Harmony Grove Village South

Appendix J1

Global Climate Change Report

FOR THE

Final Environmental Impact Report

PDS2015-GPA-15-002
PDS2015-SP-15-002
PDS2015-REZ-15-003
PDS2018-TM-5626
PDS2015-MUP-15-008
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Prepared for:
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GLOBAL CLIMATE CHANGE

Harmony Grove Village South Project

PDS2015-GPA-15-002; PDS2015-SP-15-002
PDS2015-TM-5600; PDS2015-REZ-15-003
PDS2015-MUP-15-008; PDS2015-ER-15-08-006
County of San Diego, CA

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EXECUTIVE SUMMARY

On July 25, 2018, the County Board of Supervisors (BOS) approved entitlements for the Harmony Grove Village South (HGVS) Project (Project) and certified its Final Environmental Impact Report (FEIR). The accompanying 2018 greenhouse gas (GHG) analysis for the Project included the Final Greenhouse Gas (GHG) Analyses Report (Helix Environmental, 2018)[1] which was augmented by the Global Climate Change Supplemental Letter prepared by Ldn Consulting, Inc. (February 16, 2018) and included verification of the Project's onsite photovoltaic (PV) solar panels by an independent third-party reviewer (ConSol, 2017). The original GHG analysis calculated that the proposed Project would generate a total of 5,272 Metric Tons (MT) Carbon Dioxide equivalent (CO_2e) from construction (amortized over 20 years) and Project operations, as shown in Table ES.1 of the Final Greenhouse Gas (GHG) Analyses Report (Helix Environmental, as amended, 2018). The Project's FEIR included certain project design features (PDFs) which were listed in Section 2.7 of the FEIR. The FEIR also recommended mitigation measures for GHG impacts to be considered less than significant (As explained below those mitigation measures have been revised).

After several years of litigation, the California Court of Appeal, Fourth Appellate District, Division One ("Court") found that environmental analyses within the Project's FEIR complied with the California Environmental Quality Act ("CEQA") except for one issue related to its Green House Gas ("GHG") mitigation measures. (Elfin Forest Harmony Grove Town Council et al. v. County of San Diego and RCS, 37-2018-00042927, Court of Appeal, Fourth Appellate District (Division One), filed October 14, 2021).

This report updates the 2018 Final Greenhouse Gas (GHG) Analyses Report using an updated version of California Emissions Estimator Model (CalEEMod), Version 2020.4.0[2]. The 2020 version is a similar model with updated emission factors. However, using the 2020 version to model the Project's emissions is a more conservative approach than using subsequent updated versions that apply emission factors that are generally lower compared to the 2020 model.

Substantive modifications to the earlier study are therefore extremely focused. Topical elements of the prior study that were previously approved by the BOS and determined by the Court to be adequate for CEQA include the following:

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[1] The 2017 report was approved with the 2018 amendments and is therefore referred to as the 2018 GHG analysis.
[2] Since this Project analysis was started, an updated version of CalEEMod has been released by SCAQMD. The updated version of the model Version 2022.1 is the latest update to CalEEMod and brings a new web-based platform, with many new features and components. In addition, the model includes updated emission factors which generally are lower when compared to the 2020 model. As a result, the 2022.1 version and future subsequent updates of CalEEMod would estimate lower Project GHG emissions once fully operational when compared to the model used in this analysis. Therefore, due to the conservative nature of this analysis, the use CalEEMod 2020 is valid under CEQA.

- GHG analysis approach.

- A three-year construction period, with duration of specific construction efforts and specified associated construction equipment.

- Traffic generation information (average daily trips, vehicle miles traveled, and associated roadway effects).

- Sequestration effects during construction and subsequent landscaping.

- CEQA thresholds of significance (Net Zero GHG emissions taking into consideration GHG reduction measures).

As noted, the Project's estimated three-year construction period will remain the same as in the 2018 FEIR, however, construction has been updated to commence in the fall of 2025 and could be completed in 2029. The first full year of operations would be expected in 2030. The construction activities would result in GHG emissions primarily from the use of off-road construction equipment, on-road hauling and vendor trucks, and worker vehicles. Since emission factors for pollutants generated by construction equipment are generally reduced over time, the modeling, which reflects a later start date for construction, shows reduced construction emissions. If construction were to be further delayed or were to take a longer duration than proposed, the emissions are anticipated to be reduced, rendering this a conservative analysis. In addition, this analysis includes additional construction assumptions from the installation of solar panels, which were excluded in the previous studies.

The first full year of Project operations is expected to be 2030 and would generate GHG emissions from area sources (landscape maintenance), energy sources (electricity consumption), mobile sources, water supply and wastewater treatment, and solid waste.

The Project Applicant(s) have responded to the California Court of Appeal decision with proposed modifications to the Project's GHG reduction measures. The Project will offset 100 percent of the Project's GHG emissions with the implementation of previously identified Project design features (PDFs), updated as applicable, and a new mitigation measure (Mitigation Measure GHG MM-1) consistent with select guidance from CARB's *2022 Scoping Plan to Achieve Carbon Neutrality* (2022 Scoping Plan), Appendix "D" Local Actions.

This analysis uses a different strategy to mitigate GHG emissions from the 2018 FEIR, which focused on strategies to reduce or offset electrical and natural gas emissions using solar within the Project site and the purchase of offsite GHG reduction credits for remaining Project emissions.

The current Project maximizes onsite GHG reductions (i.e., increased and more efficient photovoltaic solar panels) and mitigates any remaining GHG emissions that cannot be fully reduced onsite to zero by installing solar on existing facilities outside of the Project site. These existing facilities would not otherwise be required to install solar panels and are located within San Diego County. This strategy allows the Project to achieve a zero net GHG emission completely within San Diego County. This is possible because all relevant GHG emissions equate to CO_2e values which may be generated from any source including electrical, area, mobile, waste, water, and generator uses. The goal is to reduce any Project generated net increase in GHG emissions in the County based on the requirements specified in the CEQA statute, Guidelines, and case law – e.g., not otherwise required (see CEQA Guidelines section 15126.4(c)(3)); enforceable (see CEQA Guidelines section 15126.4(a)(2)); supported by substantial evidence; etc.

The original PDFs identified in the 2018 FEIR were updated as appropriate, and additional PDFs have also been incorporated into the Project. For example, 2018 PDFs based on outdated regulations have been updated (See revised PDF 8, the requirement to use Title 24 (2016) for instance PDFs, 10 and 15).

The list of applicable GHG-related PDFs for the Project is taken verbatim from the 2018 FEIR (Section 2.7 specifically) except for several 2018 PDFs that are outdated or not relevant and have been either excluded or revised (specifically PDFs 8, 10, 13 and 15). These 2018 GHG PDFs now include and "R" indicating they have been revised.:

<u>Construction Related GHG PDFs</u>

1. Construction equipment shall be operated in accordance with CARB's Airborne Toxic Control Measure (ATCM) that limits diesel-fueled commercial motor vehicle idling. In accordance with the subject ATCM (see Cal. Code Regs., tit. 13, §2485), the drivers of diesel-fueled commercial motor vehicles meeting certain specifications shall not idle the vehicle's primary diesel engine for longer than five minutes at any location. The ATCM requires the owners and motor carriers that own or dispatch such vehicles to ensure compliance with the ATCM requirements.

2. Tier III or higher construction equipment will be used, with the exception of concrete/ industrial saws, generator sets, welders, air compressors, or construction equipment where Tier III or higher is not available.

3. To the extent feasible, diesel equipment fleets that exceed existing emissions standards will be utilized when commercially available in the San Diego region.

4. To the extent feasible, electric and renewable fuel powered construction equipment will be utilized when commercially available in the San Diego region.

5. To the extent practicable and feasible, electricity will be used to power appropriate types and categories of construction equipment (e.g., hand tools).

6. As a PDF, the Applicant will develop and provide to all homeowners an informative brochure to educate homeowners regarding water conservation measures, recycling, location of the electric vehicle charging stations, location of outdoor electric outlets to promote using electrical lawn and garden equipment, and location of nearby resources such as dining and entertainment venues, small commercial centers, and civic uses to reduce vehicle miles traveled.

7. The Project will comply with County Municipal Code Section 68.508-68.518. A Construction and Demolition Debris Management Plan and a refundable performance guarantee will be developed by the Construction Contractor prior to building permit issuance and implemented to divert debris from construction and demolition away from landfills. The plan will require that 90 percent of inerts and 70 percent of all other materials from the Project are recycled.

Operational Related GHG PDFs

8R. The Proposed Project will comply with the California Title 24 Energy Code in effect at the time of building permit application. The following energy efficient items will be included in all residential units: improved HVAC systems with sealed (tight) air ducts; enhanced ceiling, attic and wall insulation; install energy conserving appliances such as whole house fans; high-efficiency water heaters (tankless water heaters); energy-efficient three coat stucco exteriors; energy efficient appliances; programmable thermostat timers; and high-efficiency window glazing.

(NOTE: The previous PDF required the Project to comply with the 2016 Title 24. The 2018 PDF did not indicate that the Project will comply with the latest California Energy Code in effect at the time of building permit application. This revision indicates that the Project would utilize the latest Code when building permits are requested by the Project. Currently the latest code applicable to this Project as of the date of this report is Title 24 (2022) which went into effect on January 1, 2023.)

9. Roof anchors and pre-wiring to allow for the installation of PV systems where such systems are not installed as part of Project implementation will be provided on additional non-residential structures (e.g., if an on-site WTWRF is approved as part of the Project).

10R. The Center House parking area will include eight 19.2 kW Level 2 electric vehicle (EV) charging stations (serving two parking spaces). The Project will also install a Level 2 EV charging station (220-volt chargers) within the garage of each of the residential units (453 total).

(NOTE: The revision increases the number of EV Charging stations from two to eight within the Center House parking area. The project will also now install charging stations within each of the residential units instead of providing the plumbing for such units.)

11. The Project's outdoor landscaping plan will use turf only in sports field, dog park and park/recreation areas; maximize drought-tolerant, native, and regionally appropriate plants through planting in conformance with the Project Conceptual Landscape Plan and the County's Water Conservation and Landscape Design Manual; and incorporate weather-based irrigation controllers, multi-programmable irrigation clocks, and high efficiency drip irrigation systems. At the time of final inspection, a manual will be placed in each building that includes, among other things, information about water conservation. The Project shall submit a Landscape Document Package that complies with the referenced County Ordinance and demonstrates a 40 percent reduction in outdoor use. The Landscape Document Package shall be submitted to the County for review and approval prior to issuance of any building permits and compliance with this measure shall be made a condition of the Project's approval.

12. The Project will utilize reclaimed water from the proposed WTWRF (or the existing HGV WRF) for outdoor irrigation.

13R. The Project will install rooftop solar PV panels (a photovoltaic solar system) on all residential units within the project to produce a total of 4,165kW of solar power.

(Note: According to ConSol's 2023 report, the Project is capable of installing up to 4,165 kW of solar power on all residential rooftops within the HGVS development (ConSol, 2023) (See: Photovoltaic Systems – Onsite Solar (2024). The increased capacity is the result of the incorporation of 360-watt panels instead of the original 285-watt panels. See also new PDF 27 below; the Project will not install natural gas onsite, including residential and the Center House.

14. Project potable water use will be reduced by 20 percent through installation of low-flow water fixtures, reduction of wastewater generation by 20 percent, installation of low-flow bathroom fixtures, and installation of weather-based smart irrigation control systems.

15R. As a matter of regulatory compliance, the Project would comply with Section 5.106.5.2 of the latest CALGreen Code in effect at the time of building permit application which requires the provision of designated parking for shared vehicles and clean air vehicles. This will occur at the Center House and Project parks.

(NOTE: The previous PDF requires the Project to comply with the 2016 California Green Building Standards Code (CALGreen Code). This revision indicates that the Project would utilize the latest CALGreen Code when building permits are requested by the Project. Currently the latest code applicable to this Project as of the date of this report is CALGreen Code (2022) which went into effect on January 1, 2023.)

16. As discussed in the Specific Plan, the Project will provide bicycle parking facilities and bicycle circulation improvements to encourage the use of bicycles (see also *Improvement Plans*).

17. Marked crosswalks connecting the east and west sides of Country Club Drive will be located from each of the Project entries to the future multi-use trail on the west side of the road to accommodate pedestrians/equestrians in crossing the road.

18. The Project's parking facilities will be required to comply with the County's Parking Design Manual (County of San Diego, 2013) that requires parking areas to minimize the heat island effect that results from asphalt and/or large building block surfaces such as parking lots.

19. The Project will provide electrical outlets in all residential backyards and within the common areas of multi-family development areas.

20. Areas for storage and collection of recyclables and yard waste will be provided.

21. The Landscaping Plan for the Project will include the installation of a minimum of 2,045 trees within the Project site.

22. The HOA will provide two electrical vehicles that will be sited at the Center House for use by residents for service that further connects various Project components, land uses, parks/open spaces, and the retail/commercial uses of HGV and HGV South. The vehicles will be provided to the HOA with the issuance of the first occupancy permit and the future provision and maintenance of such vehicles shall thereafter be the responsibility of the HOA in accordance with the CC&Rs. The vehicles will be available for use based upon a self-service check in system utilizing HOA identification cards. This program will terminate

when a transit linkage is proposed by the local transit district.

23. An area within the developable portion of the Center House will be reserved for dedication for a transit stop for bus service when a local transit line is extended to service the HGV/HGV South Village area. The Project's proposed circulation network of sidewalks, trails, and bicycle routes will provide connections to the transit stop to further provide a regional alternative transportation system.

24. The Project shall submit building plans illustrating that the Project would install one rain barrel per every 500 square feet of available roof area provided that State, regional or local incentives/rebates are available to fund the purchase of such rain barrels and roof area is available to feasibly install the barrels.

25. The HOA will provide informational materials on SANDAG's rideshare programs like iCommute. The Applicant will develop and provide to all homeowners an informative brochure, approved by the County, to educate homeowners regarding water conservation measures, recycling, location of the electric vehicle charging stations, location of outdoor electric outlets to promote using electrical lawn and garden equipment, and location of nearby resources such as dining and entertainment venues, commercial centers, and civic uses to reduce Vehicle Miles Traveled (VMT).

New 2024 PDFs have also been included in this Project to further reduce GHG emissions beyond what was analyzed in 2018:

<u>2024 New GHG PDFs</u>

26. The Project will **not** install wood or natural gas burning hearth options in residential units.

27. Natural gas lines will **not** be installed onsite (Project will be 100 percent electric).

28 The Project will install rooftop solar PV panels (a photovoltaic solar system) on the Center House to the maximum extent feasible based on its final design.

(Note: The residential units within the Project will supply 100 percent of the electricity needs for both the residential units and the Center House. Although the installation of the PV panels on the Center House will offer an additional reduction in electricity needs, no credit has been taken for this savings. The exact rooftop capacity of the Center House is unknown at this time until detailed plans for the Center House are provided.)

TIMING: The design measures described above shall be incorporated into the site plan, building plans and landscape plan for the Project as applicable to ensure implementation. MONITORING: Prior to issuance of each permit, consistency with the applicable plans and the PDFs will be confirmed by the County. The County of San Diego Planning & Development Services (PDS) will ensure that the sustainable design measures on all such plans for the Project are implemented. PDS will ensure that the Landscape Plans are in compliance with the measures.

After incorporation of all the onsite PDFs (2018, 2018 Revised and 2024), the Project-related construction activities are estimated to generate approximately 3,701.36 total metric tons (MT) of carbon dioxide equivalent (CO_2e). Construction emissions are amortized over 30 years per South Coast Air Quality Management District emissions (SCAQMD, 2008), such that the proposed construction activities would contribute an average of 123.38 MT per year of CO_2e emissions to the Project's total GHG emissions. Project related operational and amortized construction GHG emissions are estimated to generate 1,037.72 MT CO_2e per year with the incorporation of the PDFs. All calculation details are provided in Section 5 of this report.

CEQA Guidelines recognize that in appropriate situations, offsite actions may be used as attenuation for GHG emissions. CEQA Guidelines Section 15126.4(c)(3), expressly authorizes the use of offsite measures to mitigate GHG emissions, and Section 15126.4(c)(2) states that reductions in emissions may result "from a project through implementation of project features, project design, or other measures…". CARB's *2022 Scoping Plan* Appendix "D" Local Actions also recognizes that:

> "Local, ***offsite*** mitigation measures implemented in the communities in which a project's impacts occur have the added potential co-benefit of reducing emissions of toxic air contaminants and criteria air pollutants, which will improve health and social and economic resiliency to climate-related impacts. Verification of local mitigation can also be more straightforward than verification of mitigation that is outside of the jurisdictional boundaries of the lead agency."

Among the many offsite local measures that are considered in the 2022 Scoping Plan, is the retrofitting of existing building(s) with solar panels. (Appendix D; 2022 Scoping Plan). These panels can be equipped with solar monitoring systems. Such systems provide a real-time verification of solar energy production that can verify solar production and provide documentation to the appropriate party.

Although similar types of incentives (retrofitting existing nonresidential buildings with solar panels) are under consideration in the County's Draft Climate Action Plan (CAP), no current federal, state, or local regulation requires or mandates existing and operating buildings to install solar panels to convert their current electrical sources. Policy E-2 of the Draft CAP addresses

energy efficiency and electrification in the unincorporated area. Energy Goal E-2.2 proposes amendment of County regulations "to require (Tier 2) CALGreen or similar energy efficiency requirements for existing development projects with qualifying improvements" and for "[d]eveloping a program by 2026 to incentivize building electrification and energy efficiency." Additionally, Policy E-3 of the Draft CAP focuses on increasing renewable energy use, generation, and storage. This includes expanding streamlined solar permitting processes and incentivizing renewable energy installations on low-income homes. Please note that this analysis does not rely on the County's Draft CAP, which is currently under consideration for adoption by the County. It does, however, demonstrate that the Project is consistent with the County's climate goals.

The Project would be required to install an on-site photovoltaic system on an existing building, which is not otherwise mandated, thereby supporting energy efficiency and savings for the off-site owner. This would occur without the need for the off-site property owner to propose to construct "qualifying improvements" on the existing structure, which could trigger the installation of such solar panels as outlined in the Draft CAP. This would result in capturing existing buildings that would not be captured otherwise.

The Draft CAP does not ensure the ongoing monitoring and maintenance of such improvements, as does the Project's mitigation measure. Ongoing maintenance would be guaranteed through various mechanisms outlined in the mitigation measure. If any solar panels need to be replaced, they will have an equivalent or higher rating than the initially installed panels, thereby achieving similar or higher reductions. A monitoring system that will indicate when one or more panels (aka "modules") is not producing as much energy as others and tracks a system's performance over time will also be required. There are three main types of solar panel monitoring systems: those from (1) equipment manufacturers, or from (2) from qualified installers, and (3) standalone home energy monitors. Each of these typically contains module-level monitoring capabilities with a web portal and mobile application for convenient access to solar production; and can provide alerts to the installer, the owner and/or any authorized reviewer if there are anomalies in solar energy production.

The Project maximizes emission reductions based on today's feasible technologies as identified in the PDFs referenced above. In addition to the PDFs identified above, in order for the Project to achieve carbon neutrality (i.e., no net GHG emissions through offsetting to zero); the Project Applicant(s) shall comply with the following:

GHG MM-1 – Prior to the issuance of the first grading permit for the Project, compliance with GHG MM-1 shall be as follows:

a) Solar panel(s), capable of generating a total of 1,720 KW, shall be installed on an existing building(s) that does not currently utilize solar energy, located within the County of San

Diego, that is not otherwise required by law or regulation through statute, regulation, existing local program, or requirement to install such solar panels. The building shall have an estimated life of at least thirty years as verified by a third-party building inspector. The solar system installation shall be completed by a licensed, bonded and insured installer; and equipped with a monitoring system to notify the property owner upon which the building is located ("property owner"), the installer, and the HGV South HOA with monitoring data. The solar panels will be registered with an extended warranty for the maximum period of time feasible, not less than thirty years, and the panels will be dated at the time of installation. Consistent with the North American Board of Certified Energy Practitioners (NABCEP) standards, the installation company shall have a minimum of three years' experience.

b) The identified building(s) shall be located within the County boundaries. A Covenant shall be recorded against the property, for the benefit of the Project site, stating that the Project-installed solar panel(s) must remain on the building(s) and operational for a period of thirty years. This Covenant runs with the land, not the owner, and will pass with the parcel in the event of sale. The Covenant shall also require the property owner to allow the HOA or representative (including the County) to conduct annual baseline maintenance inspections, monitor, repair or replace the system as described in e), below, during that thirty-year period. The Covenant shall also include the following provisions:

i) The property Owner shall allow the HOA or County to access the system if maintenance is indicated by the monitoring system or when issues are otherwise noted by the property owner;
ii) the property owner shall notify the HOA and County if any repair or maintenance events become known to the property owner;
iii) the property owner shall maintain a policy of insurance (or include the addition of such panels to the coverage limits of the building's current insurance policy) to cover against the repair or replacement of the solar system resulting from physical damage (e.g., caused by severe weather conditions, vandalism, fire and other events) and name the HOA and County as additional insureds;
iv) the property owner shall maintain and/or replace such panels with an equivalent or higher rated panel as necessary if the repair work is not completed by the HOA.
v) if the identified building is vacated or abandoned, or the building is demolished before the thirty-year period, the property owner shall be required to install an equivalent unit (and provide insurance for the same) on one or more existing buildings that meet the same criteria identified in a); within the County, that would generate an equivalent amount of solar power for the remaining term of the thirty-year period. The property owner shall be required to record a Covenant with the same provisions against the property upon which the new building with the

replacement solar unit is located, for the remaining term of the thirty-year period and notify the HOA and County of the same, prior to the vacation, abandonment, or demolition of the existing building.

vi) any new purchaser of the property shall notify the HOA and County that it has acquired the site and acknowledge its obligations under the Covenant, including allowing access for solar panels maintenance for the duration of the thirty-year term.

c) The Applicant is required to fund and provide a report to the County that provides the following information:

(i) the address of the specific building(s) upon which the installation of the solar panels required by MM-1 have been installed;

(ii) evidence that the building(s) is/are not required by law or regulation through statute, regulation, existing local program, or requirement to install such solar panels (i.e., additional);

(iii) the amount of GHG emissions that will be reduced by the installation of such panels,

(iv) a copy of the Covenant recorded against the property that includes the information required by MM-1 b) above,

(v) a copy of the third-party building inspector (verification) that the life of the building be at least thirty years;

(vi) a copy of the Project "Covenants, Conditions, and Restrictions" (CC&Rs or Declaration) of the HOA that include the provisions identified in paragraph e) below, including the HOA's budget that shows the reserve set aside for the purposes described in paragraph f) below, and

(vii) a copy of the solar installation contract with a licensed and bonded installer and warranty and insurance policy, along with the approved solar permit. The report shall include calculations conducted by a technical GHG expert using County-approved models and/or methodologies.

d) The Applicant shall comply with County Code Section 6954, Solar Energy Systems, and obtain any required permits. The installation of such a PV system shall be required to qualify for a CEQA exemption, such as PRC 21080.35 at the time of application for installation.

e) The CC&Rs or Declaration for the Project shall be submitted to the County for its review prior to the approval of the first grading permit that includes the following provisions:

1. The HOA shall monitor the solar system using the module-level monitoring application described above for a thirty-year period that commences from the

project's start of operations. The HOA shall keep records of solar power production during this period.

2. If any solar equipment is found to need repair or replacement, the HOA shall be responsible for such work being completed as needed in order to maintain the equivalent amount of solar power generated by such panels. The HOA shall work with the property owner, installation company and/or insurance entity to ensure that the repairs are completed in a timely manner. If the repair work is not covered by the warranty or paid for by the insurance carrier, the HOA shall be responsible for ensuring that the repair work is completed.
3. An annual maintenance and monitoring program shall be conducted by a licensed and bonded solar company (the Covenant requires the property owner to allow this annual inspection). A report shall be prepared by the solar company with the results of the inspection, including whether any repairs are needed and the amount of solar power generated by such panels. The report will be provided to the HOA, property owner, and County.
4. During maintenance, the HOA or representative shall replace (with an equivalent or higher rating panel), or repair any of the solar panels as needed in order to maintain the equivalent amount of solar power generated by such panels.
5. Any revisions to the above-described provisions of the CC&Rs shall be approved by the County, require the consent of 100 percent of the holders of first mortgages or the property owners within the HOA, and require the HOA to retain the same amount of funds set aside by this mitigation measure for the same purposes for the thirty year period.
6. The County shall be named as a party to said Declaration authorizing the County to enforce the terms and conditions of the Declaration in the same manner as the HOA or any owner within the subdivision.
7. The HOA shall maintain the budgeted reserve described in paragraph f) below for the exclusive uses described below. The County may use such funds should it decide to enforce said obligations.
8. These CC&Rs shall be confirmed by the County prior to recording the first subdivision map.

f) Applicant shall submit the initial HOA budget subject to Department of Real Estate (DRE) rules, for review and approval by the County that includes a set aside fund of $300,000, for the purpose of repairing or replacing any solar panels (see ***Attachment G***), should such work not be eligible for reimbursement from the property owner's insurance policy or warranty. The set aside funds may also be used to enforce the provisions of the Covenant and any insurance claim if needed. The amount of the set aside funds shall be adjusted each year by the HOA, based on the annual indexed increases in construction costs and expenses consistent with the California Construction Cost Index or similar construction industry standard index, through a reserve study prepared by a qualified consultant, hired

by the HOA as required by the DRE, provided however, in no event shall the reserve fund be increased more than 3 percent in a given year. This budgeted reserve amount shall be designated and restricted exclusively for the sole purposes set forth herein and may be used by the County should it decide to enforce the obligations of the property owner. If any amount of the set aside is used by the HOA or County for such purposes, the HOA shall replenish the fund with an amount equal to what has been withdrawn.

