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September 2, 2022

Project 08236.00002.001

Mr. Joshua Garner
Liberty Towers Church
5132 Elkhorn Boulevard
Sacramento, CA 95842

Subject: Liberty Towers Church Project Air Quality and Greenhouse Gas Emissions Assessment

Dear Mr. Garner:

HELIX Environmental Planning, Inc. (HELIX) has assessed the air quality and greenhouse gas (GHG) emissions associated with the construction and operation of the proposed Liberty Towers Church Project (project). Analysis within this report was prepared to support impact analysis pursuant to the California Environmental Quality Act (CEQA; Public Resources Code Sections 21000 et seq.), CEQA Guidelines (Title 14, Section 15000 et seq. of the California Code of Regulations).

PROJECT LOCATION

The project site is comprised of 10.46 acres located at 5132 Elkhorn Boulevard in the Foothill Farms census-designated place unincorporated community in Sacramento County (County). The project site is located at the south corner of the intersection of Elkhorn Boulevard and Hillsdale Boulevard, approximately 3,000 feet (0.57 mile) northeast of Interstate 80 (I-80). Access to the project site would be provided by three driveways that would be accessible by Elkhorn Boulevard, Hillsdale boulevard, and Andrea Boulevard. See Attachment A for Figure 1, *Site and Vicinity Map*, and Figure 2, *Aerial Map*.

PROJECT DESCRIPTION

The proposed project would develop the site with a mix of uses. Proposed new buildings would include:

- An approximately 27,860-square-foot (SF) two story multipurpose building. The bottom floor would contain a daycare center, restrooms, a kitchen/cafe, and a multipurpose space. The upper floor would contain a large multipurpose room and smaller meeting rooms.
- An approximately 5,780-SF two-story office building for administration of the church and project.

- 69 independent senior living apartments located in a single three-story building with a total area of approximately 44,499 SF.
- 48 apartments located in 6 two-story buildings with a total area of approximately 31,604 SF.

In addition, the existing church building on the project site would be renovated and would include an approximately 431-SF backstage building addition located under the existing roof. Outdoor amenities would include play areas, a multi-use lawn area, patio areas with seating, a gas fire pit/social area, a sports court, parking lots, bicycle parking, sidewalks, driveways, stormwater control features, and landscaped areas. See Attachment A for Figure 3, *Site Plan*.

ENVIRONMENTAL SETTING

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

The climate of the SVAB is characterized by hot dry summers and mild rainy winters. During the year the temperature may range from 20 to 115 degrees Fahrenheit (°F) with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 20 inches with snowfall being very rare. The prevailing winds are moderate in strength and vary from moist breezes from the south to dry land flows from the north. The mountains surrounding the Sacramento Valley create a barrier to airflow, which can trap air pollutants in the valley when certain meteorological conditions are right, and a temperature inversion (areas of warm air overlying areas of cooler air) exists. Air stagnation in the autumn and early winter occurs when large high-pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows pollutants to become concentrated in the air. The surface concentrations of pollutants are highest when these conditions are combined with increased levels of smoke or when temperature inversions trap cool air, fog, and pollutants near the ground. The ozone season (May through October) in the SVAB is characterized by stagnant morning air or light winds with the breeze arriving in the afternoon out of the southwest from the San Francisco Bay. Usually, the evening breeze transports the airborne pollutants to the north out of the SVAB. During about half of the days from July to September, however, a phenomenon called the “Schultz Eddy” prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern and pollutants to circle back southward. This phenomenon’s effect exacerbates the pollution levels in the area and increases the likelihood of violating the federal and state air quality standards (SMAQMD 2020a).

The predominant wind direction in the vicinity of the project site is from the southeast and the average wind speed is approximately 6.1 mph, as measured at the Sacramento McClellan Airport, approximately 2.5 miles southwest of the project site (Iowa Environmental Mesonet [IEM] 2021). The annual average

maximum temperature in the project area, as measured at the Sacramento 5 ESE climatic station, approximately 8 miles southwest of the project site, is approximately 73.1 degrees Fahrenheit (°F), and the annual average minimum temperature is approximately 49.8°F. Total precipitation in the project area averages approximately 18.2 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center [WRCC] 2017).

REGULATORY SETTING

Air Quality

Criteria Pollutants

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

The California Air Resources Board (CARB) is required to designate areas of the state as attainment, nonattainment, or unclassified for any state standard. An “attainment” designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A “nonattainment” designation indicates that a pollutant concentration violated the standard at least once. The air quality attainment status of the SVAB, including the City of Folsom, is shown in Table 1, *Sacramento County Attainment Status*.

Table 1
SACRAMENTO COUNTY ATTAINMENT STATUS

Pollutant	State of California Attainment Status	Federal Attainment Status
Ozone (1-hour)	Nonattainment	No Federal Standard
Ozone (8-hour)	Nonattainment	Nonattainment
Coarse Particulate Matter (PM ₁₀)	Nonattainment	Attainment
Fine Particulate Matter (PM _{2.5})	Attainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment/Unclassified
Nitrogen Dioxide (NO ₂)	Attainment	Attainment/Unclassified
Lead	Attainment	Attainment/Unclassified
Sulfur Dioxide (SO ₂)	Attainment	Unclassified
Sulfates	Attainment	No Federal Standard
Hydrogen Sulfide	Unclassified	No Federal Standard
Visibility Reducing Particles	Unclassified	No Federal Standard

Sources: SMAQMD 2020a

Sacramento County is designated as nonattainment for the state and federal ozone standards, the state PM₁₀ standards, and the federal PM_{2.5} standards. Concentrations of all other pollutants meet state and federal standards.

Ozone is not emitted directly into the environment but is generated from complex chemical reactions between reactive organic gases (ROG), or non-methane hydrocarbons, and oxides of nitrogen (NO_x) that occur in the presence of sunlight. ROG and NO_x generators in Sacramento County include motor vehicles, recreational boats, other transportation sources, and industrial processes. PM₁₀ and PM_{2.5} arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations, and windblown dust.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs can cause long-term chronic health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe and impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

The Health and Safety Code (§39655[a]) defines toxic air contaminants as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health.” All substances that are listed as hazardous air pollutants pursuant to subsection (b) of Section 112 of the CAA (42 United States Code Sec. 7412[b]) are designated as TACs. Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health.

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is referred to as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter (CARB 2022). Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, CARB identified DPM as a TAC based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a notable effect on California’s population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2022).

Greenhouse Gases

Global climate change refers to changes in average climatic conditions on Earth including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases.

These gases are commonly referred to as GHGs because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with burning of fossil fuels during motorized transport; electricity generation; natural gas consumption; industrial activity; manufacturing; and other activities such as deforestation, agricultural activity, and solid waste decomposition.

The GHGs defined under California's Assembly Bill (AB) 32, described below, include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Estimates of GHG emissions are commonly presented in carbon dioxide equivalents (CO₂e), which weigh each gas by its global warming potential (GWP). Expressing GHG emissions in CO₂e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted. GHG emissions quantities in this analysis are presented in metric tons (MT) of CO₂e. For consistency with United Nations Standards, modeling, and reporting of GHGs in California and the U.S. use the GWPs defined in the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report (IPCC 2007): CO₂ – 1; CH₄ – 25; N₂O – 298.

GHG Reduction Regulations and Plans

The primary GHG reduction regulatory legislation and plans (applicable to the project) at the State, regional, and local levels are described below. Implementation of California's GHG reduction mandates is primarily under the authority of CARB at the state level, SMAQMD and the Sacramento Area Council of Governments (SACOG) at the regional level, and the County at the local level.

Executive Order S-3-05: On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. Executive Orders are not laws and can only provide the governor's direction to state agencies to act within their authority to reinforce existing laws.

Assembly Bill 32 – Global Warming Solution Act of 2006: The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that CARB develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed by AB 32 to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

Executive Order B-30-15: On April 29, 2015, EO B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28 nation European Union. California is on track to meet or exceed the target of reducing GHGs emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030

will make it possible to reach the goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

Senate Bill 32: Signed into law by Governor Brown on September 8, 2016, Senate Bill (SB) 32 (Amendments to the California Global Warming Solutions Action of 2006) extends California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EO B-30-15 of 80 percent below 1990 emissions levels by 2050.

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

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

Sacramento Area Council of Governments: As required by the Sustainable Communities and Climate Protection Act of 2008 (SB 375), SACOG has developed the 2020 Metropolitan Transportation Plan and Sustainable Communities Strategy. This plan seeks to reduce GHG and other mobile source emissions through coordinated transportation and land use planning to reduce VMT (SACOG 2019).

County of Sacramento: In November 2011, the County approved the Phase 1 Climate Action Plan Strategy and Framework (CAP), which is the first phase of developing a community-level Climate Action Plan. The Phase 1 CAP provides a framework and overall policy strategy for reducing GHG emissions and managing our resources in order to comply with AB 32. It also highlights actions already taken to become more efficient and targets future mitigation and adaptation strategies. In September 2012, the County adopted the Phase 2A CAP to address reducing GHG emissions for County operations. Neither the Phase 1 CAP nor the Phase 2A CAP are "qualified" GHG reduction plans for the purposes of streamlined impact analysis of GHG emissions per Section 15183.5 of the CEQA Guidelines.

As part of an update to the General Plan, the County is preparing a Phase 2B CAP which will be a qualified GHG reduction plan in accordance with Section 15183.5 of the CEQA Guidelines (County 2021). As of this analysis, a Phase 2B CAP and Addendum to the General Plan Update Environmental Impact

Report is in progress. The addendum has not been certified and the Phase 2B CAP has not been adopted.

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015).

Residential areas are considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Children and infants are considered more susceptible to health effects of air pollution due to their immature immune systems, developing organs, and higher breathing rates. As such, schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities.

The closest existing sensitive receptor to the project site is the Cornerstone Christian School adjacent to the project site to the east. Single family residential neighborhoods are located approximately 80 feet across Hillsdale Boulevard to the west and northwest and across Andrea Boulevard to the south. Multi-family residences are located approximately 170 feet across Elkhorn Boulevard to the northeast. The Frontier Elementary School is located approximately 850 feet to the southeast.

METHODOLOGY AND ASSUMPTIONS

Criteria pollutant, precursor, and GHG emissions for project construction and operation were estimated using the California Emissions Estimator Model (CalEEMod), Version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The calculation methodology and default data used in the model are available in the CalEEMod User's Guide, Appendices A, D, and E (CAPCOA 2021). The CalEEMod output files are included in Attachment B to this letter.

Construction of the project is anticipated to begin as early as May 2023 and be completed in November 2024. Construction modeling assumes the anticipated schedule reported by the project applicant: demolition/site preparation 45 workdays; grading 21 workdays; underground utilities 87 workdays; building construction 262 workdays; and paving 15 workdays. Architectural coating is assumed to occur concurrently with the last six months of building construction. Construction equipment assumptions were based on estimates from the project applicant and CalEEMod defaults. An estimated 100 truckloads (200 one-way trips) of asphalt/concrete/debris would be exported during demolition, and an

estimated 50 truckloads (200 one-way trips) of vegetation would be exported during site preparation. Construction equipment assumptions were based on estimates from the project applicant and CalEEMod defaults and are shown in Table 2, *Construction Equipment Assumptions*.

Table 2
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Equipment	Horsepower	Number	Hours/Day
<i>Demolition/Site Preparation</i>			
Excavators	158	1	8
Rubber-Tired Dozers	247	1	8
Rubber-Tired Loaders	203	3	8
Tractors/Loaders/Backhoes	97	1	8
Water Trucks	402	1	4
<i>Grading</i>			
Excavators	158	2	8
Graders	187	1	8
Water Trucks	402	1	4
Rubber Tired Dozers	247	1	8
Rubber-Tired Loaders	203	3	8
Scrapers	367	2	8
Tractors/Loaders/Backhoes	97	2	8
<i>Underground Utilities</i>			
Excavators	158	1	8
Rubber Tired Dozers	247	1	8
Rubber-Tired Loaders	203	3	8
Tractors/Loaders/Backhoes	97	1	8
<i>Building Construction</i>			
Cranes	231	1	7
Forklifts	89	3	8
Generator Sets	84	1	8
Tractors/Loaders/Backhoes	97	3	7
Welders	46	1	8
<i>Architectural Coating</i>			
Air Compressors	78	1	6
<i>Paving</i>			
Pavers	130	2	8
Paving Equipment	132	2	8
Rollers	80	2	8
Rubber-Tired Loaders	203	2	8

Source: CalEEMod

Operational mobile emissions were modeled using the CalEEMod defaults for project trip generation which result in an estimated 1,262 average daily trips.

Energy source emissions were estimated assuming implementation of energy-reducing project design features to comply with the 2019 Title 24 standards which include a requirement for new residential buildings with three or fewer residential floors to have on-site generation of electricity through photovoltaic (solar) panels. Based on the anticipated conditioned space of the senior apartments and

regular apartments (117 dwelling units, totaling approximately 75,563 SF of conditioned space), the project would require solar panels producing a minimum of 210 kilowatts (kW).¹ The annual electricity generated by a rooftop mounted solar power system varies by the climate, amount of sunlight available per day, the pitch and orientation of the roof, and the efficiency of the electrical transmission. Assuming a capacity factor (CF) of 20 percent, which accounts for climate, daylight hours, roof pitch and orientation, and transmission loss, the power produced by the project's solar panels would be approximately 368,130 kilowatt-hours (kWh) per year.² The complete solar power requirement calculations are included in Attachment C to this letter.

As described in the GHG impact analysis, below, all projects which utilize the SMAQMD's standards to determine the significance of GHG emissions must implement project energy BMPs, including the requirement that all new land use development be designed without natural gas appliances or natural gas infrastructure. Accordingly, the CalEEMod default natural gas use was converted to equivalent kWh of electricity (1 kilo British Thermal Unit [kBTU] of natural gas equals approximately 0.293 kWh of electricity) which was added to the CalEEMod default electricity use. The project's building natural gas use was then set to zero. The project proposes a natural gas outdoor fire pit. Per the project applicant, the fire pit would have a typical 65 kBTU burner and would use approximately 5 gallons of natural gas per hour. Based on an estimated 4 hours of weekly fire pit use, approximately 23,150 kBTU of annual natural gas would be used, which was added to the project model outdoor area land use (modeled as City Park in CalEEMod).

Operational emissions resulting from water use, and solid waste generation were modeled using CalEEMod defaults with an added 20 percent reduction in water use to account for the requirements of the 2019 CALGreen, and an additional 25 percent solid waste diversion to account for AB 341 requirements. Complete model inputs and assumptions are included in the CalEEMod output reports in Attachment B to this letter.

STANDARDS OF SIGNIFICANCE

Air Quality

While the final determination of whether or not a project has a significant effect is within the purview of the lead agency pursuant to CEQA Guidelines Section 15064(b), SMAQMD recommends that its air pollution thresholds be used to determine the significance of project emissions. The criteria pollutant thresholds and various assessment recommendations are contained in SMAQMD's *Guide to Air Quality Assessment in Sacramento County*, and are discussed under the checklist questions below (SMAQMD 2020a).

¹ Per the 2019 Title 24 residential building energy efficiency requirements, the minimum solar electrical generation required is calculated by $kW = (CFA \times A)/1000 + (DU * B)$, where CFA is the conditioned floor area, A is 0.613 (climate zone 12 adjustment factor), DU is the total number of dwelling units, and B is 1.4 (climate zone 12 dwelling unit factor).

