sand - silt mixtures
		SC		Clayey sands, sand - clay mixtures
FINE GRAINED SOILS <small>(50% or more of soil < no. 200 sieve size)</small>		SILTS & CLAYS	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
	<small>LL < 50</small>	CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL		Organic silts and organic silty clays of low plasticity
	SILTS & CLAYS <small>LL ≥ 50</small>	MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH		Inorganic clays of high plasticity, fat clays
		OH		Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS	Pt		Peat and other highly organic soils	
ROCK	RX		Rocks, weathered to fresh	
FILL	FILL		Artificially placed fill material	

OTHER SYMBOLS

	= Drive Sample: 2-1/2" O.D. Modified California sampler
	= Drive Sampler: no recovery
	= SPT Sampler
	= Initial Water Level
	= Final Water Level
- - - - -	= Estimated or gradational material change line
—————	= Observed material change line
<u>Laboratory Tests</u>	
PI	= Plasticity Index
EI	= Expansion Index
UCC	= Unconfined Compression Test
TR	= Triaxial Compression Test
GR	= Gradational Analysis (Sieve)
K	= Permeability Test

GRAIN SIZE CLASSIFICATION

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVEL coarse (c) fine (f)	3" to No. 4 3" to 3/4" 3/4" to No. 4	76.2 to 4.76 76.2 to 19.1 19.1 to 4.76
SAND coarse (c) medium (m) fine (f)	No. 4 to No. 200 No. 4 to No. 10 No. 10 to No. 40 No. 40 to No. 200	4.76 to 0.074 4.76 to 2.00 2.00 to 0.420 0.420 to 0.074
SILT & CLAY	Below No. 200	Below 0.074



UNIFIED SOIL CLASSIFICATION SYSTEM
 19th & J STREETS - 11 STORY MIXED-USE BUILDING
 Sacramento, California

FIGURE 6

DRAWN BY	RWO
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DATE	08/16
WKA NO. 11050.01	

APPENDICES



APPENDIX A
Field and Laboratory Testing Programs



APPENDIX A

A. GENERAL INFORMATION

The performance of a geotechnical engineering study for the proposed 11-story mixed-use building to be constructed northwest of the intersection of 19th and J Streets in Sacramento, California, was authorized by Mr. Moe Mohanna on July 5, 2016.

Authorization was for a geotechnical study as described in our confirming proposal letter dated July 5, 2016, sent to our client M.H. Mohanna, whose mailing address is 1025 9th Street, Suite 205, in Sacramento, California 95814; telephone (916) 447-5232.

In performing this study we made reference to an undated site plan drawing provided by M.H. Mohanna Development on July 13, 2016.

B. FIELD EXPLORATIONS

As part of our study for the proposed mixed-use building, our field exploration included the drilling and sampling of three borings (D1 through D3) at the approximate locations shown on Figure 2.

Borings D1 and D2 were drilled on July 8 and 13, 2016, respectively, utilizing a CME-75 truck-mounted, drill rig equipped with eight-inch diameter, hollow stem augers and a four-inch diameter drill bit using mud-rotary techniques. Boring D1 and D2 were drilled to a depth of about 27 and 32 feet below existing site grades, respectively, and Boring D2 was drilled to a depth of about 32 feet below existing site grades. At various intervals soil samples were recovered with a 2½-inch outside diameter (O.D.), 2-inch inside diameter (I.D.), Modified California split-spoon sampler and a 2-inch O.D., 1 ⅜-inch I.D., Standard Penetration Test (SPT) split-spoon sampler. Both split-spoon samplers were driven by an automatic 140-pound hammer freely falling 30 inches. The number of blows of the hammer required to drive the 18-inch long samplers each 6-inch interval was recorded. The sum of the blows required to drive the sampler the lower 12-inch interval, or portion thereof, is designated the penetration resistance or "blow count" for that particular drive. The modified California samples were retained in 2-inch-diameter by 6-inch-long, thin walled brass tubes contained within the sampler. The SPT samples were retained in plastic zip-lock bags. After recovery, the field engineer visually classified the soil recovered in the tubes and plastic bags. After the samples were classified, the ends of the tubes and plastic bags were sealed to preserve the natural moisture contents.

Boring D3 was drilled on July 20, 2016, utilizing a John Deere 4x6 Gator-mounted drill rig equipped with four-inch-diameter, solid helical flight augers, to a depth of about 19 feet below existing site grades. At various intervals soil samples were recovered with a



2½-inch O.D., 2-inch inside diameter I.D., Modified California split-spoon sampler driven by a 70-pound, hand-operated slide hammer. The samples were retained in 2-inch-diameter by 6-inch-long, thin walled brass tubes contained within the sampler. After recovery, the field engineer visually classified the soil in the tubes and the ends of the tubes were sealed to preserve the natural moisture contents.

In addition to the driven sample from the borings, representative bulk samples of near-surface soils were also collected and retained in plastic bags. Driven samples and bulk samples were taken to our laboratory for additional soil classification and selection of samples for testing.

The Logs of Soil Borings containing descriptions of the soils encountered in each boring are presented as Figures 3 through 5. A Legend explaining the Unified Soil Classification System and the symbols used on the logs is contained on Figure 6.

C. LABORATORY TESTING

Selected soil samples were tested to determine natural moisture content (ASTM D4643) and triaxial shear strength (ASTM D4767). The results of the moisture content tests are included on the boring logs at the depth each sample was obtained. The results of the triaxial shear strength testing are presented on Figures A1 and A2.

Six soil samples were subjected to grain-size analysis testing (ASTM C136 and ASTM D1140). Test results (grain size distribution curves) for grain-size analysis performed in accordance with ASTM C136 are presented on Figure A3. Test results (percent passing the No. 200 sieve) for grain-size analyses performed in accordance with ASTM D1140 are presented on the Logs of Soil Borings at the depth each sample was obtained.

One sample was subjected to consolidation testing (ASTM D2435). The results of this test are presented in Figure A4.