MONITORING: As provided for in the Mitigation Measure, the HOA shall be responsible for monitoring compliance with this mitigation measure and shall be responsible for taking such actions as necessary to enforce the Covenant placed on the property. Additionally, a fund shall be set aside by the HOA to ensure the funding needed to enforce this provision. The County shall also be named a party to the CC&Rs allowing the County to enforce the terms and conditions of the CC&Rs in the same manner as the HOA or any owner within the subdivision.

TIMING: The solar panel(s) shall be installed prior to the issuance of the Project's first grading permit.

GHG MM-1 is consistent with CARB's 2022 Scoping Plan that provides that if implementation of all feasible onsite GHG reduction measures is insufficient to reduce a project's impact to a less-than-significant level, the State recommends that the lead agency next explore options to fund or implement local, offsite direct GHG reduction strategies. Examples include local building retrofit programs targeting existing residential and non-residential buildings in the project's vicinity that result in the installation of solar panels and other such measures in exchange for being credited with the resulting GHG reductions in a project's CEQA analyses. There is value in improving an offsite and existing building, which is not a new building and that would not otherwise be required to have updated energy reductions. Such offsite mitigation measures, "are viable options for mitigation under CEQA and would not be double counted, provided they are not otherwise required by law or regulation and would not have happened but for the mitigation requirements of the project." (Section 4.1.2. of Appendix "D" of the CARB 2022 Scoping Plan) (CARB, 2022). Substantial evidence will be provided pursuant to subparagraph c of GHG MM-1 that the mitigation would not occur independently of the Project (i.e., that installation of solar panels on an existing building would not otherwise be required, consistent with the 2022 Scoping Plan).

As stated above, there are no federal, state, or local laws or policies that would require an ***existing*** commercial building to install solar panels as described in GHG MM-1. Solar PV and energy storage systems will be required on certain newly constructed commercial buildings with the update to Title 24, Part 6: Building Energy Efficiency Standards (the Energy Code), (effective January 1, 2023). Existing commercial buildings that fall within the requirements of Title 24 Part 6 may also be required to install solar panels (those that require building permits for qualified work such as modifications, reconstruction, or alteration work). Minor renovations are not subject

to such rules, and there are a number of exceptions that can still apply. Similarly, Energy Goal E-2.2 of the County's Draft Climate Action Plan applies only to existing buildings with "qualified improvement".

To conclude, the Project Applicant(s) shall be conditioned to implement the PDFs and GHG MM-1 identified in this report.

This Project is committed to a zero net gain in GHG emissions. Based on these findings, the Project would require mitigation and would be required to reduce or avoid GHG emissions within the County of San Diego by at least 1,037.72 MT CO_2e for the Project to meet a zero emission threshold. To reduce the emissions of the Project, solar panels will be required to be installed on a pre-existing building (or buildings) located offsite within the County of San Diego that would reduce GHG emissions by 1,038.20 MT CO_2e. This analysis determined that with 1,720 kW of renewable energy (i.e., solar PV) installed offsite, GHG emissions for the Project would be reduced to zero. More detail on this mitigation measure is provided in Section 5 of this report. It is expected that a rooftop area within the County of San Diego as large as 142,760 SF would accommodate a solar PV system reaching 1,720 kW.

This update to the GHG analysis was prepared according to guidelines established within the California Global Warming Solutions Act of 2006 – Assembly Bill (AB) 32 (AB32), Senate Bill 97 (SB97), California Environmental Quality Act (CEQA) and SB32. GHG emissions analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). As indicated above, both CH_4 and N_2O are converted to equivalent amounts of CO_2 and are identified as CO_2e (carbon dioxide equivalent).

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this GHG assessment is to provide documentation in support of the County's CEQA compliance requirement. The proposed Project's GHG emissions impacts are based on the recommendations provided in Appendix G of the CEQA Guidelines which are (14 CCR 15000 et seq.):

1. Will the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

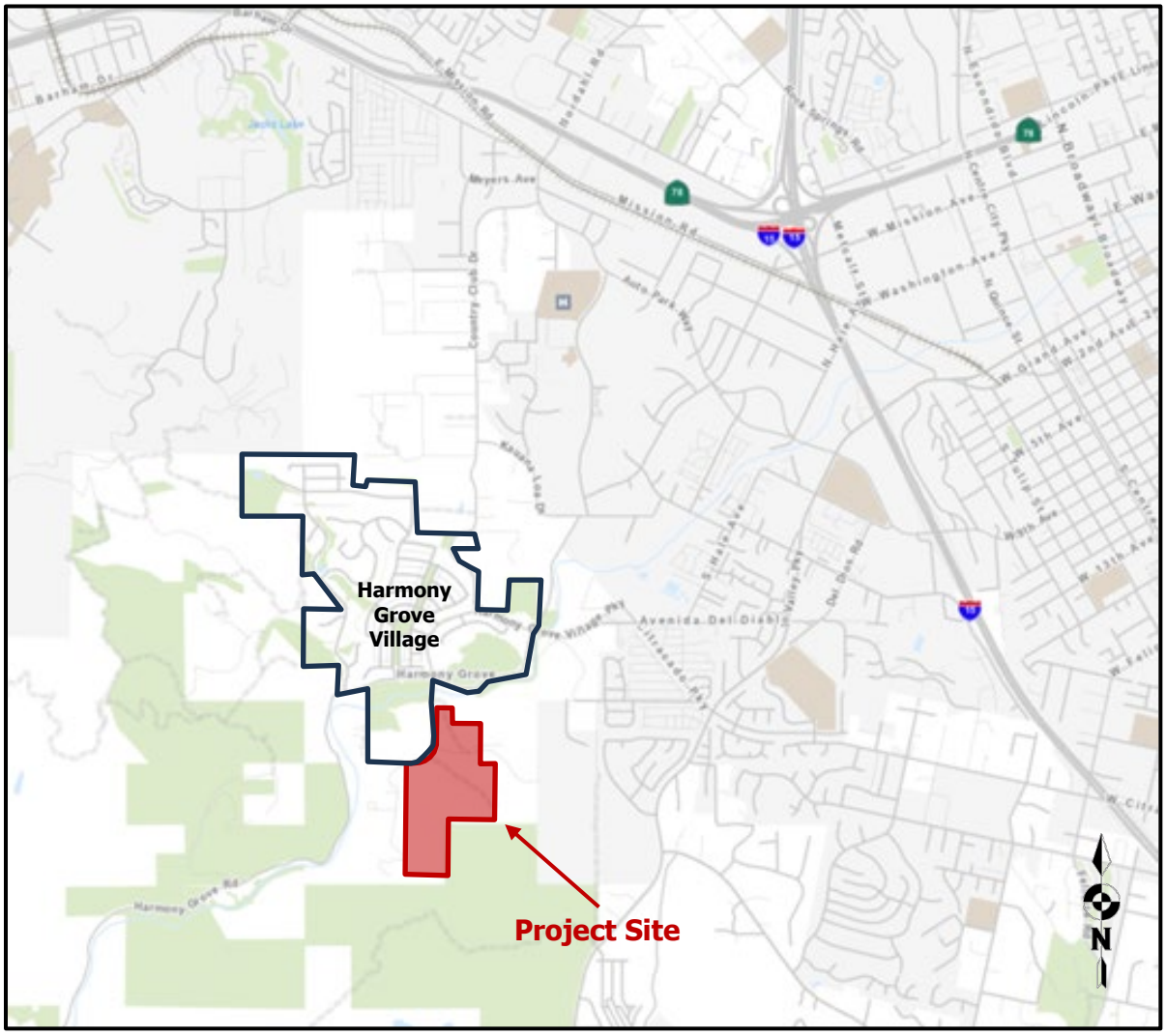
2. Will the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

1.2 Project Location

The Project is located on a 111-acre site which encompasses four separate Assessor Parcel Numbers (APN) numbered: 235-011-06-00, 238-021-08-00, 238-021-09-00, and 238-021-10-00. The Project site is within an unincorporated portion of San Diego County (County) in the community of Harmony Grove. The Project is located within walking distance of Harmony Grove Village (HGV), an existing village that has 742 homes and other village-supporting commercial and recreational uses. The Proposed Project will expand, complement, and support the existing, fully occupied Harmony Grove Village Specific Plan, located directly north and west. The Proposed Project will diversify the mix of housing opportunities and provide limited commercial/civic uses that are compatible with the existing elements of the adjacent Harmony Grove Village Specific Plan area.

The Project is also approximately two miles from a confluence of regional transportation connectors (Interstate 15 and State Route 78) and a concentration of urban and mixed land uses that include Palomar Hospital, Stone Brewing, numerous "big box" retail stores with surrounding retail, apartment complexes, multiple mobile home parks, a large-scale automobile mall, an expansive light-industrial/commercial employment center (Escondido Research and Technology Center) and California State University San Marcos. The western Project boundary abuts Country Club Drive. Primary access to the Project vicinity is provided by Harmony Grove Road and Country Club Drive. A general Project vicinity map is shown in Figure 1-A of this report.

Figure 1-A: Project Vicinity Map



Source: (SanGIS, 2023)

1.3 Project Description

The Project proposes 453 dwelling units (single-family homes and attached housing)[3]; 5,000 square feet of commercial/civic uses (Center House); 2 miles of multi-use trails; 35 acres of biological open space; 36 acres of common area; and 4 acres of parks. The 5,000 square foot Center House will contain a minimum of 1,500 square feet of commercial uses. The Center House is designed to feature a small commercial use, such as a café, coffee shop, hair or nail salon, or day spa. The residents within the immediate and surrounding community would be

[3] This exceeds the number of homes allowed on the site under the Geneal Plan and under existing zoning. Please see additional discussion in Section 4.2 of this report.

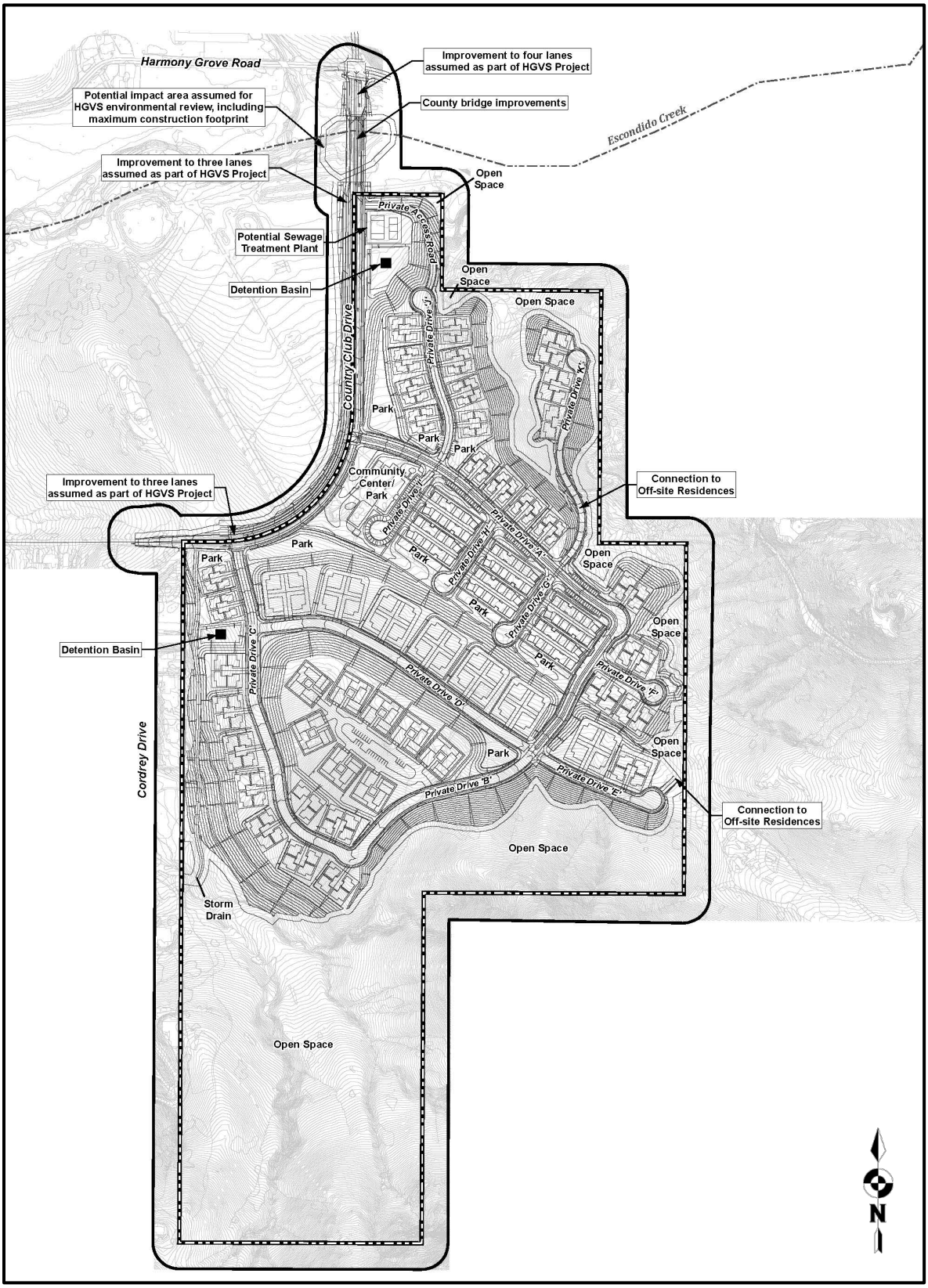
able to visit the commercial business without generating additional primary vehicle trips. The residential units would be a mix of multi and single-family units.

The Project site design includes a potential onsite wastewater treatment and water reclamation facility (WTWRF) located in the northwestern portion of the site, with two design alternatives for connecting to the existing Harmony Grove Village facility. The HGV South onsite facility would treat all wastewater generated onsite (up to 180,000 gallons per day (GPD)) and produce reclaimed effluent per regulatory standards for irrigating onsite landscaping. Two potential options include an Aeromod facility or a Major Ovivo type plant, both requiring a wastewater discharge permit. Regardless of the reclamation location (onsite or at HGV), reclaimed water would still be provided to the Project.

As part of the potential onsite WTWRF, two standby diesel generators were modeled for emergency use, representing the worst-case scenario and consistent with the original CEQA analysis. GHG emissions were assumed based on CalEEMod, which calculates water and wastewater uses based on land use. Any construction emissions are included in the construction assumptions discussed later in this report.

The Project site plan is shown in Figure 1-B. All construction phases of the proposed Project are now anticipated to start as early as the fall of 2025 and be completed as early as 2029. This assumes the shortest duration for construction, which actually may take longer. If construction were to be further delayed or were to take a longer duration than proposed, the emissions are anticipated to be reduced, rendering this a conservative analysis. The first full year of operations is expected in 2030.

Figure 1-B: Proposed Project Site Layout



Source: (Project Design Consultants, 2018)

1.4 Project Design Features

The Project would implement PDFs as approved in the 2018 FEIR which are identified in Section 2.7 of the FEIR.

Several of the 2018 PDFs that are outdated or not relevant and have been either excluded or revised (specifically PDFs 8, 10, 13 and 15). These 2018 GHG PDFs now include and "R" indicating they have been revised. In addition, the Project has added new PDFs as shown below.

Construction Related GHG PDFs

1. Construction equipment shall be operated in accordance with CARB's Airborne Toxic Control Measure (ATCM) that limits diesel-fueled commercial motor vehicle idling. In accordance with the subject ATCM (see Cal. Code Regs., tit. 13, §2485), the drivers of diesel-fueled commercial motor vehicles meeting certain specifications shall not idle the vehicle's primary diesel engine for longer than five minutes at any location. The ATCM requires the owners and motor carriers that own or dispatch such vehicles to ensure compliance with the ATCM requirements.

2. Tier III or higher construction equipment will be used, with the exception of concrete/ industrial saws, generator sets, welders, air compressors, or construction equipment where Tier III or higher is not available.

3. To the extent feasible, diesel equipment fleets that exceed existing emissions standards will be utilized when commercially available in the San Diego region.

4. To the extent feasible, electric and renewable fuel powered construction equipment will be utilized when commercially available in the San Diego region.

5. To the extent practicable and feasible, electricity will be used to power appropriate types and categories of construction equipment (e.g., hand tools).

6. As a PDF, the Applicant will develop and provide to all homeowners an informative brochure to educate homeowners regarding water conservation measures, recycling, location of the electric vehicle charging stations, location of outdoor electric outlets to promote using electrical lawn and garden equipment, and location of nearby resources such as dining and entertainment venues, small commercial centers, and civic uses to reduce vehicle miles traveled.

7. The Project will comply with County Municipal Code Section 68.508-68.518. A Construction and Demolition Debris Management Plan and a refundable performance guarantee will be developed by the Construction Contractor prior to building permit issuance and implemented to divert debris from construction and demolition away from landfills. The plan will require that 90 percent of inerts and 70 percent of all other materials from the Project are recycled.

Operational Related GHG PDFs

8R. The Proposed Project will comply with the California Title 24 Energy Code in effect at the time of building permit application. The following energy efficient items will be included in all residential units: improved HVAC systems with sealed (tight) air ducts; enhanced ceiling, attic and wall insulation; install energy conserving appliances such as whole house fans; high-efficiency water heaters (tankless water heaters); energy-efficient three coat stucco exteriors; energy efficient appliances; programmable thermostat timers; and high-efficiency window glazing.

(Note: The previous PDF required the Project to comply with the 2016 Title 24. The 2018 PDF did not indicate that the Project will comply with the latest California Energy Code in effect at the time of building permit application. This revision indicates that the Project would utilize the latest Code when building permits are requested by the Project. Currently the latest code applicable to this Project as of the date of this report is Title 24 (2022) which went into effect on January 1, 2023.)

9. Roof anchors and pre-wiring to allow for the installation of PV systems where such systems are not installed as part of Project implementation will be provided on additional non-residential structures (e.g., if an on-site WTWRF is approved as part of the Project).

10R. The Center House parking area will include eight 19.2 kW Level 2 electric vehicle (EV) charging stations (serving two parking spaces). The Project will also install a Level 2 EV charging station (220-volt chargers) within the garage of each of the residential units (453 total).

(Note: The revision increases the number of EV Charging stations from two to eight within the Center House parking area. The project will also now install charging stations within each of the residential units instead of providing the plumbing for such units.)

11. The Project's outdoor landscaping plan will use turf only in sports field, dog park and park/recreation areas; maximize drought-tolerant, native, and regionally appropriate plants through planting in conformance with the Project Conceptual Landscape Plan and the County's Water Conservation and Landscape Design Manual; and incorporate weather-based irrigation controllers, multi-programmable irrigation clocks, and high efficiency drip irrigation systems. At the time of final inspection, a manual will be placed in each building that includes, among other things, information about water conservation. The Project shall submit a Landscape Document Package that complies with the referenced County Ordinance and demonstrates a 40 percent reduction in outdoor use. The Landscape Document Package shall be submitted to the County for review and approval prior to issuance of any building permits and compliance with this measure shall be made a condition of the Project's approval.

12. The Project will utilize reclaimed water from the proposed WTWRF (or the existing HGV WRF) for outdoor irrigation.

13R. The Project will install rooftop solar PV panels (a photovoltaic solar system) on all residential units within the project to produce a total of 4,165kW of solar power.

(Note: According to ConSol's 2023 report, the Project is capable of installing up to 4,165 kW of solar power on all residential rooftops within the HGVS development (ConSol, 2023) (See: Photovoltaic Systems – Onsite Solar (2024). The increased capacity is the result of the incorporation of 360-watt panels instead of the original 285-watt panels. See also new PDF 27 below; the Project will not install natural gas onsite, including residential and the Center House.

14. Project potable water use will be reduced by 20 percent through installation of low-flow water fixtures, reduction of wastewater generation by 20 percent, installation of low-flow bathroom fixtures, and installation of weather-based smart irrigation control systems.

15R. As a matter of regulatory compliance, the Project would comply with Section 5.106.5.2 of the latest CALGreen Code in effect at the time of building permit application which requires the provision of designated parking for shared vehicles and clean air vehicles. This will occur at the Center House and Project parks.

(Note: The previous PDF requires the Project to comply with the 2016 California Green Building Standards Code (CALGreen Code). This revision simply indicates that the Project would utilize the latest CALGreen Code when building permits are requested

by the Project. Currently the latest code applicable to this Project as of the date of this report is CALGreen Code (2022) which went into effect on January 1, 2023.)

16. As discussed in the Specific Plan, the Project will provide bicycle parking facilities and bicycle circulation improvements to encourage the use of bicycles (see also *Improvement Plans*).

17. Marked crosswalks connecting the east and west sides of Country Club Drive will be located from each of the Project entries to the future multi-use trail on the west side of the road to accommodate pedestrians/equestrians in crossing the road.

18. The Project's parking facilities will be required to comply with the County's Parking Design Manual (County of San Diego, 2013) that requires parking areas to minimize the heat island effect that results from asphalt and/or large building block surfaces such as parking lots.

19. The Project will provide electrical outlets in all residential backyards and within the common areas of multi-family development areas.

20. Areas for storage and collection of recyclables and yard waste will be provided.

21. The Landscaping Plan for the Project will include the installation of a minimum of 2,045 trees within the Project site.

22. The HOA will provide two electrical vehicles that will be sited at the Center House for use by residents for service that further connects various Project components, land uses, parks/open spaces, and the retail/commercial uses of HGV and HGV South. The vehicles will be provided to the HOA with the issuance of the first occupancy permit and the future provision and maintenance of such vehicles shall thereafter be the responsibility of the HOA in accordance with the CC&Rs. The vehicles will be available for use based upon a self-service check in system utilizing HOA identification cards. This program will terminate when a transit linkage is proposed by the local transit district.

23. An area within the developable portion of the Center House will be reserved for dedication for a transit stop for bus service when a local transit line is extended to service the HGV/HGV South Village area. The Project's proposed circulation network of sidewalks, trails, and bicycle routes will provide connections to the transit stop to further provide a regional alternative transportation system.

24. The Project shall submit building plans illustrating that the Project would install one rain barrel per every 500 square feet of available roof area provided that State, regional or local incentives/rebates are available to fund the purchase of such rain barrels and roof area is available to feasibly install the barrels.

25. The HOA will provide informational materials on SANDAG's rideshare programs like iCommute. The Applicant will develop and provide to all homeowners an informative brochure, approved by the County, to educate homeowners regarding water conservation measures, recycling, location of the electric vehicle charging stations, location of outdoor electric outlets to promote using electrical lawn and garden equipment, and location of nearby resources such as dining and entertainment venues, commercial centers, and civic uses to reduce Vehicle Miles Traveled (VMT).

New 2024 PDFs have also been included in this Project to further reduce GHG emissions beyond what was analyzed in 2018:

2024 New GHG PDFs

26. The Project will not install wood or natural gas burning hearth options in residential units.

27. Natural gas lines will not be installed onsite (Project will be 100 percent electric).

28. The Project will install rooftop solar PV panels (a photovoltaic solar system) on the Center House to the maximum extent feasible based on its final design.

    (NOTE: The residential units within the Project will supply 100 percent of the electricity needs for both the residential units and the Center House. Although the installation of the PV panels on the Center House will offer an additional reduction in electricity needs, no credit has been taken for these savings. The exact rooftop capacity of the Center House is unknown at this time until detailed plans for the Center House are provided.)

TIMING: The design measures described above shall be incorporated into the site plan, building plans and landscape plan for the Project as applicable to ensure implementation. MONITORING: Prior to issuance of each permit, consistency with the applicable plans and the PDFs will be confirmed by the County. The County of San Diego Planning & Development Services (PDS) will ensure that the sustainable design measures on all such plans for the Project are implemented. PDS will ensure that the Landscape Plans are in compliance with the measures.

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Understanding GHGs

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period of time (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in the Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere. The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows:

a) As short-wave radiation emitted by the Sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation. GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth.

b) The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on the Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

c) Some GHGs are emitted exclusively from human activities (e.g., synthetic halocarbons). Others occur naturally but are found at elevated levels due to human inputs (e.g., carbon dioxide). Anthropogenic sources result from energy-related activities (e.g., combustion of fossil fuels in the electric utility and transportation sectors), agriculture, land-use change, waste management and treatment activities, and various industrial processes. Major GHGs include CO_2, CH_4, N_2O , and various synthetic chemicals (EPA, 2023).

The GHGs typically analyzed in a greenhouse gas study are CO_2, CH_4, and N_2O because they are emitted in the greatest quantities from human activities. A brief description of each GHG follows:

Carbon Dioxide (CO_2) is widely reported as the most important anthropogenic greenhouse gas because it currently accounts for the greatest portion of the warming associated with human activities. Carbon dioxide occurs naturally as part of the global carbon cycle, but human activities have increased atmospheric loadings through combustion of fossil fuels and other emissions sources. Natural sinks that remove carbon dioxide from the atmosphere (e.g.,

oceans, plants) help regulate carbon dioxide concentrations, but human activities can disturb these processes (e.g., deforestation) or enhance them (EPA, 2023).

Methane (CH_4) comes from many sources, including human activities such as coal mining, natural gas production and distribution, waste decomposition in landfills, and digestive processes in livestock and agriculture. Natural sources of methane include wetlands and termite mounds (EPA, 2023).

Nitrous Oxide (N_2O) is emitted during agricultural and industrial activities, as well as during combustion of solid waste and fossil fuels (EPA, 2023).