² Solar kWhr per year can be calculated by: $kWhr/year = Power\ Output\ (kW) \times 24\ hours/day \times 365\ days/year \times CF$, where CF is a capacity factor which accounts for climate, daylight hours, roof pitch and orientation, and transmission loss. For typical California residential systems, the CF can range between 17% and 22.5%. A CF of 20% was used in the project calculations.

Greenhouse Gas Emissions

The final determination of whether or not a project has a significant effect is within the purview of the lead agency pursuant to CEQA Guidelines Section 15064(b). The SMAQMD has developed GHG emissions standards of significance for land use development projects that lead agencies can use to determine the significance of a project's emissions in relation to the County meeting the State GHG reduction mandates for the year 2030. The SMAQMD recommends a construction period GHG emissions threshold of 1,100 MT CO₂e per year. Where a qualified GHG Reduction Plan has not been adopted by the lead agency, for operational period GHG emissions, the SMAQMD recommends a screening level of 1,100 MT CO₂e per year. For all projects, regardless of project GHG emission levels, the SMAQMD requires implementation of Tier 1 Best Management Practices (BMPs; SMAQMD 2020a):

- BMP 1 - projects shall be designed and constructed without natural gas infrastructure.
- BMP 2 - projects shall meet the current CALGreen Tier 2 standards, except all electric vehicle capable spaces shall instead be electric vehicle ready.

For projects which exceed 1,100 MT CO₂e per year operational screening level emissions, the SMAQMD requires implementation of Tier 2 BMPs (SMAQMD 2020a):

- BMP 3 - residential projects shall achieve a 15 percent reduction in vehicle miles traveled per resident, office projects shall achieve a 15 percent reduction in vehicle miles traveled per worker compared to existing average vehicle miles traveled for the county, and retail projects shall achieve a no net increase in total vehicle miles traveled to show consistency with SB 743. Air Quality IMPACT Analysis.

AIR QUALITY IMPACT ANALYSIS

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

Less than Significant Impact. In accordance with SMAQMD's CEQA Guide, construction-generated NO_x, PM₁₀, and PM_{2.5}, and operation-generated ROG and NO_x (all ozone precursors) are used to determine consistency with the Ozone Attainment Plan. The Guide states (SMAQMD 2020a, p. 4-6):

By exceeding the District's mass emission thresholds for operational emissions of ROG, NO_x, PM₁₀, or PM_{2.5}, the project would be considered to conflict with or obstruct implementation of the District's air quality planning efforts.

As shown in the discussion for question 2) below, the project's construction-generated emissions of NO_x, PM₁₀, and PM_{2.5} and operation-generated emissions ROG and NO_x would not exceed SMAQMD thresholds. The project would not conflict with or obstruct implementation of the applicable air quality plan and the impact would be less than significant.

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

Less than Significant Impact with Mitigation. The Sacramento region is in non-attainment for ozone (ozone precursors NO_x and ROG) and particulate matter (PM₁₀ and PM_{2.5}). The project's emissions of these criteria pollutants and precursors during construction and operation are evaluated below.

Construction Emissions

CalEEMod version 2020.4.0 was used to quantify project-generated construction emissions. Assumptions included in the model are described previously and detailed model output sheets are included in Attachment B. Construction activities were assumed to commence as early as May 2023 and be completed in late 2024. The quantity, duration, and intensity of construction activity influence the amount of construction emissions and related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction activity is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of: (1) a more modern and cleaner-burning construction equipment fleet mix than assumed in CalEEMod; and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval).

The project's construction period emissions of ROG, NO_x, PM₁₀, and PM_{2.5} are compared to the SMAQMD construction thresholds in Table 3, *Construction Criteria Pollutant and Precursor Emissions*. The SMAQMD does not have a recommended threshold for construction-generated ROG. However, quantification and disclosure of ROG emissions is recommended. The SMAQMD considers any emissions of PM₁₀ and PM_{2.5} to be significant unless the Basic Construction Emissions Control Practices are implemented, also known as Best Management Practices (BMPs). The project would implement all of the SMAQMD BMPs to control fugitive dust in accordance with SMAQMD Rule 403. The modeling accounts for emissions reductions resulting from watering exposed surfaces twice daily. As shown in Table 3, the proposed project construction period emissions of the ozone precursor NO_x, PM₁₀, and PM_{2.5} would not exceed the SMAQMD thresholds. Without implementation of the BCECPs, construction emissions of PM₁₀ and PM_{2.5} would be potentially significant. Mitigation Measure AQ-1 would require implementation of the SMAQMD's recommended BCECPs.

Table 3
CONSTRUCTION CRITERIA POLLUTANT AND PRECURSOR EMISSIONS

Construction Activity	ROG (pounds/day)	NO_x (pounds/day)	PM₁₀ (pounds/day)	PM_{2.5} (pounds/day)
Demolition/Site Preparation	2.2	21.1	4.0	2.3
Grading	4.5	44.3	6.1	3.3
Underground Utilities	1.9	18.2	0.9	0.7
Building Construction	2.5	19.2	3.3	1.4
Architectural Coating	8.8	1.3	0.5	0.2
Paving	2.1	14.2	0.8	0.6
Concurrent Grading and Underground Utilities	6.4	62.5	7.0	4.0
Concurrent Building Construction and Architectural Coating	11.2	19.4	3.7	1.5
Maximum Daily Emissions	11.2	62.5	7.0	4.0
<i>SMAQMD Thresholds</i>	<i>None</i>	<i>85</i>	<i>80</i>	<i>82</i>
<i>Exceed Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Source: CalEEMod (output data is provided in Attachment B); Threshold SMAQMD 2020b

ROG = reactive organic gases; NO_x = nitrogen oxides; PM₁₀ = particulate matter 10 microns or less in diameter;

PM_{2.5} = particulate matter 2.5 microns or less in diameter; SMAQMD= Sacramento Metropolitan Air Quality Management District

Operational Emissions

Emissions generated from operational activities would include:

- Areas sources – combustion emissions from the use of landscape maintenance equipment, the reapplication of architectural coatings for maintenance, and the use of consumer products.
- Energy sources – combustion emissions from the use of the natural gas fire pit.
- Mobile emissions – combustion, fuel evaporation, brake and tire wear, and road dust emission resulting from worker, customer, and vendor vehicle traveling to and from the project site.

The results of the modeling for project operational activities are shown in Table 4, *Maximum Daily Operational Emissions*. The data is presented as the maximum anticipated daily emissions for comparison with the SMAQMD thresholds, the model output and calculation sheets are included as Attachment B to this letter. As shown in Table 4, the proposed project operation period emissions of the ozone precursors NO_x and ROG, PM₁₀, and PM_{2.5} would not exceed the SMAQMD thresholds. Impacts related to operation-generated emissions of ROG, NO_x, PM₁₀, and PM_{2.5} would be less than significant.

Table 4
MAXIMUM DAILY OPERATIONAL EMISSIONS

Source	ROG (pounds/day)	NO _x (pounds/day)	PM ₁₀ (pounds/day)	PM _{2.5} (pounds/day)
Area	3.1	0.1	<0.1	<0.1
Energy	<.01	<0.1	<0.1	<0.1
Mobile	2.7	3.3	4.6	1.2
Maximum Daily Emissions	5.7	3.4	4.6	1.3
<i>SMAQMD Thresholds</i>	<i>65</i>	<i>65</i>	<i>80</i>	<i>82</i>
<i>Exceed Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Source: CalEEMod (output data is provided in Attachment B); Threshold SMAQMD 2020b
ROG = reactive organic gases; NO_x = nitrogen oxides; PM₁₀ = particulate matter 10 microns or less in diameter;
PM_{2.5} = particulate matter 2.5 microns or less in diameter; SMAQMD= Sacramento Metropolitan Air Quality Management District

With implementation of mitigation measure AQ-1 to require the SMAQMDs BCEPs, the project’s maximum daily construction or operational emissions would not exceed the SMAQMD’s thresholds. Therefore, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment, and the impact would be less than significant with mitigation incorporated.

Mitigation Measure AQ-1: Basic Construction Emissions Control Practices

The following Basic Construction Emissions Control Practices are considered feasible for controlling fugitive dust from a construction site. Control of fugitive dust is required by SMAQMD Rule 403 and enforced by SMAQMD staff. Prior to issuing grading or construction permits the County shall verify the following measures are specified on construction contracts and/or construction documentation.

- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 mph.
- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Minimize idling time by either shutting equipment off when not in use or reducing time of idling to 5 minutes. Provide clear signage that posts this requirement for workers at the entrances to the site; and

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

(3) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. As described above, the closest existing sensitive receptor location to the project site is the Cornerstone Christian School adjacent to the project site to the east. The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has with the substance; a longer exposure period to a fixed quantity of emissions would result in higher health risks. Current models and methodologies for conducting cancer health risk assessments are associated with longer-term exposure periods (typically 30 years for individual residents based on guidance from OEHHA and are best suited for evaluation of long duration TAC emissions with predictable schedules and locations. These assessment models and methodologies do not correlate well with the temporary and highly variable nature of construction activities. Cancer potency factors are based on animal lifetime studies or worker studies where there is long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime (OEHHA 2015). In addition, concentrations of mobile source DPM emissions disperse rapidly and are typically reduced by 70 percent at approximately 500-feet (CARB 2005). Considering this information, the highly dispersive nature of DPM, and the fact that construction activities would occur at various locations throughout the project site, it is not anticipated that construction of the project would expose sensitive receptors to substantial DPM concentrations.

According to the SMAQMD, land use development projects do not typically have the potential to result in localized concentrations of criteria air pollutants that expose sensitive receptors to substantial pollutant concentrations. This is because criteria air pollutants are predominantly generated in the form of mobile-source exhaust from vehicle trips associated with the land use development project. These vehicle trips occur throughout a paved network of roads, and, therefore, associated exhaust emissions of criteria air pollutants are not generated in a single location where high concentrations could be formed (SMAQMD 2020a). Therefore, localized concentration of CO from exhaust emissions, or "CO hotspots," would only be a concern on high-volume roadways where vertical and/or horizontal mixing is substantially limited, such as tunnels or below grade highways. There are no high-volume roadways in the region with limited mixing that would be affected by project generated traffic. Once operational, the project would not be a significant source of TACs. Therefore, the project would not expose sensitive receptors to substantial pollutant concentrations, and the impact would be less than significant.

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

Less than Significant Impact. Odors associated with diesel exhaust and ROG from application of asphalt and architectural coatings would be emitted during project construction. The odor of these emissions is objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not be at a level that would affect a substantial number of people. Further, construction activities would be temporary. As a result, impacts associated with temporary odors during construction are not considered significant.

According to SMAQMD, typical land uses which could generate significant odor impacts include wastewater treatment plants, sanitary landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants (SMAQMD 2020a). The project would not include any of these land uses. The project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and the impact would be less than significant.

GHG EMISSIONS IMPACT ANALYSIS

(1) *Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less than Significant Impact with Mitigation.

Construction Emissions

Project construction GHG emissions were estimated using CalEEMod as described above. Additional details of construction activity, selection of construction equipment, and other input parameters, are included in the CalEEMod output in Attachment B to this letter.

Emissions of GHGs related to the construction of the project would be temporary. As shown in Table 5, *Construction GHG Emissions*, the annual project construction emissions would not exceed the SMAQMD threshold.

**Table 5
CONSTRUCTION GHG EMISSIONS**

Year	Emissions (MT CO ₂ e)
2023	440.4
2024	670.4
Maximum	670.4
<i>SMAQMD Threshold</i>	<i>1,100</i>
Exceed Threshold?	No

Source: CalEEMod; Threshold SMAQMD 2020b

GHG = greenhouse gas; MT = metric tons; CO₂e = carbon dioxide equivalent

Operational Emissions

Project operational GHG emissions were estimated using the CalEEMod model as described in Section 4.1.2. Project operational emissions are compared to the SMAQMD threshold in Table 6, *Operational GHG Emissions*.

**Table 6
OPERATIONAL GHG EMISSIONS**

Emission Sources	2020 Emissions (MT CO₂e)
Area Sources	2.0
Energy Sources	267.6
Vehicular (Mobile) Sources	614.8
Solid Waste Sources	60.7
Water Sources	22.8
Total¹	968.0
<i>SMAQMD Screening Level</i>	<i>1,100</i>
Exceed Screening Level?	No

Source: CalEEMod; Threshold SMAQMD 2020b

¹ Totals may not sum due to rounding.

GHG = greenhouse gas; MT = metric tons; CO₂e = carbon dioxide equivalent

As shown in Table 6, the project’s operational GHG emissions would not exceed the SMAQMD operational screening level of 1,100 MT CO₂e per year. To use the SMAQMD’s land use development project GHG emissions significance criteria, SMAQMD requires all projects to implement the Tier 1 GHG reduction BMPs, regardless of the projects’ GHG emission levels. Mitigation measure GHG-1 would require the project to implement the SMAQMD’s Tier 1 GHG reduction BMP 1 for new project buildings without natural gas use, and BMP 2 for project EV parking. However, because the project would use a small amount of natural gas for an outdoor fire pit, mitigation would be required to offset the resulting GHG emission from the use of natural gas, as described in the SMAQMD CEQA Guidelines (SMAQMD 2020a, p. 6-15):

Project’s that do not implement the tier 1 Best Management Practices must conduct additional calculations to determine excess emissions and provide measures either on-site or off-site to provide equivalent mitigation.

According to the CalEEMod results, the natural gas used by the outdoor fire pit would result in 1.27 MT CO₂e per year. Using the Sacramento Municipal Utility District (SMUD) electricity GHG intensity factors used in CalEEMod, 1.27 MT CO₂e would be emitted by the generation of 7,569 kWh of electricity by SMUD (CAPCOA 2021). Assuming a solar panel capacity factor of 20% (which accounts for climate, daylight hours, roof pitch and orientation, and transmission loss), 7,569 kWh hour of solar electricity generation in a year would require panels with a capacity of approximately 4.3 kW. To offset the project GHG emission from the use of natural gas, mitigation measure GHG-2 would require the installation of solar panels totaling a minimum of 5 kW beyond the solar power generation required by Title 24 or any other applicable regulation.

With implementation of mitigation measures GHG-1 and GHG-2, the project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, and the impact would be less than significant with mitigation incorporated.

Mitigation Measure GHG-1: SMAQMD Tier 1 Best Management Practices for GHG Emission Reductions

The project shall implement the SMAQMD Tier 1 GHG Reduction Best Management Practices. Prior to issuing building permits, the County shall verify that project plans include the following BMPs:

- BMP 1 – New project building shall be designed and constructed without natural gas infrastructure.
- BMP 2 – The project shall meet the current CALGreen Tier 2 standards, except the minimum number of electric vehicle capable spaces shall instead be electric vehicle ready.

Mitigation Measure GHG-2: Natural Gas Use GHG Emissions Offsets

The project shall install on-site photovoltaic panels (solar panels) totaling a minimum of 5 kilowatts capacity in excess of the minimum capacity required by the applicable Title 24 building energy efficiency code, and 5 kilowatts capacity beyond the requirement of any other applicable regulation or program which would require the project to install on-site solar panels. Prior to issuing building permits, the County shall verify project plans specify solar panel capacity meeting the minimum requirements of this mitigation.