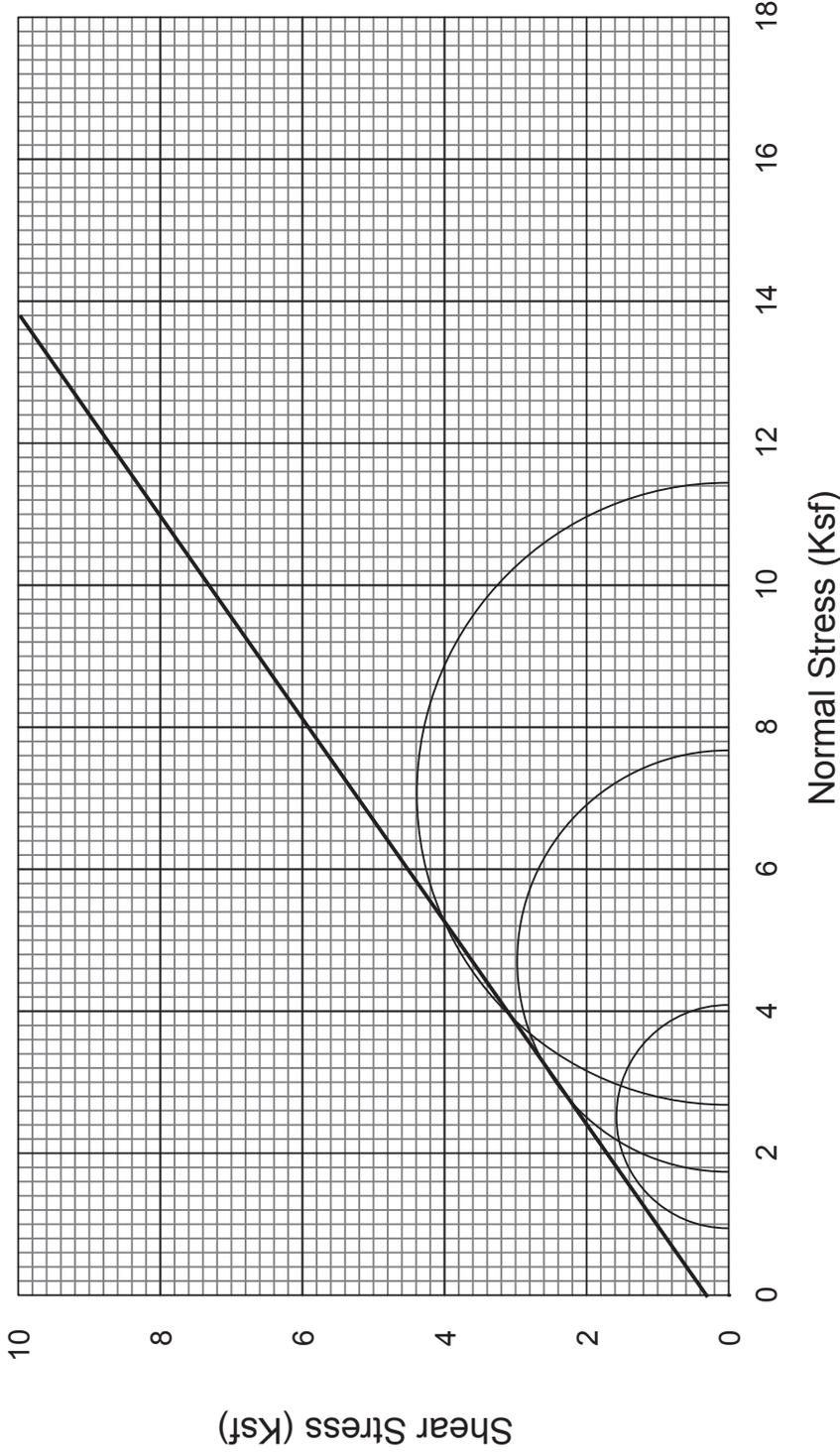
One representative sample of the near-surface soils was subjected to Expansion Index testing (ASTM D4829). The test results are presented on Figure A5.

One representative sample of the near-surface soils was submitted to Sunland Analytical to determine the soil pH and minimum resistivity (California Test 643), Sulfate concentration (California Test 417 and ASTM D516) and Chloride concentration (California Test 422). The test results are presented in Figures A6 and A7.



TRIAxIAL COMPRESSIOn TEST

ASTM D4767



DRY DENSITY (PCF) : 101
 INITIAL MOISTURE (%) : 20.5
 FINAL MOISTURE (%) : 24.7

ANGLE OF INTERNAL FRICTION (ϕ) : 35°
 COHESION (PSF) : 360

SAMPLE NO.: D2-11

SAMPLE CONDITION: Undisturbed

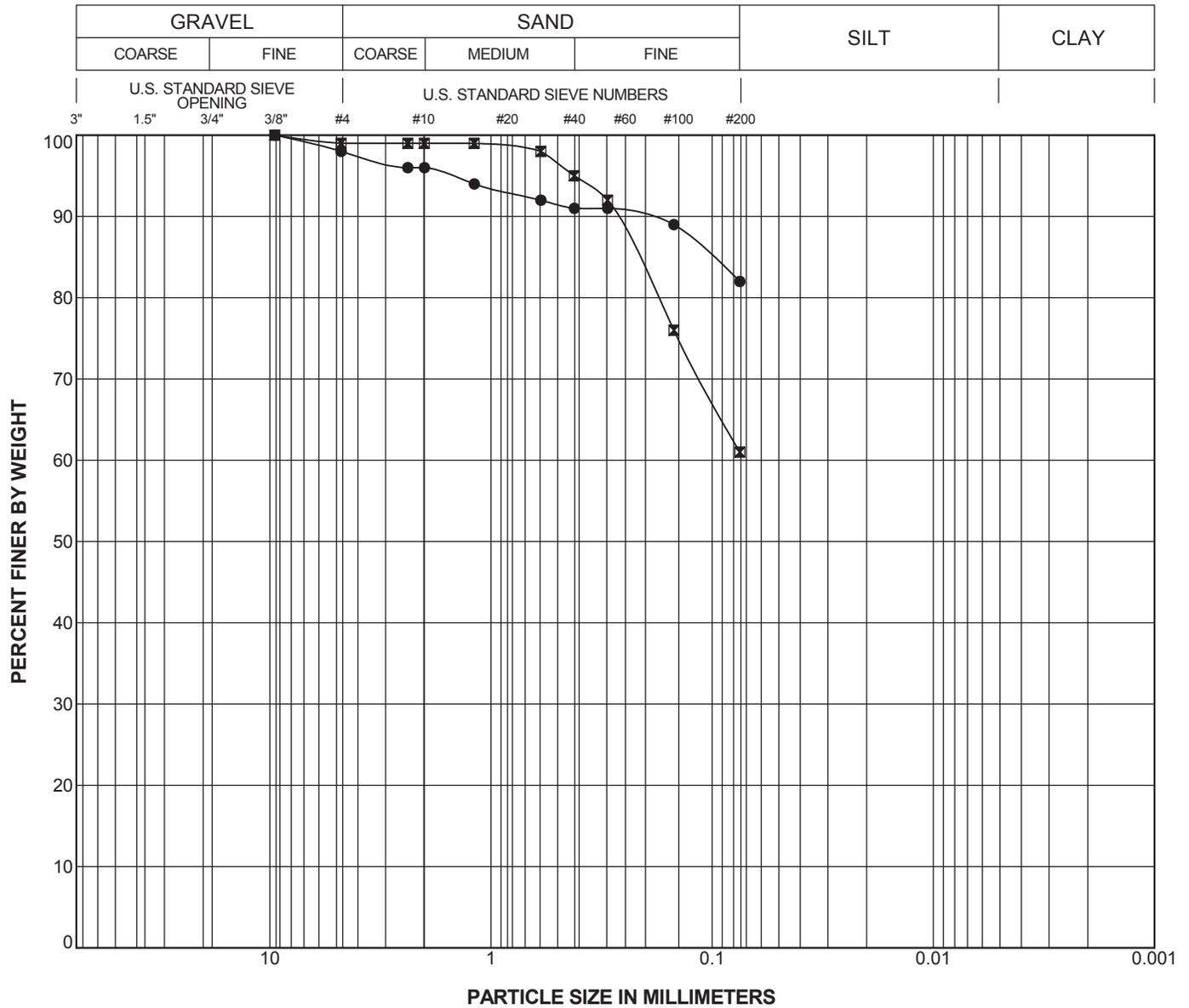
SAMPLE DESCRIPTION: Brown, slightly clayey, sandy silt