To simplify GHG calculations, both CH_4 and N_2O are converted to an equivalent amount of carbon dioxide, or CO_2e. CO_2e is calculated by multiplying the calculated levels of CH_4 and N_2O by a Global Warming Potential (GWP). GWPs for both CH_4 and N_2 are presented within the 2007 Intergovernmental Panel on Climate Change (IPCC) report as being 25 and 298, respectively (IPCC, 2007).The GWPs are incorporated within CalEEMod.

2.2 Climate

Climate within the San Diego Air Basin (SDAB) often varies dramatically over short geographical distances with cooler temperatures on the western coast gradually warming to the east as prevailing winds from the west heat up. Most of southern California is dominated by high-pressure systems for much of the year, which keeps San Diego mostly sunny and warm. Typically, during the winter months, the high-pressure system drops to the south and brings cooler, moister weather from the north. It is common for inversion layers to develop within high-pressure areas, which mostly define pressure patterns over the SDAB. These inversions are caused when a thin layer of the atmosphere increases in temperature with height. An inversion acts like a lid preventing vertical mixing of air through convective overturning.

Meteorological trends within the area generally show daytime highs ranging between 65ºF in the winter to approximately 88ºF in the summer with August usually being the hottest month. Daytime Low temperatures range from approximately 37ºF in the winter to approximately 59ºF in the summer. Precipitation is generally about 16 inches per year (WRCC, 2020). Prevailing wind patterns for the area vary during any given month during the year and also vary depending on the time of day or night. The predominant pattern though throughout the year is usually from the west or westerly (WRCC, 2018).

2.3 Existing Project Zoning

The site is currently zoned A70 (Limited Agriculture) and RR (Rural Residential) which allows for agricultural, open space, and large lot rural residential. The site is Semi-Rural Regional Category and the existing land use designations are Semi-Rural Residential (SR-0.5) and Rural Lands (RL-20). The Project site is approximately 111 acres, of which 110.5 acres is designated SR-0.5. Under the existing designation, the Project site could result in a potential maximum of 220 dwelling units, as constrained by slope and other environmental concerns.

A development of this size would be allowed under the General Plan and would result in GHG emissions.

3.0 CLIMATE CHANGE REGULATORY ENVIRONMENT

3.1 Federal

Massachusetts v. US Environmental Protection Agency (EPA)

On April 2, 2007, in *Massachusetts v. EPA*, the Supreme Court directed the EPA Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the federal Clean Air Act. On December 7, 2009, the EPA Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The Administrator found that elevated concentrations of GHGs such as CO_2, CH_4, N_2O, Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur hexafluoride (SF_6) within the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."

- The Administrator further found the combined emissions of GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Federal Vehicle Standards

On May 14, 2007, Executive Order (EO) 13432 was signed by President George Bush. This EO directed the EPA, the Department of Transportation (DOT), and the Department of Energy (DOE) to establish GHG emissions regulations from the transportation sector.

This EO led to the Federal Government establishing stricter fuel efficiency and GHG emissions regulations for vehicles manufactured starting in 2012 which effectively updated the Corporate Average Fuel Economy (CAFE) Standards which was first enacted in 1975 (DOT, 2014). These CAFE standards have been updated regularly and each time they are, Vehicle efficiency requirements become more stringent.

In May 2022, the National Highway Traffic Safety Administration (NHTSA) published rules finalizing revised fuel economy standards for passenger cars and light trucks for 2024-2025 and the standards increase at a rate of 8 percent per year. Then in 2026 an increase in the

efficiency standard by 10 percent would be required. NHTSA estimates that the industry fleet-wide average will be 49 miles per gallon (MPG) in 2026. (NHTSA, 2022).

In July 2023, NHTSA proposed new CAFE standards for passenger cars and light trucks built in model years 2027-2032, and new fuel efficiency standards for heavy-duty pickup trucks and vans built in model years 2030-2035. If finalized, the proposal would require an industry fleet-wide average of approximately 58 miles per gallon for passenger cars and light trucks in MY 2032, by increasing fuel economy by 2 percent year over year for passenger cars and by 4 percent year over year for light trucks. (NHTSA, 2023)

3.2 State

State Greenhouse Gas Targets

Executive Order S-3-05

EO S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.

AB 32 and CARB's Climate Change Scoping Plan

In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, the CARB is responsible for and is recognized as having the expertise to carry out and develop the programs and regulations necessary to achieve the GHG emissions reduction mandate of AB 32. Therefore, in furtherance of AB 32, CARB adopted regulations requiring the reporting and verification of GHG emissions from specified sources, such as industrial facilities, fuel suppliers and electricity importers (see Health & Safety Code Section 35830; Cal. Code Regs., tit. 17, §§95100 et seq.). CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, at the State level CARB will continue monitoring compliance and enforcing rules, regulation, emission limitations, emission reduction measures, or market-based compliance mechanisms adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for the year 2020 consistent with the determined 1990 baseline (427 million metric tons (MMT) CO_2e). CARB's adoption of this limit is in accordance with Health and Safety Code Section 38550.

Further, in 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (*Scoping Plan*) in accordance with Health and Safety Code Section 38561. The *Scoping Plan* established an overall framework for the measures that will be implemented to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The 2008 *Scoping Plan* evaluated opportunities for sector-specific reductions, integrated all CARB and Climate Action Team[4] early actions and additional GHG reduction features by both entities, identified additional measures to be pursued as regulations, and outlined the role of a cap-and-trade program. The key elements of the 2008 *Scoping Plan* include the following (CARB, 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards.

2. Achieving a statewide renewable energy mix of 33 percent.

3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions.

4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.

6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

In the 2008 *Scoping Plan*, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise projected 2020 emissions level; i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations (referred to as "Business-As-Usual" [BAU]). For purposes of

[4] The Climate Action Team is comprised of state agency secretaries and heads of state agencies, boards and departments; these members work to coordinate statewide efforts to implement GHG emissions reduction programs and adaptation programs.

calculating this percent reduction, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

In the 2011 Final Supplement to the *Scoping Plan's* Functional Equivalent Document, CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations (CARB, 2011). Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from the BAU conditions. When the 2020 emissions level projection was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewables Portfolio Standard (12 percent to 20 percent), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions.

In 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* (*First Update*). The stated purpose of the *First Update* was to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050." The *First Update* found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the *First Update*, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050." Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and, (6) natural and working lands. The *First Update* identified key recommended actions for each sector that will facilitate achievement of EO S-3-05's 2050 reduction goal.

Based on CARB's research efforts presented in the *First Update*, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050." Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

As part of the *First Update*, CARB recalculated the state's 1990 emissions level using more recent global warming potentials identified by the IPCC. Using the recalculated 1990 emissions level (431 MMT CO_2e) and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent (instead of 28.5 percent or 16 percent) from the BAU conditions.

In November 2017, CARB released *California's 2017 Climate Change Scoping Plan* (*Second Update*) for public review and comment (CARB, 2017). This update proposes CARB's strategy for achieving the state's 2030 GHG target as established in SB 32 (discussed below). The strategy includes continuing the Cap-and-Trade Program through 2030[5], inclusive policies and broad support for clean technologies, enhanced industrial efficiency and competitiveness, prioritization of transportation sustainability, continued leadership on clean energy, putting waste resources to beneficial use, supporting resilient agricultural and rural economics and natural and working lands, securing California's water supplies, and cleaning the air and public health.

When discussing project-level GHG emissions reduction actions and thresholds, the *Second Update* states "[a]chieving no additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development." However, the *Second Update* also recognizes that such an achievement "may not be feasible or appropriate for every project and the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA." CARB's Governing Board adopted the *Second Update* in December 2017.

CARB's Climate Change Scoping Plan Update 2022

In 2022 California released the latest scoping plan update which lays out the sector-by-sector roadmap for California to achieve carbon neutrality by 2045. This plan, addressing recent legislation and direction from Governor Newsom, extends and expands upon these earlier plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045 (CARB, 2022). The plan suggests that bold steps are required by the State and calls for the need of vast research and development with respect to methods of capturing CO_2. The plan calls for a need to take an unprecedented transformation and aggressively seek reductions to reduce the need of fossil fuels by moving to zero emission transportation, electrifying the cars, buses, trucks and trains. The plan requires partnership and collaboration

[5] In July 2017, AB 398 was enacted into law, thereby extending the legislatively authorized lifetime of the Cap-and-Trade Program to December 31, 2030.

with the federal government, other U.S. states, and other jurisdictions around the world for California to succeed in achieving its climate targets.

The 2022 Scoping Plan includes key actions to support success in the necessary transition away from fossil fuel combustion. Among the actions listed is decarbonizing the electricity sector; which depends on both using energy more efficiently and replacing fossil-fueled generation with renewable and zero carbon resources, including solar, wind, energy storage, 353 geothermal, biomass, and hydroelectric power. Another action includes expanding incentive programs to support the holistic retrofit of existing buildings. Buildings have cross-sector interactions that influence public health and well-being and affect energy use. There are about 14 million existing homes and over 7.5 billion square feet of existing commercial buildings in California. Fossil gas supplies about half of the energy consumed by end uses in these buildings. In achieving carbon neutrality, transitioning away from fossil fuels in existing residential and commercial buildings is an important action item.

Section 4.1.2 of Appendix "D," "Local Actions," of CARB's 2022 Scoping Plan recommends exploring options to fund or implement local, offsite direct GHG reduction strategies after first maximizing feasible onsite design features to reduce emissions. Examples include building retrofit programs that install solar panels and other measures to reduce residual GHG emissions. These measures are viable under CEQA, provided they are not required by law or regulation and would not have occurred without compliance to a mitigation requirement. (CARB, 2022) These offsite mitigation measures should only be considered after onsite options have been exhausted.

AB 97

AB 97 was enacted in 2007 and expressly recognized the need to analyze GHG emissions as a part of the CEQA process. AB 97 required the Governor's Office of Planning and Research (OPR) to develop CEQA Guidelines for GHG emissions (Pub. Resources Code, §21083.05.)

EO B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim goal of reducing statewide GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050 as set forth in S-3-05. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's *Scoping Plan* to express the 2030 target in terms of MMT CO_2e. The EO also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. Sector-specific agencies in transportation, energy, water, and forestry were

required to prepare GHG reduction plans by September 2015, followed by a report on action taken in relation to these plans in June 2016.

SB 32 and AB 197

SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction target; make changes to CARB's membership and increase legislative oversight of CARB's climate change-based activities; and expand dissemination of GHG and other air quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies.

AB 197 also added two members of the Legislature to CARB as nonvoting members. The legislation further requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and identify specific information for GHG emissions reduction measures when updating the scoping plan, including information regarding the range of projected GHG emissions and air pollution reductions that result from each measure and the cost-effectiveness (including avoided social costs) of each measure (see Health & Safety Code Section 38562.7).

EO B-55-18

In 2018, the Governor expanded upon EO S-3-05 by issuing Executive Order B-55-18 and creating a statewide goal of carbon neutrality by 2045. EO B-55-18 identifies CARB as the lead agency to develop a framework for implementation and progress tracking toward this goal. It should be noted that consistency with a statewide carbon neutrality target by 2045 represents the Governor's policy goal but is not required to make a significance determination. The state has already determined that 80 percent below 1990 levels by 2050 is a long-term target that represents California's share of emissions reductions to stabilize and limit global warming and "avoid dangerous climate change". EO B-30-15 sets forth the 2050 target endorsed by the Intergovernmental Panel on Climate Change's finding and notes that the state's 2050 target will "attain a level of emissions necessary to avoid dangerous climate change" because it may limit global warming to 2 degrees Celsius by 2050.

In 2022 California released the latest scoping plan update which lays out the sector-by-sector roadmap for California to achieve carbon neutrality by 2045. This plan, addressing recent legislation and direction from Governor Newsom, extends and expands upon these earlier

plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045 (CARB, 2022). The plan suggests that bold steps are required by the State and calls for the need of vast research and development with respect to methods of capturing CO2. The plan calls for a need to take an unprecedented transformation and aggressively seek reductions to reduce the need of fossil fuels by moving to zero emission transportation, electrifying the cars, buses, trucks and trains. The plan relies on external controls and requires partnership and collaboration with the federal government, other U.S. states, and other jurisdictions around the world for California to succeed in achieving its climate targets.

Assembly Bill 1279

In 2022, the Governor approved Assembly Bill 1279 (AB 1279) (State of California, 2022) which requires the state board to prepare and approve a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions and to update the scoping plan at least once every 5 years. This bill, the California Climate Crisis Act, would declare the policy of the state both to achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045, and achieve and maintain net negative greenhouse gas emissions thereafter, and to ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85 percent below the 1990 levels.

Building Energy

Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include: refrigerators, refrigerator-freezers and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing for each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure new buildings and alterations or additions to existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The California Energy Commission (CEC) is required by law to adopt standards every 3 years that are cost effective for homeowners over the 30-year lifespan of a building. These standards are updated to consider and incorporate new energy efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The current code requirement is based on the 2022 standards, as those standards went into effect on January 1, 2023. The 2022 standards have mandatory requirements to reduce building envelope air leakage, improve roofing through Solar Reflectance and Thermal Emittance, improve on insulation, improve on space conditioning, water heating and plumbing, and improve on lighting efficiency requirements, to name a few. The project will be required to implement Title 24 2022 or the code cycle relevant at the time of building permit issuance.

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards initially took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CALGreen 2016 standards became effective on January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings.

- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance.

- Sixty-five (65) percent of construction and demolition waste must be diverted from landfills.

- Mandatory inspections of energy systems to ensure optimal working efficiency.

- Inclusion of EV charging stations or designated spaces capable of supporting future charging stations.

- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards.

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15 percent improvement in energy requirements; stricter water conservation, 10 percent recycled content in building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30 percent improvement in energy requirements, stricter water conservation, 75 percent diversion of construction and demolition waste, 15 percent recycled content in building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar-reflective roofs.

The latest CALGreen Standards were updated in 2022 and became effective on January 1, 2023. The updated Code includes modifications to current codes and is currently a requirement for this Project. Mandatory requirements include many updated Electric Vehicle Charging requirements for multi- and single-family developments (California Title 24, Part 11, 2022).

Mobile Sources

AB 1493

In response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in

2009 and all subsequent model years. CARB adopted the standards in September 2004(CARB, 2017).

EO S-1-07

Issued in January 2007, EO S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009.

The latest amendment to LCFS implementation regulations was in 2018 via CARB approved amendments which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32 (CARB, 2018). CARB is considering new amendments which have gone through the public review process, however it is unknown when new standards will be adopted.

SB 375

SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations (MPOs) are then responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan. The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible and if implemented, the GHG reduction targets. If an SCS is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

In 2010, CARB adopted the SB 375 targets for the regional metropolitan planning organizations. The 2010-adopted targets for SANDAG are a 7 percent reduction in emissions per capita by 2020 and a 13 percent reduction by 2035; the targets are expressed as a percent change in per capita passenger vehicle GHG emissions relative to 2005.

In October 2015, SANDAG adopted *San Diego Forward: The Regional Plan*, which contains the region's current SCS. In December 2015, CARB, by resolution, accepted SANDAG's GHG

emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region. More specifically, as set forth in CARB Executive Order G-15-075, CARB determined that SANDAG's SCS would achieve a 15 percent per capita reduction by 2020 and a 21 percent per capita reduction by 2035.

In 2018, CARB updated the SB 375 targets. For purposes of SANDAG, the updated targets include a 15 percent reduction in emissions per capita by 2020 and a 19 percent reduction by 2035.

SANDAG approved the 2021 Regional Plan in December 2021. The Plan provides a big picture vision for how the San Diego region will grow through 2050 and beyond with an implementation program to help make the plan a reality. Within the Draft Plan, SANDAG introduced a transformative vision for transportation in San Diego County that completely reimagines how people and goods could move throughout the region in the 21st century. The plan outlines the "5 Big Moves" which are: Complete Corridors, Transit Leap, Mobility Hubs, Flexible Fleets, and the Next OS. This plan is the region's long-term plan which will be implemented incrementally through the Regional Transportation Improvement Program (RTIP) (SANDAG, 2021).

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB, 2017). To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, also has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent in 2025 compared to 2017 (CARB, 2012).

The Zero Emission Vehicle (ZEV) program acts as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles (PHEVs) in the 2018 to 2025 model years (California Air Resources Board, 2017).

This program was recently updated and is known as the Advanced Clean Cars II (ACC II) Program. The ACC II regulations will rapidly scale down emissions of light-duty passenger cars, pickup trucks and SUVs starting with the 2026 model year through 2035. The regulations are two-pronged. First, it amends the ZEV Regulation to require an increasing number of zero-

emission vehicles, and relies on currently available advanced vehicle technologies, including battery-electric, hydrogen fuel cell electric and plug-in hybrid electric-vehicles, to meet air quality and climate change emissions standards. Second, the Low-emission Vehicle Regulations were amended to include increasingly stringent standards for gasoline cars and heavier passenger trucks to continue to reduce smog-forming emissions (CARB, 2023).

EO B-16-12

EO B-16-12 (March 2012) directs state entities under the Governor's direction and control to support and facilitate development and distribution of ZEVs. This EO also sets a long-term target of reaching 1.5 million zero-emission vehicles on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of this EO, the Governor convened an Interagency Working Group on Zero-Emission Vehicles that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet. As of January 2018, the Governor has called for as many as 1.5 million EV by 2025 and up to five million EV by 2030 (Office of Governor Edmund G. Brown Jr., 2018).

EO N-79-20

EO N-79-20 (September 2020) Governor Gavin Newsom signed EO N-79-20 in 2020 and it requires that 100 percent of new car sales in California be ZEVs by 2035. The plan targets 35 percent ZEV sales by 2026, 68 percent by 2030, and 100 percent by 2035 (CARB, 2023).

AB 1236

AB 1236 (2015), as enacted in California's Planning and Zoning Law, requires local land use jurisdictions to approve applications for the installation of electric vehicle charging stations, as defined, through the issuance of specified permits unless there is substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill requires local land use jurisdictions with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that creates an expedited and streamlined permitting process for electric vehicle charging stations, as specified. In August 2016, the County Board of Supervisors adopted Ordinance No. 10437 adding a section to its County Code related to the expedited processing of electric vehicle charging stations permits consistent with AB 1236.

SB 350

Renewable Energy Procurement

SB 350 (2015) further expanded the Renewables Portfolio Standard (RPS) by establishing that 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030, be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency.

SB 1078

SB 1078 (2002) established the RPS program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20 percent of their power from renewable sources by 2010.

SB X1 2

SB X1 2 (2011) expanded the RPS by establishing that 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 100

Established in 2002 by SB 1078, California's Renewables Portfolio Standard (RPS) requires electricity providers (i.e., utilities, cooperatives, and community choice aggregators) to provide a specified minimum portion of their electricity supply from eligible renewable resources by milestone target years. Since 2002, state legislative actions have modified and accelerated the RPS several times, resulting in one of the most ambitious renewable energy standards in the country. Per SB 100, the RPS requires retail sellers of electricity to serve 60 percent of their electric load with renewable energy by 2030 with new interim targets of 44 percent by 2024 and 52 percent by 2027, as well as requiring that all of the state's electricity come from carbon-free resources (not only RPS-eligible ones) by 2045.

SB 1020

In 2022, the Governor approved SB 1020 (State of California, 2022). This bill requires the state board to conduct a series of public workshops to give interested parties an opportunity to comment on the plan and requires a portion of those workshops to be conducted in regions of the state that have the most significant exposure to pollutants. This bill includes as regions for these workshops federal extreme nonattainment areas that have communities with minority populations, communities with low-income populations, or both.

Under existing law, it was the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

This bill revised the state policy to instead provide that eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035, 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045, and 100 percent of electricity procured to serve all state agencies by December 31, 2035, as specified.

Water

EO B-29-15

In response to drought-related concerns, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

AB 939 and AB 341

In 1989, AB 939, known as the Integrated Waste Management Act (Public Resources Code Sections 40000 et seq.), was passed because of the increase in waste stream and the

decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction in waste being disposed wherein jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by the year 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal.

AB 1826 (2014)

In October 2014 Governor Brown signed AB 1826 which requires businesses to recycle their organic waste as of April 1, 2016. The law also required that after January 1, 2016, local jurisdictions across the state were required to implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. This requires business generating over 8 cubic yards (CY) of waste per week to arrange organic waste recycling services. The law also contained a trigger that allowed for increased implementation. For example, in 2019 CalRecycle changed the 8 CY threshold to 4 CY and then in 2020 to CY for business to implement organic recycling programs (CalRecycle, 2023).

3.3 Local Regulations

County of San Diego General Plan

The County's General Plan Update (approved in 2011) provides smart growth and land use planning principles designed to reduce GHG emissions. GHG reduction policies are addressed within multiple elements of the General Plan Update. The strategies for reduction of GHG emissions in the General Plan Update include reducing vehicle miles traveled (VMT), energy consumption, water consumption and solid waste. The General Plan Update also discusses the increased generation and use of renewable energy sources to reduce non-renewable electrical and natural gas energy consumption.

3.4 Framework for CEQA Analysis

A number of agencies throughout the state, including multiple air districts, have drafted and/or adopted varying threshold approaches and guidelines for analyzing GHG emissions

and global climate change in CEQA documents. The State of California has developed guidelines to address the significance of climate change impacts based on Appendix G of the CEQA Guidelines

Appendix G of the CEQA Guidelines

Appendix G of the CEQA Guidelines was revised December 28, 2018. According to Appendix G, a project would have a significant environmental impact related to GHGs if it would:

1. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.*

2. *Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.*

For purposes of this analysis, the two Appendix G checklist questions set forth above are utilized as the thresholds of significance when evaluating the environmental effects of the project's GHG emissions. In applying these thresholds, reference is made to CEQA Guidelines Section 15064.4(b)(1)-(3).

3.5 Harmony Grove Village South Project Thresholds Analysis

CEQA Guidelines Section 15064.4 states that the "determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." Section 15064.4(b) further states a lead agency should consider the following nonexclusive list of factors when assessing the significance of GHG emissions:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;

2. The extent to which project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

3. The extent to which the project complies with regulations or requirements adopted to implement statewide, regional, or local plans for the reduction or mitigation for GHG emissions.

CEQA Guidelines Section 15064(h)(1) states that "the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable." A cumulative impact may be significant when the project's incremental effect, though individually limited, is cumulatively considerable. As discussed above, climate change results from incremental contributions of GHG emissions on a global scale. Section 15064.4 states that the "determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project."

Recognizing that GHG emissions contribute to the cumulative impact condition of global climate change, section 15064(h)(1) of the CEQA Guidelines is also applicable. Section 15064(h)(1) states that "the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable." A cumulative impact may be significant when the project's incremental effect, though individually limited, is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of other past, current, and reasonably foreseeable probable future projects. As discussed above, climate change is the product of incremental contributions of GHG emissions on a global scale. Finally, Section 15064(h)(3) of the CEQA Guidelines is pertinent. Section 15064(h)(3) states that: "[a] lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program…that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located."

4.0 METHODOLOGY

4.1 Construction CO_2e Emissions Calculation Methodology

The Project construction durations were selected based on the 2018 FEIR. The revised construction kickoff is expected in 2025 with construction completion expected in early 2029. This assumes the shortest duration for construction, which actually may take longer. The first full year of operations is expected in 2030. Construction activities would result in GHG emissions primarily from the use of off-road construction equipment, on-road hauling and vendor trucks, and worker vehicles. The expected timeframes for each construction phase, as well as the quantity of construction equipment are shown in Table 4.1. Construction-related emissions are provided in Section 5.2. It should be noted that construction activities for the WTWRF and the solar installation were also included to conservatively estimate construction emission which may not have been included in the original FEIR. These additional construction elements were assumed to generate additional workers and vendor deliveries. [6]

The construction was analyzed using CalEEMod Version 2020.4.0[7] model, which was developed by BREEZE Software for South Coast Air Quality Management District (SCAQMD) in 2021. CalEEMod was utilized for all construction calculations and has been manually updated to reflect SDAPCD Rule 67 paint Volatile Organic Compound (VOC) standards.

The 2018 FEIR listed Construction PDFs for the GHG section. The construction-related PDFs are identified in Section 1.4 of this analysis. However, no reductions were taken for any construction PDFs. The quantity, duration, and the intensity of construction activity have a direct effect on construction emissions. If construction is delayed or occurs over a longer time period, emissions could be reduced because more modern and cleaner-burning construction equipment would be utilized, and stricter regulations are reasonably assumed to be adopted. The construction module within CalEEMod was used to calculate the emissions associated with the construction of the Project and uses methodologies presented in Chapter 11.9 of the US EPA AP-42 document. The CalEEMod input/output model for the Project are shown in ***Attachment A*** to this report.

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[6] CEQA does not generally apply to the installation of solar energy systems on roofs of existing buildings that require the issuance of nondiscretionary permits for the installation. (Pub. Res. Section 21080.35)

[7] Since this Project analysis was started, an updated version of CalEEMod has been released by SCAQMD. The updated version of the model Version 2022.1 is the latest update to CalEEMod and brings a new web-based platform, with many new features and components. In addition, the model includes updated emission factors which generally are lower when compared to the 2020 model. As a result, the 2022.1 version and future subsequent updates of CalEEMod would estimate lower Project GHG emissions once fully operational when compared to the model used in this analysis. Therefore, due to the conservative nature of this analysis the use CalEEMod 2020 is valid under CEQA.