(2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Less than Significant Impact with Mitigation. There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 would require further reductions of 40 percent below 1990 levels by 2030. The mandates of AB 32 and SB 32 are implanted at the state level by the CARB's Scoping Plan. Because the project's operational year is post-2020, the project aims to reach the quantitative goals set by SB 32. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the LCFS, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed project would not conflict with those plans and regulations.

The project site has a General Plan land use designation of Medium Density Residential and is zoned Multiple Family Residential 20 (RD-20). The project would be consistent with the General Plan designation and zoning district for the site. Therefore, population and employment growth in the region as a result of the project would be accounted for in the County General Plan. Regional plans, including the SACOG's RTP/SCS, use growth assumptions and land use patterns derived from local plans such as the County's General Plan. Therefore, changes in regional VMT as a result of the project would be accounted for in the SACOG's RTP/SCS.

The project must also be constructed in accordance with the energy-efficiency standards, water reduction goals, and other standards contained in the 2019 Title 24 Part 6 Building Energy Efficiency Standards and Part 11 (CALGreen) Building Standards, including the requirement for onsite solar electricity generation. As discussed in Issue 1, implementation of mitigation measure GHG-1, would

require the project to meet the CALGreen Tier 2 standards and be designed and constructed without natural gas infrastructure, and would ensure the project's compliance with SMAQMD's policies for the reduction of GHG emissions. The project's GHG emissions, in relation to the County meeting the State GHG reduction mandates for the year 2030, would be less than significant. Therefore, the project would not conflict with CARB's Scoping Plan.

With the implementation of mitigation measures GHG-1 and GHG-2, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and the impact would be less than significant with mitigation incorporated.

SUMMARY

As described above, emissions of criteria pollutants would be below SMAQMD thresholds. However, project construction emissions of PM_{10} and $PM_{2.5}$ would be potentially significant without incorporation of the SMAQMD's BCEPs into project construction activities. With implementation of mitigation measure AQ-1 to require the BCEPs, impacts related to emissions of criteria pollutants and precursors would be less than significant with mitigation. The project would not conflict with the Regional Ozone Plan or applicable portions of the SIP. Sensitive receptors would not be exposed to substantial concentrations of TACs or odors. The project would be consistent with the County General Plan land use and zoning designations and would not conflict with the CARB's 2017 Scoping Plan, and the SACOG's 2020 MTP/SCS, with implementation of mitigation measures GHG-1 and GHG-2. Impacts related to GHG emissions would be less than significant with mitigation required.

Sincerely,



Martin Rolph
Air Quality Specialist



Victor Ortiz
Senior Air Quality Specialist

Attachments:

- Attachment A: Figures
- Attachment B: CalEEMod Output
- Attachment C: Solar Calculations

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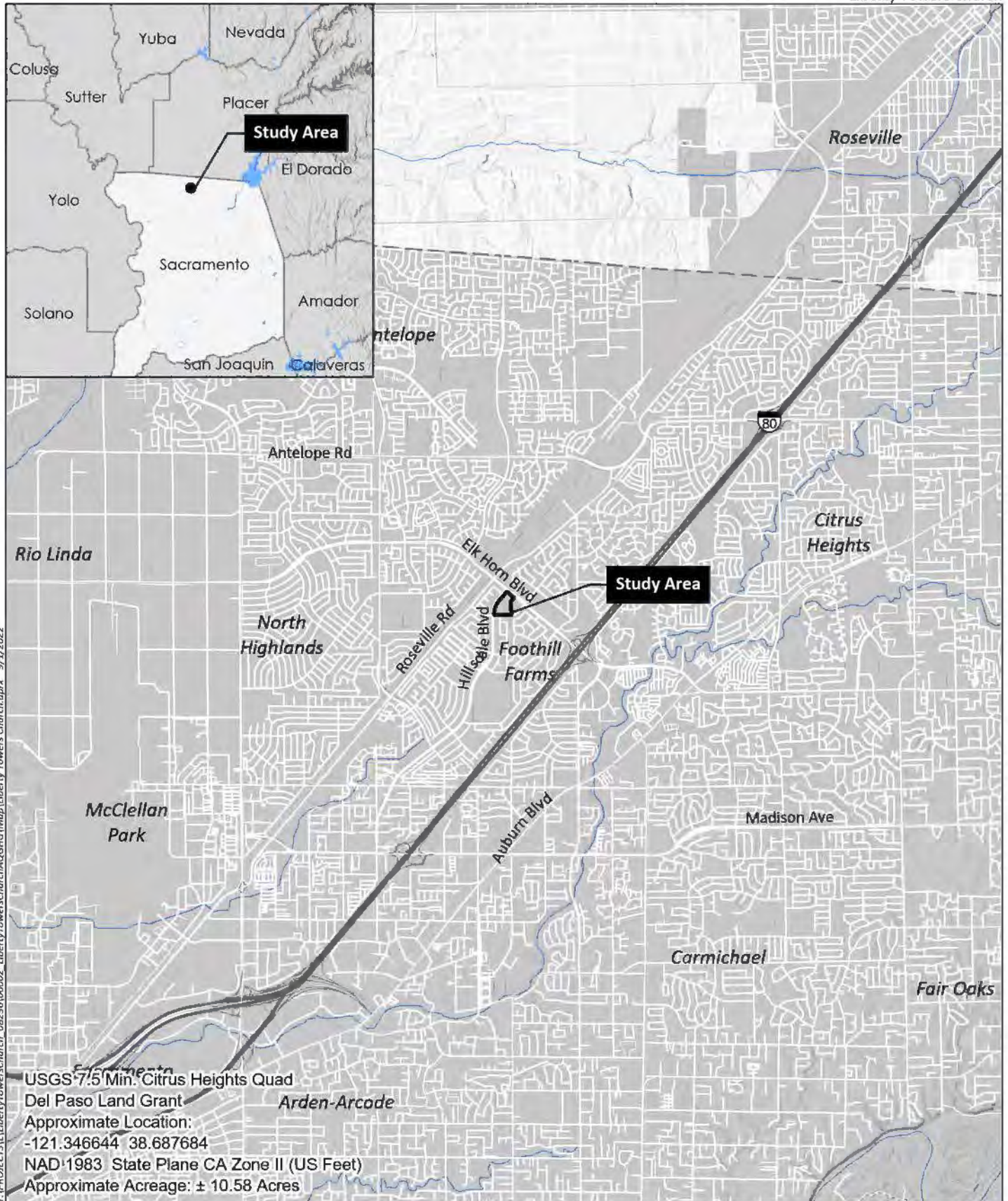
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Attachment A

Figures



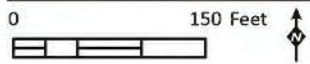
T:\PROJECTS\1\LibertyTowersChurch_082316\00002_LibertyTowersChurch\AQGHG1\Map\MapLiberty Towers Church.aprx 9/1/2022

Legend

 Study Area - 10.58 Acres

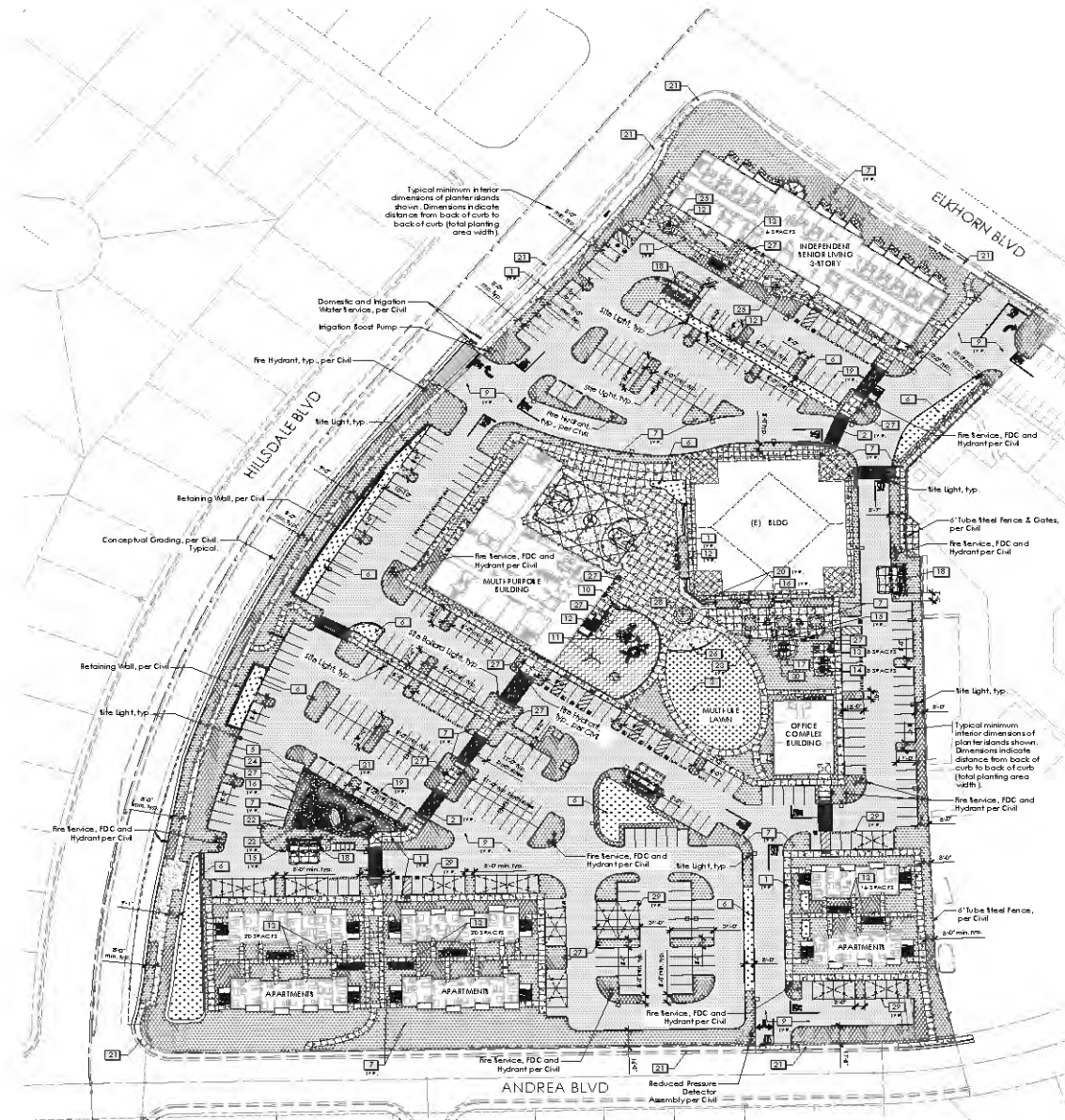


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Source: Aerial (Maxar, 4/26/2022)

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SITE LEGEND

SYMBOL	DESCRIPTION
[Symbol]	1 Concrete Paving, Natural Grey
[Symbol]	2 Crosswalk, Stamped colored asphalt paving
[Symbol]	3 Lawn, Tall Fescue
[Symbol]	4 Not Used
[Symbol]	5 Stabilized Decomposed Granite Paving
[Symbol]	6 Retention Area, Tree sheet 12.00 for plant list
[Symbol]	7 Site Planting Area, Tree sheet 12.00 for plant list
[Symbol]	8 AC Paving, per Civil
[Symbol]	9 6" Tall Tubular Steel Fence w/ Lockable Gate & Emergency Egress Hardware
[Symbol]	10 Enclosed Play Area (Ages 5-12), 5,000 SF with rubberized fall surfacing
[Symbol]	11 6" Long Backed Bench, ADA-compliant per CEC standards
[Symbol]	12 Bike Rack
[Symbol]	13 Bike Locker, 2-Bike Capacity
[Symbol]	14 Table & Chairs w/ Umbrella Hole
[Symbol]	15 ADA Table & Chairs w/ Umbrella Hole
[Symbol]	16 Precast Concrete Firepit, with natural gas connection
[Symbol]	17 Trash Enclosure, per Civil
[Symbol]	18 Parking Mall Striping
[Symbol]	19 Hairs
[Symbol]	20 Existing concrete to remain
[Symbol]	21 EEO Grid
[Symbol]	22 Teething Boulder
[Symbol]	23 Shade Sail, Shade Structure
[Symbol]	24 Exterior Art Piece or Recirculating Water feature
[Symbol]	25 Recirculating Water Splash Play
[Symbol]	26 Trash & Recycling Receptacles
[Symbol]	27 "Living Christmas Tree" location, see planting
[Symbol]	28 Casport, per Civil
[Symbol]	29 Adirondack Chair
[Symbol]	30 Conceptual Mounding

See Sheet L1.10 for Site Furnishing Descriptions and Representative Images.
 See Sheet L2.00 for Site Planting Design & Irrigation Narrative.
 See Civil Sheets for Site Grading Design.
 See Civil Sheets for Site Utilities and Lighting.

DESIGN STATEMENT

The Liberty Towers Landscape Design will utilize perennial native and adaptive native plant species. Candidate plants have been selected for their low water and maintenance requirements and will be sited and spaced per mature growth rates. Planting areas will be designed to provide visual access into and through the site, while providing an aesthetically pleasing landscape. Plant species with seasonal interest, such as flowers, will be back-dropped by evergreen plant species to provide year-round interest. Ample shade tree plantings will provide shading and screening for the project.

The Liberty Towers project landscape design will comply with the the Sacramento County Countywide Design Guidelines and the Sacramento County Development Standards.

The Liberty Towers project irrigation design will comply with the State's Model Water Efficient Landscape Ordinance (MWELO) requirements.

Source: HEGIS 2013

Attachment B

CalEEMod Output

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**Liberty Towers Church
Sacramento County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.78	1000sqft	0.08	5,780.00	0
Day-Care Center	14.46	1000sqft	0.33	14,460.00	0
Place of Worship	12.80	1000sqft	0.29	12,800.00	0
Place of Worship	0.41	1000sqft	0.01	410.00	0
Parking Lot	130.20	1000sqft	2.99	130,200.00	0
City Park	6.46	Acre	6.46	281,397.60	0
High Turnover (Sit Down Restaurant)	0.60	1000sqft	0.01	600.00	0
Apartments Low Rise	48.00	Dwelling Unit	0.24	31,064.00	128
Retirement Community	69.00	Dwelling Unit	0.34	44,499.00	184

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.5	Precipitation Freq (Days)	58
Climate Zone	6			Operational Year	2025
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MW hr)	357.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 1

Land Use - Building areas per plans.
 12.8 kSF Place of Worship = multi-purpose building upper level.
 0.41 kSF Place of Worship = existing church/auditorium renovation/addition.
 High Turnover Restaurant = kitchen/cafe in multi-purpose building.