19th & J STREETS - 11 STORY MIXED-USE BUILDING
 Sacramento, California

FIGURE	A1
DRAWN BY	RWO
CHECKED BY	ML
PROJECT MGR	DAR
DATE	08/16
WKA NO. 11050.01	

GRAIN SIZE 11050.01 - 19TH & J STREETS 11-STORY MIXED-USE BUILDING.GPJ WKA.GDT 8/18/16 2:28 PM



PARTICLE SIZE DISTRIBUTION

Project: 19th & J Street 11-Story Mixed-use Building
WKA No. 11050.01

EXPANSION INDEX TEST RESULTS

ASTM D4829

MATERIAL DESCRIPTION: Brown, slightly clayey, sandy silt

LOCATION: D1

Sample Depth	Pre-Test Moisture (%)	Post-Test Moisture (%)	Dry Density (pcf)	Expansion Index
1' - 5'	13.0	25.9	99.1	□□

CLASSIFICATION OF EXPANSIVE SOIL *

EXPANSION INDEX	POTENTIAL EXPANSION
□ □□□ 21 - 50	□□r□ □□□ Low
51 - 90	Medium
91 - 130	High
Above 130	Very High

* From ASTM D4829, Table 1



19th & J STREETS - 11 STORY MIXED-USE BUILDING
Sacramento, California

FIGURE A5	
DRAWN BY	RWO
CHECKED BY	ML
PROJECT MGR	DAR
DATE	08/16
WKA NO. 11050.01	



Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 08/05/2016
Date Submitted 08/02/2016

To: Mauricio Luna
Wallace-Kuhl & Assoc.
3050 Industrial Blvd.
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 11050.01 Site ID : D1 1-5FT.
Your purchase order number is 3746.
Thank you for your business.

* For future reference to this analysis please use SUN # 72490-151398.

EVALUATION FOR SOIL CORROSION

Soil pH	7.64		
Minimum Resistivity	2.63	ohm-cm (x1000)	
Chloride	13.0 ppm	00.00130	%
Sulfate	14.5 ppm	00.00145	%

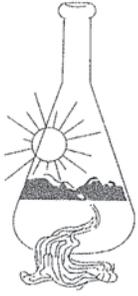
METHODS

pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422



□□□□□□□□ □□□□ □□□□□□□□
19th & J STREET - 11 STORY MIXED-USE BUILDING
Sacramento, California

FIGURE A6	
DRAWN BY	RWO
CHECKED BY	ML
PROJECT MGR	DAR
DATE	08/16
WKA NO. 11050.01	



Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 08/05/2016
Date Submitted 08/02/2016

To: Mauricio Luna
Wallace-Kuhl & Assoc.
3050 Industrial Blvd.
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Randy Horney *RA*
General Manager \ Lab Manager

The reported analysis was requested for the following:
Location : 11050.01 Site ID : D1 1-5FT.
Your purchase order number is 3746. Thank you for your business.

* For future reference to this analysis please use SUN # 72490-151399.

Extractable Sulfate in Water

TYPE OF TEST	RESULTS	UNITS
Sulfate-SO4	13.93	mg/kg

ASTM D-516 from sat.paste extract-reported based on dry wt.



19th & J STREET - 11 STORY MIXED-USE BUILDING
Sacramento, California

FIGURE A7	
DRAWN BY	RWO
CHECKED BY	ML
PROJECT MGR	DAR
DATE	08/16
WKA NO. 11050.01	

APPENDIX A
Side Earth or Seilations



APPENDIX B
GUIDE EARTHWORK SPECIFICATIONS
19th & J STREETS – 11-STORY MIXED-USE BUILDING
Sacramento, California
WKA No. 11050.01

PART 1: GENERAL

1.1 SCOPE

a. General Description

This item shall include all clearing of existing surface and subsurface structures, utilities, vegetation, rubbish, rubble, and associated items; preparation of surfaces to be filled, filling, spreading, compaction, observation and testing of the fill; and all subsidiary work necessary to complete the grading of the site to conform with the lines, grades and slopes as shown on the accepted Drawings.

b. Related Work Specified Elsewhere

- (1) Trenching and backfilling for sanitary sewer system: Section ____.
- (2) Trenching and backfilling for storm drain system: Section ____.
- (3) Trenching and backfilling for underground water, natural gas, and electric supplies: Section ____.

c. Geotechnical Engineer

Where specific reference is made to "Geotechnical Engineer" this designation shall be understood to include either the Geotechnical Engineer or his or her representative.