Table 4.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Complete	Quantity
Site Preparation	10/09/2025	01/07/2026	
Crushing/Proc. Equipment			1
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Backbone infrastructure	01/08/2026	07/08/2026	
Forklifts			1
Off-Highway Trucks			2
Other Material Handling Equipment			1
Tractors/Loaders/Backhoes			1
Trenchers			1
Roadway Construction	01/08/2026	07/08/2026	
Crawler Tractor			1
Excavators			3
Grader			1
Roller			2
Rubber Tired Loaders			1
Scrapers			2
Signal Boards			4
Tractors/Loaders/Backhoes			2
Grading	07/09/2026	10/07/2026	
Excavators			2
Graders			1
Rubber Tired Dozers			1
Scrapers			2
Tractors/Loaders/Backhoes			2
Bridge Construction	07/09/2026	07/09/2027	
Cranes			2
Forklifts			1
Generator Sets			2
Pumps			1
Tractors/Loaders/Backhoes			3
Building Construction	10/09/2026	01/10/2029	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1

Table 4.1 (continued): Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Complete	Quantity
Building Construction WTWRF	10/9/2026	3/10/2027	
Cranes			1
Forklifts			3
Tractors/Loaders/Backhoes			3
Welders			1
Onsite Solar Construction	3/1/2028	3/1/2029	
Aerial Lifts			1
Rough Terrain Forklifts			1
Architectural Coating	08/09/2028	01/08/2029	
Air Compressors			1
Paving	08/09/2028	01/08/2029	
Pavers			2
Paving Equipment			2
Rollers			2

4.2 Operational Emissions Calculation Methodology

Operational GHG sources for the Project would include area sources such as landscaping and architectural coatings during routine painting to maintain the upkeep of the buildings; Energy sources from electricity use; Mobile sources from vehicular traffic including trucks and passenger vehicles; Solid waste from trash generation and decomposition at landfills; and emissions generated through the conveyance and treatment of water.

GHG emissions for Area, Water, and Solid Waste source emissions were estimated using CalEEMod default inputs, which calculate emissions based on land use. The land use baseline includes a WTWRF, whether onsite or off-site, which treats all wastewater generated onsite and produces reclaimed water for irrigation. Since water treatment operational emissions are based on land use in the model, the emission generation would be the same or less than regardless of its proximity. Construction emissions for the WTWRF and other project components are accounted for in the construction assumptions discussed later in the report, ensuring a comprehensive assessment of the Project's environmental impact.

Mobile source emissions were based on the projected generated traffic volumes of 4,010 Average Daily Trips (ADT) identified within the Project Traffic Impact Assessment (LLG, 2018) as Attachment H (dated April 25, 2018.) It should be noted that, the initial traffic volume was updated based on the proposed land use of multi-family residential (originally trip generation was based on single family uses to be conservative). Thus, the Project trip generation is 4,010 ADT instead of 4,500 and no "mixed use" reductions were taken as was the case in the 2018 FEIR comparison. The average trip length of 7.88 miles for this Project was provided by LLG, 2016 in a Project memo which is provided as Appendix C to the Greenhouse Gas Analysis

Report circulated with the Draft EIR for the Project in 2017. The Project ADT as well as the Project trip distance was manually updated within CalEEMod.

General Plan Zoning

It is important to note that under the existing site zoning designation, the Project site could result in a potential maximum of 220 dwelling units. Development of the site under the existing zoning would be allowed under the General Plan. In addition, development of these homes would inevitably generate GHG emissions under the General Plan and the General Plan would not require the same benchmark used by this Project to achieve a zero net increase in Project GHG emissions.

Operational Energy Usage - San Diego Gas and Electric's RPS in CalEEMod

In accordance with SB 100, SDG&E is required to achieve an RPS of 60 percent by 2030 which would be when the first full year of operations for the Project would be expected. Given this, if the Project did not install solar the Project operations would expect to receive at least 60 percent of the energy from renewable sources and 40 percent from non-renewable sources without usage of any onsite solar generation. From a modeling perspective, the Project baseline without added solar would be based on the average GHG intensity for the model year. Any solar added by the Project would be renewable and would therefore offset nonrenewable sources generated by SDG&E.

San Diego Gas and Electric's (SDG&E) has a composite energy portfolio comprising both non-renewable (e.g., natural gas, coal, diesel) and renewable energy sources (e.g., solar, wind) and is referred to as RPS. The reported GHG intensity is an average value that incorporates emissions from all these sources, which is the forecasted intensity CalEEMod uses.

When a home or business adds solar panels, the generated solar electricity displaces the need for electricity from non-renewable sources. Solar energy cannot offset other renewable energy sources since both are already carbon neutral. Instead, it directly reduces the demand for fossil fuel-generated electricity, which has higher GHG emissions. Therefore, the correct approach is to calculate the avoided GHG emissions based on the GHG intensity of non-renewable sources, not the average composite intensity used by CalEEMod. To achieve a 100 percent RPS, as required by SB 100, the utility provider will be required to pull off non-renewable sources.

To capture what SDGE's non-renewable intensity, we utilized source data from CalEEMod models starting in version 2016.3.2, which estimated a 2009 GHG intensity of 720.49 lb/MWh which included an RPS of 10.5 percent (CPUC, 2016).

Taking the composite 720.49 lb/MWH reported in 2009 and removing renewable sources and relying only on carbon-based sources yields a calculated intensity of 805.02 lb/MWh (720.49 lb/MWh / 89.5 percent non-renewable sources) whenever SDG&E requires carbon-based fuel energy generation, a GHG intensity of 805.02 lb/MWh would be expected.

The 805.02 lb/MWh estimate would be a conservative estimate since according to the U.S. Energy Information Administration (EIA), natural gas powered electrical generation (which generally is considered one of the lowest GHG producing non-renewable sources) is 0.97 lb/kWh (970 lb/MWh) (EIA, 2023). In other words, the realistic non-renewable offset could defensibly argue that renewable sources would offset 970 lb/MWh in GHGs for solar. However, since 805.02 lb/MWh was utilized, this analysis is conservative.

California allows customers to install renewable electrical generation facilities primarily to offset the customers' electrical needs, and to interconnect these facilities with the electrical grid. Customers have mostly installed solar, wind, and fuel cell facilities, but other energy sources such as biogas, biomass, geothermal, small hydroelectric, and ocean currents also count as renewable. A variety of California laws have directed the California Public Utilities Commission (CPUC) to create rules (or "tariffs") under which the investor-owned utilities (IOUs) must allow customers who generate their own energy ("customer-generators") to serve their energy needs directly onsite and to receive a financial credit on their electric bills for any surplus energy fed back to their utility. This concept is referred to as Net Energy Metering (NEM). Participation in these tariffs does not limit a customer-generator's eligibility for any other rebate, incentive, or credit provided by an electric utility (CPUC, 2023).

When solar panels are installed at homes or businesses, SDG&E has a NEM program Consistent with CPUC guidelines. The way the program works is if an SDG&E customer has an electricity generation system that uses a renewable energy source, and produces more energy than the SDG&E customer uses, they can earn bill credits for excess power that flows from their system to SDG&E's electricity grid (SDG&E, 2023).

Operational Energy Estimates (ConSol)

ConSol, a building energy efficiency consultant, was retained to calculate the residential energy demand for the Project and provided a report in 2017. An addendum to that report was generated and now includes Title 24 (2019) (ConSol, 2023) and was done to be consistent with the modeling of this report. This methodology is conservative since the latest building code will be required for this project (currently 2022) but at the time of buildout could be Title 24 (2028 or 2030). The ConSol report also provides an estimate of the solar energy that can be installed onsite (excluding the Center House) and was also updated to reflect a more common higher energy density solar panel (e.g., 360-watt panels instead of 285-watt panels) which is readily available. PDF 13R is based on ConSol's findings and ConSol's latest report is

provided as ***Attachment B*** to this report and can be reviewed for additional details. Also, as noted in PDF 28, the solar will be maximized on the Center House, but credit was not taken for this element of the PDF.

The ConSol modeling uses the CEC's public-domain compliance software, California Building Energy Code Compliance – Residential (CBECC-Res), which calculates Title 24 compliance and annual energy use. The estimated energy use of each prototype was calculated for both a code-based compliance scenario and a Zero Net Energy attainment scenario. ConSol's report also separates electrical regulated (defined as Title 24 Energy Intensity in CalEEMod) and unregulated loads (defined as Nontitle-24 Energy Intensity in CalEEMod). Regulated loads are attributed to sources such as heating, cooling and water heating. Unregulated loads are attributed to interior and exterior lighting, appliances, cooking and other plug loads.

The ConSol report provides an updated projection of energy consumption intensity for the Project as well as the total capacity of solar installation and energy generation which may be expected within the Project (ConSol, 2023). Solar assumptions will be discussed in more detail in the PV Installation PDF as well as in Section 5 of this report. The analysis in this GHG report assumes the no natural gas scenario analyzed by ConSol. In addition, non-residential uses were not specifically modeled by ConSol, CalEEMod default energy inputs were used for all other non-residential land uses. The commercial component of the Project is limited to an approximate 5,000 SF area which is designated as the Center House. The Project would also install PV Solar on the roof of the Center House once final design is ready, however, no additional credit for that PV system was taken in this analysis.

Wastewater Treatment and Water Reclamation Facility Operations

The final Project design may include an onsite WTWRF capable of treating up to 180,000 GPD. As part of this design, the Project would utilize two 84 horsepower emergency diesel generators which could be utilized in the event utility power is offline. These diesel generators would be required to test annually to ensure they operate correctly in the event of an emergency power outage. The Generators were assumed to operate 200 hours each per year which includes the testing for operational readiness as well as emergency power generation. CalEEMod was updated to reflect the emergency diesel generators operations for each year.

In addition, there are two design scenarios whereby the Project would instead fully or partially connect to the Harmony Grove Village Water Recycling Facility Plant. If the full connection scenario is chosen, the Project would not install diesel generators. The more conservative WTWRF scenario is assumed within this analysis which includes both diesel generators.

Finally, as noted above, CalEEMod calculates GHG emission for water conveyance and treatment within the model and assumes that treatment of water would be similar to offsite treatment within the model. Therefore, for purposes of this analysis, CalEEMod defaults would be appropriate for this Project.

Operational Solid Waste Generation

Under AB 341 and the County's own Strategic Plan to Reduce Waste, adopted in April 2017, the County would ultimately be required to increase diversion of waste from landfills by 75 percent. The Project would provide separate waste containers to allow for simpler material separations or would direct the Project HOA to pay for a waste collection service that recycles materials offsite. Additionally, the Project would provide for green waste collection so that green waste is diverted from landfills and recycled as mulch. Prior to 2012, when AB 341 was approved, a 50 percent diversion rate was required for commercial and industrial uses. AB 341 and the County's Strategic Plan to Reduce Waste could increase the diversion rate beyond the assumed CalEEMod diversion 25 percent, only a 25 percent reduction was assumed which is conservative.

EV Systems

The electrification of California's transportation sector is recognized by CARB, other state, regional, and local agencies as a critical element of the State meeting its 2030 and 2050 GHG emission reduction targets. CARB's Second Update to the Scoping Plan (as adopted in December 2017) seeks to have 1.5 million ZEVs on California's roadways in 2025 and 5 million ZEVs by 2030 (Office of Governor Edmund G. Brown Jr., 2018), while accelerating the deployment of alternative fueling infrastructure. As noted above, EO N-79-20 requires that 100 percent of new car sales in California be ZEVs by 2035. The plan targets 35 percent ZEV sales by 2026, 68 percent by 2030, and 100 percent by 2035 (CARB, 2023) and is also shown in Table 4.2.

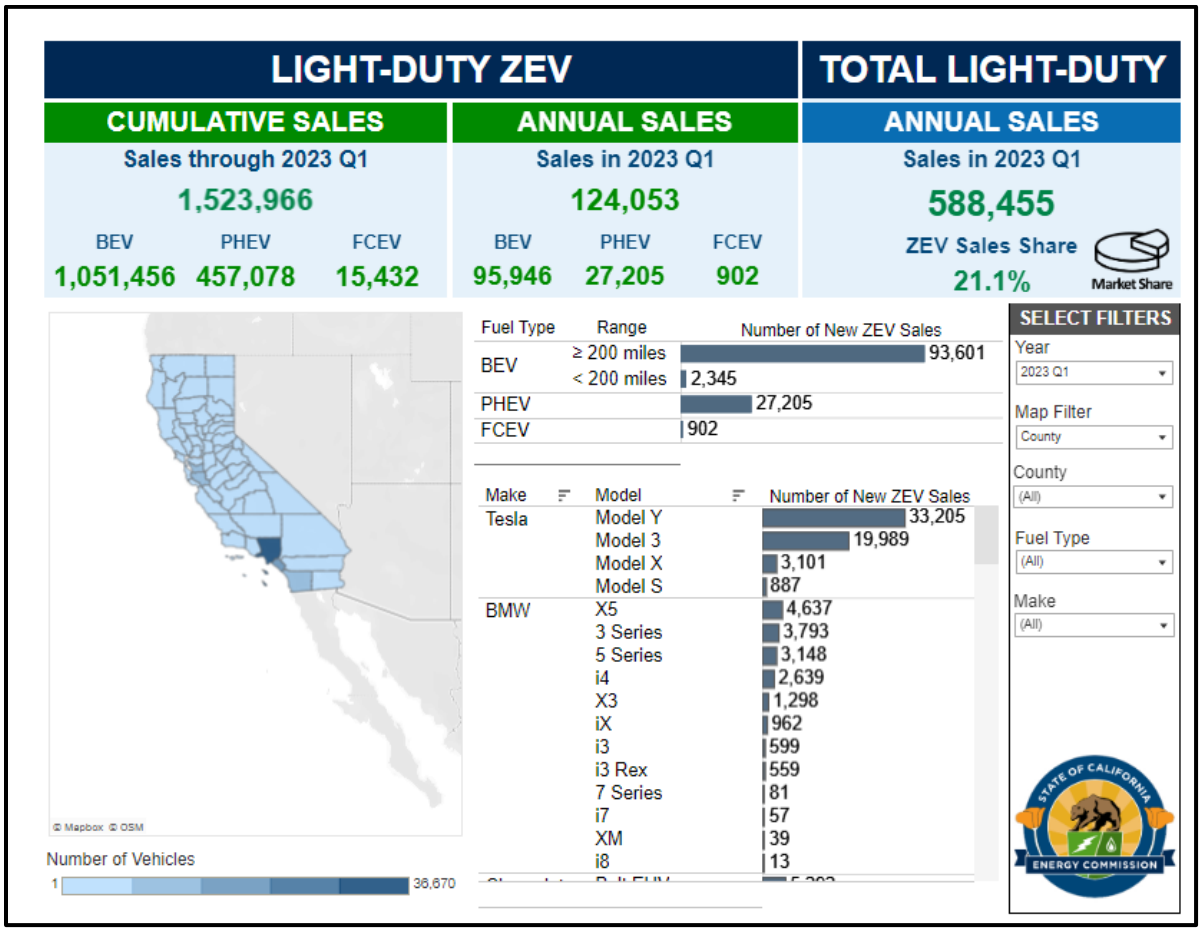
Table 4.2: Expected EV Market Share as a percent of Total New Cars Purchased

Year	EV Market Share (%) – California[1]
2026	35%
2027	43%
2028	51%
2029	59%
2030	68%
[1] Source: (CARB, 2023)	

These targets would be achievable and conservative since the adoption of EV is largely supported by the Federal Government as it relates to EV purchases and the Government's ability through financial incentives to influence the purchasing of EVs by consumers. The Inflation Reduction Act of 2022 provided tax rebates ranging from $3,750 to $7,500 for purchasing EV Cars which can help consumers overcome the EV pricing (IRS, 2023).

Based on Figure 4-A provided by the California Energy Commission (CEC), new ZEV sales in California have already met the 1.5 million goal in the first quarter of 2023 which exceeds the states goals which were set for 2025 (CEC, 2023).

Figure 4-A: EV Sales in California – Through 1st Quarter 2023



Project Specific EV Analysis

The proposed Project calls for the installation of a Level 2 charging station (220-volt chargers) in the garages of each of the 453 residential units. It is expected that residents will take advantage of the convenience of having these chargers installed, and the inclusion of this PDF and the trends presented above would likely encourage residents to purchase EVs. Based on the U.S. Census Bureau Tenure by Vehicles data in the American Community Survey 5-Year Estimates, the estimated average number of vehicles per home is 1.97 cars/home (US Census Bureau, 2023) which is calculated in ***Attachment C*** to this report and includes the raw data downloaded from the American Community Survey. Given this, the Project would be expected to have 892 cars which is calculated by multiplying each unit by the number of vehicles per home.

CalEEMod incorporates emission factors for on-road mobile sources from the EMFAC 2017 model. Based on the EMFAC 2017 projections for the year 2030, San Diego would have 34.7 million vehicles registered; EMFAC 2017 assumes that 1.16 million of those vehicles would be electric. This equates to roughly 3.4 percent of the vehicle fleet in the year 2030 being electric.

In January of 2018, EO B-48-18 was signed to "boost the supply of zero-emission vehicles and charging and refueling stations in California." The EO directs state government to meet a series of milestones toward targets of 1.5 million ZEVs on California's roadways by 2025 and 5 million by 2030 (Governor of California, 2018); and should be significantly higher in 2035 and beyond due to EO N-79-20 and ACC II. Based on these estimates the total percentage of EVs expected in California would be 14.4 percent or 11 percent over what EMFAC estimates in the year 2030.

The energy contained in 1 gallon of gas is equivalent to 33.7 kilowatt hours (kWh) of electricity (Office of Energy Efficiency & Renewable Energy, 2023). To compare the relative energy consumption of electric cars with vehicles that run on fuel, the EPA provides a miles-per-gallon equivalent measurement (MPGe). For many of the EV cars on the market today, this efficiency is over 100 MPGe. For example, the Tesla Model 3 has an average combined city/highway MPGe of 131 (US Department of Energy, 2023). This conversion makes it easier to compare standard internal combustion engine vehicles with EV.

Eight Common Area EV Charging Stations (PDF 10R)

The Project would install eight 19.2 kW Level II chargers in the common parking area at the Center House. For purposes of analysis, it is assumed that each charger is estimated to be utilized at least four hours per occurrence and no more than 25 percent of the year (or roughly

91 days per year conservatively). Given this, the guest EV charging stations would be utilized up to 2,920 hours yearly.

A car getting 100 MPGe would travel roughly 2.97 miles for every kWh which is calculated by dividing 100 MPGe by 33.7 kWh/Gal. Therefore, since each hour of charging provides 19.2 kWh, the car can travel approximately 57 miles on that charge. With eight chargers, this would result in about 166,362 miles of EV travel annually.

Based on the Project GHG modeling outputs from CalEEMod (***See Attachment A***), the Project's mobile emissions would generate 2,846.07 MT CO_2e yearly from the 4,010 ADT generated by the Project. Based on CalEEMod, the emissions generated directly from the Project would be 0.000279 MT CO_2e/mile driven which is calculated by the estimated yearly miles driven divided by the total emissions. Therefore, the 166,362 miles driven by EV would equate to an avoidance of roughly 46.36 MT CO_2e, identified by dividing EV miles traveled annually by the GHG emission rate per mile driven.

In addition, the electricity used to achieve the expected EV miles would be 56,064 kWh, which is calculated by multiplying the assumed 2,920 hours of yearly charging by the 19.2 kWh per hour of charging. This charging will consume power from the grid. Based on CalEEMod inputs, the estimated Project electrical energy demand is 3,147,533 kWh which produces 461.83 MT CO_2e. The is equivalent to 0.000147 MT CO_2e per kWh from SDG&E. Given this, the GHGs generated from vehicle charging would be 8.23 MT CO_2e.

Given this and based on CalEEMod, a GHG avoidance of 38.14 MT CO_2e (46.36 MT CO_2e - 8.23 MT CO_2e) would be expected which is calculated by subtracting the GHGs generated from electrical energy by the mobile emission avoidance. The calculations for this analysis have been described for the reader in detail and can be further reviewed in a worksheet provided as ***Attachment D*** to this report.

453 EV Charging Stations within Garages (PDF 10R)

The Project seeks to maximize the usage of EVs through Project design features that require the installation of onsite charging infrastructure. Specifically, the Project would install one (1) Level 2 single-port charging station for each of the 453 residential units. Given the expected vehicle population of 892, the Project would expect as many as 129 EVs. CalEEMod estimates includes 3.4 percent or 31 EVs. Therefore, roughly 98 EVs are not counted within CalEEMod. These EVs would provide a GHG reduction which is estimated below.

As determined above in the *Eight Common Area EV Charging Stations,* the Project generates 0.000279 MT CO_2e per mile driven. Based on CalEEMod estimates, the total miles driven, 98

EVs would travel 1,123,360.81 miles or 11 percent of the total. Based on this, a GHG avoidance of 313.07 MT CO_2e would be expected.

The electricity needed to achieve the expected EV miles from the Project garage charges, would be 378,573 kWh which is calculated using the miles driven by EV divided by 2.97 miles for every kWh charged. Since GHG production is 0.000147 MT CO_2e per kWh from SDG&E, the estimated GHG emissions from charging of these garage-based chargers is 55.55 MT CO_2e. The GHG reductions would be 257.52 MT CO_2e which is calculated by subtracting the 55.55 MT CO_2e associated with charging from the 313.07 MT CO_2e avoided by the EVs. Detailed calculations for this analysis can be further reviewed in a worksheet provided as ***Attachment D*** to this report.

Photovoltaic Systems – Onsite Solar (PDF 13R)

Per ConSol's 2023 report (ConSol, 2023), on Page 11, it is noted that each single-family unit could contain 13.3 KW of solar and a 15-unit multi-family structure could contain as much as 92.2 kW of solar or 6.15 kW per unit. Based on this, ConSol's report indicates that the Project would consist of 13.3 kW x 193 single-family units and 6.15 kW x 260 multi-family units or 4,165 kW in total for the HGVS development Project. The Project would install a minimum PV system to meet this capacity. As noted in PDF 28, the Project will install PV solar on the roof of the Center House once final design is ready, however, no additional credit for that PV system was taken in this analysis.

Since the onsite power generation is 100 percent renewable and the excess power (amount of electricity exceeding the Project use) is allowed to flow into SDG&E's electrical grid, the onsite generated renewable energy would reduce GHG emissions from offsite power generation. Therefore, any power generated onsite and in excess would essentially increase SDG&Es renewable portfolio on the grid and provide access to renewable energy to offsite users within the surrounding community.be consumed within the surrounding community and would reduce the electrical load requirements provided by SDG&E. Excess power generated from solar by the project is exported back to SDG&E under their NEM program. That energy is consumed offsite immediately in the surrounding offsite area and enables SDG&E to reduce non-renewable energy production which would have otherwise been required without the Project's excess solar.

This concept within SDG&E's infrastructure is referred to as the NEM program, as described above (SDG&E, 2023), which is allowed in California per the CPUC (CPUC, 2023). It is important to again note that energy produced by any solar would only offset electrical energy which would otherwise be produced by SDG&E from carbon-based fuel generation.

The Project's installed renewable source would offset non-renewable electrical generation or generation having a GHG intensity of 805.02 lb/MWh as discussed in the *Operational Energy Usage - San Diego Gas and Electric's RPS in CalEEMod* subsection above. This is because SDG&Es electrical energy portfolio is made up of both renewable and non-renewable sources and when renewables are generated non-renewable sources are shed by SDG&E. Based on the ConSol report (ConSol, 2023), the Project's installation of 4,165 kW of solar would directly generate 6,296,470 kWh of power. ConSol's conversion rates in their analysis assumes 1,430 kWh/kW for annual generation (the average of the best and worst orientations) for single-family, and 1,645 kWh/kW for multi-family.

As discussed above (*Operational Energy Usage - San Diego Gas and Electric's RPS in CalEEMod*), any indirect contribution of renewable energy into the grid would by default supply renewable energy and offset non-renewable generation. Given this, a separate CalEEMod file was prepared (without RPS corrections) since the Project's solar under this PDF would not offset renewables but rather non-renewables having a GHG intensity of 805.02 lb/MWh. The CalEEMod solar outputs are shown in ***Attachment E*** to this report.

Vegetation Change Calculations - (PDF 21)

The existing site conditions have not changed since the 2018 FEIR analysis was completed and generally consist of non-native grass land, scrubs and a small mix of woodlands and riparian areas, as described in the Helix Environmental Planning August 2017 Sequestration Memorandum included in the 2018 FEIR documentation based on the Project Landscaping Plans. These calculations have been confirmed as part of the current remodeling and are included within the Project CalEEMod output provided in ***Attachment A*** to this report.

Vegetation, as it grows, collects carbon from the air and stores it in the leaves, stems, and roots. Therefore, a project that changes the existing land use type, with respect to vegetation, can result in changes in CO_2 sequestration from the atmosphere. CalEEMod has generally applicable sequestration data that can be used to estimate the amount of CO_2 that either is gained or lost from vegetation-based sequestration, depending on the project.

The one-time loss through the removal of existing vegetation is estimated by multiplying the acreage of vegetated land to be removed by CO_2 accumulation rates published by the IPCC. Vegetated acreages were obtained from Table 2.3-4 of the 2018 FEIR. The Project will plant 2,045 new, native trees on slopes, along streets, and around all perimeters of the Project, as shown on Project Landscaping Plans.

CalEEMod uses the IPCC's protocol for vegetation sequestration calculations. Based on this, the model estimates how much CO_2 newly planted trees would sequester and reports the

sequestration as a one-time carbon-stock change (per the IPCC, trees sequester CO_2 while they are actively growing and the one-time stock is based on a 20-year lifecycle). The IPCC concludes that a tree's ability to sequester carbon decreases significantly after 20 years and credit after 20 years is not applied (CAPCOA, 2021).