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

- Construction Phase - Construction schedule per project applicant.
- Architectural Coatings assumed to occur during last 6 months of building construction.
- Off-road Equipment -
- Off-road Equipment -
- Off-road Equipment - Equipment per project applicant.
- Off-Highway Truck = water truck.
- Off-road Equipment - Equipment per project applicant.
- Off-Highway Truck = water truck
- Off-road Equipment - Equipment per project applicant.
- Off-road Equipment - Equipment per project applicant.
- Trips and VMT - 100 truck loads asphalt/concrete/debris exported during demolition.
- 50 truckload vegetation exported during site preparation.
- Grading cut/fill balanced on-site (no import or export of soil).
- Grading -
- Vehicle Trips - Resaurant (cafeteria) trips included with day care center.
- No new trips for church expansion (431 SF backstage area).
- No trips for City Park (outdoor/lanscape areas for entire project).
- Energy Use - Project to be all electric per SMAQMD GHG Tier 1 BMP requirements.
- Default natural gas use converted to KWhr (1 KBTU = 0.293 KWhr) and added to defaul electricity use.
- Natural gas from outdoor fire pit use added to City Park.
- Water And Wastewater -
- Solid Waste -
- Construction Off-road Equipment Mitigation - Fugitive dust mitigation to meet requirments of SMAQMD BCEPs.
- Area Mitigation -
- Water Mitigation - 20% additional water use reduction per 2019 CALGreen not accounted for in model defaults.
- Waste Mitigation - 25% additional solid waste diversion per AB 341 not accounted for in model defaults.
- Energy Mitigation - Solar generation per 2019 Title 24.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	NumDays	300.00	262.00
tblConstructionPhase	NumDays	20.00	154.00
tblConstructionPhase	NumDays	20.00	15.00

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblEnergyUse	NT24E	3,172.76	3,960.00
tblEnergyUse	NT24E	2.17	2.36
tblEnergyUse	NT24E	5.75	5.95
tblEnergyUse	NT24E	26.72	61.31
tblEnergyUse	NT24E	7.20	10.84
tblEnergyUse	NT24E	3,172.76	3,960.05
tblEnergyUse	NT24NG	2,687.00	0.00
tblEnergyUse	NT24NG	0.00	0.08
tblEnergyUse	NT24NG	0.66	0.00
tblEnergyUse	NT24NG	0.68	0.00
tblEnergyUse	NT24NG	118.04	0.00
tblEnergyUse	NT24NG	12.42	0.00
tblEnergyUse	NT24NG	2,687.00	0.00
tblEnergyUse	T24E	108.87	2,736.90
tblEnergyUse	T24E	1.83	6.07
tblEnergyUse	T24E	4.44	8.04
tblEnergyUse	T24E	7.86	25.17
tblEnergyUse	T24E	3.05	9.83
tblEnergyUse	T24E	108.87	8,596.90
tblEnergyUse	T24NG	8,969.37	0.00
tblEnergyUse	T24NG	14.46	0.00
tblEnergyUse	T24NG	12.30	0.00
tblEnergyUse	T24NG	59.07	0.00
tblEnergyUse	T24NG	23.15	0.00
tblEnergyUse	T24NG	8,969.37	0.00
tblLandUse	LandUseSquareFeet	48,000.00	31,064.00
tblLandUse	LandUseSquareFeet	69,000.00	44,499.00
tblLandUse	LotAcreage	0.13	0.08
tblLandUse	LotAcreage	3.00	0.24

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblLandUse	LotAcreage	13.80	0.34
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	122.40	0.00
tblVehicleTrips	ST_TR	5.99	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	142.64	0.00
tblVehicleTrips	SU_TR	27.63	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	112.18	0.00
tblVehicleTrips	WD_TR	6.95	0.00

2.0 Emissions Summary

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2302	2.1405	1.8112	4.9000e-003	0.3103	0.0847	0.3950	0.1320	0.0782	0.2102	0.0000	435.3543	435.3543	0.1115	7.7200e-003	440.4415
2024	0.9417	2.1758	2.9100	7.2900e-003	0.3047	0.0802	0.3849	0.0823	0.0756	0.1580	0.0000	659.4167	659.4167	0.0786	0.0305	670.4758
Maximum	0.9417	2.1758	2.9100	7.2900e-003	0.3103	0.0847	0.3950	0.1320	0.0782	0.2102	0.0000	659.4167	659.4167	0.1115	0.0305	670.4758

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2302	2.1405	1.8112	4.9000e-003	0.1761	0.0847	0.2607	0.0693	0.0782	0.1475	0.0000	435.3539	435.3539	0.1115	7.7200e-003	440.4411
2024	0.9417	2.1758	2.9100	7.2900e-003	0.3047	0.0802	0.3849	0.0823	0.0756	0.1580	0.0000	659.4164	659.4164	0.0786	0.0305	670.4754
Maximum	0.9417	2.1758	2.9100	7.2900e-003	0.3047	0.0847	0.3849	0.0823	0.0782	0.1580	0.0000	659.4164	659.4164	0.1115	0.0305	670.4754

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	ROG	NOx	CO	SO2	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	0.00	0.00	0.00	0.00	21.83	0.00	17.21	29.29	0.00	17.05	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2023	7-31-2023	1.2672	1.2672
2	8-1-2023	10-31-2023	0.6600	0.6600
3	11-1-2023	1-31-2024	0.6991	0.6991
4	2-1-2024	4-30-2024	0.7623	0.7623
5	5-1-2024	7-31-2024	0.9937	0.9937
6	8-1-2024	9-30-2024	0.6589	0.6589
		Highest	1.2672	1.2672

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.5404	0.0139	1.2076	6.0000e-005		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	1.9752	1.9752	1.9000e-003	0.0000	2.0226
Energy	1.2000e-004	1.1300e-003	9.5000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	325.9003	325.9003	0.0300	3.6500e-003	327.7369
Mobile	0.4261	0.4747	3.4030	6.5200e-003	0.6852	5.3100e-003	0.6906	0.1832	4.9600e-003	0.1881	0.0000	603.7359	603.7359	0.0481	0.0332	614.8219
Waste						0.0000	0.0000		0.0000	0.0000	32.6816	0.0000	32.6816	1.9314	0.0000	80.9671
Water						0.0000	0.0000		0.0000	0.0000	3.4906	16.7259	20.2165	0.0136	7.7800e-003	22.8732
Total	0.9666	0.4897	4.6116	6.5900e-003	0.6852	0.0121	0.6973	0.1832	0.0118	0.1949	36.1721	948.3372	984.5094	2.0250	0.0446	1,048.4218

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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	0.5404	0.0139	1.2076	6.0000e-005		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	1.9752	1.9752	1.9000e-003	0.0000	2.0226
Energy	1.2000e-004	1.1300e-003	9.5000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	266.1244	266.1244	0.0244	2.9800e-003	267.6243
Mobile	0.4261	0.4747	3.4030	6.5200e-003	0.6852	5.3100e-003	0.6906	0.1832	4.9600e-003	0.1881	0.0000	603.7359	603.7359	0.0481	0.0332	614.8219
Waste						0.0000	0.0000		0.0000	0.0000	24.5112	0.0000	24.5112	1.4486	0.0000	60.7254
Water						0.0000	0.0000		0.0000	0.0000	3.4836	16.6925	20.1761	0.0135	7.7600e-003	22.8274
Total	0.9666	0.4897	4.6116	6.5900e-003	0.6852	0.0121	0.6973	0.1832	0.0118	0.1949	27.9948	888.5279	916.5227	1.5366	0.0439	968.0216

	ROG	NOx	CO	SO2	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.61	6.31	6.91	24.12	1.55	7.67

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/Site Preparation	Site Preparation	5/1/2023	6/30/2023	5	45	
2	Grading	Grading	7/1/2023	7/31/2023	5	21	
3	Underground Utilites	Trenching	7/1/2023	10/31/2023	5	87	

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4	Building Construction	Building Construction	11/1/2023	10/31/2024	5	262
5	Architectural Coating	Architectural Coating	4/1/2024	10/31/2024	5	154
6	Paving	Paving	11/1/2024	11/21/2024	5	15

Acres of Grading (Site Preparation Phase): 22.5

Acres of Grading (Grading Phase): 63

Acres of Paving: 2.99

Residential Indoor: 153,015; Residential Outdoor: 51,005; Non-Residential Indoor: 51,075; Non-Residential Outdoor: 17,025; Striped Parking Area: 7,812 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition/Site Preparation	Excavators	1	8.00	158	0.38
Demolition/Site Preparation	Off-Highway Trucks	1	4.00	402	0.38
Demolition/Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Demolition/Site Preparation	Rubber Tired Loaders	3	8.00	203	0.36
Demolition/Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Off-Highway Trucks	1	4.00	402	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	3	8.00	203	0.36
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilites	Excavators	1	8.00	158	0.38
Underground Utilites	Rubber Tired Dozers	1	8.00	247	0.40
Underground Utilites	Rubber Tired Loaders	3	8.00	203	0.36
Underground Utilites	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29

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Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	203	0.36

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/Site Preparation	7	18.00	0.00	300.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	12	30.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilites	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	271.00	86.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	54.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition/Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1474	0.0000	0.1474	0.0758	0.0000	0.0758	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0470	0.4491	0.3323	9.5000e-004		0.0181	0.0181		0.0166	0.0166	0.0000	83.3880	83.3880	0.0270	0.0000	84.0622
Total	0.0470	0.4491	0.3323	9.5000e-004	0.1474	0.0181	0.1655	0.0758	0.0166	0.0924	0.0000	83.3880	83.3880	0.0270	0.0000	84.0622

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	4.0000e-004	0.0239	4.7900e-003	9.0000e-005	2.5400e-003	1.7000e-004	2.7100e-003	7.0000e-004	1.7000e-004	8.6000e-004	0.0000	9.3196	9.3196	3.7000e-004	1.4800e-003	9.7692
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	1.1600e-003	7.2000e-004	9.4200e-003	3.0000e-005	2.9700e-003	2.0000e-005	2.9900e-003	7.9000e-004	1.0000e-005	8.1000e-004	0.0000	2.3567	2.3567	8.0000e-005	7.0000e-005	2.3789
Total	1.5600e-003	0.0246	0.0142	1.2000e-004	5.5100e-003	1.9000e-004	5.7000e-003	1.4900e-003	1.8000e-004	1.6700e-003	0.0000	11.6762	11.6762	4.5000e-004	1.5500e-003	12.1481

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition/Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0663	0.0000	0.0663	0.0341	0.0000	0.0341	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0470	0.4491	0.3323	9.5000e-004		0.0181	0.0181		0.0166	0.0166	0.0000	83.3879	83.3879	0.0270	0.0000	84.0621
Total	0.0470	0.4491	0.3323	9.5000e-004	0.0663	0.0181	0.0844	0.0341	0.0166	0.0507	0.0000	83.3879	83.3879	0.0270	0.0000	84.0621

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	4.0000e-004	0.0239	4.7900e-003	9.0000e-005	2.5400e-003	1.7000e-004	2.7100e-003	7.0000e-004	1.7000e-004	8.6000e-004	0.0000	9.3196	9.3196	3.7000e-004	1.4800e-003	9.7692
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	1.1600e-003	7.2000e-004	9.4200e-003	3.0000e-005	2.9700e-003	2.0000e-005	2.9900e-003	7.9000e-004	1.0000e-005	8.1000e-004	0.0000	2.3567	2.3567	8.0000e-005	7.0000e-005	2.3789
Total	1.5600e-003	0.0246	0.0142	1.2000e-004	5.5100e-003	1.9000e-004	5.7000e-003	1.4900e-003	1.8000e-004	1.6700e-003	0.0000	11.6762	11.6762	4.5000e-004	1.5500e-003	12.1481

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3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0966	0.0000	0.0966	0.0384	0.0000	0.0384	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0460	0.4648	0.3594	9.2000e-004		0.0184	0.0184		0.0170	0.0170	0.0000	80.6624	80.6624	0.0261	0.0000	81.3146
Total	0.0460	0.4648	0.3594	9.2000e-004	0.0966	0.0184	0.1151	0.0384	0.0170	0.0553	0.0000	80.6624	80.6624	0.0261	0.0000	81.3146

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	5.6000e-004	7.3200e-003	2.0000e-005	2.3100e-003	1.0000e-005	2.3300e-003	6.2000e-004	1.0000e-005	6.3000e-004	0.0000	1.8330	1.8330	6.0000e-005	5.0000e-005	1.8502
Total	9.0000e-004	5.6000e-004	7.3200e-003	2.0000e-005	2.3100e-003	1.0000e-005	2.3300e-003	6.2000e-004	1.0000e-005	6.3000e-004	0.0000	1.8330	1.8330	6.0000e-005	5.0000e-005	1.8502

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3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0435	0.0000	0.0435	0.0173	0.0000	0.0173	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0460	0.4648	0.3594	9.2000e-004		0.0184	0.0184		0.0170	0.0170	0.0000	80.6623	80.6623	0.0261	0.0000	81.3145
Total	0.0460	0.4648	0.3594	9.2000e-004	0.0435	0.0184	0.0619	0.0173	0.0170	0.0342	0.0000	80.6623	80.6623	0.0261	0.0000	81.3145

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	5.6000e-004	7.3200e-003	2.0000e-005	2.3100e-003	1.0000e-005	2.3300e-003	6.2000e-004	1.0000e-005	6.3000e-004	0.0000	1.8330	1.8330	6.0000e-005	5.0000e-005	1.8502
Total	9.0000e-004	5.6000e-004	7.3200e-003	2.0000e-005	2.3100e-003	1.0000e-005	2.3300e-003	6.2000e-004	1.0000e-005	6.3000e-004	0.0000	1.8330	1.8330	6.0000e-005	5.0000e-005	1.8502

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3.4 Underground Utilites - 2023

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	0.0799	0.7906	0.5709	1.5500e-003		0.0322	0.0322		0.0296	0.0296	0.0000	135.9629	135.9629	0.0440	0.0000	137.0622
Total	0.0799	0.7906	0.5709	1.5500e-003		0.0322	0.0322		0.0296	0.0296	0.0000	135.9629	135.9629	0.0440	0.0000	137.0622

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8700e-003	1.1600e-003	0.0152	4.0000e-005	4.7900e-003	3.0000e-005	4.8200e-003	1.2700e-003	2.0000e-005	1.3000e-003	0.0000	3.7968	3.7968	1.2000e-004	1.1000e-004	3.8326
Total	1.8700e-003	1.1600e-003	0.0152	4.0000e-005	4.7900e-003	3.0000e-005	4.8200e-003	1.2700e-003	2.0000e-005	1.3000e-003	0.0000	3.7968	3.7968	1.2000e-004	1.1000e-004	3.8326

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3.4 Underground Utilites - 2023

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	0.0799	0.7906	0.5709	1.5500e-003		0.0322	0.0322		0.0296	0.0296	0.0000	135.9627	135.9627	0.0440	0.0000	137.0621
Total	0.0799	0.7906	0.5709	1.5500e-003		0.0322	0.0322		0.0296	0.0296	0.0000	135.9627	135.9627	0.0440	0.0000	137.0621

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8700e-003	1.1600e-003	0.0152	4.0000e-005	4.7900e-003	3.0000e-005	4.8200e-003	1.2700e-003	2.0000e-005	1.3000e-003	0.0000	3.7968	3.7968	1.2000e-004	1.1000e-004	3.8326
Total	1.8700e-003	1.1600e-003	0.0152	4.0000e-005	4.7900e-003	3.0000e-005	4.8200e-003	1.2700e-003	2.0000e-005	1.3000e-003	0.0000	3.7968	3.7968	1.2000e-004	1.1000e-004	3.8326

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3.5 Building Construction - 2023

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	0.0338	0.3093	0.3493	5.8000e-004		0.0150	0.0150		0.0142	0.0142	0.0000	49.8380	49.8380	0.0119	0.0000	50.1344
Total	0.0338	0.3093	0.3493	5.8000e-004		0.0150	0.0150		0.0142	0.0142	0.0000	49.8380	49.8380	0.0119	0.0000	50.1344