1.2 PROTECTION

a. Adequate protection measures shall be provided to protect workers and passers-by the site. Streets and adjacent property shall be fully protected throughout the operations.

b. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for working conditions at the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours.

c. Any construction review of the Contractor's performance conducted by the Geotechnical Engineer is not intended to include review of the adequacy of the Contractor's safety measures, in, on or near the construction site.

d. Adjacent streets and sidewalks shall be kept free of mud, dirt, or similar nuisances resulting from earthwork operations.

e. Measures shall be taken to protect storm drains in adjacent depressed areas such that minimum siltation occurs in the drainage system.

f. Surface drainage provisions shall be made during the period of construction in a manner to avoid creating a nuisance to adjacent areas.



- g. The site and adjacent influenced areas shall be watered as required to suppress dust nuisance.

1.3 GEOTECHNICAL REPORT

- a. A *Geotechnical Engineering Report* (WKA No. 11050.01, dated September 1, 2016) has been prepared for this site by Wallace - Kuhl & Associates, Geotechnical Engineers of West Sacramento, California [(916) 372-1434]. A copy is available for review at the office of Wallace - Kuhl & Associates.
- b. The information contained in this report was obtained for design purposes only. The Contractor is responsible for any conclusions the Contractor may draw from this report; should the Contractor prefer not to assume such risk, the Contractor should employ experts to analyze available information and/or to make additional borings upon which to base conclusions drawn by the Contractor, all at no cost to the Owner.

1.4 EXISTING SITE CONDITIONS

The Contractor shall become acquainted with all site conditions. If unshown active utilities are encountered during the work, the Architect shall be promptly notified for instructions. Failure to notify will make the Contractor liable for damage to these utilities arising from Contractor's operations subsequent to the discovery of such unshown utilities.

1.5 SEASONAL LIMITS

Fill material shall not be placed, spread or rolled during unfavorable weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until field tests indicate that the moisture contents of the subgrade and fill materials are satisfactory.

PART 2: PRODUCTS

2.1 MATERIALS

- a. All fill shall be of approved local materials from required excavations, supplemented by imported fill, if necessary. Approved local materials are defined as local soils that do not contain significant quantities of rubble, rubbish and vegetation, and having been tested and approved by the Geotechnical Engineer prior to use.
- b. Imported fill materials shall be approved by the Geotechnical Engineer; they shall be compactable materials meeting the above requirements; shall have a Plasticity Index not exceeding fifteen (15) when tested in accordance with ASTM D4318, an expansion index not exceeding twenty (20) when tested in accordance with ASTM D4829; and, shall be of three-inch (3") maximum particle size. Import materials also shall not contain known contaminants and be within acceptable corrosion limits, with appropriate documentation provided by the contractor.



- c. Capillary barrier material under concrete foundation slabs shall be provided to the thickness shown on the Drawings. This material shall be clean gravel of one-inch (1") maximum size, with less than five percent (5%) material passing a Number Four (#4) sieve.
- d. Other products, such as aggregate base, shall comply with the appropriate provision of the State of California (Caltrans) Standard Specifications, latest edition.

PART 3: EXECUTION

3.1 LAYOUT AND PREPARATION

Lay out all work, establish grades, locate existing underground utilities, set markers and stakes, set up and maintain barricades and protection of utilities prior to beginning actual earthwork operations.

3.2 CLEARING, STRIPPING, AND PREPARING BUILDING PAD AND PAVEMENT AREAS

- a. All surface and other sub-surface items associated with current site activities (including utilities) and associated backfill, debris, and other items encountered during site work and deemed unacceptable by the Geotechnical Engineer, shall be removed and disposed of so as to leave the disturbed areas with a neat and finished appearance, free from unsightly debris. Trees and any other vegetation designated for removal shall include the rootball and all surface roots larger than one-half inch ($\frac{1}{2}$ ") in diameter. Adequate removal of debris and roots may require laborers and handpicking to clean the subgrade soils to the satisfaction of the Geotechnical Engineer's on-site representative, prior to further site preparation. All demolition debris shall be hauled off site, or used as engineered fill, provided it is processed per the recommendations in Geotechnical Report.
- b. On-site wells, septic systems/tanks, and/or grease interceptors associated with previous development, if any, should be properly abandoned in accordance with Sacramento County Environmental Management Department requirements.
- c. Excavations and depressions resulting from the removal of such items, as determined by the Geotechnical Engineer, shall be cleaned out to firm, undisturbed soils and backfilled with suitable materials in accordance with these specifications.
- d. Existing concrete slabs, other concrete structures, and pavements designated for removal may be broken up, pulverized and reused as engineered fill, or removed from the site. If existing pavement rubble is reused as engineered fill, they shall be pulverized to fragments less than three inches (3") in largest dimension and mixed with soil to for a compactable mixture.
- e. Following demolition and site clearing activities, sub-excavation of the proposed building footprint, including adjacent exterior flatwork, shall be performed as recommended in the Geotechnical Engineering Report.



- f. Following sub-excavation activities, the exposed subgrade soils, as well as areas to receive fill, achieved by excavation or remain at grade, shall be scarified twelve inches (12"), uniformly moisture conditioned to at least the optimum moisture content, and uniformly compacted to at least ninety percent (90%) of the maximum dry density as determined by ASTM D1557 Compaction Test.
- g. Compaction operations for all soil subgrades shall be undertaken with a heavy, self-propelled, sheepsfoot compactor capable of achieving the compaction requirements included in the Geotechnical Engineering Report.
- h. When the moisture content of the fill material is less than the optimum moisture content, as defined by the ASTM D1557 Compaction Test, water shall be added until the proper moisture content is achieved.
- i. When the moisture content of the subgrade is too high to permit the specified compaction to be achieved, the subgrade shall be aerated by blading or other methods until the moisture content is satisfactory for compaction.
- j. Compaction operations shall be performed in the presence of the Geotechnical Engineer who will evaluate the performance of the materials under compactive load. Loose, soft and saturated soils and unstable soil deposits, as determined by the Geotechnical Engineer, shall be excavated to expose a firm base and grades restored with engineered fill in accordance with these specifications.
- k. The building pad area shall be defined as extending at least five feet (5') beyond proposed building lines.