The Project's Specific Plan provides for trees to be planted on slopes, along streets, within HOA open space areas, and around all perimeters of the Project to visually buffer the community from view. Relatedly, site landscape shall require the approval of a Landscape Plan(s) from the County's Planning & Development Services Department; the plan(s) shall comply with the landscape provisions of the Project's Specific Plan, County's Water Conservation in Landscape Ordinance, the Water Efficiency Landscape Design Manual, and other applicable regulatory standards. Native trees and shrubs, such as sycamores, oaks, madrone, currant and toyon as well as local apricot, lemon, orange, guava, and avocado, may be planted along parkways.

During the construction phases, the Project would remove approximately 80.4 acres of vegetation on the Project site. The vegetation removal has been incorporated into CalEEMod. Vegetation change (the same as discussed in the prior Project analysis); comprised of 31.21 acres of mixed forest land, 48.1 acres of grassland and 1.1 acre of various vegetation types. This would result in a GHG increase of approximately 729 MT CO_2e of sequestered carbon from vegetation loss. The Project also would plant a minimum of 2,045 new trees. The vegetation loss and new trees are incorporated into CalEEMod. CalEEMod estimates that the new tree plantings would sequester approximately 1,448 MT CO_2e over a 20-year period per the IPCC, trees sequester CO_2 while they are actively growing and the one-time stock is based on a 20-year lifecycle (CAPCOA, 2021). The difference in emissions between what was removed to what will be planted is 719 MT CO_2e (1,448 – 729) MT CO_2e. Since the Project has a 30-year life, assuming no additional carbon is sequestered beyond 20 years, the total amortized carbon sequestration over 30 years is 23.97 MT CO_2e. This would be conservative. The calculated vegetation emissions from change in vegetation is shown in more detail in ***Attachment A*** to this report and Section 5.2.

5.0 FINDINGS

5.1 Potential to Generate Significant GHG Emissions

As stated in Section 3.4 of this report, analysis of the proposed Project's GHG emissions impacts are based on GHG thresholds provided in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.).

5.2 Project Generated Greenhouse Gas Emissions

1. Will the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction

Utilizing the CalEEMod inputs for the model as shown in Table 4.1 above, grading and construction of the Project would produce approximately 3,701.36 MT CO_2e from construction activities (see Table 5.1). Given the fact that the total emissions would ultimately contribute to cumulative levels, and consistent with the South Coast Air Quality Management District (SCAQMD) recommendations for construction GHG emissions (SCAQMD, 2008) total construction emissions have been averaged over the life of the Project (assumed to be 30 years), in order to evaluate Project emissions against those allowed by the General Plan. Given this, the Project would add approximately 123.38 MT CO_2e per year, as demonstrated in Table 5.1.

Table 5.1: Proposed Project Construction CO_2e Emissions Summary

Year	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e
2025	0.00	122.04	122.04	0.03	0.00	122.91
2026	0.00	1,518.07	1,518.07	0.3632	0.0209	1,533.39
2027	0.00	1,137.97	1,137.97	0.1427	0.0419	1,154.02
2028	0.00	841.62	841.62	0.13	0.03	853.12
2029	0.00	37.45	37.45	0.01	0.00	37.92
Project Total (MT CO_2e)						**3,701.36**
Annualized Emission Increase over 30 years (MT CO_2e per Year)						**123.38**
Expected construction emissions are based upon CalEEMod modeling for equipment listed in Table 4.1 above.						

Operations

Proposed Project (2030)

Once construction is complete, the Project transitions into operations (i.e., occupancy). Full buildout is expected in 2029 and the first full year of operations would be expected in 2030. As noted in Section 4.2 of this report, GHG operational emissions are generated from Area, Energy, Mobile, Solid Waste and Water sources. Also as mentioned above, the emissions projected for Project operations are conservative – the numbers assume the greatest amount of potential impact.

The total CO_2e GHG emission sources would be minimized through the incorporation of PDF measures identified in Section 1.4 of this report. Many of the PDF measures identified in Section 1.4 are incorporated in CalEEMod. However, some of the PDFs require post processing calculations or additional modeling to determine the annual emissions or emission reductions and are discussed below.

PDF 10R: Eight 19.2 kW Level 2 EV charging stations would be installed at the Center House parking area. The Project will also install a Level 2 EV charging station (220-volt chargers) within the garage of each of the residential units (453 total).

PDF Benefit: This exceeds the two Level 2 EV charging stations proposed in the 2018 FEIR. Based on the calculations provided in Section 4.2 above, the Project would support as many as 166,362 miles of EV travel annually from these chargers alone and would consume as much as 56,064 kWh. Given this, these EV Chargers would provide a GHG avoidance of 46.36 MT CO_2e and the GHG emissions from electricity usage from the grid would add 8.23 MT CO_2e. Therefore, a net avoidance from the chargers at the Center house is 38.14 MT CO_2e annually.

The 2018 FEIR proposed plumbing for, but not installation of, residential charges. These chargers provide infrastructure opportunities to each household within the HGVS development. The Chargers alone do not reduce GHG emissions but provide the necessary infrastructure for the Project to meet the goals of the State of California to achieve at least 14.4 percent fleet participation. As discussed in Section 4.2, the EV Charging network onsite would improve access and participation for EV drivers by 11 percent from Project participation which would avoid 313.07 MT CO_2e. The EV Chargers would generate 55.55 MT CO_2e annually. Therefore, a net avoidance of 257.52 MT CO_2e annually would be expected from the chargers installed in the garages.

PDF 13R: Based on ConSol's 2023 report, and as identified above, the Project has the capacity to install 4,165 kW of solar on the residential units within the project, which is the estimated maximum size foreseeable on all residential structures.

PDF Benefit: This PDF exceeds the 2018 proposed PDF to install a photovoltaic solar system on all residential units in order to supply 100 percent of the Project's electricity needs which includes the energy needs at the Center House . Based on the ConSol 2023 report, the additional solar panels and higher rated panels produce excess renewable energy which would exceed the Project demand. This excess renewable electrical energy would be added to the energy grid for use within the surrounding community as part of the SDG&E NEM program.

Based on the ConSol report, the Project installed solar would equate to 4,165 kW of PV onsite and is capable of producing 6,296,470 kWh of renewable energy annually. The Project including the Center House energy consumption is 3,147,533 kWH. Since the onsite power generation is 100 percent renewable and the excess power is allowed to flow into SDG&Es electrical grid, the onsite generated renewable energy would reduce GHG emissions from offsite carbon-based power generation. Therefore, any power generated onsite would essentially increase SDG&Es renewable portfolio, allowing more offsite users access to renewable energy. Based on CalEEMod outputs shown in ***Attachment E*** to this report, the onsite Project generated solar would avoid 2,310.39 MT CO_2e annually.

PDF 21: The Landscaping Plan for the Project includes the installation of a minimum of 2,045 trees within the Project site as identified in the Harmony Grove Village South Carbon Sequestration Analysis based on the Project Landscape Plans.

PDF Benefit: The GHGs sequestered by the trees is calculated with CalEEMod and is 1,447.86 MT CO_2e. In addition, the estimated one-time loss of vegetation is 729.09 MT CO_2e. This results in a total reduction of 718.77 MT CO_2e. Given this, the annualized GHG emissions are calculated to be 23.97 MT CO_2e annually (718.77 divided 30 years).

PDF 27: This PDF removes natural gas from the modeling. GHG reductions from natural gas were not estimated in this analysis and instead relies on the Project being fully electric. The intent of this PDF is to only provide electric sourcing for onsite energy because this ensures that carbon free energy goals within the state can essentially be realized through this project.

PDF Benefit: The benefits for this PDF are not directly reduced from any quantified GHG emissions in this analysis. This PDF has the benefit of enabling the Project to generate zero GHG emissions from electrical energy alone.

PDF 28 The Project will install rooftop solar PV panels (a photovoltaic solar system) on the Center House to the maximum extent feasible based on its final design.

PDF Benefit: The benefits for this PDF with the installation of the PV panels on the Center House will offer an additional reduction in electricity needs. The exact rooftop capacity of the Center House is unknown at this time until detailed plans for the Center House are provided. Therefore, no credit has been taken for this PDF.

GHG Emissions Summary

As described above, all PDFs contribute to the reduction of GHGs. Many PDFs were included directly within the CalEEMod model and the PDFs identified above were calculated separately. As identified in Table 5.1 above, construction emissions would have an amortized emission increase of 120.01 MT CO_2e. Table 5.2 below is a summary of these emission calculations. Based on these findings, the Project would generate 1,037.72 MT CO_2e after all PDFs are applied. This Project is committed to a no net gain in GHG emissions once fully operational.

The onsite solar installation, excluding the PV for the Center House, is designed to generate 4,165 kW of power, which equates to 6,296,470 kWh of energy produced annually. The Project's total energy consumption, including the approximate 5,000 SF Center House, is 3,147,533 kWh which is reflected in the Project's GHG modeling. Therefore, the solar power generated onsite from the residential PV, will be sufficient to offset all energy consumption, including that of the Center House. Once the solar installation on the Center House is added at the time permits are issued, the total onsite energy production will exceed 6,296,470 kWh, further ensuring that the Project's energy requirements are fully met and maximizing the GHG emissions which can be avoided from onsite solar.

Table 5.2: Annual HGVS GHG Project Emissions Summary (MT/Year)

Source	CO_2e (MT/Yr)
Area	5.63
Electrical	461.83
Mobile	2,846.07
Waste	132.50
Water	84.19
Diesel Generators	14.14
Annual Emissions Total (Includes all PDFs not shown below)	3,544.36
Amortized Construction	123.38
Emissions including all PDFs excluding post processed PDFs below	**3,667.74**
2018 PDF 10R (Install 8 EV Charging Stations at the Center House)	-38.14
2024 PDF 10R (Install EV Chargers in all 453 Garages)	-257.52
2024 PDF 13R – Onsite Project Installed Solar (4,165 kW or 11,570 360W panels)	-2,310.39
2018 PDF 21 (Install 2,045 Trees)	-23.97
2024 PDF 27 Natural Gas is not designed within this Project	0
2024 PDF 28 – Onsite Project Installed Solar on the Center House (no credit taken)	0
PDFs Emission Totals	**-2,632.32**
Project Emissions Summary (All PDFs identified in Section 1.4 included)	**1,037.72**

Based on these findings, the Project would require mitigation and would be required to reduce or avoid GHG emissions within the County of San Diego by at least 1,037.72 MT CO_2e for the Project to meet a Zero emission threshold.

The State of California is endeavoring to increase renewable energy as a means to drive GHG emissions down. Consistent with CARB's 2022 Scoping Plan, after implementation of all feasible onsite GHG reduction measures, Lead Agencies should explore options including funding or implementing local, offsite direct GHG reduction strategies. Examples include local building retrofit programs targeting existing residential and commercial buildings in the Project's vicinity that result in the installation of solar panels and other such measures to reduce the project's residual emissions. Such offsite mitigation measures "are viable options for mitigation under CEQA and would not be double counted, provided they are not otherwise required by law or regulation and would not have happened but for the mitigation requirements of the project." (Section 4.1.2. of Appendix "D" of the CARB 2022 Scoping Plan) (CARB, 2022).

As stated above, there are no federal, state, or local laws or policies that would require an existing commercial building to install solar panels. Although solar PV and energy storage

systems will be required on all new commercial buildings with the update to Title 24, Part 6: Building Energy Efficiency Standards (the Energy Code), (effective January 1, 2023), such requirements will apply to commercial buildings that are issued a building permit for construction, reconstruction, or alteration work (minor renovations are not subject to such rules and there are a number of exceptions that can still apply). Similarly, Energy Goal E-2.2 of the County's Draft Climate Action Plan applies only to existing buildings with "qualified improvement" work.

For this reason, the Project seeks to increase solar generation within the County as a means to mitigate these remaining GHG emissions to zero cumulatively such that the net Project GHG emissions are zero MT CO_2e.

To reduce the emissions of the Project, a mitigation measure has been identified consistent with the 2022 Scoping Plan, requiring solar panels to be installed on a pre-existing building located offsite within the County of San Diego that would reduce GHG emissions by at least 1,037.72 MT CO_2e.

ConSol's updated report (ConSol, 2023) provides details with respect to a 1MW system within the County of San Diego which could be expanded linearly to establish sizing to reduce total Project emissions to Zero MT CO_2e. They found that operations of a 1MW solar array would create 1,645 MWh annually and would require as much as 83,000 SF of roof space to install the system.

GHG modeling was conducted for a 1 MW offsite system which was done to determine the estimated construction and operational emissions. The intent is to derive a scalable system to establish unit emissions rates to estimate mitigation measure requirements.

Construction of an offsite panel system would require delivery of panels which would take as many as six loaded semi delivery trucks during construction. The model also assumes a crew of 9 people would be required to install systems and it would take one month to complete. The analysis shows that construction emissions during that one month would generate 4.72 MT CO_2e and after a 30-year amortization, would generate 0.16 MT CO_2e annually. Operationally, the system would avoid 603.61 MT CO_2e annually (See ***Attachment F***). Therefore, total avoidance after construction is 603.45 MT CO_2e (603.61 minus 0.16) annually per MW, or 0.60345 MT CO_2e per kW of solar installed. Again, taking into consideration 0.16 MT CO2e annually for installation of the panels, is a conservative approach since CEQA Guidelines 21080.35(b) generally exempts from its requirements projects that install solar energy systems on the roofs of existing buildings or at an existing parking lot.

Thus, to mitigate the 1,037.72 MT CO_2e produced by the Project after all PDFs are included, the Project would need to install an additional 1,720 kW rated solar panel system which is calculated based on the 1,038.20 MT CO_2e produced by the GHG avoidance rate of a 1 MW system of 0.60345 MT CO_2e/kW. Using ConSol's estimates of 83,000 SF/1MW of solar, the requirement of 1,720 kW would cover approximately 142,760 SF of roof area. The installation of the offsite solar would be required within the County of San Diego.

Therefore, in addition to the PDFs identified above, in order for the Project to achieve carbon neutrality (i.e., no net GHG emissions through offsetting to zero); the Project Applicant(s) shall comply with the following:

GHG MM-1 – Prior to the issuance of the first grading permit for the Project, compliance with GHG MM-1 shall be as follows:

a) Solar panel(s), capable of generating a total of 1,720 KW, shall be installed on an existing building(s) that does not currently utilize solar energy, located within the County of San Diego, that is not otherwise required by law or regulation through statute, regulation, existing local program, or requirement to install such solar panels. The building shall have an estimated life of at least thirty years as verified by a third-party building inspector. The solar system installation shall be completed by a licensed, bonded and insured installer; and equipped with a monitoring system to notify the property owner upon which the building is located ("property owner"), the installer, and the HGV South HOA with monitoring data. The solar panels will be registered with an extended warranty for the maximum period of time feasible, not less than thirty years, and the panels will be dated at the time of installation. Consistent with the North American Board of Certified Energy Practitioners (NABCEP) standards, the installation company shall have a minimum of three years' experience.

b) The identified building(s) shall be located within the County boundaries. A Covenant shall be recorded against the property, for the benefit of the Project site, stating that the Project-installed solar panel(s) must remain on the building(s) and operational for a period of thirty years. This Covenant runs with the land, not the owner, and will pass with the parcel in the event of sale. The Covenant shall also require the property owner to allow the HOA or representative (including the County) to conduct annual baseline maintenance inspections, monitor, repair or replace the system as described in e), below, during that thirty-year period. The Covenant shall also include the following provisions:

i) The property Owner shall allow the HOA or County to access the system if maintenance is indicated by the monitoring system or when issues are otherwise noted by the property owner;

ii) the property owner shall notify the HOA and County if any repair or maintenance events become known to the property owner;
iii) the property owner shall maintain a policy of insurance (or include the addition of such panels to the coverage limits of the building's current insurance policy) to cover against the repair or replacement of the solar system resulting from physical damage (e.g.,, caused by severe weather conditions, vandalism, fire and other events) and name the HOA and County as additional insureds;
iv) the property owner shall maintain and/or replace such panels with an equivalent or higher rated panel as necessary if the repair work is not completed by the HOA.
v) if the identified building is vacated or abandoned, or the building is demolished before the thirty-year period, the property owner shall be required to install an equivalent unit (and provide insurance for the same) on one or more existing buildings that meet the same criteria identified in a); within the County, that would generate an equivalent amount of solar power for the remaining term of the thirty-year period. The property owner shall be required to record a Covenant with the same provisions against the property upon which the new building with the replacement solar unit is located, for the remaining term of the thirty-year period and notify the HOA and County of the same, prior to the vacation, abandonment, or demolition of the existing building.
vi) any new purchaser of the property shall notify the HOA and County that it has acquired the site and acknowledge its obligations under the Covenant, including allowing access for solar panels maintenance for the duration of the thirty-year term.

c) The Applicant is required to fund and provide a report to the County that provides the following information:

(i) the address of the specific building(s) upon which the installation of the solar panels required by MM-1 have been installed;
(ii) evidence that the building(s) is/are not required by law or regulation through statute, regulation, existing local program, or requirement to install such solar panels (i.e., additional);
(iii) the amount of GHG emissions that will be reduced by the installation of such panels,
(iv) a copy of the Covenant recorded against the property that includes the information required by MM-1 b) above,
(v) a copy of the third-party building inspector (verification) that the life of the building be at least thirty years; and

(vi) a copy of the Project "Covenants, Conditions, and Restrictions" (CC&Rs or Declaration) of the HOA that include the provisions identified in paragraph e) below, including the HOA's budget that shows the reserve set aside for the purposes described in paragraph f) below, and

(vii) a copy of the solar installation contract with a licensed and bonded installer and warranty and insurance policy, along with the approved solar permit. The report shall include calculations conducted by a technical GHG expert using County-approved models and/or methodologies.

d) The Applicant shall comply with County Code Section 6954, Solar Energy Systems, and obtain any required permits. The installation of such a PV system shall be required to qualify for a CEQA exemption, such as PRC 21080.35 at the time of application for installation.

e) The CC&Rs or Declaration for the Project shall be submitted to the County for its review prior to the approval of the first grading permit that includes the following provisions:

1. The HOA shall monitor the solar system using the module-level monitoring application described above for a thirty-year period that commences from the project's start of operations. The HOA shall keep records of solar power production during this period.
2. If any solar equipment is found to need repair or replacement, the HOA shall be responsible for such work being completed as needed in order to maintain the equivalent amount of solar power generated by such panels. The HOA shall work with the property owner, installation company and/or insurance entity to ensure that the repairs are completed in a timely manner. If the repair work is not covered by the warranty or paid for by the insurance carrier, the HOA shall be responsible for ensuring that the repair work is completed.
3. An annual maintenance and monitoring program shall be conducted by a licensed and bonded solar company (the Covenant requires the property owner to allow this annual inspection). A report shall be prepared by the solar company with the results of the inspection, including whether any repairs are needed and the amount of solar power generated by such panels. The report will be provided to the HOA, property owner, and County.
4. During maintenance, the HOA or representative shall replace (with an equivalent or higher rating panel), or repair any of the solar panels as needed in order to maintain the equivalent amount of solar power generated by such panels.
5. Any revisions to the above-described provisions of the CC&Rs shall be approved by the County, require the consent of 100 percent of the holders of first mortgages or the property owners within the HOA, and require the HOA to retain the same amount of funds set aside by this mitigation measure for the same purposes for the thirty-year period.

6. The County shall be named as a party to said Declaration authorizing the County to enforce the terms and conditions of the Declaration in the same manner as the HOA or any owner within the subdivision.
7. The HOA shall maintain the budgeted reserve described in paragraph f) below for the exclusive uses described below. The County may use such funds should it decide to enforce said obligations.
8. These CC&Rs shall be confirmed by the County prior to recording the first subdivision map.

f) Applicant shall submit the initial HOA budget subject to Department of Real Estate (DRE) rules, for review and approval by the County that includes a set aside fund of $300,000, for the purpose of repairing or replacing any solar panels (see ***Attachment G***), should such work not be eligible for reimbursement from the property owner's insurance policy or warranty. The set aside funds may also be used to enforce the provisions of the Covenant and any insurance claim if needed. The amount of the set aside funds shall be adjusted each year by the HOA, based on the annual indexed increases in construction costs and expenses consistent with the California Construction Cost Index or similar construction industry standard index, through a reserve study prepared by a qualified consultant, hired by the HOA as required by the DRE, provided however, in no event shall the reserve fund be increased more than 3 percent in a given year. This budgeted reserve amount shall be designated and restricted exclusively for the sole purposes set forth herein and may be used by the County should it decide to enforce the obligations of the property owner. If any amount of the set aside is used by the HOA or County for such purposes, the HOA shall replenish the fund with an amount equal to what has been withdrawn.

MONITORING: As provided for in the Mitigation Measure, the HOA shall be responsible for monitoring compliance with this mitigation measure and shall be responsible for taking such actions as necessary to enforce the Covenant placed on the property. Additionally, a fund shall be set aside by the HOA that will ensure the funding needed to enforce this provision. The County shall also be named a party to the CC&Rs allowing the County to enforce the terms and conditions of the CC&Rs in the same manner as the HOA or any owner within the subdivision.

TIMING: The solar panel(s) shall be installed prior to the issuance of the Project's first grading permit.

Conclusion

As explained above, after several years of litigation, the Court found that the environmental analyses within the Project's FEIR complied with CEQA except for one issue related to its GHG mitigation measures. As such the topical elements of the prior study that were previously approved by the BOS and assessed by the Court as adequate include the following:

- GHG analysis approach.
- A three-year construction period, with duration of specific construction efforts and specified associated construction equipment.
- Traffic generation information (average daily trips, vehicle miles traveled, and associated roadway effects).
- Sequestration effects during construction and subsequent landscaping.
- CEQA thresholds of significance (Net Zero GHG emissions taking into consideration GHG reduction measures).

The Project Applicant(s) has responded to the California Court of Appeal decision with proposed modifications to the Project's GHG reduction measures. The Project will offset 100 percent of the Project's GHG emissions with the implementation of previously identified Project design features (PDFs), updated as applicable, and a new mitigation measure (Mitigation Measure GHG MM-1) consistent with CARB's 2022 Scoping Plan, Appendix "D" Local Actions.

This analysis uses a different strategy to mitigate GHG emissions from the 2018 FEIR, which assumed onsite offset of electrical and natural gas emissions through onsite solar and purchase of offsite credits for remaining emissions. The current Project shifts the GHG reductions from credits based on potentially out of San Diego County offsets, to a localized reduction specific to GHG emissions generated within the County of San Diego and would offset GHG emissions from all Project GHG emission sources also generated within the County of San Diego. This is possible because all relevant GHG emissions equate to CO_2 equivalent (CO_2e) values which may be generated from any source including electrical, area, mobile, waste, water, and generator uses. The goal is to reduce any Project generated net increase in GHG emissions with offsets or avoidances in GHG emissions in the County using realistic and quantifiable measures to reduce emissions to zero.

GHG MM-1 is consistent with CARB's 2022 Scoping Plan that provides that if implementation of all feasible onsite GHG reduction measures is insufficient to reduce a project's impact to a less-than-significant level, the State recommends that the lead agency next explore options to fund or implement local, offsite direct GHG reduction strategies. Examples include local

building retrofit programs targeting existing residential and commercial buildings in the project's vicinity that result in the installation of solar panels and other such measures in exchange for being credited with the resulting GHG reductions in a project's CEQA analyses. Also consistent with the 2022 Scoping Plan, the proposed mitigation measure would be implemented in San Diego County, having the added potential co-benefit of reducing emissions of toxic air contaminants and criteria air pollutants, which will improve health and social and economic resiliency. Verification of local mitigation will also be more straightforward than verification of mitigation that is outside of the jurisdictional boundaries of the lead agency. As part of the mitigation measure, evidence will also be required to show that the solar panels will be installed on an existing commercial building that is not required by law or regulation to install such panels (i.e., a project cannot take credit for unrelated offsite measures that would occur independently of the proposed project). Such offsite mitigation measures "are viable options for mitigation under CEQA and would not be double counted, provided they are not otherwise required by law or regulation and would not have happened but for the mitigation requirements of the project." (Section 4.1.2. of Appendix "D" of the CARB 2022 Scoping Plan.) (CARB, 2022). As stated above, there are no federal, state, or local laws or policies that would require an existing commercial building to install solar panels as described in GHG MM-1. Although solar PV and energy storage systems will be required on all new commercial buildings with the update to Title 24, Part 6: Building Energy Efficiency Standards (the Energy Code), (effective January 1, 2023), such requirements will apply to commercial buildings that are issued a building permit for construction, reconstruction, or alteration work (minor renovations are not subject to such rules and there are a number of exceptions that can still apply). Similarly, Energy Goal E-2.2 of the County's Draft Climate Action Plan applies only to existing buildings with "qualified improvement" work.

To conclude, the Project Applicant(s) shall be conditioned to implement the PDFs and GHG MM-1 identified in this report. Based on this, the Project would not generate greenhouse gas emissions, either directly or indirectly, that could have a significant impact on the environment. Therefore, the Project will continue to remain in compliance with applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions.

2. Will the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The Project would be consistent with the recently approved 2022 Scoping Plan which lays out the sector-by-sector roadmap for California to achieve carbon neutrality by 2045. This Project would be carbon neutral by design. The Project would be required to include all the PDFs as identified in this report and mitigation measure GHG MM-1 identified above. With these measures, the proposed Project was found to generate zero net GHG emissions and this analysis considered all GHG emissions from both construction and operations. Because the

Project would ensure the total net GHG emissions from the HGVS Project are zero MT CO_2e the Project would be consistent with the State's plans of reducing GHGs. The Project would attain a net zero increase in GHG emissions, which is consistent with the AB 1279, and on track for meeting the SB 32 and EO S-3-05 reduction targets.