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	2.4100e-003	0.0901	0.0272	3.5000e-004	0.0108	4.8000e-004	0.0113	3.1300e-003	4.6000e-004	3.5900e-003	0.0000	34.2933	34.2933	8.5000e-004	5.0300e-003	35.8139
Worker	0.0167	0.0103	0.1355	3.7000e-004	0.0428	2.3000e-004	0.0430	0.0114	2.1000e-004	0.0116	0.0000	33.9038	33.9038	1.0900e-003	9.8000e-004	34.2233
Total	0.0191	0.1005	0.1626	7.2000e-004	0.0536	7.1000e-004	0.0543	0.0145	6.7000e-004	0.0152	0.0000	68.1970	68.1970	1.9400e-003	6.0100e-003	70.0372

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3.5 Building Construction - 2023

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	0.0338	0.3093	0.3493	5.8000e-004		0.0150	0.0150		0.0142	0.0142	0.0000	49.8380	49.8380	0.0119	0.0000	50.1344
Total	0.0338	0.3093	0.3493	5.8000e-004		0.0150	0.0150		0.0142	0.0142	0.0000	49.8380	49.8380	0.0119	0.0000	50.1344

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	2.4100e-003	0.0901	0.0272	3.5000e-004	0.0108	4.8000e-004	0.0113	3.1300e-003	4.6000e-004	3.5900e-003	0.0000	34.2933	34.2933	8.5000e-004	5.0300e-003	35.8139
Worker	0.0167	0.0103	0.1355	3.7000e-004	0.0428	2.3000e-004	0.0430	0.0114	2.1000e-004	0.0116	0.0000	33.9038	33.9038	1.0900e-003	9.8000e-004	34.2233
Total	0.0191	0.1005	0.1626	7.2000e-004	0.0536	7.1000e-004	0.0543	0.0145	6.7000e-004	0.0152	0.0000	68.1970	68.1970	1.9400e-003	6.0100e-003	70.0372

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3.5 Building Construction - 2024

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	0.1611	1.4721	1.7703	2.9500e-003		0.0672	0.0672		0.0632	0.0632	0.0000	253.8748	253.8748	0.0600	0.0000	255.3756
Total	0.1611	1.4721	1.7703	2.9500e-003		0.0672	0.0672		0.0632	0.0632	0.0000	253.8748	253.8748	0.0600	0.0000	255.3756

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	0.0117	0.4499	0.1341	1.7600e-003	0.0551	2.4100e-003	0.0575	0.0159	2.3100e-003	0.0182	0.0000	171.3393	171.3393	4.1900e-003	0.0252	178.9526
Worker	0.0795	0.0468	0.6411	1.8200e-003	0.2179	1.1000e-003	0.2190	0.0580	1.0200e-003	0.0590	0.0000	167.0338	167.0338	5.0200e-003	4.6500e-003	168.5438
Total	0.0912	0.4968	0.7751	3.5800e-003	0.2731	3.5100e-003	0.2766	0.0739	3.3300e-003	0.0772	0.0000	338.3732	338.3732	9.2100e-003	0.0299	347.4964

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3.5 Building Construction - 2024

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	0.1611	1.4721	1.7703	2.9500e-003		0.0672	0.0672		0.0632	0.0632	0.0000	253.8745	253.8745	0.0600	0.0000	255.3753
Total	0.1611	1.4721	1.7703	2.9500e-003		0.0672	0.0672		0.0632	0.0632	0.0000	253.8745	253.8745	0.0600	0.0000	255.3753

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	0.0117	0.4499	0.1341	1.7600e-003	0.0551	2.4100e-003	0.0575	0.0159	2.3100e-003	0.0182	0.0000	171.3393	171.3393	4.1900e-003	0.0252	178.9526
Worker	0.0795	0.0468	0.6411	1.8200e-003	0.2179	1.1000e-003	0.2190	0.0580	1.0200e-003	0.0590	0.0000	167.0338	167.0338	5.0200e-003	4.6500e-003	168.5438
Total	0.0912	0.4968	0.7751	3.5800e-003	0.2731	3.5100e-003	0.2766	0.0739	3.3300e-003	0.0772	0.0000	338.3732	338.3732	9.2100e-003	0.0299	347.4964

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3.6 Architectural Coating - 2024

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	0.6487					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0139	0.0939	0.1394	2.3000e-004		4.6900e-003	4.6900e-003		4.6900e-003	4.6900e-003	0.0000	19.6601	19.6601	1.1100e-003	0.0000	19.6877
Total	0.6627	0.0939	0.1394	2.3000e-004		4.6900e-003	4.6900e-003		4.6900e-003	4.6900e-003	0.0000	19.6601	19.6601	1.1100e-003	0.0000	19.6877

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0111	6.5600e-003	0.0898	2.6000e-004	0.0305	1.5000e-004	0.0307	8.1200e-003	1.4000e-004	8.2600e-003	0.0000	23.4048	23.4048	7.0000e-004	6.5000e-004	23.6164
Total	0.0111	6.5600e-003	0.0898	2.6000e-004	0.0305	1.5000e-004	0.0307	8.1200e-003	1.4000e-004	8.2600e-003	0.0000	23.4048	23.4048	7.0000e-004	6.5000e-004	23.6164

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3.6 Architectural Coating - 2024

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	0.6487					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0139	0.0939	0.1394	2.3000e-004		4.6900e-003	4.6900e-003		4.6900e-003	4.6900e-003	0.0000	19.6600	19.6600	1.1100e-003	0.0000	19.6877
Total	0.6627	0.0939	0.1394	2.3000e-004		4.6900e-003	4.6900e-003		4.6900e-003	4.6900e-003	0.0000	19.6600	19.6600	1.1100e-003	0.0000	19.6877

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0111	6.5600e-003	0.0898	2.6000e-004	0.0305	1.5000e-004	0.0307	8.1200e-003	1.4000e-004	8.2600e-003	0.0000	23.4048	23.4048	7.0000e-004	6.5000e-004	23.6164
Total	0.0111	6.5600e-003	0.0898	2.6000e-004	0.0305	1.5000e-004	0.0307	8.1200e-003	1.4000e-004	8.2600e-003	0.0000	23.4048	23.4048	7.0000e-004	6.5000e-004	23.6164

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3.7 Paving - 2024

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	0.0112	0.1064	0.1321	2.6000e-004		4.6800e-003	4.6800e-003		4.3100e-003	4.3100e-003	0.0000	23.2596	23.2596	7.5200e-003	0.0000	23.4477
Paving	3.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0151	0.1064	0.1321	2.6000e-004		4.6800e-003	4.6800e-003		4.3100e-003	4.3100e-003	0.0000	23.2596	23.2596	7.5200e-003	0.0000	23.4477

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	4.0000e-004	2.4000e-004	3.2400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8443	0.8443	3.0000e-005	2.0000e-005	0.8520
Total	4.0000e-004	2.4000e-004	3.2400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8443	0.8443	3.0000e-005	2.0000e-005	0.8520

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3.7 Paving - 2024

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	0.0112	0.1064	0.1321	2.6000e-004		4.6800e-003	4.6800e-003		4.3100e-003	4.3100e-003	0.0000	23.2596	23.2596	7.5200e-003	0.0000	23.4476
Paving	3.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0151	0.1064	0.1321	2.6000e-004		4.6800e-003	4.6800e-003		4.3100e-003	4.3100e-003	0.0000	23.2596	23.2596	7.5200e-003	0.0000	23.4476

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	4.0000e-004	2.4000e-004	3.2400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8443	0.8443	3.0000e-005	2.0000e-005	0.8520
Total	4.0000e-004	2.4000e-004	3.2400e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8443	0.8443	3.0000e-005	2.0000e-005	0.8520

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4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4261	0.4747	3.4030	6.5200e-003	0.6852	5.3100e-003	0.6906	0.1832	4.9600e-003	0.1881	0.0000	603.7359	603.7359	0.0481	0.0332	614.8219
Unmitigated	0.4261	0.4747	3.4030	6.5200e-003	0.6852	5.3100e-003	0.6906	0.1832	4.9600e-003	0.1881	0.0000	603.7359	603.7359	0.0481	0.0332	614.8219

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	351.36	390.72	301.44	897,757	897,757
City Park	0.00	0.00	0.00		
Day-Care Center	688.59	89.94	84.45	459,106	459,106
General Office Building	56.30	12.77	4.05	88,005	88,005
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Place of Worship	0.00	0.00	0.00		
Place of Worship	0.00	0.00	0.00		
Retirement Community	165.60	140.07	134.55	404,206	404,206
Total	1,261.84	633.51	524.48	1,849,074	1,849,074

4.3 Trip Type Information

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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 Low Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Day-Care Center	10.00	5.00	6.50	12.70	82.30	5.00	28	58	14
General Office Building	10.00	5.00	6.50	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	10.00	5.00	6.50	8.50	72.50	19.00	37	20	43
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Place of Worship	10.00	5.00	6.50	0.00	95.00	5.00	64	25	11
Place of Worship	10.00	5.00	6.50	0.00	95.00	5.00	64	25	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
City Park	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Day-Care Center	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
General Office Building	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
High Turnover (Sit Down Restaurant)	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Parking Lot	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Place of Worship	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Retirement Community	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tans/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	264.8931	264.8931	0.0244	2.9600e-003	266.3856
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	324.6689	324.6689	0.0299	3.6300e-003	326.4982
NaturalGas Mitigated	1.2000e-004	1.1300e-003	9.5000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2314	1.2314	2.0000e-005	2.0000e-005	1.2387
NaturalGas Unmitigated	1.2000e-004	1.1300e-003	9.5000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2314	1.2314	2.0000e-005	2.0000e-005	1.2387

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	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
City Park	23074.6	1.2000e-004	1.1300e-003	9.5000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2314	1.2314	2.0000e-005	2.0000e-005	1.2387
Day-Care Center	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
General Office Building	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
High Turnover (Sit Down Restaurant)	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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Place of Worship	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
Retirement Community	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.2000e-004	1.1300e-003	9.5000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2314	1.2314	2.0000e-005	2.0000e-005	1.2387

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	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
City Park	23074.6	1.2000e-004	1.1300e-003	9.5000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2314	1.2314	2.0000e-005	2.0000e-005	1.2387
Day-Care Center	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
General Office Building	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
High Turnover (Sit Down Restaurant)	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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Place of Worship	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
Retirement Community	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.2000e-004	1.1300e-003	9.5000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2314	1.2314	2.0000e-005	2.0000e-005	1.2387

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	360348	58.5123	5.3900e-003	6.5000e-004	58.8420
City Park	0	0.0000	0.0000	0.0000	0.0000
Day-Care Center	166724	27.0721	2.5000e-003	3.0000e-004	27.2246
General Office Building	102306	16.6121	1.5300e-003	1.9000e-004	16.7057
High Turnover (Sit Down Restaurant)	55602	9.0285	8.3000e-004	1.0000e-004	9.0794
Parking Lot	45570	7.3995	6.8000e-004	8.0000e-005	7.4412
Place of Worship	10348.4	1.6803	1.5000e-004	2.0000e-005	1.6898
Place of Worship	323072	52.4595	4.8400e-003	5.9000e-004	52.7550
Retirement Community	935505	151.9046	0.0140	1.7000e-003	152.7605
Total		324.6689	0.0299	3.6300e-003	326.4983

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	319445	51.8705	4.7800e-003	5.8000e-004	52.1628
City Park	-40903.3	-6.6418	-0.0006	-0.0001	-6.6792
Day-Care Center	125820	20.4304	1.8800e-003	2.3000e-004	20.5455
General Office Building	61402.7	9.9704	9.2000e-004	1.1000e-004	10.0266
High Turnover (Sit Down Restaurant)	14698.7	2.3867	2.2000e-004	3.0000e-005	2.4002
Parking Lot	4666.67	0.7578	7.0000e-005	1.0000e-005	0.7620
Place of Worship	-30554.9	-4.9614	-0.0005	-0.0001	-4.9894
Place of Worship	282169	45.8177	4.2200e-003	5.1000e-004	46.0759
Retirement Community	894602	145.2628	0.0134	1.6200e-003	146.0813
Total		264.8931	0.0244	2.9600e-003	266.3856

6.0 Area Detail

6.1 Mitigation Measures Area

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.5404	0.0139	1.2076	6.0000e-005		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	1.9752	1.9752	1.9000e-003	0.0000	2.0226
Unmitigated	0.5404	0.0139	1.2076	6.0000e-005		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	1.9752	1.9752	1.9000e-003	0.0000	2.0226

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	0.0649					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4392					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	0.0364	0.0139	1.2076	6.0000e-005		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	1.9752	1.9752	1.9000e-003	0.0000	2.0226
Total	0.5404	0.0139	1.2076	6.0000e-005		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	1.9752	1.9752	1.9000e-003	0.0000	2.0226

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0649					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4392					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	0.0364	0.0139	1.2076	6.0000e-005		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	1.9752	1.9752	1.9000e-003	0.0000	2.0226
Total	0.5404	0.0139	1.2076	6.0000e-005		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	1.9752	1.9752	1.9000e-003	0.0000	2.0226

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	20.1761	0.0135	7.7600e-003	22.8274
Unmitigated	20.2165	0.0136	7.7800e-003	22.8732

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.12739 / 1.97162	4.7572	4.1400e-003	2.4500e-003	5.5901
City Park	0 / 7.69697	4.3743	4.0000e-004	5.0000e-005	4.3990
Day-Care Center	0.620183 / 1.59476	1.6275	8.9000e-004	4.9000e-004	1.7965
General Office Building	1.0273 / 0.629636	1.5524	1.3600e-003	8.0000e-004	1.8260
High Turnover (Sit Down Restaurant)	0.18212 / 0.0116247	0.2184	2.4000e-004	1.4000e-004	0.2666
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Place of Worship	0.413326 / 0.646485	0.8481	5.7000e-004	3.3000e-004	0.9594
Retirement Community	4.49563 / 2.8342	6.8385	5.9600e-003	3.5200e-003	8.0357
Total		20.2165	0.0136	7.7800e-003	22.8732

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.12114 / 1.96767	4.7477	4.1400e-003	2.4400e-003	5.5789
City Park	0 / 7.68158	4.3656	4.0000e-004	5.0000e-005	4.3902
Day-Care Center	0.618943 / 1.59157	1.6243	8.8000e-004	4.9000e-004	1.7929
General Office Building	1.02525 / 0.628377	1.5493	1.3600e-003	8.0000e-004	1.8223
High Turnover (Sit Down Restaurant)	0.181756 / 0.0116015	0.2180	2.4000e-004	1.4000e-004	0.2660
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Place of Worship	0.4125 / 0.645192	0.8464	5.7000e-004	3.3000e-004	0.9574
Retirement Community	4.48664 / 2.82853	6.8249	5.9500e-003	3.5100e-003	8.0197
Total		20.1761	0.0135	7.7600e-003	22.8274

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	24.5112	1.4486	0.0000	60.7254
Unmitigated	32.6816	1.9314	0.0000	80.9671

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	GH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	22.08	4.4820	0.2649	0.0000	11.1041
City Park	0.56	0.1137	6.7200e-003	0.0000	0.2816
Day-Care Center	18.8	3.8162	0.2255	0.0000	9.4546
General Office Building	5.38	1.0921	0.0645	0.0000	2.7056
High Turnover (Sit Down Restaurant)	7.14	1.4494	0.0857	0.0000	3.5907
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Place of Worship	75.3	15.2852	0.9033	0.0000	37.8685
Retirement Community	31.74	6.4429	0.3808	0.0000	15.9621
Total		32.6815	1.9314	0.0000	80.9671

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	GH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	16.56	3.3615	0.1987	0.0000	8.3281
City Park	0.42	0.0853	5.0400e-003	0.0000	0.2112
Day-Care Center	14.1	2.8622	0.1692	0.0000	7.0909
General Office Building	4.035	0.8191	0.0484	0.0000	2.0292
High Turnover (Sit Down Restaurant)	5.355	1.0870	0.0642	0.0000	2.6930
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Place of Worship	56.475	11.4639	0.6775	0.0000	28.4014
Retirement Community	23.805	4.8322	0.2856	0.0000	11.9716
Total		24.5112	1.4486	0.0000	60.7254

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Liberty Towers Church - Sacramento County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**Liberty Towers Church
Sacramento County, Winter**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.78	1000sqft	0.08	5,780.00	0
Day-Care Center	14.46	1000sqft	0.33	14,460.00	0
Place of Worship	12.80	1000sqft	0.29	12,800.00	0
Place of Worship	0.41	1000sqft	0.01	410.00	0
Parking Lot	130.20	1000sqft	2.99	130,200.00	0
City Park	6.46	Acre	6.46	281,397.60	0
High Turnover (Sit Down Restaurant)	0.60	1000sqft	0.01	600.00	0
Apartments Low Rise	48.00	Dwelling Unit	0.24	31,064.00	128
Retirement Community	69.00	Dwelling Unit	0.34	44,499.00	184

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.5	Precipitation Freq (Days)	58
Climate Zone	6			Operational Year	2025
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MW hr)	357.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 1

Land Use - Building areas per plans.