3.3 CONSTRUCTION OF UNTREATED SUBGRADES

- a. The selected soil fill material shall be placed in layers which when compacted shall not exceed six inches (6") in compacted thickness. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to promote uniformity of material in each layer.
- b. When the moisture content of the fill material is less than the optimum moisture content, as defined by the ASTM D1557 Compaction Test, water shall be added until the proper moisture content is achieved.
- c. When the moisture content of the fill material is too high to permit the specified degree of compaction to be achieved, the fill material shall be aerated by blading or other methods until the moisture content is satisfactory.
- d. After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to at least ninety percent (90%) as determined by the ASTM D1557 Compaction Test. Compaction shall be undertaken with equipment capable of achieving the specified density and shall be accomplished while the fill material is at the required moisture content. Each layer shall be compacted over its entire area until the desired density has been obtained.
- e. The filling operations shall be continued until the fills have been brought to the finished slopes and grades as shown on the accepted Drawings.



3.4 FINAL SUBGRADE PREPARATION USING UNTREATED SOILS

- a. Final subgrade for building pads and exterior flatwork shall be constructed in accordance with Section 3.2 and Section 3.3 of these specifications. The upper twelve inches (18") of final subgrade for the concrete foundation slabs and exterior flatwork shall be brought to a uniform moisture content not less than the optimum moisture content, and shall be uniformly compacted to not less than ninety percent (90%) as determined by ASTM D1557 Compaction Test, unless the lime-treatment alternative include in the Geotechnical Engineering Report is selected.

3.5 TESTING AND OBSERVATION

- a. Grading operations shall be observed by the Geotechnical Engineer, serving as the representative of the Owner.
- b. Field density tests shall be made by the Geotechnical Engineer after compaction of each layer of fill. Additional layers of fill shall not be spread until the field density tests indicate that the minimum specified density has been obtained.
- c. Earthwork shall not be performed without the notification or approval of the Geotechnical Engineer. The Contractor shall notify the Geotechnical Engineer at least two (2) working days prior to commencement of any aspect of the site earthwork.
- d. If the Contractor should fail to meet the technical or design requirements embodied in this document and on the applicable plans, the necessary readjustments shall be made by the Contractor until all work is deemed satisfactory, as determined by the Geotechnical Engineer and the Architect/Engineer. No deviation from the specifications shall be made except upon written approval of the Geotechnical Engineer or Architect/Engineer.

//



APPENDIX C
Guide Specifications for Auger Cast in Place ACIP Piles



APPENDIX C
GUIDE SPECIFICATIONS FOR AUGER CAST-IN-PLACE PILES
19th & J STREETS – 11-STORY MIXED-USE BUILDING
Sacramento, California
WKA No. 11050.01

PART 1: GENERAL

1.1 SUMMARY

- A. This Section includes construction of compression and tension auger cast piles, where shown on contract drawings and specified herein.
- B. The Contractor shall furnish all labor, materials, tools, and equipment necessary for designing, furnishing, installing, inspecting and testing augered cast-in-place piles, and shall remove and dispose spoils generated by pile construction.

1.2 WORK NOT INCLUDED UNDER THIS SECTION

- A. Concrete pile caps: Section _____.
- B. Excavations: Section _____.
- C. Shoring and bracing of earth banks: Section _____.
- D. Dewatering: Section _____.

1.3 REFERENCE STANDARDS

- A. Requirements, abbreviations and acronyms for reference standards are defined in Section _____.
- B. American Concrete Institute (ACI)
 - 1. ACI 305 - Hot Weather Concreting.
 - 2. ACI 306 - Cold Weather Concreting.
 - 3. ACI 315 - Details and Detailing of Concrete Reinforcement.
- C. American Society for Testing and Materials (ASTM) latest editions
 - 1. ASTM A 615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
 - 2. ASTM C 33 - Concrete Aggregates.
 - 3. ASTM C 31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field
 - 4. ASTM C 109 - Test Method for Compressive Strength of Hydraulic Cement Mortars.
 - 5. ASTM C 150 - Portland Cement.
 - 6. ASTM C 618 - Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
 - 7. ASTM C 939 - Test Method for Flow of Grout for Preplaced - Aggregate Concrete (Flow Cone Method)



8. ASTM C 942 - Test Method for Compressive Strength of Grouts for Preplaced-Aggregate Concrete in the Laboratory.
9. ASTM D 1143 - Test Method for Piles Under Static Axial Compressive Load.
10. ASTM D 3689 - Test Method for Individual Piles Under Static Axial Tensile Load.
11. ASTM D 3966 - Test Method for Piles Under Lateral Loads.

1.4 PROTECTION

- A. Adequate protection measures shall be provided to protect workers and passers-by at the site. Streets and adjacent property shall be fully protected throughout the operations.
- B. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for working conditions at the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours.
- C. Any construction review of the Contractor's performance conducted by the Geotechnical Engineer is not intended to include review of the adequacy of the Contractor's safety measures, in, on or near the construction site.
- D. Adjacent streets and sidewalks shall be kept free of mud, dirt or similar nuisances resulting from earthwork operations.
- E. Surface drainage provisions shall be made during the period of construction in a manner to avoid creating a nuisance to adjacent areas.
- F. The site and adjacent influenced areas shall be watered as required to suppress dust nuisance.

1.5 EXISTING SITE CONDITIONS

Piling Contractor shall inspect the site and related conditions prior to commencing their portion of the work. If unshown active utilities are encountered during the work, the Architect shall be promptly notified for instructions. Failure to notify will make the Contractor liable for damage to these utilities arising from Contractor's operations subsequent to the discovery of such unshown utilities.

1.6 GEOTECHNICAL ENGINEERING REPORT

- A. A *Geotechnical Engineering Report* (WKA No. 11050.01, dated September 1, 2016), has been prepared by Wallace - Kuhl & Associates, Geotechnical Engineers of West Sacramento, California; telephone (916) 372-1434; facsimile (916) 372-2565. That report is available for review at the office of Wallace - Kuhl & Associates.



- B. The Piling Contractor shall submit in writing to the Architect and/or Structural Engineer, all applicable information as listed in Subsection 1.7 - Submittals for review and approval, in addition to the above experience record.
- C. The Owner does not guarantee that the information contained in the Geotechnical Engineering Report is correct nor that the conditions revealed at the actual exploration locations will be continuous over the entire site. This report was prepared for purposes of design only. Making the report available to contractors shall not be construed in any way as a waiver of this position. The Piling Contractor shall be responsible for any conclusions the Contractor may draw from this report. Should the Contractor prefer not to assume such risk, the Contractor is under obligation to employ their own experts to analyze available information and/or to make their own tests upon which to base their conclusions.