Moreover, compliance with applicable policies of the regional and local plans for the reduction of GHG emissions considers the Project's potential to conflict with such policies and is often tied to ensuring regional and local compliance with the State goals. The County of San Diego's General Plan contains various goals, policies and objectives related to the reduction of GHG emissions and global climate change. The Project's potential to conflict with other applicable policies adopted for the purpose of reducing GHG emissions at the regional level is identified as a factor that the lead agency considered pursuant to CEQA Guidelines Section 15064.4(b).

As discussed above, the Proposed Project would achieve GHG reductions through PDFs that include improved energy efficiency. Verification and commissioning of these features would occur through independent third-party inspection and diagnostics, in the Title 24 Compliance Reports provided by the Project Applicant to the County prior to issuance of the building permit.

The Project also would be consistent with specific General Plan policies 14.3, 15.1, 15.4, 17.2, 17.6, and 19.1, in that the Project: includes many design features to reduce energy and water use; would supply 100 percent of the Project's electricity needs through renewable sources; proposes sustainability and efficiency features consistent with the California Green Building Code; proposes implementing energy efficiency features that would achieve Title 24 requirements; would divert 90 percent of inert construction materials and 70 percent of all other construction materials from landfills through reuse and recycling; would provide areas for storage and collection of recyclables and yard waste; and proposes implementing water conservation strategies to reduce water usage by installing low flow water features.

The County's adopted General Plan emphasizes sustainable community design principles within its Goals and Policies. By locating the Proposed Project near existing and planned infrastructure, services, and jobs in a compact pattern of development, while at the same time promoting sustainability among its residents, the Project has been designed around the guiding principles of the General Plan. Developing the Proposed Project in this manner meets a number of the objectives of San Diego Forward, AB 32, SB 32 and EO S-3-05 reduction targets. This Project would be consistent and contribute to climate stabilization since the Project would not generate GHGs from non-renewable energy sources.

Therefore, the Project would not conflict with any State or County applicable plans, policies or regulations adopted for the purposes of reducing GHGs.

The Project Applicant(s)s shall be conditioned to implement the PDFs and Mitigation Measures identified in this report and shall also require verification GHG inventories throughout the planning process, building permit process and operations.

Upon installation of GHG MM-1 discussed above, GHG emissions from all Project sources would be Zero and would therefore be consistent with the Project specific GHG threshold of Zero GHG emissions. Therefore, the Project would not conflict with any State or County applicable plans, policies or regulations adopted for the purposes of reducing GHGs.

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7.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the projected CO_2e emissions from the Project development based upon the best available information at the time of preparation. The report was prepared by Jeremy Louden, a County approved CEQA Consultant for Air Quality and GHG.

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Date August 15, 2024

ATTACHMENT

A - CALEEMOD 2020.4.0 (Proposed Project)

Harmony Grove Village South 2020.4.0 - San Diego County, Annual

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

Harmony Grove Village South 2020.4.0

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	46.00	Space	0.41	18,400.00	0
City Park	1.50	Acre	1.50	65,340.00	0
Condo/Townhouse	260.00	Dwelling Unit	16.25	260,000.00	744
Single Family Housing	193.00	Dwelling Unit	62.66	347,400.00	552
Strip Mall	5.00	1000sqft	0.11	5,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2030
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	322.38	**CH4 Intensity (lb/MWhr)**	0.02	**N2O Intensity (lb/MWhr)**	0.002

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS will likely be 60% in 2030 to meet state goals.

Land Use - 500 SF has been added to the retail to account for building construction of the wastewater facility so the total will be 5000 SF for center house and 500 SF for WWTP (5,500 SF)

Construction Phase - Construction Schedule pushed forward from original report though same duration assumed which is consistentstent with approved Report (Helix). Building Construction was added for Solar and WWTP to be conservative. WWTP grading is same as rest of project.

Off-road Equipment - Construction Equipment Constistent With Previous Reports

Off-road Equipment - Construction Equipment Constistent With Previous Reports

Off-road Equipment - Construction Equipment Constistent With Previous Reports

Off-road Equipment - Construction Equipment Constistent With Previous Reports

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

Off-road Equipment - equipment for solar

Off-road Equipment - Construction equipment assumed for WWTP

Off-road Equipment - Construction Equipment Constistent With Previous Reports

Off-road Equipment - Construction Equipment Constistent With Previous Reports

Off-road Equipment - equipment list

Off-road Equipment - Construction Equipment Constistent With Previous Reports

Trips and VMT - Roadway Construction Maximum daily trips is 40 per 2017 analysis; Added solar and WWTP to existing building construction.

Grading - Per HG modeling approved in 2017

Architectural Coating - Rule 67 Paints and Coatings required by SDAPCD

Vehicle Trips - Trip generation based on LLG2017; trip length based on LLG2016

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - No Gas or Wood Fireplaces

Area Coating - Rule 67 Paints and Coatings required by SDAPCD

Energy Use - Energy assumptions based on Consol Addendum to the 2017 report update and assumes reductions for Title 24 2019. Efficiency for Parking and retail lighting reduced 65% to account for LED

Land Use Change - Vegetation Loss

Sequestration - Per Landscape Architect

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Operational Off-Road Equipment - WTWRF generator was modified per discussion with applicant. WTWRF will not operate more than 200 hours per year.

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00

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tblArchitecturalCoating	EF_Parking	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblAreaCoating	Area_EF_Parking	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblAreaCoating	Area_Nonresidential_Exterior	2750	2500
tblAreaCoating	Area_Nonresidential_Interior	8250	7500
tblConstructionPhase	NumDays	110.00	109.00
tblConstructionPhase	NumDays	1,550.00	130.00
tblConstructionPhase	NumDays	1,550.00	262.00
tblConstructionPhase	NumDays	1,550.00	589.00
tblConstructionPhase	NumDays	1,550.00	109.00
tblConstructionPhase	NumDays	1,550.00	262.00
tblConstructionPhase	NumDays	155.00	65.00
tblConstructionPhase	NumDays	110.00	109.00
tblConstructionPhase	NumDays	60.00	65.00
tblEnergyUse	LightingElect	1,001.10	0.00
tblEnergyUse	LightingElect	0.35	0.12
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	LightingElect	6.22	2.18
tblEnergyUse	NT24E	3,795.01	4,408.86
tblEnergyUse	NT24E	6,155.97	4,581.00
tblEnergyUse	NT24NG	4,180.00	0.00
tblEnergyUse	NT24NG	4,180.00	0.00
tblEnergyUse	NT24NG	1.09	0.00
tblEnergyUse	T24E	47.72	2,208.00

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tblEnergyUse	T24E	69.52	2,514.00
tblEnergyUse	T24E	2.84	4.77
tblEnergyUse	T24NG	9,243.79	0.00
tblEnergyUse	T24NG	17,401.47	0.00
tblEnergyUse	T24NG	1.13	0.00
tblFireplaces	NumberGas	143.00	0.00
tblFireplaces	NumberGas	106.15	0.00
tblFireplaces	NumberNoFireplace	26.00	260.00
tblFireplaces	NumberNoFireplace	19.30	193.00
tblFireplaces	NumberWood	91.00	0.00
tblFireplaces	NumberWood	67.55	0.00
tblGrading	AcresOfGrading	195.00	162.50
tblGrading	AcresOfGrading	97.50	0.00
tblLandUse	LandUseSquareFeet	5,000.00	5,500.00
tblLandUseChange	CO2peracre	0.00	6.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	25.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.02
tblProjectCharacteristics	CO2IntensityFactor	539.98	322.38
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.002
tblSequestration	NumberOfNewTrees	0.00	2,045.00
tblTripsAndVMT	VendorTripNumber	63.00	0.00
tblTripsAndVMT	VendorTripNumber	63.00	2.00
tblTripsAndVMT	VendorTripNumber	63.00	2.00

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

tblTripsAndVMT	WorkerTripNumber	294.00	40.00
tblTripsAndVMT	WorkerTripNumber	294.00	293.00
tblTripsAndVMT	WorkerTripNumber	294.00	293.00
tblTripsAndVMT	WorkerTripNumber	294.00	8.00
tblTripsAndVMT	WorkerTripNumber	294.00	4.00
tblVehicleTrips	CC_TL	7.30	7.88
tblVehicleTrips	CC_TL	7.30	7.88
tblVehicleTrips	CC_TL	7.30	7.88
tblVehicleTrips	CNW_TL	7.30	7.88
tblVehicleTrips	CNW_TL	7.30	7.88
tblVehicleTrips	CNW_TL	7.30	7.88
tblVehicleTrips	CW_TL	9.50	7.88
tblVehicleTrips	CW_TL	9.50	7.88
tblVehicleTrips	CW_TL	9.50	7.88
tblVehicleTrips	HO_TL	7.50	7.88
tblVehicleTrips	HO_TL	7.50	7.88
tblVehicleTrips	HO_TTP	39.60	39.00
tblVehicleTrips	HO_TTP	39.60	39.00
tblVehicleTrips	HS_TL	7.30	7.88
tblVehicleTrips	HS_TL	7.30	7.88
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	7.88
tblVehicleTrips	HW_TL	10.80	7.88
tblVehicleTrips	HW_TTP	41.60	42.00
tblVehicleTrips	HW_TTP	41.60	42.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	ST_TR	8.14	8.00
tblVehicleTrips	ST_TR	9.54	10.00

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

tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	SU_TR	6.28	8.00
tblVehicleTrips	SU_TR	8.55	10.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	7.32	8.00
tblVehicleTrips	WD_TR	9.44	10.00
tblVehicleTrips	WD_TR	44.32	0.00
tblWoodstoves	NumberCatalytic	13.00	0.00
tblWoodstoves	NumberCatalytic	9.65	0.00
tblWoodstoves	NumberNoncatalytic	13.00	0.00
tblWoodstoves	NumberNoncatalytic	9.65	0.00

2.0 Emissions Summary

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					
2025	0.0877	0.8368	0.6789	1.3900e-003	0.5468	0.0360	0.5828	0.2992	0.0334	0.3326	0.0000	122.0439	122.0439	0.0336	9.0000e-005	122.9105
2026	0.7338	6.2647	7.1830	0.0172	0.6211	0.2543	0.8754	0.2208	0.2362	0.4570	0.0000	1,518.0755	1,518.0755	0.3632	0.0209	1,533.3873
2027	0.4658	3.6467	5.0605	0.0126	0.5513	0.1333	0.6846	0.1484	0.1258	0.2742	0.0000	1,137.9690	1,137.9690	0.1427	0.0419	1,154.0211
2028	3.9600	2.6963	4.0858	9.3600e-003	0.3953	0.1008	0.4961	0.1063	0.0944	0.2008	0.0000	841.6157	841.6157	0.1291	0.0278	853.1238
2029	0.2252	0.1271	0.2042	4.2000e-004	0.0139	4.5300e-003	0.0184	3.7300e-003	4.2300e-003	7.9500e-003	0.0000	37.4538	37.4538	7.2200e-003	9.5000e-004	37.9182
Maximum	**3.9600**	**6.2647**	**7.1830**	**0.0172**	**0.6211**	**0.2543**	**0.8754**	**0.2992**	**0.2362**	**0.4570**	**0.0000**	**1,518.0755**	**1,518.0755**	**0.3632**	**0.0419**	**1,533.3873**

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

2.1 Overall Construction

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					
2025	0.0877	0.8368	0.6789	1.3900e-003	0.5468	0.0360	0.5828	0.2992	0.0334	0.3326	0.0000	122.0438	122.0438	0.0336	9.0000e-005	122.9103
2026	0.7338	6.2647	7.1830	0.0172	0.6211	0.2543	0.8754	0.2208	0.2362	0.4570	0.0000	1,518.0740	1,518.0740	0.3632	0.0209	1,533.3859
2027	0.4658	3.6467	5.0605	0.0126	0.5513	0.1333	0.6846	0.1484	0.1258	0.2742	0.0000	1,137.9683	1,137.9683	0.1427	0.0419	1,154.0205
2028	3.9600	2.6963	4.0858	9.3600e-003	0.3953	0.1008	0.4961	0.1063	0.0944	0.2008	0.0000	841.6152	841.6152	0.1291	0.0278	853.1233
2029	0.2252	0.1271	0.2042	4.2000e-004	0.0139	4.5300e-003	0.0184	3.7300e-003	4.2300e-003	7.9500e-003	0.0000	37.4538	37.4538	7.2200e-003	9.5000e-004	37.9182
Maximum	**3.9600**	**6.2647**	**7.1830**	**0.0172**	**0.6211**	**0.2543**	**0.8754**	**0.2992**	**0.2362**	**0.4570**	**0.0000**	**1,518.0740**	**1,518.0740**	**0.3632**	**0.0419**	**1,533.3859**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**10-1-2025**	**12-31-2025**	0.9247	0.9247
3	**1-1-2026**	**3-31-2026**	1.7257	1.7257
4	**4-1-2026**	**6-30-2026**	1.8070	1.8070
5	**7-1-2026**	**9-30-2026**	1.7648	1.7648
6	**10-1-2026**	**12-31-2026**	2.0389	2.0389
7	**1-1-2027**	**3-31-2027**	1.9403	1.9403
8	**4-1-2027**	**6-30-2027**	1.6667	1.6667

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

9	**7-1-2027**	**9-30-2027**	1.0174	1.0174
10	**10-1-2027**	**12-31-2027**	0.9521	0.9521
11	**1-1-2028**	**3-31-2028**	0.6485	0.6485
12	**4-1-2028**	**6-30-2028**	0.6792	0.6792
13	**7-1-2028**	**9-30-2028**	2.2261	2.2261
14	**10-1-2028**	**12-31-2028**	3.3667	3.3667
15	**1-1-2029**	**3-31-2029**	0.3388	0.3388
		Highest	3.3667	3.3667

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8786	0.0387	3.3552	1.8000e-004		0.0187	0.0187		0.0187	0.0187	0.0000	5.4953	5.4953	5.2400e-003	0.0000	5.6262
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	460.2607	460.2607	0.0286	2.8600e-003	461.8255
Mobile	1.5377	1.5502	14.2371	0.0303	3.8194	0.0209	3.8403	1.0192	0.0195	1.0387	0.0000	2,802.3381	2,802.3381	0.2056	0.1295	2,846.0710
Offroad	4.8800e-003	0.0451	0.0909	1.6000e-004		9.3000e-004	9.3000e-004		9.3000e-004	9.3000e-004	0.0000	14.1302	14.1302	4.0000e-004	0.0000	14.1401
Waste						0.0000	0.0000		0.0000	0.0000	71.3107	0.0000	71.3107	4.2143	0.0000	176.6693
Water						0.0000	0.0000		0.0000	0.0000	9.4812	90.4043	99.8855	0.9794	0.0236	131.3902
Total	**4.4213**	**1.6340**	**17.6831**	**0.0306**	**3.8194**	**0.0405**	**3.8598**	**1.0192**	**0.0391**	**1.0583**	**80.7919**	**3,372.6286**	**3,453.4205**	**5.4335**	**0.1559**	**3,635.7223**

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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	2.8786	0.0387	3.3552	1.8000e-004		0.0187	0.0187		0.0187	0.0187	0.0000	5.4953	5.4953	5.2400e-003	0.0000	5.6262
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	460.2607	460.2607	0.0286	2.8600e-003	461.8255
Mobile	1.5377	1.5502	14.2371	0.0303	3.8194	0.0209	3.8403	1.0192	0.0195	1.0387	0.0000	2,802.3381	2,802.3381	0.2056	0.1295	2,846.0710
Offroad	4.8800e-003	0.0451	0.0909	1.6000e-004		9.3000e-004	9.3000e-004		9.3000e-004	9.3000e-004	0.0000	14.1302	14.1302	4.0000e-004	0.0000	14.1401
Waste						0.0000	0.0000		0.0000	0.0000	53.4830	0.0000	53.4830	3.1608	0.0000	132.5020
Water						0.0000	0.0000		0.0000	0.0000	7.5849	51.4684	59.0533	0.7822	0.0187	84.1861
Total	**4.4213**	**1.6340**	**17.6831**	**0.0306**	**3.8194**	**0.0405**	**3.8598**	**1.0192**	**0.0391**	**1.0583**	**61.0680**	**3,333.6927**	**3,394.7606**	**4.1828**	**0.1511**	**3,544.3510**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**24.41**	**1.15**	**1.70**	**23.02**	**3.10**	**2.51**

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

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,447.8600
Vegetation Land Change	-729.0910
Total	**718.7690**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/9/2025	1/7/2026	5	65	
2	Backbone infrastructure	Trenching	1/8/2026	7/8/2026	5	130	
3	Roadway Construction	Building Construction	1/8/2026	7/8/2026	5	130	
4	Grading	Grading	7/9/2026	10/7/2026	5	65	
5	Bridge Construction	Building Construction	7/9/2026	7/9/2027	5	262	
6	Building Construction	Building Construction	10/9/2026	1/10/2029	5	589	
7	Building Construction WWTP	Building Construction	10/9/2026	3/10/2027	5	109	
8	Building Construction (Solar)	Building Construction	3/1/2028	3/1/2029	5	262	
9	Paving	Paving	8/9/2028	1/8/2029	5	109	
10	Architectural Coating	Architectural Coating	8/9/2028	1/8/2029	5	109	

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

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 162.5

Acres of Paving: 0.41

Residential Indoor: 1,229,985; Residential Outdoor: 409,995; Non-Residential Indoor: 8,250; Non-Residential Outdoor: 2,750; Striped Parking Area: 1,104 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crushing/Proc. Equipment	1	8.00	85	0.78
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Backbone infrastructure	Forklifts	1	8.00	89	0.20
Backbone infrastructure	Off-Highway Trucks	2	8.00	402	0.38
Backbone infrastructure	Other Material Handling Equipment	1	8.00	168	0.40
Backbone infrastructure	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Backbone infrastructure	Trenchers	1	8.00	78	0.50
Roadway Construction	Crawler Tractors	1	8.00	212	0.43
Roadway Construction	Excavators	3	8.00	158	0.38
Roadway Construction	Graders	1	8.00	187	0.41
Roadway Construction	Rollers	2	8.00	80	0.38
Roadway Construction	Rubber Tired Dozers	1	8.00	247	0.40
Roadway Construction	Scrapers	2	8.00	367	0.48
Roadway Construction	Signal Boards	4	8.00	6	0.82
Roadway Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48

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

Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Bridge Construction	Cranes	2	7.00	231	0.29
Bridge Construction	Forklifts	1	8.00	89	0.20
Bridge Construction	Generator Sets	2	8.00	84	0.74
Bridge Construction	Pumps	1	8.00	84	0.74
Bridge Construction	Tractors/Loaders/Backhoes	3	7.00	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
Building Construction WWTP	Cranes	1	7.00	231	0.29
Building Construction WWTP	Forklifts	3	8.00	89	0.20
Building Construction WWTP	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction WWTP	Welders	1	8.00	46	0.45
Building Construction (Solar)	Aerial Lifts	1	4.00	63	0.31
Building Construction (Solar)	Rough Terrain Forklifts	1	8.00	100	0.40
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Backbone infrastructure	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Roadway Construction	16	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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

Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Bridge Construction	9	293.00	63.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	293.00	63.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction WWTP	8	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction (Solar)	2	4.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	59.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2025

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					0.5420	0.0000	0.5420	0.2979	0.0000	0.2979	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0863	0.8359	0.6669	1.3500e-003		0.0359	0.0359		0.0333	0.0333	0.0000	118.4865	118.4865	0.0335	0.0000	119.3230
Total	**0.0863**	**0.8359**	**0.6669**	**1.3500e-003**	**0.5420**	**0.0359**	**0.5779**	**0.2979**	**0.0333**	**0.3313**	**0.0000**	**118.4865**	**118.4865**	**0.0335**	**0.0000**	**119.3230**

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

3.2 Site Preparation - 2025

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	1.4400e-003	9.1000e-004	0.0120	4.0000e-005	4.8100e-003	2.0000e-005	4.8400e-003	1.2800e-003	2.0000e-005	1.3000e-003	0.0000	3.5574	3.5574	9.0000e-005	9.0000e-005	3.5875
Total	**1.4400e-003**	**9.1000e-004**	**0.0120**	**4.0000e-005**	**4.8100e-003**	**2.0000e-005**	**4.8400e-003**	**1.2800e-003**	**2.0000e-005**	**1.3000e-003**	**0.0000**	**3.5574**	**3.5574**	**9.0000e-005**	**9.0000e-005**	**3.5875**

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					0.5420	0.0000	0.5420	0.2979	0.0000	0.2979	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0863	0.8359	0.6669	1.3500e-003		0.0359	0.0359		0.0333	0.0333	0.0000	118.4864	118.4864	0.0335	0.0000	119.3228
Total	**0.0863**	**0.8359**	**0.6669**	**1.3500e-003**	**0.5420**	**0.0359**	**0.5779**	**0.2979**	**0.0333**	**0.3313**	**0.0000**	**118.4864**	**118.4864**	**0.0335**	**0.0000**	**119.3228**

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

3.2 Site Preparation - 2025

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	1.4400e-003	9.1000e-004	0.0120	4.0000e-005	4.8100e-003	2.0000e-005	4.8400e-003	1.2800e-003	2.0000e-005	1.3000e-003	0.0000	3.5574	3.5574	9.0000e-005	9.0000e-005	3.5875
Total	**1.4400e-003**	**9.1000e-004**	**0.0120**	**4.0000e-005**	**4.8100e-003**	**2.0000e-005**	**4.8400e-003**	**1.2800e-003**	**2.0000e-005**	**1.3000e-003**	**0.0000**	**3.5574**	**3.5574**	**9.0000e-005**	**9.0000e-005**	**3.5875**

3.2 Site Preparation - 2026

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.1900e-003	0.0697	0.0556	1.1000e-004		2.9900e-003	2.9900e-003		2.7800e-003	2.7800e-003	0.0000	9.8739	9.8739	2.7900e-003	0.0000	9.9436
Total	**7.1900e-003**	**0.0697**	**0.0556**	**1.1000e-004**	**0.0452**	**2.9900e-003**	**0.0482**	**0.0248**	**2.7800e-003**	**0.0276**	**0.0000**	**9.8739**	**9.8739**	**2.7900e-003**	**0.0000**	**9.9436**

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

3.2 Site Preparation - 2026

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	1.1000e-004	7.0000e-005	9.4000e-004	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.2872	0.2872	1.0000e-005	1.0000e-005	0.2896
Total	**1.1000e-004**	**7.0000e-005**	**9.4000e-004**	**0.0000**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.2872**	**0.2872**	**1.0000e-005**	**1.0000e-005**	**0.2896**

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.1900e-003	0.0697	0.0556	1.1000e-004		2.9900e-003	2.9900e-003		2.7800e-003	2.7800e-003	0.0000	9.8739	9.8739	2.7900e-003	0.0000	9.9436
Total	**7.1900e-003**	**0.0697**	**0.0556**	**1.1000e-004**	**0.0452**	**2.9900e-003**	**0.0482**	**0.0248**	**2.7800e-003**	**0.0276**	**0.0000**	**9.8739**	**9.8739**	**2.7900e-003**	**0.0000**	**9.9436**

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

3.2 Site Preparation - 2026

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	1.1000e-004	7.0000e-005	9.4000e-004	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.2872	0.2872	1.0000e-005	1.0000e-005	0.2896
Total	**1.1000e-004**	**7.0000e-005**	**9.4000e-004**	**0.0000**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.2872**	**0.2872**	**1.0000e-005**	**1.0000e-005**	**0.2896**

3.3 Backbone infrastructure - 2026

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	0.1102	0.8006	1.0256	2.5900e-003		0.0376	0.0376		0.0346	0.0346	0.0000	227.5361	227.5361	0.0736	0.0000	229.3759
Total	**0.1102**	**0.8006**	**1.0256**	**2.5900e-003**		**0.0376**	**0.0376**		**0.0346**	**0.0346**	**0.0000**	**227.5361**	**227.5361**	**0.0736**	**0.0000**	**229.3759**

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

3.3 Backbone infrastructure - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2100e-003	1.3500e-003	0.0183	6.0000e-005	7.8200e-003	4.0000e-005	7.8600e-003	2.0800e-003	3.0000e-005	2.1100e-003	0.0000	5.6002	5.6002	1.4000e-004	1.4000e-004	5.6463
Total	**2.2100e-003**	**1.3500e-003**	**0.0183**	**6.0000e-005**	**7.8200e-003**	**4.0000e-005**	**7.8600e-003**	**2.0800e-003**	**3.0000e-005**	**2.1100e-003**	**0.0000**	**5.6002**	**5.6002**	**1.4000e-004**	**1.4000e-004**	**5.6463**

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	0.1102	0.8006	1.0256	2.5900e-003		0.0376	0.0376		0.0346	0.0346	0.0000	227.5359	227.5359	0.0736	0.0000	229.3756
Total	**0.1102**	**0.8006**	**1.0256**	**2.5900e-003**		**0.0376**	**0.0376**		**0.0346**	**0.0346**	**0.0000**	**227.5359**	**227.5359**	**0.0736**	**0.0000**	**229.3756**

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

3.3 Backbone infrastructure - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2100e-003	1.3500e-003	0.0183	6.0000e-005	7.8200e-003	4.0000e-005	7.8600e-003	2.0800e-003	3.0000e-005	2.1100e-003	0.0000	5.6002	5.6002	1.4000e-004	1.4000e-004	5.6463
Total	**2.2100e-003**	**1.3500e-003**	**0.0183**	**6.0000e-005**	**7.8200e-003**	**4.0000e-005**	**7.8600e-003**	**2.0800e-003**	**3.0000e-005**	**2.1100e-003**	**0.0000**	**5.6002**	**5.6002**	**1.4000e-004**	**1.4000e-004**	**5.6463**