12.8 kSF Place of Worship = multi-purpose building upper level.

0.41 kSF Place of Worship = existing church/auditorium renovation/addition.

High Turnover Restaurant = kitchen/cafe in multi-purpose building.

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Construction Phase - Construction schedule per project applicant.

Architectural Coatings assumed to occur during last 6 months of building construction.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Equipment per project applicant.

Off-Highway Truck = water truck.

Off-road Equipment - Equipment per project applicant.

Off-Highway Truck = water truck

Off-road Equipment - Equipment per project applicant.

Off-road Equipment - Equipment per project applicant.

Trips and VMT - 100 truck loads asphalt/concrete/debris exported during demolition.

50 truckload vegetation exported during site preparation.

Grading cut/fill balanced on-site (no import or export of soil).

Grading -

Vehicle Trips - Resaurant (cafeteria) trips included with day care center.

No new trips for church expansion (431 SF backstage area).

No trips for City Park (outdoor/lanscape areas for entire project).

Energy Use - Project to be all electric per SMAQMD GHG Tier 1 BMP requirements.

Default natural gas use converted to KWhr (1 KBTU = 0.293 KWhr) and added to defaul electricity use.

Natural gas from outdoor fire pit use added to City Park.

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation - Fugitive dust mitigation to meet requirments of SMAQMD BCEPs.

Area Mitigation -

Water Mitigation - 20% additional water use reduction per 2019 CALGreen not accounted for in model defaults.

Waste Mitigation - 25% additional solid waste diversion per AB 341 not accounted for in model defaults.

Energy Mitigation - Solar generation per 2019 Title 24.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	NumDays	300.00	262.00
tblConstructionPhase	NumDays	20.00	154.00
tblConstructionPhase	NumDays	20.00	15.00

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblEnergyUse	NT24E	3,172.76	3,960.00
tblEnergyUse	NT24E	2.17	2.36
tblEnergyUse	NT24E	5.75	5.95
tblEnergyUse	NT24E	26.72	61.31
tblEnergyUse	NT24E	7.20	10.84
tblEnergyUse	NT24E	3,172.76	3,960.05
tblEnergyUse	NT24NG	2,687.00	0.00
tblEnergyUse	NT24NG	0.00	0.08
tblEnergyUse	NT24NG	0.66	0.00
tblEnergyUse	NT24NG	0.68	0.00
tblEnergyUse	NT24NG	118.04	0.00
tblEnergyUse	NT24NG	12.42	0.00
tblEnergyUse	NT24NG	2,687.00	0.00
tblEnergyUse	T24E	108.87	2,736.90
tblEnergyUse	T24E	1.83	6.07
tblEnergyUse	T24E	4.44	8.04
tblEnergyUse	T24E	7.86	25.17
tblEnergyUse	T24E	3.05	9.83
tblEnergyUse	T24E	108.87	8,596.90
tblEnergyUse	T24NG	8,969.37	0.00
tblEnergyUse	T24NG	14.46	0.00
tblEnergyUse	T24NG	12.30	0.00
tblEnergyUse	T24NG	59.07	0.00
tblEnergyUse	T24NG	23.15	0.00
tblEnergyUse	T24NG	8,969.37	0.00
tblLandUse	LandUseSquareFeet	48,000.00	31,064.00
tblLandUse	LandUseSquareFeet	69,000.00	44,499.00
tblLandUse	LotAcreage	0.13	0.08
tblLandUse	LotAcreage	3.00	0.24

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblLandUse	LotAcreage	13.80	0.34
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	122.40	0.00
tblVehicleTrips	ST_TR	5.99	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	142.64	0.00
tblVehicleTrips	SU_TR	27.63	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	112.18	0.00
tblVehicleTrips	WD_TR	6.95	0.00

2.0 Emissions Summary

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	6.3556	62.5284	48.4147	0.1259	9.5459	2.4967	12.0426	3.7446	2.2969	6.0415	0.0000	12,194.83 12	12,194.83 12	3.8632	0.3126	12,294.09 88
2024	11.0907	19.4328	26.3965	0.0655	2.9904	0.7084	3.6988	0.8049	0.6701	1.4750	0.0000	6,528.650 2	6,528.650 2	1.1097	0.3145	6,640.586 4
Maximum	11.0907	62.5284	48.4147	0.1259	9.5459	2.4967	12.0426	3.7446	2.2969	6.0415	0.0000	12,194.83 12	12,194.83 12	3.8632	0.3145	12,294.09 88

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	6.3556	62.5284	48.4147	0.1259	4.4839	2.4967	6.9806	1.7350	2.2969	4.0319	0.0000	12,194.83 12	12,194.83 12	3.8632	0.3126	12,294.09 88
2024	11.0907	19.4328	26.3965	0.0655	2.9904	0.7084	3.6988	0.8049	0.6701	1.4750	0.0000	6,528.650 2	6,528.650 2	1.1097	0.3145	6,640.586 4
Maximum	11.0907	62.5284	48.4147	0.1259	4.4839	2.4967	6.9806	1.7350	2.2969	4.0319	0.0000	12,194.83 12	12,194.83 12	3.8632	0.3145	12,294.09 88

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365
Energy	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816
Mobile	2.6703	3.2905	24.0381	0.0411	4.5447	0.0344	4.5790	1.2115	0.0321	1.2436		4,199.2587	4,199.2587	0.3786	0.2498	4,283.1722
Total	5.7239	3.4079	33.7042	0.0417	4.5447	0.0884	4.6331	1.2115	0.0861	1.2976	0.0000	4,224.1141	4,224.1141	0.3955	0.2500	4,308.4904

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	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365
Energy	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816
Mobile	2.6703	3.2905	24.0381	0.0411	4.5447	0.0344	4.5790	1.2115	0.0321	1.2436		4,199.2587	4,199.2587	0.3786	0.2498	4,283.1722
Total	5.7239	3.4079	33.7042	0.0417	4.5447	0.0884	4.6331	1.2115	0.0861	1.2976	0.0000	4,224.1141	4,224.1141	0.3955	0.2500	4,308.4904

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition/Site Preparation	Site Preparation	5/1/2023	6/30/2023	5	45	
2	Grading	Grading	7/1/2023	7/31/2023	5	21	
3	Underground Utilites	Trenching	7/1/2023	10/31/2023	5	87	
4	Building Construction	Building Construction	11/1/2023	10/31/2024	5	262	
5	Architectural Coating	Architectural Coating	4/1/2024	10/31/2024	5	154	
6	Paving	Paving	11/1/2024	11/21/2024	5	15	

Acres of Grading (Site Preparation Phase): 22.5

Acres of Grading (Grading Phase): 63

Acres of Paving: 2.99

Residential Indoor: 153,015; Residential Outdoor: 51,005; Non-Residential Indoor: 51,075; Non-Residential Outdoor: 17,025; Striped Parking Area: 7,812 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition/Site Preparation	Excavators	1	8.00	158	0.38
Demolition/Site Preparation	Off-Highway Trucks	1	4.00	402	0.38
Demolition/Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Demolition/Site Preparation	Rubber Tired Loaders	3	8.00	203	0.36
Demolition/Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Off-Highway Trucks	1	4.00	402	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	3	8.00	203	0.36
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilites	Excavators	1	8.00	158	0.38
Underground Utilites	Rubber Tired Dozers	1	8.00	247	0.40
Underground Utilites	Rubber Tired Loaders	3	8.00	203	0.36
Underground Utilites	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	203	0.36

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/Site Preparation	7	18.00	0.00	300.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	12	30.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilites	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	9	271.00	86.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	54.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition/Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.0881	19.9594	14.7690	0.0422		0.8037	0.8037		0.7394	0.7394		4,085.3105	4,085.3105	1.3213		4,118.3423
Total	2.0881	19.9594	14.7690	0.0422	6.5523	0.8037	7.3561	3.3675	0.7394	4.1069		4,085.3105	4,085.3105	1.3213		4,118.3423

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition/Site Preparation - 2023

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	0.0172	1.0835	0.2154	4.1800e-003	0.1163	7.7600e-003	0.1240	0.0318	7.4200e-003	0.0393		456.7314	456.7314	0.0182	0.0724	478.7663
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
Worker	0.0537	0.0357	0.4261	1.1100e-003	0.1369	7.0000e-004	0.1376	0.0363	6.5000e-004	0.0370		112.5438	112.5438	4.0500e-003	3.6100e-003	113.7203
Total	0.0709	1.1192	0.6415	5.2900e-003	0.2532	8.4600e-003	0.2616	0.0682	8.0700e-003	0.0762		569.2752	569.2752	0.0222	0.0760	592.4866

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					2.9486	0.0000	2.9486	1.5154	0.0000	1.5154			0.0000			0.0000
Off-Road	2.0881	19.9594	14.7690	0.0422		0.8037	0.8037		0.7394	0.7394	0.0000	4,085.3105	4,085.3105	1.3213		4,118.3423
Total	2.0881	19.9594	14.7690	0.0422	2.9486	0.8037	3.7523	1.5154	0.7394	2.2548	0.0000	4,085.3105	4,085.3105	1.3213		4,118.3423

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition/Site Preparation - 2023

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	0.0172	1.0835	0.2154	4.1800e-003	0.1163	7.7600e-003	0.1240	0.0318	7.4200e-003	0.0393		456.7314	456.7314	0.0182	0.0724	478.7663
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
Worker	0.0537	0.0357	0.4261	1.1100e-003	0.1369	7.0000e-004	0.1376	0.0363	6.5000e-004	0.0370		112.5438	112.5438	4.0500e-003	3.6100e-003	113.7203
Total	0.0709	1.1192	0.6415	5.2900e-003	0.2532	8.4600e-003	0.2616	0.0682	8.0700e-003	0.0762		569.2752	569.2752	0.0222	0.0760	592.4866

3.3 Grading - 2023

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					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	4.3852	44.2636	34.2247	0.0875		1.7557	1.7557		1.6152	1.6152		8,468.1054	8,468.1054	2.7388		8,536.5743
Total	4.3852	44.2636	34.2247	0.0875	9.2036	1.7557	10.9593	3.6538	1.6152	5.2690		8,468.1054	8,468.1054	2.7388		8,536.5743

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

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	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
Worker	0.0895	0.0596	0.7102	1.8600e-003	0.2282	1.1700e-003	0.2294	0.0605	1.0800e-003	0.0616		187.5730	187.5730	6.7500e-003	6.0100e-003	189.5338
Total	0.0895	0.0596	0.7102	1.8600e-003	0.2282	1.1700e-003	0.2294	0.0605	1.0800e-003	0.0616		187.5730	187.5730	6.7500e-003	6.0100e-003	189.5338

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					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	4.3852	44.2636	34.2247	0.0875		1.7557	1.7557		1.6152	1.6152	0.0000	8,468.1054	8,468.1054	2.7388		8,536.5743
Total	4.3852	44.2636	34.2247	0.0875	4.1416	1.7557	5.8973	1.6442	1.6152	3.2594	0.0000	8,468.1054	8,468.1054	2.7388		8,536.5743

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

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	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
Worker	0.0895	0.0596	0.7102	1.8600e-003	0.2282	1.1700e-003	0.2294	0.0605	1.0800e-003	0.0616		187.5730	187.5730	6.7500e-003	6.0100e-003	189.5338
Total	0.0895	0.0596	0.7102	1.8600e-003	0.2282	1.1700e-003	0.2294	0.0605	1.0800e-003	0.0616		187.5730	187.5730	6.7500e-003	6.0100e-003	189.5338

3.4 Underground Utilites - 2023

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	1.8362	18.1755	13.1248	0.0356		0.7392	0.7392		0.6801	0.6801		3,445.3663	3,445.3663	1.1143		3,473.2238
Total	1.8362	18.1755	13.1248	0.0356		0.7392	0.7392		0.6801	0.6801		3,445.3663	3,445.3663	1.1143		3,473.2238

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Underground Utilites - 2023

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	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
Worker	0.0447	0.0298	0.3551	9.3000e-004	0.1141	5.9000e-004	0.1147	0.0303	5.4000e-004	0.0308		93.7865	93.7865	3.3700e-003	3.0100e-003	94.7669
Total	0.0447	0.0298	0.3551	9.3000e-004	0.1141	5.9000e-004	0.1147	0.0303	5.4000e-004	0.0308		93.7865	93.7865	3.3700e-003	3.0100e-003	94.7669

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	1.8362	18.1755	13.1248	0.0356		0.7392	0.7392		0.6801	0.6801	0.0000	3,445.3663	3,445.3663	1.1143		3,473.2238
Total	1.8362	18.1755	13.1248	0.0356		0.7392	0.7392		0.6801	0.6801	0.0000	3,445.3663	3,445.3663	1.1143		3,473.2238

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Underground Utilites - 2023

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	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
Worker	0.0447	0.0298	0.3551	9.3000e-004	0.1141	5.9000e-004	0.1147	0.0303	5.4000e-004	0.0308		93.7865	93.7865	3.3700e-003	3.0100e-003	94.7669
Total	0.0447	0.0298	0.3551	9.3000e-004	0.1141	5.9000e-004	0.1147	0.0303	5.4000e-004	0.0308		93.7865	93.7865	3.3700e-003	3.0100e-003	94.7669

3.5 Building Construction - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2023

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	0.0000
Vendor	0.1112	4.2799	1.2961	0.0164	0.5181	0.0225	0.5406	0.1491	0.0215	0.1706		1,758.9640	1,758.9640	0.0432	0.2583	1,837.0101
Worker	0.8082	0.5380	6.4151	0.0168	2.0615	0.0106	2.0721	0.5468	9.7600e-003	0.5566		1,694.4098	1,694.4098	0.0610	0.0543	1,712.1222
Total	0.9195	4.8179	7.7112	0.0332	2.5796	0.0331	2.6127	0.6960	0.0313	0.7272		3,453.3738	3,453.3738	0.1042	0.3126	3,549.1323