1.7 SUBMITTALS

Submit the following according to Conditions of the Construction Contract and Division 1 Specifications, for Owner's approval.

- A. Shop Drawings: Shall clearly indicate but not be limited to:
 - 1. Description of the pile drilling and grouting equipment and procedures to be utilized in installations.
 - 2. Proposed pile grout design mix and description of materials to be used in sufficient detail to indicate their compliance with the specifications and either;
 - a. Laboratory tests of trial mixes made with the proposed mix, or
 - b. Laboratory tests of the proposed mix used on previous projects.
 - 3. A pile layout plan referenced to the structural plans including a numbering system capable of identifying each individual pile, and indicating pile cutoff elevations.
 - 4. A dimensioned sketch of the pile load test arrangements, including sizes of primary members, data on testing and measuring equipment including required jack and gauge calibrations, load cell and professional engineer seal certifying the adequacy of the reaction frames.
 - 5. Fabrication and installation schedule covering test pile installation, pile testing, and production pile installation, with excavation schedule for pile cap and finished subgrades by area.
 - 6. Qualifications of pile installation construction personnel, supervisor, and technician.
- B. Records
 - 1. The Contractor shall submit a pile design report indicating construction methods and materials which will be utilized to install piles of the specified compression and tension capacity, meeting the criteria of this



- specification and the Contract Drawings. The report shall be prepared and sealed by a Professional Engineer licensed in the state of California.
2. The Contractor shall provide a Technician for each pile rig responsible for observing the auger construction, grout batching, and grouting operations and preparing installation records. The Contractor's inspector shall submit an installation record for each pile not later than two (2) days after installation is completed. The report shall include but not be limited to:
 - a. Project name and number
 - b. Name of contractor
 - c. Pile number
 - d. Pile location, date and time of installation
 - e. Design pile capacity, compression or tension
 - f. Pile diameter
 - g. Tip elevation
 - h. Cut off elevation
 - i. Elevation of butt
 - j. Drilling elevation
 - k. Rate of advancement of auger and rotation speed
 - l. Quantity of grout placed as compared to the theoretical volume for each pile, in five-foot (5') depth increments, and total for pile
 - m. Grout pressures
 - n. Pile reinforcing steel
 - o. Grout flow cone test report
 - p. Any unusual occurrences observed during pile installation, and pile deviation from vertical
 3. The grout quantity shall be determined by recording grout pump displacement or by other acceptable means; the pile installation record shall reveal the observed measure and quantity.
 4. Load test reports shall be in accordance with the applicable ASTM Standards.
 5. Grout compression test reports.
- C. Hazardous Materials Notification: In the event no alternative product or material is available that does not contain asbestos, polychlorinated biphenyls (PCBs) or other hazardous materials as determined by the Owners' Authorized Representative, a "Material Safety Data Sheet" (MSDS) equivalent to OSHA Form 20 shall be submitted for that proposed product or material prior to installation.
- D. Asbestos and PCB Certification: After completion of installation, but prior to Substantial Completion, Contractor shall certify in writing that products and materials installed, and processes used, do not contain asbestos or



polychlorinated biphenyls (PCB), using format in Section ____/Closeout Procedures.

1.8 DELIVERY, HANDLING, STORAGE

Comply with General Conditions and Section 01600/Product Requirements.

1.9 WARRANTY

Comply with General Conditions and Section ____/Product Requirements.

PART 2: PRODUCTS

2.1 QUALITY ASSURANCE

- A. The work of this section shall be performed by a company specialized in auger cast pile work with a minimum of five (5) years of documented successful experience, and shall be performed by skilled workers thoroughly experienced in the necessary crafts. Contractor shall submit evidence of successful installation of augered cast-in-place piles under similar job and subsurface conditions, including a job supervisor who shall have a minimum of three (3) years of method specific experience.
- B. Work shall comply with all Municipal, State and Federal regulations regarding safety, including the requirements of the Williams-Steiger Occupational Safety and Health Act of 1970.

2.2 MATERIALS

- A. Portland Cement: conforming to ASTM C 150.
- B. Mineral Admixture: Mineral admixture, if used, shall be fly ash or natural pozzolan which possesses the property of combining with the lime liberated during the process of hydration of Portland cement to form compounds containing cementitious properties, conforming to ASTM C 618, Class C or Class F.
- C. Fluidifier conforming to ASTM C 937, except that expansion shall not exceed 4%.
- D. Water: Potable, fresh, clean and free of sewage, oil, acid, alkali, salts or organic matter.
- E. Fine Aggregate: Conforming to ASTM C 33.
- F. Grout Mixes:
 - 1. The grout shall consist of Portland cement, sand and water, and may also contain a mineral admixture and approved fluidifier.
 - a. The components shall be proportioned and mixed to produce a grout capable of maintaining the solids in suspension, which may



- be pumped without difficulty and which will penetrate and fill open voids in the adjacent soils.
- b. These materials shall be proportioned to produce a hardened grout which will achieve the design strength within twenty-eight (28) days.
 - c. The design grout strength at twenty-eight (28) days for this project shall be a minimum four thousand pounds per square inch (4000 psi).
2. All materials shall be accurately measured by volume or weight as they are fed to the mixer.
 - a. Time of mixing shall be not less than one minute at the site.
 - b. If agitated continuously, the grout may be held in the mixer or agitator for a period not exceeding two and one-half (2½) hours at grout temperatures below seventy degrees Fahrenheit (70°F) and for a period not exceeding one hundred degrees Fahrenheit (100°F).
 - c. Grout shall not be placed when its temperature exceeds one hundred degrees Fahrenheit (100°F).
 3. Protect grout from physical damage or reduced strength, which could be caused by frost, freezing actions or low temperatures or from damage during high temperatures in accordance with ACI 305/306.
 4. The grout shall be tested by making a minimum of six, two-inch (2") diameter by four-inch (4") tall cylinders for each day during which piles are placed.
 - a. A set of six (6) cylinders shall consist of two (2) cylinders tested at seven (7) days, and two (2) cylinders tested at twenty-eight (28) days. Two (2) cylinders shall be held in reserve.
 - b. Test cylinders shall be cured and tested in accordance with ASTM C 109.
 - c. Cylinder specimens shall be cast and cured in accordance with ASTM C 31.
 - d. Cylinder specimens may be restrained from expansion as described in ASTM C 942.
 5. Test the flow of grout for each pile and batch of grout. Maintain grout fluidity between fifteen (15) and twenty-five (25) seconds through a three-quarters inch (¾") diameter grout cone.
- G. Steel Reinforcing:
1. Minimum reinforcing steel assemblies are shown on the Contract Drawings. Assemblies shall be detailed and fabricated in accordance with the manual of Standard Practice for Detailing Reinforced Concrete Structures (ACI 315).