3.4 Roadway Construction - 2026

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	0.2565	2.4340	2.3785	5.4000e-003		0.1005	0.1005		0.0928	0.0928	0.0000	470.1007	470.1007	0.1495	0.0000	473.8378
Total	**0.2565**	**2.4340**	**2.3785**	**5.4000e-003**		**0.1005**	**0.1005**		**0.0928**	**0.0928**	**0.0000**	**470.1007**	**470.1007**	**0.1495**	**0.0000**	**473.8378**

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

3.4 Roadway Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8800e-003	3.6100e-003	0.0489	1.6000e-004	0.0209	1.0000e-004	0.0210	5.5400e-003	9.0000e-005	5.6300e-003	0.0000	14.9338	14.9338	3.7000e-004	3.8000e-004	15.0568
Total	**5.8800e-003**	**3.6100e-003**	**0.0489**	**1.6000e-004**	**0.0209**	**1.0000e-004**	**0.0210**	**5.5400e-003**	**9.0000e-005**	**5.6300e-003**	**0.0000**	**14.9338**	**14.9338**	**3.7000e-004**	**3.8000e-004**	**15.0568**

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	0.2565	2.4340	2.3785	5.4000e-003		0.1005	0.1005		0.0928	0.0928	0.0000	470.1001	470.1001	0.1495	0.0000	473.8372
Total	**0.2565**	**2.4340**	**2.3785**	**5.4000e-003**		**0.1005**	**0.1005**		**0.0928**	**0.0928**	**0.0000**	**470.1001**	**470.1001**	**0.1495**	**0.0000**	**473.8372**

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

3.4 Roadway Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8800e-003	3.6100e-003	0.0489	1.6000e-004	0.0209	1.0000e-004	0.0210	5.5400e-003	9.0000e-005	5.6300e-003	0.0000	14.9338	14.9338	3.7000e-004	3.8000e-004	15.0568
Total	**5.8800e-003**	**3.6100e-003**	**0.0489**	**1.6000e-004**	**0.0209**	**1.0000e-004**	**0.0210**	**5.5400e-003**	**9.0000e-005**	**5.6300e-003**	**0.0000**	**14.9338**	**14.9338**	**3.7000e-004**	**3.8000e-004**	**15.0568**

3.5 Grading - 2026

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					0.2819	0.0000	0.2819	0.1169	0.0000	0.1169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0943	0.9081	0.8558	2.0200e-003		0.0368	0.0368		0.0338	0.0338	0.0000	177.1452	177.1452	0.0573	0.0000	178.5775
Total	**0.0943**	**0.9081**	**0.8558**	**2.0200e-003**	**0.2819**	**0.0368**	**0.3186**	**0.1169**	**0.0338**	**0.1507**	**0.0000**	**177.1452**	**177.1452**	**0.0573**	**0.0000**	**178.5775**

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

3.5 Grading - 2026

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	1.4700e-003	9.0000e-004	0.0122	4.0000e-005	5.2100e-003	2.0000e-005	5.2400e-003	1.3900e-003	2.0000e-005	1.4100e-003	0.0000	3.7334	3.7334	9.0000e-005	1.0000e-004	3.7642
Total	**1.4700e-003**	**9.0000e-004**	**0.0122**	**4.0000e-005**	**5.2100e-003**	**2.0000e-005**	**5.2400e-003**	**1.3900e-003**	**2.0000e-005**	**1.4100e-003**	**0.0000**	**3.7334**	**3.7334**	**9.0000e-005**	**1.0000e-004**	**3.7642**

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					0.2819	0.0000	0.2819	0.1169	0.0000	0.1169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0943	0.9081	0.8558	2.0200e-003		0.0368	0.0368		0.0338	0.0338	0.0000	177.1450	177.1450	0.0573	0.0000	178.5773
Total	**0.0943**	**0.9081**	**0.8558**	**2.0200e-003**	**0.2819**	**0.0368**	**0.3186**	**0.1169**	**0.0338**	**0.1507**	**0.0000**	**177.1450**	**177.1450**	**0.0573**	**0.0000**	**178.5773**

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

3.5 Grading - 2026

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	1.4700e-003	9.0000e-004	0.0122	4.0000e-005	5.2100e-003	2.0000e-005	5.2400e-003	1.3900e-003	2.0000e-005	1.4100e-003	0.0000	3.7334	3.7334	9.0000e-005	1.0000e-004	3.7642
Total	**1.4700e-003**	**9.0000e-004**	**0.0122**	**4.0000e-005**	**5.2100e-003**	**2.0000e-005**	**5.2400e-003**	**1.3900e-003**	**2.0000e-005**	**1.4100e-003**	**0.0000**	**3.7334**	**3.7334**	**9.0000e-005**	**1.0000e-004**	**3.7642**

3.6 Bridge Construction - 2026

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	0.1134	1.0763	1.3268	2.4900e-003		0.0449	0.0449		0.0428	0.0428	0.0000	216.4929	216.4929	0.0395	0.0000	217.4814
Total	**0.1134**	**1.0763**	**1.3268**	**2.4900e-003**		**0.0449**	**0.0449**		**0.0428**	**0.0428**	**0.0000**	**216.4929**	**216.4929**	**0.0395**	**0.0000**	**217.4814**

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

3.6 Bridge Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2200e-003	0.1714	0.0590	7.7000e-004	0.0264	1.0300e-003	0.0274	7.6100e-003	9.9000e-004	8.6000e-003	0.0000	75.2940	75.2940	2.5900e-003	0.0109	78.6062
Worker	0.0418	0.0256	0.3473	1.1600e-003	0.1480	7.0000e-004	0.1487	0.0393	6.5000e-004	0.0400	0.0000	106.0241	106.0241	2.6500e-003	2.7100e-003	106.8973
Total	**0.0460**	**0.1971**	**0.4062**	**1.9300e-003**	**0.1744**	**1.7300e-003**	**0.1761**	**0.0469**	**1.6400e-003**	**0.0486**	**0.0000**	**181.3181**	**181.3181**	**5.2400e-003**	**0.0136**	**185.5036**

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	0.1134	1.0763	1.3268	2.4900e-003		0.0449	0.0449		0.0428	0.0428	0.0000	216.4926	216.4926	0.0395	0.0000	217.4812
Total	**0.1134**	**1.0763**	**1.3268**	**2.4900e-003**		**0.0449**	**0.0449**		**0.0428**	**0.0428**	**0.0000**	**216.4926**	**216.4926**	**0.0395**	**0.0000**	**217.4812**

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

3.6 Bridge Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2200e-003	0.1714	0.0590	7.7000e-004	0.0264	1.0300e-003	0.0274	7.6100e-003	9.9000e-004	8.6000e-003	0.0000	75.2940	75.2940	2.5900e-003	0.0109	78.6062
Worker	0.0418	0.0256	0.3473	1.1600e-003	0.1480	7.0000e-004	0.1487	0.0393	6.5000e-004	0.0400	0.0000	106.0241	106.0241	2.6500e-003	2.7100e-003	106.8973
Total	**0.0460**	**0.1971**	**0.4062**	**1.9300e-003**	**0.1744**	**1.7300e-003**	**0.1761**	**0.0469**	**1.6400e-003**	**0.0486**	**0.0000**	**181.3181**	**181.3181**	**5.2400e-003**	**0.0136**	**185.5036**

3.6 Bridge Construction - 2027

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	0.1224	1.1617	1.4321	2.6900e-003		0.0485	0.0485		0.0462	0.0462	0.0000	233.6749	233.6749	0.0427	0.0000	234.7419
Total	**0.1224**	**1.1617**	**1.4321**	**2.6900e-003**		**0.0485**	**0.0485**		**0.0462**	**0.0462**	**0.0000**	**233.6749**	**233.6749**	**0.0427**	**0.0000**	**234.7419**

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

3.6 Bridge Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4500e-003	0.1831	0.0630	8.1000e-004	0.0285	1.1000e-003	0.0296	8.2100e-003	1.0600e-003	9.2700e-003	0.0000	79.5895	79.5895	2.8600e-003	0.0115	83.0930
Worker	0.0426	0.0254	0.3552	1.2100e-003	0.1598	7.1000e-004	0.1605	0.0425	6.6000e-004	0.0431	0.0000	111.1063	111.1063	2.6300e-003	2.7800e-003	112.0001
Total	**0.0471**	**0.2085**	**0.4182**	**2.0200e-003**	**0.1882**	**1.8100e-003**	**0.1900**	**0.0507**	**1.7200e-003**	**0.0524**	**0.0000**	**190.6957**	**190.6957**	**5.4900e-003**	**0.0143**	**195.0931**

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	0.1224	1.1617	1.4321	2.6900e-003		0.0485	0.0485		0.0462	0.0462	0.0000	233.6746	233.6746	0.0427	0.0000	234.7416
Total	**0.1224**	**1.1617**	**1.4321**	**2.6900e-003**		**0.0485**	**0.0485**		**0.0462**	**0.0462**	**0.0000**	**233.6746**	**233.6746**	**0.0427**	**0.0000**	**234.7416**

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

3.6 Bridge Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4500e-003	0.1831	0.0630	8.1000e-004	0.0285	1.1000e-003	0.0296	8.2100e-003	1.0600e-003	9.2700e-003	0.0000	79.5895	79.5895	2.8600e-003	0.0115	83.0930
Worker	0.0426	0.0254	0.3552	1.2100e-003	0.1598	7.1000e-004	0.1605	0.0425	6.6000e-004	0.0431	0.0000	111.1063	111.1063	2.6300e-003	2.7800e-003	112.0001
Total	**0.0471**	**0.2085**	**0.4182**	**2.0200e-003**	**0.1882**	**1.8100e-003**	**0.1900**	**0.0507**	**1.7200e-003**	**0.0524**	**0.0000**	**190.6957**	**190.6957**	**5.4900e-003**	**0.0143**	**195.0931**

3.7 Building Construction - 2026

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	0.0410	0.3741	0.4825	8.1000e-004		0.0158	0.0158		0.0149	0.0149	0.0000	69.5758	69.5758	0.0164	0.0000	69.9847
Total	**0.0410**	**0.3741**	**0.4825**	**8.1000e-004**		**0.0158**	**0.0158**		**0.0149**	**0.0149**	**0.0000**	**69.5758**	**69.5758**	**0.0164**	**0.0000**	**69.9847**

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

3.7 Building Construction - 2026

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	2.0100e-003	0.0816	0.0281	3.6000e-004	0.0126	4.9000e-004	0.0130	3.6200e-003	4.7000e-004	4.0900e-003	0.0000	35.8543	35.8543	1.2300e-003	5.1900e-003	37.4315
Worker	0.0199	0.0122	0.1654	5.5000e-004	0.0705	3.3000e-004	0.0708	0.0187	3.1000e-004	0.0190	0.0000	50.4877	50.4877	1.2600e-003	1.2900e-003	50.9035
Total	**0.0219**	**0.0938**	**0.1935**	**9.1000e-004**	**0.0830**	**8.2000e-004**	**0.0839**	**0.0224**	**7.8000e-004**	**0.0231**	**0.0000**	**86.3419**	**86.3419**	**2.4900e-003**	**6.4800e-003**	**88.3350**

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	0.0410	0.3741	0.4825	8.1000e-004		0.0158	0.0158		0.0149	0.0149	0.0000	69.5758	69.5758	0.0164	0.0000	69.9846
Total	**0.0410**	**0.3741**	**0.4825**	**8.1000e-004**		**0.0158**	**0.0158**		**0.0149**	**0.0149**	**0.0000**	**69.5758**	**69.5758**	**0.0164**	**0.0000**	**69.9846**

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

3.7 Building Construction - 2026

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	2.0100e-003	0.0816	0.0281	3.6000e-004	0.0126	4.9000e-004	0.0130	3.6200e-003	4.7000e-004	4.0900e-003	0.0000	35.8543	35.8543	1.2300e-003	5.1900e-003	37.4315
Worker	0.0199	0.0122	0.1654	5.5000e-004	0.0705	3.3000e-004	0.0708	0.0187	3.1000e-004	0.0190	0.0000	50.4877	50.4877	1.2600e-003	1.2900e-003	50.9035
Total	**0.0219**	**0.0938**	**0.1935**	**9.1000e-004**	**0.0830**	**8.2000e-004**	**0.0839**	**0.0224**	**7.8000e-004**	**0.0231**	**0.0000**	**86.3419**	**86.3419**	**2.4900e-003**	**6.4800e-003**	**88.3350**

3.7 Building Construction - 2027

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	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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

3.7 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.5400e-003	0.3513	0.1209	1.5500e-003	0.0546	2.1200e-003	0.0567	0.0158	2.0300e-003	0.0178	0.0000	152.7415	152.7415	5.4800e-003	0.0221	159.4652
Worker	0.0818	0.0488	0.6816	2.3300e-003	0.3066	1.3700e-003	0.3080	0.0815	1.2600e-003	0.0827	0.0000	213.2260	213.2260	5.0400e-003	5.3300e-003	214.9414
Total	**0.0904**	**0.4000**	**0.8026**	**3.8800e-003**	**0.3612**	**3.4900e-003**	**0.3647**	**0.0972**	**3.2900e-003**	**0.1005**	**0.0000**	**365.9675**	**365.9675**	**0.0105**	**0.0274**	**374.4067**

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	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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

3.7 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.5400e-003	0.3513	0.1209	1.5500e-003	0.0546	2.1200e-003	0.0567	0.0158	2.0300e-003	0.0178	0.0000	152.7415	152.7415	5.4800e-003	0.0221	159.4652
Worker	0.0818	0.0488	0.6816	2.3300e-003	0.3066	1.3700e-003	0.3080	0.0815	1.2600e-003	0.0827	0.0000	213.2260	213.2260	5.0400e-003	5.3300e-003	214.9414
Total	**0.0904**	**0.4000**	**0.8026**	**3.8800e-003**	**0.3612**	**3.4900e-003**	**0.3647**	**0.0972**	**3.2900e-003**	**0.1005**	**0.0000**	**365.9675**	**365.9675**	**0.0105**	**0.0274**	**374.4067**

3.7 Building Construction - 2028

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	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4953	301.4953	0.0709	0.0000	303.2671
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4953**	**301.4953**	**0.0709**	**0.0000**	**303.2671**

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

3.7 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.3400e-003	0.3469	0.1197	1.5100e-003	0.0544	2.0900e-003	0.0565	0.0157	2.0000e-003	0.0177	0.0000	149.1107	149.1107	5.5800e-003	0.0216	155.6773
Worker	0.0771	0.0449	0.6472	2.2500e-003	0.3055	1.2700e-003	0.3067	0.0812	1.1700e-003	0.0823	0.0000	206.7057	206.7057	4.6400e-003	5.0800e-003	208.3355
Total	**0.0854**	**0.3917**	**0.7670**	**3.7600e-003**	**0.3598**	**3.3600e-003**	**0.3632**	**0.0969**	**3.1700e-003**	**0.1001**	**0.0000**	**355.8163**	**355.8163**	**0.0102**	**0.0267**	**364.0127**

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	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4949	301.4949	0.0709	0.0000	303.2667
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4949**	**301.4949**	**0.0709**	**0.0000**	**303.2667**

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

3.7 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.3400e-003	0.3469	0.1197	1.5100e-003	0.0544	2.0900e-003	0.0565	0.0157	2.0000e-003	0.0177	0.0000	149.1107	149.1107	5.5800e-003	0.0216	155.6773
Worker	0.0771	0.0449	0.6472	2.2500e-003	0.3055	1.2700e-003	0.3067	0.0812	1.1700e-003	0.0823	0.0000	206.7057	206.7057	4.6400e-003	5.0800e-003	208.3355
Total	**0.0854**	**0.3917**	**0.7670**	**3.7600e-003**	**0.3598**	**3.3600e-003**	**0.3632**	**0.0969**	**3.1700e-003**	**0.1001**	**0.0000**	**355.8163**	**355.8163**	**0.0102**	**0.0267**	**364.0127**

3.7 Building Construction - 2029

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	5.4700e-003	0.0499	0.0643	1.1000e-004		2.1100e-003	2.1100e-003		1.9900e-003	1.9900e-003	0.0000	9.2768	9.2768	2.1800e-003	0.0000	9.3313
Total	**5.4700e-003**	**0.0499**	**0.0643**	**1.1000e-004**		**2.1100e-003**	**2.1100e-003**		**1.9900e-003**	**1.9900e-003**	**0.0000**	**9.2768**	**9.2768**	**2.1800e-003**	**0.0000**	**9.3313**

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

3.7 Building Construction - 2029

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	2.5000e-004	0.0106	3.6600e-003	5.0000e-005	1.6700e-003	6.0000e-005	1.7400e-003	4.8000e-004	6.0000e-005	5.4000e-004	0.0000	4.4938	4.4938	1.8000e-004	6.5000e-004	4.6918
Worker	2.2400e-003	1.2800e-003	0.0190	7.0000e-005	9.4000e-003	4.0000e-005	9.4400e-003	2.5000e-003	3.0000e-005	2.5300e-003	0.0000	6.2030	6.2030	1.3000e-004	1.5000e-004	6.2510
Total	**2.4900e-003**	**0.0118**	**0.0227**	**1.2000e-004**	**0.0111**	**1.0000e-004**	**0.0112**	**2.9800e-003**	**9.0000e-005**	**3.0700e-003**	**0.0000**	**10.6968**	**10.6968**	**3.1000e-004**	**8.0000e-004**	**10.9428**

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	5.4700e-003	0.0499	0.0643	1.1000e-004		2.1100e-003	2.1100e-003		1.9900e-003	1.9900e-003	0.0000	9.2768	9.2768	2.1800e-003	0.0000	9.3313
Total	**5.4700e-003**	**0.0499**	**0.0643**	**1.1000e-004**		**2.1100e-003**	**2.1100e-003**		**1.9900e-003**	**1.9900e-003**	**0.0000**	**9.2768**	**9.2768**	**2.1800e-003**	**0.0000**	**9.3313**

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

3.7 Building Construction - 2029

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	2.5000e-004	0.0106	3.6600e-003	5.0000e-005	1.6700e-003	6.0000e-005	1.7400e-003	4.8000e-004	6.0000e-005	5.4000e-004	0.0000	4.4938	4.4938	1.8000e-004	6.5000e-004	4.6918
Worker	2.2400e-003	1.2800e-003	0.0190	7.0000e-005	9.4000e-003	4.0000e-005	9.4400e-003	2.5000e-003	3.0000e-005	2.5300e-003	0.0000	6.2030	6.2030	1.3000e-004	1.5000e-004	6.2510
Total	**2.4900e-003**	**0.0118**	**0.0227**	**1.2000e-004**	**0.0111**	**1.0000e-004**	**0.0112**	**2.9800e-003**	**9.0000e-005**	**3.0700e-003**	**0.0000**	**10.6968**	**10.6968**	**3.1000e-004**	**8.0000e-004**	**10.9428**

3.8 Building Construction WWTP - 2026

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	0.0330	0.3022	0.3728	6.1000e-004		0.0130	0.0130		0.0120	0.0120	0.0000	52.6196	52.6196	0.0157	0.0000	53.0128
Total	**0.0330**	**0.3022**	**0.3728**	**6.1000e-004**		**0.0130**	**0.0130**		**0.0120**	**0.0120**	**0.0000**	**52.6196**	**52.6196**	**0.0157**	**0.0000**	**53.0128**

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

3.8 Building Construction WWTP - 2026

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	6.0000e-005	2.5900e-003	8.9000e-004	1.0000e-005	4.0000e-004	2.0000e-005	4.1000e-004	1.2000e-004	1.0000e-005	1.3000e-004	0.0000	1.1382	1.1382	4.0000e-005	1.6000e-004	1.1883
Worker	5.4000e-004	3.3000e-004	4.5200e-003	2.0000e-005	1.9200e-003	1.0000e-005	1.9300e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.3785	1.3785	3.0000e-005	4.0000e-005	1.3899
Total	**6.0000e-004**	**2.9200e-003**	**5.4100e-003**	**3.0000e-005**	**2.3200e-003**	**3.0000e-005**	**2.3400e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.5167**	**2.5167**	**7.0000e-005**	**2.0000e-004**	**2.5782**

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	0.0330	0.3022	0.3728	6.1000e-004		0.0130	0.0130		0.0120	0.0120	0.0000	52.6196	52.6196	0.0157	0.0000	53.0128
Total	**0.0330**	**0.3022**	**0.3728**	**6.1000e-004**		**0.0130**	**0.0130**		**0.0120**	**0.0120**	**0.0000**	**52.6196**	**52.6196**	**0.0157**	**0.0000**	**53.0128**

Harmony Grove Village South 2020.4.0 - San Diego County, Annual

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

3.8 Building Construction WWTP - 2026

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	6.0000e-005	2.5900e-003	8.9000e-004	1.0000e-005	4.0000e-004	2.0000e-005	4.1000e-004	1.2000e-004	1.0000e-005	1.3000e-004	0.0000	1.1382	1.1382	4.0000e-005	1.6000e-004	1.1883
Worker	5.4000e-004	3.3000e-004	4.5200e-003	2.0000e-005	1.9200e-003	1.0000e-005	1.9300e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.3785	1.3785	3.0000e-005	4.0000e-005	1.3899
Total	**6.0000e-004**	**2.9200e-003**	**5.4100e-003**	**3.0000e-005**	**2.3200e-003**	**3.0000e-005**	**2.3400e-003**	**6.3000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.5167**	**2.5167**	**7.0000e-005**	**2.0000e-004**	**2.5782**

3.8 Building Construction WWTP - 2027

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	0.0270	0.2468	0.3044	5.0000e-004		0.0106	0.0106		9.8200e-003	9.8200e-003	0.0000	42.9727	42.9727	0.0128	0.0000	43.2938
Total	**0.0270**	**0.2468**	**0.3044**	**5.0000e-004**		**0.0106**	**0.0106**		**9.8200e-003**	**9.8200e-003**	**0.0000**	**42.9727**	**42.9727**	**0.0128**	**0.0000**	**43.2938**

Harmony Grove Village South 2020.4.0 - San Diego County, Annual

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

3.8 Building Construction WWTP - 2027

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	5.0000e-005	2.0900e-003	7.2000e-004	1.0000e-005	3.3000e-004	1.0000e-005	3.4000e-004	9.0000e-005	1.0000e-005	1.1000e-004	0.0000	0.9103	0.9103	3.0000e-005	1.3000e-004	0.9504
Worker	4.2000e-004	2.5000e-004	3.4900e-003	1.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.2000e-004	0.0000	1.0930	1.0930	3.0000e-005	3.0000e-005	1.1018
Total	**4.7000e-004**	**2.3400e-003**	**4.2100e-003**	**2.0000e-005**	**1.9000e-003**	**2.0000e-005**	**1.9200e-003**	**5.1000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**2.0033**	**2.0033**	**6.0000e-005**	**1.6000e-004**	**2.0522**

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	0.0270	0.2468	0.3044	5.0000e-004		0.0106	0.0106		9.8200e-003	9.8200e-003	0.0000	42.9726	42.9726	0.0128	0.0000	43.2938
Total	**0.0270**	**0.2468**	**0.3044**	**5.0000e-004**		**0.0106**	**0.0106**		**9.8200e-003**	**9.8200e-003**	**0.0000**	**42.9726**	**42.9726**	**0.0128**	**0.0000**	**43.2938**

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

3.8 Building Construction WWTP - 2027

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	5.0000e-005	2.0900e-003	7.2000e-004	1.0000e-005	3.3000e-004	1.0000e-005	3.4000e-004	9.0000e-005	1.0000e-005	1.1000e-004	0.0000	0.9103	0.9103	3.0000e-005	1.3000e-004	0.9504
Worker	4.2000e-004	2.5000e-004	3.4900e-003	1.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.2000e-004	0.0000	1.0930	1.0930	3.0000e-005	3.0000e-005	1.1018
Total	**4.7000e-004**	**2.3400e-003**	**4.2100e-003**	**2.0000e-005**	**1.9000e-003**	**2.0000e-005**	**1.9200e-003**	**5.1000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**2.0033**	**2.0033**	**6.0000e-005**	**1.6000e-004**	**2.0522**

3.9 Building Construction (Solar) - 2028

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	0.0124	0.1684	0.3086	4.7000e-004		4.4200e-003	4.4200e-003		4.0600e-003	4.0600e-003	0.0000	41.0392	41.0392	0.0133	0.0000	41.3710
Total	**0.0124**	**0.1684**	**0.3086**	**4.7000e-004**		**4.4200e-003**	**4.4200e-003**		**4.0600e-003**	**4.0600e-003**	**0.0000**	**41.0392**	**41.0392**	**0.0133**	**0.0000**	**41.3710**

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

3.9 Building Construction (Solar) - 2028

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	2.2000e-004	9.2300e-003	3.1900e-003	4.0000e-005	1.4500e-003	6.0000e-005	1.5000e-003	4.2000e-004	5.0000e-005	4.7000e-004	0.0000	3.9690	3.9690	1.5000e-004	5.7000e-004	4.1438
Worker	8.8000e-004	5.1000e-004	7.4100e-003	3.0000e-005	3.5000e-003	1.0000e-005	3.5100e-003	9.3000e-004	1.0000e-005	9.4000e-004	0.0000	2.3661	2.3661	5.0000e-005	6.0000e-005	2.3847
Total	**1.1000e-003**	**9.7400e-003**	**0.0106**	**7.0000e-005**	**4.9500e-003**	**7.0000e-005**	**5.0100e-003**	**1.3500e-003**	**6.0000e-005**	**1.4100e-003**	**0.0000**	**6.3351**	**6.3351**	**2.0000e-004**	**6.3000e-004**	**6.5285**