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2023

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	0.0000
Vendor	0.1112	4.2799	1.2961	0.0164	0.5181	0.0225	0.5406	0.1491	0.0215	0.1706		1,758.9640	1,758.9640	0.0432	0.2583	1,837.0101
Worker	0.8082	0.5380	6.4151	0.0168	2.0615	0.0106	2.0721	0.5468	9.7600e-003	0.5566		1,694.4098	1,694.4098	0.0610	0.0543	1,712.1222
Total	0.9195	4.8179	7.7112	0.0332	2.5796	0.0331	2.6127	0.6960	0.0313	0.7272		3,453.3738	3,453.3738	0.1042	0.3126	3,549.1323

3.5 Building Construction - 2024

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2024

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	0.0000
Vendor	0.1063	4.1962	1.2561	0.0161	0.5181	0.0221	0.5402	0.1491	0.0212	0.1703		1,725.6837	1,725.6837	0.0420	0.2539	1,802.4058
Worker	0.7562	0.4787	5.9732	0.0162	2.0615	0.0101	2.0716	0.5468	9.2700e-003	0.5561		1,639.1911	1,639.1911	0.0554	0.0505	1,655.6255
Total	0.8624	4.6749	7.2293	0.0323	2.5796	0.0322	2.6118	0.6959	0.0305	0.7264		3,364.8748	3,364.8748	0.0974	0.3044	3,458.0313

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2024

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	0.0000
Vendor	0.1063	4.1962	1.2561	0.0161	0.5181	0.0221	0.5402	0.1491	0.0212	0.1703		1,725.6837	1,725.6837	0.0420	0.2539	1,802.4058
Worker	0.7562	0.4787	5.9732	0.0162	2.0615	0.0101	2.0716	0.5468	9.2700e-003	0.5561		1,639.1911	1,639.1911	0.0554	0.0505	1,655.6255
Total	0.8624	4.6749	7.2293	0.0323	2.5796	0.0322	2.6118	0.6959	0.0305	0.7264		3,364.8748	3,364.8748	0.0974	0.3044	3,458.0313

3.6 Architectural Coating - 2024

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	8.4252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	8.6060	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2024

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	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
Worker	0.1507	0.0954	1.1902	3.2300e-003	0.4108	2.0100e-003	0.4128	0.1090	1.8500e-003	0.1108		326.6285	326.6285	0.0110	0.0101	329.9032
Total	0.1507	0.0954	1.1902	3.2300e-003	0.4108	2.0100e-003	0.4128	0.1090	1.8500e-003	0.1108		326.6285	326.6285	0.0110	0.0101	329.9032

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	8.4252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	8.6060	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2024

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	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
Worker	0.1507	0.0954	1.1902	3.2300e-003	0.4108	2.0100e-003	0.4128	0.1090	1.8500e-003	0.1108		326.6285	326.6285	0.0110	0.0101	329.9032
Total	0.1507	0.0954	1.1902	3.2300e-003	0.4108	2.0100e-003	0.4128	0.1090	1.8500e-003	0.1108		326.6285	326.6285	0.0110	0.0101	329.9032

3.7 Paving - 2024

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	1.4961	14.1801	17.6178	0.0353		0.6243	0.6243		0.5743	0.5743		3,418.5754	3,418.5754	1.1056		3,446.2163
Paving	0.5223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0184	14.1801	17.6178	0.0353		0.6243	0.6243		0.5743	0.5743		3,418.5754	3,418.5754	1.1056		3,446.2163

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Paving - 2024

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	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
Worker	0.0558	0.0353	0.4408	1.2000e-003	0.1521	7.4000e-004	0.1529	0.0404	6.8000e-004	0.0410		120.9735	120.9735	4.0900e-003	3.7300e-003	122.1864
Total	0.0558	0.0353	0.4408	1.2000e-003	0.1521	7.4000e-004	0.1529	0.0404	6.8000e-004	0.0410		120.9735	120.9735	4.0900e-003	3.7300e-003	122.1864

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	1.4961	14.1801	17.6178	0.0353		0.6243	0.6243		0.5743	0.5743	0.0000	3,418.5754	3,418.5754	1.1056		3,446.2163
Paving	0.5223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0184	14.1801	17.6178	0.0353		0.6243	0.6243		0.5743	0.5743	0.0000	3,418.5754	3,418.5754	1.1056		3,446.2163

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Paving - 2024

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	GH4	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	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
Worker	0.0558	0.0353	0.4408	1.2000e-003	0.1521	7.4000e-004	0.1529	0.0404	6.8000e-004	0.0410		120.9735	120.9735	4.0900e-003	3.7300e-003	122.1864
Total	0.0558	0.0353	0.4408	1.2000e-003	0.1521	7.4000e-004	0.1529	0.0404	6.8000e-004	0.0410		120.9735	120.9735	4.0900e-003	3.7300e-003	122.1864

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	2.6703	3.2905	24.0381	0.0411	4.5447	0.0344	4.5790	1.2115	0.0321	1.2436		4,199,258 7	4,199,258 7	0.3786	0.2498	4,283,172 2
Unmitigated	2.6703	3.2905	24.0381	0.0411	4.5447	0.0344	4.5790	1.2115	0.0321	1.2436		4,199,258 7	4,199,258 7	0.3786	0.2498	4,283,172 2

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	351.36	390.72	301.44	897,757	897,757
City Park	0.00	0.00	0.00		
Day-Care Center	688.59	89.94	84.45	459,106	459,106
General Office Building	56.30	12.77	4.05	88,005	88,005
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Place of Worship	0.00	0.00	0.00		
Place of Worship	0.00	0.00	0.00		
Retirement Community	165.60	140.07	134.55	404,206	404,206
Total	1,261.84	633.51	524.48	1,849,074	1,849,074

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 Low Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Day-Care Center	10.00	5.00	6.50	12.70	82.30	5.00	28	58	14

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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
General Office Building	10.00	5.00	6.50	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	10.00	5.00	6.50	8.50	72.50	19.00	37	20	43
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Place of Worship	10.00	5.00	6.50	0.00	95.00	5.00	64	25	11
Place of Worship	10.00	5.00	6.50	0.00	95.00	5.00	64	25	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
City Park	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Day-Care Center	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
General Office Building	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
High Turnover (Sit Down Restaurant)	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Parking Lot	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Place of Worship	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Retirement Community	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816
NaturalGas Unmitigated	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	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
City Park	63.2181	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816
Day-Care Center	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
General Office Building	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
High Turnover (Sit Down Restaurant)	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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Place of Worship	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
Retirement Community	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
Total		6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	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
City Park	0.0632181	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816
Day-Care Center	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
General Office Building	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
High Turnover (Sit Down Restaurant)	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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Place of Worship	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
Retirement Community	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
Total		6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816

6.0 Area Detail

6.1 Mitigation Measures Area

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365
Unmitigated	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365

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	0.3555					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4063					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	0.2911	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536		17.4180	17.4180	0.0167		17.8365
Total	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.3555					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4063					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	0.2911	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536		17.4180	17.4180	0.0167		17.8365
Total	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Liberty Towers Church - Sacramento County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**Liberty Towers Church
Sacramento County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.78	1000sqft	0.08	5,780.00	0
Day-Care Center	14.46	1000sqft	0.33	14,460.00	0
Place of Worship	12.80	1000sqft	0.29	12,800.00	0
Place of Worship	0.41	1000sqft	0.01	410.00	0
Parking Lot	130.20	1000sqft	2.99	130,200.00	0
City Park	6.46	Acre	6.46	281,397.60	0
High Turnover (Sit Down Restaurant)	0.60	1000sqft	0.01	600.00	0
Apartments Low Rise	48.00	Dwelling Unit	0.24	31,064.00	128
Retirement Community	69.00	Dwelling Unit	0.34	44,499.00	184

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.5	Precipitation Freq (Days)	58
Climate Zone	6			Operational Year	2025
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MW hr)	357.98	CH4 Intensity (lb/MW hr)	0.033	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Run 1

Land Use - Building areas per plans.
 12.8 kSF Place of Worship = multi-purpose building upper level.
 0.41 kSF Place of Worship = existing church/auditorium renovation/addition.
 High Turnover Restaurant = kitchen/cafe in multi-purpose building.

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Construction Phase - Construction schedule per project applicant.

Architectural Coatings assumed to occur during last 6 months of building construction.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Equipment per project applicant.

Off-Highway Truck = water truck.

Off-road Equipment - Equipment per project applicant.

Off-Highway Truck = water truck

Off-road Equipment - Equipment per project applicant.

Off-road Equipment - Equipment per project applicant.

Trips and VMT - 100 truck loads asphalt/concrete/debris exported during demolition.

50 truckload vegetation exported during site preparation.

Grading cut/fill balanced on-site (no import or export of soil).

Grading -

Vehicle Trips - Resaurant (cafeteria) trips included with day care center.

No new trips for church expansion (431 SF backstage area).

No trips for City Park (outdoor/lanscape areas for entire project).

Energy Use - Project to be all electric per SMAQMD GHG Tier 1 BMP requirements.

Default natural gas use converted to KW/hr (1 KBTU = 0.293 KW/hr) and added to default electricity use.

Natural gas from outdoor fire pit use added to City Park.

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation - Fugitive dust mitigation to meet requirments of SMAQMD BCEPs.

Area Mitigation -

Water Mitigation - 20% additional water use reduction per 2019 CALGreen not accounted for in model defaults.

Waste Mitigation - 25% additional solid waste diversion per AB 341 not accounted for in model defaults.

Energy Mitigation - Solar generation per 2019 Title 24.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	45.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	NumDays	300.00	262.00
tblConstructionPhase	NumDays	20.00	154.00
tblConstructionPhase	NumDays	20.00	15.00

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblEnergyUse	NT24E	3,172.76	3,960.00
tblEnergyUse	NT24E	2.17	2.36
tblEnergyUse	NT24E	5.75	5.95
tblEnergyUse	NT24E	26.72	61.31
tblEnergyUse	NT24E	7.20	10.84
tblEnergyUse	NT24E	3,172.76	3,960.05
tblEnergyUse	NT24NG	2,687.00	0.00
tblEnergyUse	NT24NG	0.00	0.08
tblEnergyUse	NT24NG	0.66	0.00
tblEnergyUse	NT24NG	0.68	0.00
tblEnergyUse	NT24NG	118.04	0.00
tblEnergyUse	NT24NG	12.42	0.00
tblEnergyUse	NT24NG	2,687.00	0.00
tblEnergyUse	T24E	108.87	2,736.90
tblEnergyUse	T24E	1.83	6.07
tblEnergyUse	T24E	4.44	8.04
tblEnergyUse	T24E	7.86	25.17
tblEnergyUse	T24E	3.05	9.83
tblEnergyUse	T24E	108.87	8,596.90
tblEnergyUse	T24NG	8,969.37	0.00
tblEnergyUse	T24NG	14.46	0.00
tblEnergyUse	T24NG	12.30	0.00
tblEnergyUse	T24NG	59.07	0.00
tblEnergyUse	T24NG	23.15	0.00
tblEnergyUse	T24NG	8,969.37	0.00
tblLandUse	LandUseSquareFeet	48,000.00	31,064.00
tblLandUse	LandUseSquareFeet	69,000.00	44,499.00
tblLandUse	LotAcreage	0.13	0.08
tblLandUse	LotAcreage	3.00	0.24

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblLandUse	LotAcreage	13.80	0.34
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	122.40	0.00
tblVehicleTrips	ST_TR	5.99	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	142.64	0.00
tblVehicleTrips	SU_TR	27.63	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	112.18	0.00
tblVehicleTrips	WD_TR	6.95	0.00

2.0 Emissions Summary

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	6.3729	62.5119	48.5726	0.1262	9.5459	2.4967	12.0426	3.7446	2.2969	6.0415	0.0000	12,229.77 03	12,229.77 03	3.8619	0.3050	12,328.66 02
2024	11.2095	19.0338	27.3638	0.0679	2.9904	0.7082	3.6986	0.8049	0.6699	1.4748	0.0000	6,770.573 4	6,770.573 4	1.1092	0.3062	6,879.808 3
Maximum	11.2095	62.5119	48.5726	0.1262	9.5459	2.4967	12.0426	3.7446	2.2969	6.0415	0.0000	12,229.77 03	12,229.77 03	3.8619	0.3062	12,328.66 02

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	6.3729	62.5119	48.5726	0.1262	4.4839	2.4967	6.9806	1.7350	2.2969	4.0319	0.0000	12,229.77 03	12,229.77 03	3.8619	0.3050	12,328.66 02
2024	11.2095	19.0338	27.3638	0.0679	2.9904	0.7082	3.6986	0.8049	0.6699	1.4748	0.0000	6,770.573 4	6,770.573 4	1.1092	0.3062	6,879.808 3
Maximum	11.2095	62.5119	48.5726	0.1262	4.4839	2.4967	6.9806	1.7350	2.2969	4.0319	0.0000	12,229.77 03	12,229.77 03	3.8619	0.3062	12,328.66 02

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365
Energy	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816
Mobile	3.5847	2.8500	23.2213	0.0449	4.5447	0.0343	4.5790	1.2115	0.0320	1.2435		4,580.8605	4,580.8605	0.3244	0.2281	4,656.9444
Total	6.6384	2.9674	32.8874	0.0455	4.5447	0.0883	4.6330	1.2115	0.0860	1.2975	0.0000	4,605.7159	4,605.7159	0.3412	0.2282	4,682.2626

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	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365
Energy	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816
Mobile	3.5847	2.8500	23.2213	0.0449	4.5447	0.0343	4.5790	1.2115	0.0320	1.2435		4,580.8605	4,580.8605	0.3244	0.2281	4,656.9444
Total	6.6384	2.9674	32.8874	0.0455	4.5447	0.0883	4.6330	1.2115	0.0860	1.2975	0.0000	4,605.7159	4,605.7159	0.3412	0.2282	4,682.2626

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition/Site Preparation	Site Preparation	5/1/2023	6/30/2023	5	45	
2	Grading	Grading	7/1/2023	7/31/2023	5	21	
3	Underground Utilites	Trenching	7/1/2023	10/31/2023	5	87	
4	Building Construction	Building Construction	11/1/2023	10/31/2024	5	262	
5	Architectural Coating	Architectural Coating	4/1/2024	10/31/2024	5	154	
6	Paving	Paving	11/1/2024	11/21/2024	5	15	

Acres of Grading (Site Preparation Phase): 22.5

Acres of Grading (Grading Phase): 63

Acres of Paving: 2.99

Residential Indoor: 153,015; Residential Outdoor: 51,005; Non-Residential Indoor: 51,075; Non-Residential Outdoor: 17,025; Striped Parking Area: 7,812 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition/Site Preparation	Excavators	1	8.00	158	0.38
Demolition/Site Preparation	Off-Highway Trucks	1	4.00	402	0.38
Demolition/Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Demolition/Site Preparation	Rubber Tired Loaders	3	8.00	203	0.36
Demolition/Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Off-Highway Trucks	1	4.00	402	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	3	8.00	203	0.36
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Underground Utilites	Excavators	1	8.00	158	0.38
Underground Utilites	Rubber Tired Dozers	1	8.00	247	0.40
Underground Utilites	Rubber Tired Loaders	3	8.00	203	0.36
Underground Utilites	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	203	0.36