2. Reinforcing shall conform to the requirements of ASTM A 615, Grade 60.
3. All reinforcing bar shall be epoxy coated, including bars installed for contractor convenience. Wire ties do not require epoxy coating.
4. Contractor shall provide labor, materials, and method for coating cut ends and repairing holidays in epoxy coating.
5. Acceptable materials and methods shall be provided to facilitate proper centering of all steel reinforcing installed.
6. Bars may be bent in place, provided epoxy coating at all bends is inspected, flaked coating is removed by wire brush, and holidays in coating are repaired.
7. A corrugated metal pipe sleeve shall be provided for each pile equal to the diameter of the auger, to define the pile butt and permit cut-off to specified elevations.

2.3 EQUIPMENT

A. Augering Equipment:

1. The auger flighting shall be continuous from the auger head to the top of auger without gaps or other breaks.
2. The auger flighting shall be uniform in diameter throughout its length and shall be the diameter specified for the piles less a maximum of three percent (3%). The hole through which the grout is pumped during the placement of the pile shall be located at the bottom of the auger head below the bar containing the cutting teeth.
3. Augers over forty feet (40') in length shall contain a middle support guide.
4. The piling leads shall be prevented from rotating by a stabilizing arm or by firmly placing the bottom of the leads into the ground or by some other acceptable means.
5. Leads shall be marked at one-foot (1') intervals to facilitate measurement of auger penetration.
6. Auger hoisting equipment shall be provided that will enable the auger to be rotated while being withdrawn.

B. Mixing and Pumping Equipment:

1. Only approved pumping and mixing equipment shall be used in the preparation and handling of the grout.
 - a. Provide a screen to remove over-size particles at the pump inlet.
 - b. All oil or other rust inhibitor shall be removed from mixing drums and grout pumps before each use.
 - c. All materials shall be such as to produce a homogeneous grout of the desired consistency and strength.



2. The grout pump shall be a positive displacement pump capable of developing displacement pressures at the pump of three hundred fifty pounds per square inch (350 psi) or higher.
 - a. The grout pump shall be provided with a pressure gauge in clear view of the equipment operator.
 - b. The grout pump shall be calibrated at the beginning of the work and periodically during the work to determine the volume of grout pumped per stroke, under operating pressure.
 - c. A positive method for automatic counting of grout pump strokes shall be provided. Such methods may include digital or mechanical stroke counters or other acceptable methods.
 - d. A second pressure gauge, if required, shall be provided close to the auger rig where it can be readily observed by the inspector, if required.

PART 3: EXECUTION

3.1 EXAMINATION

- A. The Contractor is responsible for supporting pile drilling equipment and concrete grout batching and delivery equipment. Equipment shall be supported on timber mats or gravel fill work platforms, if necessary for safety and stability, and to prevent damage.
- B. The Contractor shall examine the areas and evaluate conditions under which piles are to be installed and shall include measures for the proper and timely completion of the work in the construction methods and pile design.

3.2 AUGER CAST PILE SYSTEM DESCRIPTION

- A. Augered Pressure Grouted Piles
 1. Pressure grouted piles shall be made by drilling a continuous-flight, hollow-shaft auger into the ground to the design pile depth, or until refusal criteria is satisfied. The volume of soil extracted shall not be greater than the volume of the steel auger stem inserted.
 2. Grout shall be injected through the auger shaft as the auger is being withdrawn. First develop a five-foot (5') plug at the bottom of the auger flights, then inject sufficient grout volume to fill the augered hole one hundred fifteen percent of the theoretical volume (1.15 percent) or more. Grout volumes shall be logged by depth during withdrawal.
 3. Post-grouting through a special grout tube for capacity increase is permitted, given these methods are used in the test piles, and consistently throughout the entire work for this project. Post-grouting may be used for compression and tension capacity. Post-grout



pressures must be sufficient to open grout portals and cause fracture and flow. Grout volumes and pressures shall be recorded and used as a measure to demonstrate pile compliance with the design and pile load test criteria.

- B. Augered Displacement Pressure Grouted Piles
 1. Augered Displacement Pressure Grouted piles shall be made by rotating a specialized auger capable of displacing soil surrounding the auger, with minimal soils returned to the ground surface to reach the design pile depth, or until specified refusal criteria is satisfied.
 2. Grout shall be injected through the auger shaft as the auger is being withdrawn in such a way as to exert a positive upward grout pressure on the auger, as well as a positive lateral pressure on the soil surrounding the pile.
- C. Alternatives
 1. Alternative pile types which meet the compression and tension pile criteria given on the drawings may be substituted for augered pressure-grouted pile systems described in this Section.
 2. Alternative pile installation systems must be capable of achieving the specified compression and tension, and shall provide a working lateral capacity of twenty kips (20).

3.3 PILE DESIGN

- A. The ultimate capacity of twenty four inch (24") diameter compression piles shall be greater than two hundred (200) kips in axial compression and greater than thirty kips (30) in axial tension, or the ultimate capacity of thirty six inch (36") diameter compression piles shall be greater than three hundred twenty kips (320) in axial compression and greater than forty five (45) kips in axial tension. The allowable design capacities of all piles shall be determined by dividing the ultimate capacity by the appropriate factor of safety as provided in the Geotechnical Engineering Report. Load Testing performed under Part 3.4 of this section shall confirm the ultimate capacity of the piles.
- B. Pile design shall be performed by the Contractor and demonstrated by load test before installation of production piles. All piles shall meet the criteria specified on the Contract Drawings.
- C. The design shall be described in a pile design report. This report shall indicate variances, if any, from the reinforcing steel specified or the requirements of this section, and shall demonstrate that the design meets or exceeds the specified performance in tension, compression, and bending. The Contractor shall submit design calculations for the proposed piles demonstrating compression and tensile capacity.



3.4 LOAD TESTING

A. Pre-construction Pile Load Tests:

1. Install and test one (1) compression pile, one (1) tension pile, and one (1) lateral load test pile, at the locations shown on the plans or approved alternate location to verify the construction methods and pile capacity. Test piles and reaction piles shall be installed outside of pile cap locations.
2. The Contractor shall provide complete testing materials and equipment as required, install test and reaction piles and perform the load tests only in the presence of the Owner.
3. The pile test reaction frame shall be capable of safely sustaining two hundred (200) kips in axial compression and thirty (30) kips in axial tension (uplift) for twenty four inch (24") diameter piles and three hundred twenty (320) kips in axial compression and forty five (45) in axial tension (uplift) for thirty six inch (36") diameter piles.
4. Preconstruction Pile Load tests shall be performed using ASTM's Quick Test Methods.
5. One successful compression pile load test shall be performed in accordance with ASTM D 1143.
6. One successful tension pile load test shall be performed in accordance with ASTM D 3689.
7. One lateral pile load test to the design ultimate load for each pile type shall be performed in accordance with ASTM D 3966.

3.5 INSTALLATION

A. Tolerance

1. Piles shall be located where shown on drawings or where otherwise directed by the Engineer.
 - a. Pile centers shall be located to an accuracy of three inches (± 3 ").
 - b. Vertical piles shall be plumb within two percent (2%).
 - c. Battered piles shall be installed to within four percent (4%) of the specified batter as determined by the angle from horizontal.

B. Adjacent Piles

1. Adjacent piles within ten feet (10'), center-to-center, shall not be installed within twenty-four (24) hours of each other.
2. Within pile caps, piles adjacent within four (4) pile diameters center-to-center, shall not be installed within twenty-four (24) hours of each other.

C. Installation Procedure

1. The length and drilling criteria of production piles will be as defined in the Contractor's design and as demonstrated by the successful pile load tests.



Advance and rotate the auger at a continuous rate that prevents removal of excess soil.

2. Stop advancement after reaching the required depth or refusal criteria.
3. The hole in the bottom of the auger shall be closed with a suitable plug while advancing into the ground. The plug shall be removed by grout pressure or mechanically with the reinforcing bar.
4. At the start of pumping grout, raise the auger from six inches (6") to twelve inches (12") and after the grout pressure builds up sufficiently, re-drill the auger to the previously established tip elevation.
5. Maintain a head of at least fifteen feet (15') of grout on the auger flighting above the injection point during auger withdrawal.
 - a. Positive rotation of the auger shall be maintained at least until placement of the grout.
 - b. Rate of grout injection and rate of auger withdrawal from the soil shall be coordinated so as to maintain at all times the minimum grout head.
 - c. The total volume of grout shall be at least one hundred fifteen percent (115%) of the theoretical volume for each pile.
 - d. After grout is flowing at the ground surface from the auger flighting, the rate of grout injection and auger withdrawal shall be coordinated so that there is a constant grout flow at the surface.
 - e. If pumping grout is interrupted for any reason, the contractor shall reinsert the auger by drilling at least five feet (5') below the depth of the auger where the interruption occurred, and re-grout while withdrawing the auger from that depth.
6. If less than one hundred fifteen percent (115%) of the theoretical volume of grout is placed in any five foot (5') increment (until the grout head on the auger flighting reaches the ground surface), the pile increment shall be reinstalled by advancing the auger ten feet (10') or to the bottom of the pile if that is less, followed by controlled removal and grout injection.
7. Spoil material that accumulates around the auger during injection of the grout shall be promptly cleared away.
8. A steel corrugated metal pipe (CMP) sleeve shall be placed at the top of each pile to a depth of one and one half feet (1½') below the pile cutoff elevation.

D. Obstructions and Damaged Piles

1. If non-augerable material is encountered above the desired tip elevation, the pile shall be completed to the depth of the non-augerable material in accordance with these Specifications. Such short piles shall be included for payment, if completed and included within the foundation. If required



- by the Engineer, additional adjacent piles shall be placed. Additional piles shall also be included in the total number of piles for payment.
2. Damaged piles, and piles installed outside the required installation tolerances, will not be accepted.
 3. Cut off and abandon rejected piles after installation, and replace with new piles. Cutoff shall be at a sufficient depth to avoid transfer of load from the structure to the abandoned pile.
 4. Piles located within ten feet (10') of existing structures shall be installed in one continuous operation. Re-stroking piles during construction due to auger obstructions or difficulty in installation of reinforcement cages will not be allowed. The structural engineer shall be consulted in the event that replacement piles are required.
- E. Cutting-Off
1. Adjust the tops of pile to the cut-off elevations where piles are constructed from a work platform above final subgrade, by removing fresh grout from the top of the pile after the CMP sleeve is in place.
 2. Cut off hardened grout and the CMP shell down to final cutoff point after initial set has occurred for all piles in a single cap, or within fifteen feet (15') of any pile in a spaced pattern.
- F. Disposal
1. The Contractor shall remove and dispose all spoils and grout off site.
 2. The Contractor shall determine if any excavated material is contaminated, and if any contaminated material is encountered it shall be disposed of in a method acceptable to all governmental authorities having jurisdiction.

PART 4: MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. Each compression pile and each tension pile successfully installed in accordance with the Contractor's design and using the methods and practices of the approved test piles, cut off at the proper elevation, including steel reinforcing, and all records and grout testing specified, shall be considered a single unit price item. Pile design, materials testing, and the Contractor's inspection are considered incidental to construction and shall not be separately measured for payment. Damaged piles and piles installed outside the required installation tolerances will not be measured for payment. Short piles caused by obstructions and meeting the requirements of Part 3.5D shall be measured for payment.
- B. Each successful compression, tension and lateral pre-construction load test performed, including load frame and/or reaction piles, test pile, testing, and load test report, shall be considered a single unit price item.



- C. Each successful compression, tension and lateral construction quick load test performed, including load frame and/or reaction piles, test pile, testing, and load test report, shall be considered a single unit price item.

4.2 PAYMENT

- A. Each compression pile and each tension pile, approved and accepted by the Owner, shall be paid at the unit price indicated on the bid form.
- B. Each successful pile load test, approved and accepted by the Owner, shall be paid at the unit prices indicated on the bid form.

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