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/Site Preparation	7	18.00	0.00	300.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	12	30.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilites	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	9	271.00	86.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	54.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition/Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.0881	19.9594	14.7690	0.0422		0.8037	0.8037		0.7394	0.7394		4,085.3105	4,085.3105	1.3213		4,118.3423
Total	2.0881	19.9594	14.7690	0.0422	6.5523	0.8037	7.3561	3.3675	0.7394	4.1069		4,085.3105	4,085.3105	1.3213		4,118.3423

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition/Site Preparation - 2023

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	0.0181	1.0021	0.2115	4.1800e-003	0.1163	7.7300e-003	0.1240	0.0318	7.3900e-003	0.0392		456.4718	456.4718	0.0182	0.0724	478.4946
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
Worker	0.0606	0.0291	0.4892	1.2500e-003	0.1369	7.0000e-004	0.1376	0.0363	6.5000e-004	0.0370		126.5195	126.5195	3.5200e-003	3.1500e-003	127.5449
Total	0.0787	1.0312	0.7007	5.4300e-003	0.2532	8.4300e-003	0.2616	0.0682	8.0400e-003	0.0762		582.9913	582.9913	0.0217	0.0755	606.0394

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					2.9486	0.0000	2.9486	1.5154	0.0000	1.5154			0.0000			0.0000
Off-Road	2.0881	19.9594	14.7690	0.0422		0.8037	0.8037		0.7394	0.7394	0.0000	4,085.3105	4,085.3105	1.3213		4,118.3423
Total	2.0881	19.9594	14.7690	0.0422	2.9486	0.8037	3.7523	1.5154	0.7394	2.2548	0.0000	4,085.3105	4,085.3105	1.3213		4,118.3423

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition/Site Preparation - 2023

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	0.0181	1.0021	0.2115	4.1800e-003	0.1163	7.7300e-003	0.1240	0.0318	7.3900e-003	0.0392		456.4718	456.4718	0.0182	0.0724	478.4946
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
Worker	0.0606	0.0291	0.4892	1.2500e-003	0.1369	7.0000e-004	0.1376	0.0363	6.5000e-004	0.0370		126.5195	126.5195	3.5200e-003	3.1500e-003	127.5449
Total	0.0787	1.0312	0.7007	5.4300e-003	0.2532	8.4300e-003	0.2616	0.0682	8.0400e-003	0.0762		582.9913	582.9913	0.0217	0.0755	606.0394

3.3 Grading - 2023

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					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	4.3852	44.2636	34.2247	0.0875		1.7557	1.7557		1.6152	1.6152		8,468.1054	8,468.1054	2.7388		8,536.5743
Total	4.3852	44.2636	34.2247	0.0875	9.2036	1.7557	10.9593	3.6538	1.6152	5.2690		8,468.1054	8,468.1054	2.7388		8,536.5743

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

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	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
Worker	0.1010	0.0485	0.8154	2.0900e-003	0.2282	1.1700e-003	0.2294	0.0605	1.0800e-003	0.0616		210.8658	210.8658	5.8600e-003	5.2400e-003	212.5748
Total	0.1010	0.0485	0.8154	2.0900e-003	0.2282	1.1700e-003	0.2294	0.0605	1.0800e-003	0.0616		210.8658	210.8658	5.8600e-003	5.2400e-003	212.5748

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					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	4.3852	44.2636	34.2247	0.0875		1.7557	1.7557		1.6152	1.6152	0.0000	8,468.1054	8,468.1054	2.7388		8,536.5743
Total	4.3852	44.2636	34.2247	0.0875	4.1416	1.7557	5.8973	1.6442	1.6152	3.2594	0.0000	8,468.1054	8,468.1054	2.7388		8,536.5743

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2023

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	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
Worker	0.1010	0.0485	0.8154	2.0900e-003	0.2282	1.1700e-003	0.2294	0.0605	1.0800e-003	0.0616		210.8658	210.8658	5.8600e-003	5.2400e-003	212.5748
Total	0.1010	0.0485	0.8154	2.0900e-003	0.2282	1.1700e-003	0.2294	0.0605	1.0800e-003	0.0616		210.8658	210.8658	5.8600e-003	5.2400e-003	212.5748

3.4 Underground Utilites - 2023

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	1.8362	18.1755	13.1248	0.0356		0.7392	0.7392		0.6801	0.6801		3,445.3663	3,445.3663	1.1143		3,473.2238
Total	1.8362	18.1755	13.1248	0.0356		0.7392	0.7392		0.6801	0.6801		3,445.3663	3,445.3663	1.1143		3,473.2238

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Underground Utilites - 2023

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	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
Worker	0.0505	0.0243	0.4077	1.0400e-003	0.1141	5.9000e-004	0.1147	0.0303	5.4000e-004	0.0308		105.4329	105.4329	2.9300e-003	2.6200e-003	106.2874
Total	0.0505	0.0243	0.4077	1.0400e-003	0.1141	5.9000e-004	0.1147	0.0303	5.4000e-004	0.0308		105.4329	105.4329	2.9300e-003	2.6200e-003	106.2874

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	1.8362	18.1755	13.1248	0.0356		0.7392	0.7392		0.6801	0.6801	0.0000	3,445.3663	3,445.3663	1.1143		3,473.2238
Total	1.8362	18.1755	13.1248	0.0356		0.7392	0.7392		0.6801	0.6801	0.0000	3,445.3663	3,445.3663	1.1143		3,473.2238

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Underground Utilites - 2023

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	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
Worker	0.0505	0.0243	0.4077	1.0400e-003	0.1141	5.9000e-004	0.1147	0.0303	5.4000e-004	0.0308		105.4329	105.4329	2.9300e-003	2.6200e-003	106.2874
Total	0.0505	0.0243	0.4077	1.0400e-003	0.1141	5.9000e-004	0.1147	0.0303	5.4000e-004	0.0308		105.4329	105.4329	2.9300e-003	2.6200e-003	106.2874

3.5 Building Construction - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2023

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	0.0000
Vendor	0.1151	3.9821	1.2397	0.0164	0.5181	0.0222	0.5404	0.1491	0.0213	0.1704		1,757.704 2	1,757.704 2	0.0434	0.2577	1,835.571 3
Worker	0.9126	0.4385	7.3657	0.0189	2.0615	0.0106	2.0721	0.5468	9.7600e-003	0.5566		1,904.820 8	1,904.820 8	0.0529	0.0474	1,920.258 7
Total	1.0277	4.4206	8.6054	0.0352	2.5796	0.0328	2.6125	0.6960	0.0310	0.7270		3,662.525 0	3,662.525 0	0.0964	0.3050	3,755.830 0

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.209 9	2,555.209 9	0.6079		2,570.406 1

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2023

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	0.0000
Vendor	0.1151	3.9821	1.2397	0.0164	0.5181	0.0222	0.5404	0.1491	0.0213	0.1704		1,757.704 2	1,757.704 2	0.0434	0.2577	1,835.571 3
Worker	0.9126	0.4385	7.3657	0.0189	2.0615	0.0106	2.0721	0.5468	9.7600e-003	0.5566		1,904.820 8	1,904.820 8	0.0529	0.0474	1,920.258 7
Total	1.0277	4.4206	8.6054	0.0352	2.5796	0.0328	2.6125	0.6960	0.0310	0.7270		3,662.525 0	3,662.525 0	0.0964	0.3050	3,755.830 0

3.5 Building Construction - 2024

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.698 9	2,555.698 9	0.6044		2,570.807 7
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.698 9	2,555.698 9	0.6044		2,570.807 7

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2024

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	0.0000
Vendor	0.1101	3.9031	1.2008	0.0161	0.5181	0.0219	0.5400	0.1491	0.0210	0.1701		1,724.2290	1,724.2290	0.0422	0.2533	1,800.7787
Worker	0.8521	0.3904	6.8259	0.0182	2.0615	0.0101	2.0716	0.5468	9.2700e-003	0.5561		1,842.1308	1,842.1308	0.0478	0.0441	1,856.4565
Total	0.9622	4.2935	8.0267	0.0343	2.5796	0.0320	2.6116	0.6959	0.0302	0.7262		3,566.3598	3,566.3598	0.0900	0.2974	3,657.2352

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2024

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	0.0000
Vendor	0.1101	3.9031	1.2008	0.0161	0.5181	0.0219	0.5400	0.1491	0.0210	0.1701		1,724.2290	1,724.2290	0.0422	0.2533	1,800.7787
Worker	0.8521	0.3904	6.8259	0.0182	2.0615	0.0101	2.0716	0.5468	9.2700e-003	0.5561		1,842.1308	1,842.1308	0.0478	0.0441	1,856.4565
Total	0.9622	4.2935	8.0267	0.0343	2.5796	0.0320	2.6116	0.6959	0.0302	0.7262		3,566.3598	3,566.3598	0.0900	0.2974	3,657.2352

3.6 Architectural Coating - 2024

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	8.4252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	8.6060	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2024

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	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
Worker	0.1698	0.0778	1.3602	3.6300e-003	0.4108	2.0100e-003	0.4128	0.1090	1.8500e-003	0.1108		367.0667	367.0667	9.5300e-003	8.7800e-003	369.9212
Total	0.1698	0.0778	1.3602	3.6300e-003	0.4108	2.0100e-003	0.4128	0.1090	1.8500e-003	0.1108		367.0667	367.0667	9.5300e-003	8.7800e-003	369.9212

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	8.4252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	8.6060	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2024

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	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
Worker	0.1698	0.0778	1.3602	3.6300e-003	0.4108	2.0100e-003	0.4128	0.1090	1.8500e-003	0.1108		367.0667	367.0667	9.5300e-003	8.7800e-003	369.9212
Total	0.1698	0.0778	1.3602	3.6300e-003	0.4108	2.0100e-003	0.4128	0.1090	1.8500e-003	0.1108		367.0667	367.0667	9.5300e-003	8.7800e-003	369.9212

3.7 Paving - 2024

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	1.4961	14.1801	17.6178	0.0353		0.6243	0.6243		0.5743	0.5743		3,418.5754	3,418.5754	1.1056		3,446.2163
Paving	0.5223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0184	14.1801	17.6178	0.0353		0.6243	0.6243		0.5743	0.5743		3,418.5754	3,418.5754	1.1056		3,446.2163

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Paving - 2024

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	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
Worker	0.0629	0.0288	0.5038	1.3500e-003	0.1521	7.4000e-004	0.1529	0.0404	6.8000e-004	0.0410		135.9506	135.9506	3.5300e-003	3.2500e-003	137.0079
Total	0.0629	0.0288	0.5038	1.3500e-003	0.1521	7.4000e-004	0.1529	0.0404	6.8000e-004	0.0410		135.9506	135.9506	3.5300e-003	3.2500e-003	137.0079

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	1.4961	14.1801	17.6178	0.0353		0.6243	0.6243		0.5743	0.5743	0.0000	3,418.5754	3,418.5754	1.1056		3,446.2163
Paving	0.5223					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0184	14.1801	17.6178	0.0353		0.6243	0.6243		0.5743	0.5743	0.0000	3,418.5754	3,418.5754	1.1056		3,446.2163

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Paving - 2024

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	GH4	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	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
Worker	0.0629	0.0288	0.5038	1.3500e-003	0.1521	7.4000e-004	0.1529	0.0404	6.8000e-004	0.0410		135.9506	135.9506	3.5300e-003	3.2500e-003	137.0079
Total	0.0629	0.0288	0.5038	1.3500e-003	0.1521	7.4000e-004	0.1529	0.0404	6.8000e-004	0.0410		135.9506	135.9506	3.5300e-003	3.2500e-003	137.0079

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	3.5847	2.8500	23.2213	0.0449	4.5447	0.0343	4.5790	1.2115	0.0320	1.2435		4,580,860 5	4,580,860 5	0.3244	0.2281	4,656,944 4
Unmitigated	3.5847	2.8500	23.2213	0.0449	4.5447	0.0343	4.5790	1.2115	0.0320	1.2435		4,580,860 5	4,580,860 5	0.3244	0.2281	4,656,944 4

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	351.36	390.72	301.44	897,757	897,757
City Park	0.00	0.00	0.00		
Day-Care Center	688.59	89.94	84.45	459,106	459,106
General Office Building	56.30	12.77	4.05	88,005	88,005
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Place of Worship	0.00	0.00	0.00		
Place of Worship	0.00	0.00	0.00		
Retirement Community	165.60	140.07	134.55	404,206	404,206
Total	1,261.84	633.51	524.48	1,849,074	1,849,074

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 Low Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Day-Care Center	10.00	5.00	6.50	12.70	82.30	5.00	28	58	14

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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
General Office Building	10.00	5.00	6.50	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	10.00	5.00	6.50	8.50	72.50	19.00	37	20	43
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Place of Worship	10.00	5.00	6.50	0.00	95.00	5.00	64	25	11
Place of Worship	10.00	5.00	6.50	0.00	95.00	5.00	64	25	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
City Park	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Day-Care Center	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
General Office Building	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
High Turnover (Sit Down Restaurant)	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Parking Lot	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Place of Worship	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207
Retirement Community	0.546433	0.056674	0.183423	0.128799	0.024661	0.005883	0.013276	0.009437	0.000898	0.000581	0.025768	0.000959	0.003207

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816
NaturalGas Unmitigated	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	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
City Park	63.2181	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816
Day-Care Center	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
General Office Building	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
High Turnover (Sit Down Restaurant)	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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Place of Worship	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
Retirement Community	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
Total		6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	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
City Park	0.0632181	6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816
Day-Care Center	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
General Office Building	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
High Turnover (Sit Down Restaurant)	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
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Place of Worship	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
Retirement Community	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
Total		6.8000e-004	6.2000e-003	5.2100e-003	4.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004		7.4374	7.4374	1.4000e-004	1.4000e-004	7.4816

6.0 Area Detail

6.1 Mitigation Measures Area

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365
Unmitigated	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365

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	0.3555					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4063					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	0.2911	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536		17.4180	17.4180	0.0167		17.8365
Total	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.3555					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.4063					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	0.2911	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536		17.4180	17.4180	0.0167		17.8365
Total	3.0530	0.1112	9.6609	5.1000e-004		0.0536	0.0536		0.0536	0.0536	0.0000	17.4180	17.4180	0.0167	0.0000	17.8365

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Liberty Towers Church - Sacramento County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Attachment C

Solar Calculations

Liberty Towers Church Solar Panel Requirements

Factors for Climate Zone 12	
A	0.613
B	1.4
CF	20%

	DU	Conditioned Space (SF)	kW	kWhr/year
Total	117.0	75,563.0	210.1	368,130.4

Notes:

1. Calculations based on 2019 Title 24 Residential Compliance Manual for new residential buildings with 3 or fewer residential floors.
2. Factors are for eastern Sacrament County where A is the climate zone 12 adjustment factor, B is the climate zone 12 dwelling unit factor, and CF is the capacity factor which accounts for climate, daylight hours, roof pitch and orientation, and transmission loss.
3. Garage area based on typical 400 SF 2-car garage.
4. Solar power output requirement is calculated by 2019 Title 24 Residential Compliance Manual Equation 7-1:
$$kW = (CFA \times A) / 1000 + (DU \times B)$$
5. Annual solar energy generated is calculated by:
$$kWhr/year = \text{Power Output (kW)} \times 24 \text{ hours/day} \times 365 \text{ days/year} \times CF$$