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	0.0124	0.1684	0.3086	4.7000e-004		4.4200e-003	4.4200e-003		4.0600e-003	4.0600e-003	0.0000	41.0392	41.0392	0.0133	0.0000	41.3710
Total	**0.0124**	**0.1684**	**0.3086**	**4.7000e-004**		**4.4200e-003**	**4.4200e-003**		**4.0600e-003**	**4.0600e-003**	**0.0000**	**41.0392**	**41.0392**	**0.0133**	**0.0000**	**41.3710**

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

3.9 Building Construction (Solar) - 2028

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	2.2000e-004	9.2300e-003	3.1900e-003	4.0000e-005	1.4500e-003	6.0000e-005	1.5000e-003	4.2000e-004	5.0000e-005	4.7000e-004	0.0000	3.9690	3.9690	1.5000e-004	5.7000e-004	4.1438
Worker	8.8000e-004	5.1000e-004	7.4100e-003	3.0000e-005	3.5000e-003	1.0000e-005	3.5100e-003	9.3000e-004	1.0000e-005	9.4000e-004	0.0000	2.3661	2.3661	5.0000e-005	6.0000e-005	2.3847
Total	**1.1000e-003**	**9.7400e-003**	**0.0106**	**7.0000e-005**	**4.9500e-003**	**7.0000e-005**	**5.0100e-003**	**1.3500e-003**	**6.0000e-005**	**1.4100e-003**	**0.0000**	**6.3351**	**6.3351**	**2.0000e-004**	**6.3000e-004**	**6.5285**

3.9 Building Construction (Solar) - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5100e-003	0.0340	0.0623	9.0000e-005		8.9000e-004	8.9000e-004		8.2000e-004	8.2000e-004	0.0000	8.2831	8.2831	2.6800e-003	0.0000	8.3501
Total	**2.5100e-003**	**0.0340**	**0.0623**	**9.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**8.2831**	**8.2831**	**2.6800e-003**	**0.0000**	**8.3501**

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

3.9 Building Construction (Solar) - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.8400e-003	6.4000e-004	1.0000e-005	2.9000e-004	1.0000e-005	3.0000e-004	8.0000e-005	1.0000e-005	1.0000e-004	0.0000	0.7846	0.7846	3.0000e-005	1.1000e-004	0.8192
Worker	1.7000e-004	1.0000e-004	1.4300e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.4658	0.4658	1.0000e-005	1.0000e-005	0.4694
Total	**2.1000e-004**	**1.9400e-003**	**2.0700e-003**	**2.0000e-005**	**1.0000e-003**	**1.0000e-005**	**1.0100e-003**	**2.7000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**1.2504**	**1.2504**	**4.0000e-005**	**1.2000e-004**	**1.2886**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5100e-003	0.0340	0.0623	9.0000e-005		8.9000e-004	8.9000e-004		8.2000e-004	8.2000e-004	0.0000	8.2831	8.2831	2.6800e-003	0.0000	8.3501
Total	**2.5100e-003**	**0.0340**	**0.0623**	**9.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**8.2831**	**8.2831**	**2.6800e-003**	**0.0000**	**8.3501**

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

3.9 Building Construction (Solar) - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.8400e-003	6.4000e-004	1.0000e-005	2.9000e-004	1.0000e-005	3.0000e-004	8.0000e-005	1.0000e-005	1.0000e-004	0.0000	0.7846	0.7846	3.0000e-005	1.1000e-004	0.8192
Worker	1.7000e-004	1.0000e-004	1.4300e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.4658	0.4658	1.0000e-005	1.0000e-005	0.4694
Total	**2.1000e-004**	**1.9400e-003**	**2.0700e-003**	**2.0000e-005**	**1.0000e-003**	**1.0000e-005**	**1.0100e-003**	**2.7000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**1.2504**	**1.2504**	**4.0000e-005**	**1.2000e-004**	**1.2886**

3.10 Paving - 2028

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	0.0471	0.4420	0.7508	1.1700e-003		0.0216	0.0216		0.0198	0.0198	0.0000	103.0992	103.0992	0.0333	0.0000	103.9328
Paving	5.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0476**	**0.4420**	**0.7508**	**1.1700e-003**		**0.0216**	**0.0216**		**0.0198**	**0.0198**	**0.0000**	**103.0992**	**103.0992**	**0.0333**	**0.0000**	**103.9328**

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

3.10 Paving - 2028

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	1.5600e-003	9.1000e-004	0.0131	5.0000e-005	6.1900e-003	3.0000e-005	6.2200e-003	1.6500e-003	2.0000e-005	1.6700e-003	0.0000	4.1922	4.1922	9.0000e-005	1.0000e-004	4.2252
Total	**1.5600e-003**	**9.1000e-004**	**0.0131**	**5.0000e-005**	**6.1900e-003**	**3.0000e-005**	**6.2200e-003**	**1.6500e-003**	**2.0000e-005**	**1.6700e-003**	**0.0000**	**4.1922**	**4.1922**	**9.0000e-005**	**1.0000e-004**	**4.2252**

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	0.0471	0.4420	0.7508	1.1700e-003		0.0216	0.0216		0.0198	0.0198	0.0000	103.0990	103.0990	0.0333	0.0000	103.9327
Paving	5.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0476**	**0.4420**	**0.7508**	**1.1700e-003**		**0.0216**	**0.0216**		**0.0198**	**0.0198**	**0.0000**	**103.0990**	**103.0990**	**0.0333**	**0.0000**	**103.9327**

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

3.10 Paving - 2028

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	1.5600e-003	9.1000e-004	0.0131	5.0000e-005	6.1900e-003	3.0000e-005	6.2200e-003	1.6500e-003	2.0000e-005	1.6700e-003	0.0000	4.1922	4.1922	9.0000e-005	1.0000e-004	4.2252
Total	**1.5600e-003**	**9.1000e-004**	**0.0131**	**5.0000e-005**	**6.1900e-003**	**3.0000e-005**	**6.2200e-003**	**1.6500e-003**	**2.0000e-005**	**1.6700e-003**	**0.0000**	**4.1922**	**4.1922**	**9.0000e-005**	**1.0000e-004**	**4.2252**

3.10 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7500e-003	0.0257	0.0437	7.0000e-005		1.2600e-003	1.2600e-003		1.1600e-003	1.1600e-003	0.0000	6.0058	6.0058	1.9400e-003	0.0000	6.0543
Paving	3.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7800e-003**	**0.0257**	**0.0437**	**7.0000e-005**		**1.2600e-003**	**1.2600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**6.0058**	**6.0058**	**1.9400e-003**	**0.0000**	**6.0543**

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

3.10 Paving - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	5.0000e-005	7.3000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2382	0.2382	1.0000e-005	1.0000e-005	0.2400
Total	**9.0000e-005**	**5.0000e-005**	**7.3000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2382**	**0.2382**	**1.0000e-005**	**1.0000e-005**	**0.2400**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7500e-003	0.0257	0.0437	7.0000e-005		1.2600e-003	1.2600e-003		1.1600e-003	1.1600e-003	0.0000	6.0058	6.0058	1.9400e-003	0.0000	6.0543
Paving	3.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7800e-003**	**0.0257**	**0.0437**	**7.0000e-005**		**1.2600e-003**	**1.2600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**6.0058**	**6.0058**	**1.9400e-003**	**0.0000**	**6.0543**

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

3.10 Paving - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	5.0000e-005	7.3000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2382	0.2382	1.0000e-005	1.0000e-005	0.2400
Total	**9.0000e-005**	**5.0000e-005**	**7.3000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2382**	**0.2382**	**1.0000e-005**	**1.0000e-005**	**0.2400**

3.11 Architectural Coating - 2028

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	3.6192					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8000e-003	0.0590	0.0932	1.5000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	13.1493	13.1493	7.2000e-004	0.0000	13.1672
Total	**3.6280**	**0.0590**	**0.0932**	**1.5000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**13.1493**	**13.1493**	**7.2000e-004**	**0.0000**	**13.1672**

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

3.11 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1500e-003	3.5800e-003	0.0516	1.8000e-004	0.0244	1.0000e-004	0.0245	6.4700e-003	9.0000e-005	6.5700e-003	0.0000	16.4892	16.4892	3.7000e-004	4.1000e-004	16.6193
Total	**6.1500e-003**	**3.5800e-003**	**0.0516**	**1.8000e-004**	**0.0244**	**1.0000e-004**	**0.0245**	**6.4700e-003**	**9.0000e-005**	**6.5700e-003**	**0.0000**	**16.4892**	**16.4892**	**3.7000e-004**	**4.1000e-004**	**16.6193**

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	3.6192					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8000e-003	0.0590	0.0932	1.5000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	13.1492	13.1492	7.2000e-004	0.0000	13.1672
Total	**3.6280**	**0.0590**	**0.0932**	**1.5000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**13.1492**	**13.1492**	**7.2000e-004**	**0.0000**	**13.1672**

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

3.11 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1500e-003	3.5800e-003	0.0516	1.8000e-004	0.0244	1.0000e-004	0.0245	6.4700e-003	9.0000e-005	6.5700e-003	0.0000	16.4892	16.4892	3.7000e-004	4.1000e-004	16.6193
Total	**6.1500e-003**	**3.5800e-003**	**0.0516**	**1.8000e-004**	**0.0244**	**1.0000e-004**	**0.0245**	**6.4700e-003**	**9.0000e-005**	**6.5700e-003**	**0.0000**	**16.4892**	**16.4892**	**3.7000e-004**	**4.1000e-004**	**16.6193**

3.11 Architectural Coating - 2029

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	0.2108					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.4400e-003	5.4300e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	0.7660	0.7660	4.0000e-005	0.0000	0.7670
Total	**0.2113**	**3.4400e-003**	**5.4300e-003**	**1.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.5000e-004**	**1.5000e-004**	**0.0000**	**0.7660**	**0.7660**	**4.0000e-005**	**0.0000**	**0.7670**

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

3.11 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	1.9000e-004	2.8800e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4200e-003	3.8000e-004	1.0000e-005	3.8000e-004	0.0000	0.9368	0.9368	2.0000e-005	2.0000e-005	0.9441
Total	**3.4000e-004**	**1.9000e-004**	**2.8800e-003**	**1.0000e-005**	**1.4200e-003**	**1.0000e-005**	**1.4200e-003**	**3.8000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**0.9368**	**0.9368**	**2.0000e-005**	**2.0000e-005**	**0.9441**

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	0.2108					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.4400e-003	5.4300e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	0.7660	0.7660	4.0000e-005	0.0000	0.7670
Total	**0.2113**	**3.4400e-003**	**5.4300e-003**	**1.0000e-005**		**1.5000e-004**	**1.5000e-004**		**1.5000e-004**	**1.5000e-004**	**0.0000**	**0.7660**	**0.7660**	**4.0000e-005**	**0.0000**	**0.7670**

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

3.11 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	1.9000e-004	2.8800e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4200e-003	3.8000e-004	1.0000e-005	3.8000e-004	0.0000	0.9368	0.9368	2.0000e-005	2.0000e-005	0.9441
Total	**3.4000e-004**	**1.9000e-004**	**2.8800e-003**	**1.0000e-005**	**1.4200e-003**	**1.0000e-005**	**1.4200e-003**	**3.8000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**0.9368**	**0.9368**	**2.0000e-005**	**2.0000e-005**	**0.9441**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	1.5377	1.5502	14.2371	0.0303	3.8194	0.0209	3.8403	1.0192	0.0195	1.0387	0.0000	2,802.3381	2,802.3381	0.2056	0.1295	2,846.0710
Unmitigated	1.5377	1.5502	14.2371	0.0303	3.8194	0.0209	3.8403	1.0192	0.0195	1.0387	0.0000	2,802.3381	2,802.3381	0.2056	0.1295	2,846.0710

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Condo/Townhouse	2,080.00	2,080.00	2080.00	5,297,190	5,297,190
Parking Lot	0.00	0.00	0.00		
Single Family Housing	1,930.00	1,930.00	1930.00	4,915,181	4,915,181
Strip Mall	0.00	0.00	0.00		
Total	4,010.00	4,010.00	4,010.00	10,212,371	10,212,371

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	7.88	7.88	7.88	33.00	48.00	19.00	66	28	6
Condo/Townhouse	7.88	7.88	7.88	42.00	19.00	39.00	86	11	3
Parking Lot	7.88	7.88	7.88	0.00	0.00	0.00	0	0	0
Single Family Housing	7.88	7.88	7.88	42.00	19.00	39.00	86	11	3
Strip Mall	7.88	7.88	7.88	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

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

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.575453	0.061728	0.171227	0.112384	0.022882	0.006522	0.009800	0.006298	0.000679	0.000623	0.027611	0.000857	0.003936
Condo/Townhouse	0.575453	0.061728	0.171227	0.112384	0.022882	0.006522	0.009800	0.006298	0.000679	0.000623	0.027611	0.000857	0.003936
Parking Lot	0.575453	0.061728	0.171227	0.112384	0.022882	0.006522	0.009800	0.006298	0.000679	0.000623	0.027611	0.000857	0.003936
Single Family Housing	0.575453	0.061728	0.171227	0.112384	0.022882	0.006522	0.009800	0.006298	0.000679	0.000623	0.027611	0.000857	0.003936
Strip Mall	0.575453	0.061728	0.171227	0.112384	0.022882	0.006522	0.009800	0.006298	0.000679	0.000623	0.027611	0.000857	0.003936

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	460.2607	460.2607	0.0286	2.8600e-003	461.8255
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	460.2607	460.2607	0.0286	2.8600e-003	461.8255
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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 - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	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
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Harmony Grove Village South 2020.4.0 - San Diego 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 - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	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
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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			
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.72038e+006	251.5702	0.0156	1.5600e-003	252.4254
Parking Lot	2208	0.3229	2.0000e-005	0.0000	0.3240
Single Family Housing	1.36934e+006	200.2366	0.0124	1.2400e-003	200.9174
Strip Mall	55605	8.1311	5.0000e-004	5.0000e-005	8.1587
Total		**460.2607**	**0.0286**	**2.8500e-003**	**461.8255**

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			
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.72038e+006	251.5702	0.0156	1.5600e-003	252.4254
Parking Lot	2208	0.3229	2.0000e-005	0.0000	0.3240
Single Family Housing	1.36934e+006	200.2366	0.0124	1.2400e-003	200.9174
Strip Mall	55605	8.1311	5.0000e-004	5.0000e-005	8.1587
Total		**460.2607**	**0.0286**	**2.8500e-003**	**461.8255**

6.0 Area Detail

6.1 Mitigation Measures Area

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	2.8786	0.0387	3.3552	1.8000e-004		0.0187	0.0187		0.0187	0.0187	0.0000	5.4953	5.4953	5.2400e-003	0.0000	5.6262
Unmitigated	2.8786	0.0387	3.3552	1.8000e-004		0.0187	0.0187		0.0187	0.0187	0.0000	5.4953	5.4953	5.2400e-003	0.0000	5.6262

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	0.3828					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3955					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	0.1004	0.0387	3.3552	1.8000e-004		0.0187	0.0187		0.0187	0.0187	0.0000	5.4953	5.4953	5.2400e-003	0.0000	5.6262
Total	**2.8786**	**0.0387**	**3.3552**	**1.8000e-004**		**0.0187**	**0.0187**		**0.0187**	**0.0187**	**0.0000**	**5.4953**	**5.4953**	**5.2400e-003**	**0.0000**	**5.6262**

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	0.3828					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3955					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	0.1004	0.0387	3.3552	1.8000e-004		0.0187	0.0187		0.0187	0.0187	0.0000	5.4953	5.4953	5.2400e-003	0.0000	5.6262
Total	**2.8786**	**0.0387**	**3.3552**	**1.8000e-004**		**0.0187**	**0.0187**		**0.0187**	**0.0187**	**0.0000**	**5.4953**	**5.4953**	**5.2400e-003**	**0.0000**	**5.6262**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

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	59.0533	0.7822	0.0187	84.1861
Unmitigated	99.8855	0.9794	0.0236	131.3902

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.78722	2.9035	1.8000e-004	2.0000e-005	2.9134
Condo/Townhouse	16.94 / 10.6796	54.9791	0.5551	0.0133	72.8316
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	12.5747 / 7.92755	40.8114	0.4120	9.9000e-003	54.0635
Strip Mall	0.370363 / 0.226996	1.1915	0.0121	2.9000e-004	1.5817
Total		**99.8855**	**0.9794**	**0.0236**	**131.3902**

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			
City Park	0 / 0.317212	0.5153	3.0000e-005	0.0000	0.5171
Condo/Townhouse	13.552 / 1.89551	33.1826	0.4434	0.0106	47.4279
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	10.0598 / 1.40705	24.6317	0.3291	7.8700e-003	35.2061
Strip Mall	0.29629 / 0.0402893	0.7236	9.6900e-003	2.3000e-004	1.0350
Total		**59.0533**	**0.7822**	**0.0187**	**84.1861**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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	53.4830	3.1608	0.0000	132.5020
Unmitigated	71.3107	4.2143	0.0000	176.6693

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.13	0.0264	1.5600e-003	0.0000	0.0654
Condo/Townhouse	119.6	24.2777	1.4348	0.0000	60.1470
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	226.32	45.9409	2.7150	0.0000	113.8167
Strip Mall	5.25	1.0657	0.0630	0.0000	2.6402
Total		**71.3107**	**4.2143**	**0.0000**	**176.6693**

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	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.0975	0.0198	1.1700e-003	0.0000	0.0490
Condo/Townhouse	89.7	18.2083	1.0761	0.0000	45.1103
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	169.74	34.4557	2.0363	0.0000	85.3625
Strip Mall	3.9375	0.7993	0.0472	0.0000	1.9802
Total		**53.4831**	**3.1608**	**0.0000**	**132.5020**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	2	8.00	25	84	0.74	Diesel

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

UnMitigated/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
Equipment Type	tons/yr										MT/yr					
Generator Sets	4.8800e-003	0.0451	0.0909	1.6000e-004		9.3000e-004	9.3000e-004		9.3000e-004	9.3000e-004	0.0000	14.1302	14.1302	4.0000e-004	0.0000	14.1401
Total	**4.8800e-003**	**0.0451**	**0.0909**	**1.6000e-004**		**9.3000e-004**	**9.3000e-004**		**9.3000e-004**	**9.3000e-004**	**0.0000**	**14.1302**	**14.1302**	**4.0000e-004**	**0.0000**	**14.1401**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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			
Unmitigated	718.7690	0.0000	0.0000	718.7690

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	48.1 / 0	-207.3110	0.0000	0.0000	-207.3110
Others	1.1 / 0	-6.8200	0.0000	0.0000	-6.8200
Scrub	30.5 / 0	-436.1500	0.0000	0.0000	-436.1500
Trees	0.71 / 0	-78.8100	0.0000	0.0000	-78.8100
Total		**-729.0910**	**0.0000**	**0.0000**	**-729.0910**

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

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2045	1,447.8600	0.0000	0.0000	1,447.8600
Total		**1,447.8600**	**0.0000**	**0.0000**	**1,447.8600**

ATTACHMENT

B - ConSol Report (2023)

RCS-HARMONY PARTNERS, LLC.

Building Analysis – updated June 2023

This analysis provide an estimation of annual energy use and PV production for two sample residential buildings designed to comply with 2016 California Energy Code and the California Energy Commission's Zero Net Energy definition from the 2015 Integrated Energy Policy Report. Includes an addendum updating the results for all-electric buildings designed to comply with 2019 California Energy Code, and reflecting improvements in solar panel efficiency.

Contents

Executive Summary

This report analyzes a sample design for a single-family residence (SFR) and a sample design for a multi-family residence (MFR), representing a typical home and a typical multi-family building, for the proposed Harmony Grove master planned community in Escondido. Sample residences are used for this analysis as building plans have yet to be developed for the site.

The objective of this report is to calculate the annual energy use when each building is configured with options that achieve: (i) compliance with the 2016 Title 24 Standards (California's Energy Code) and (ii) Zero Net Energy (ZNE) as defined in the California Energy Commission's (CEC's) 2015 Integrated Energy Policy Report (2015 IEPR). This analysis also calculates the estimated size of a rooftop solar photovoltaic (PV) system that would produce the amount of electricity required for each building to achieve ZNE. In this analysis, total estimated annual energy use (in kWh and therms) was calculated for each of the prototype residences. This estimate includes "regulated loads" (space heating, space cooling, and water heating) and "unregulated loads," such as plug-in uses, which are not regulated by Title 24. The buildings were modeled as mixed fuel, using both gas and electricity

The sample building configuration used in this analysis for the single-family detached residence is a 1,815 square foot, two-story home. The multi-family residence is a 22,950 square foot, three-story building, with 15 flat units. The plans for all buildings were taken from ConSol's library of building plans[1].

The final section of the report updates the buildings to be all-electric, and to comply with the 2019 Title 24 Standards.

Residential Assessment

Methods and Assumptions

ConSol modeled the prototype residence using the CEC's public-domain compliance software, California Building Energy Code Compliance – Residential (CBECC-Res), which calculates Title 24 compliance and annual energy use. The residential building was modeled in Climate Zone 10 (Escondido).

In the software, the unregulated loads are set inputs determined by the CEC and based upon standard occupancy assumptions. These assumptions are detailed in the *HERS Technical Manual*[2] and the more

[1]The master planned community would result in a variety of detached, single-family residential product types that may range from approximately 1,300 to 2,700 square feet. The prototype residence studied in this report was selected to represent an average residential product type, providing a reasonable representation of building energy consumption for purposes of the community's environmental analysis and specifically the estimation of the community's greenhouse gas emissions in the utilized modeling platform (the California Emissions Estimator Model). Similarly, the 22,950 sf, 15 unit multi-family building studied in this report was selected to represent a multi-family building product type in the community's development plan that will present challenges for reaching ZNE.

[2] http://www.energy.ca.gov/2008publications/CEC-400-2008-012/CEC-400-2008-012-CMF.PDF

recent *Plug Loads and Lighting Modeling* study.[3] Because these calculations cannot be modified by the user, CBECC produced the same unregulated energy use for both the home modeled to comply with the 2016 Standards and the home modeled to reach ZNE. The rounding function in the software causes slight differences in the total kWh from one model to the other, but these differences are not significant.

ConSol modeled the buildings using energy efficiency features that California builders are most likely to use to achieve compliance with the 2016 BEES. The features used in the calculations were selected based on common industry practices, ConSol's experience with builder preferences, and cost-effectiveness. Code compliance is based on the CEC's 2016 Time Dependent Valuation (TDV) energy metric. Time Dependent Valuation energy assigns greater value to electricity produced or consumed at peak periods. This report will refer to Proposed Design TDV energy, which is the projected TDV energy consumed by the residence when modeling the proposed features thereby increasing the energy efficiency of the building. The Proposed Design TDV energy will be compared to the Standard Design TDV energy, which is the projected TDV energy consumed by the building when the residence meets the prescriptive requirements listed in Table 150.1-A (Package A) of the 2016 California Energy Code. For a building to be code compliant, the proposed design TDV energy must be less than the standard design TDV energy.

The prototype residence was initially modeled using the 2016 TDV values. The 2019 code proposed different TDV values that may cause an increase in the PV system size needed to reach ZNE. During development and build-out, the project should consider additional information regarding the achievement of ZNE as it becomes available.

An additional model was created to achieve compliance with the ZNE definition in the 2015 IEPR. An estimated increased efficiency above the 2016 code is intended to represent efficiency improvements likely to be included in a Zero Net Energy home design. In the mixed fuel models in this report, an 11% increase in the TDV efficiency of the ZNE model over the model that meets the 2016 code is shown and represents an assumption of the energy efficiency requirements that might be seen in the 2019 code cycle (2019 Title 24, Part 6). The site energy was calculated for the 2016 code compliant and the ZNE residences in kWh and therms.

Using the CBECC-Res software, an Energy Design Rating (EDR) was calculated for each prototype residence to demonstrate that the building is designed to reach ZNE. The EDR is a type of rating that compares the regulated energy consumption, unregulated energy consumption, and annual PV production of a proposed home to the reference home (a 2006 IECC compliant home). An EDR of 100 means that a proposed home uses the same energy as a 2006 IECC compliant home and an EDR of zero meets the CEC's definition of a ZNE home. All energy measurements (consumption and production) are measured in TDV. To achieve ZNE on a residence, the EDR of the efficiency features must be less than the EDR of the PV system (i.e., the sum of the efficiency EDR and renewable EDR must be equal to or less than zero).

[3] http://www.bwilcox.com/BEES/docs/Rubin%20-%202016%20T24CASE%20Report%20-%20Plug%20Load%20and%20Ltg%20Modeling%20-%20June%202016.pdf

CBECC can separately analyze the energy efficiency of a building for scenarios in which it is facing north, south, east, or west. This is called a cardinal orientation analysis and it can be used to determine the "worst case" (uses most energy) orientation. ConSol used the worst-case orientation to determine the energy features required to achieve compliance for all orientations. The worst-case orientation also represents the most amount of energy the sample building would consume.

For the PV sizing on each building, standard 285 watt panels and standard central inverters were used in the analysis. In each CBECC model, the PV system was sized for the worst-case building orientation, as stated above, consuming the greatest amount of energy. All panels are assumed to be facing south (180°) to give the PV system size required to meet ZNE. It is important to note that if the residence is built in orientations other than the one reviewed, the PV system size would likely be different. A typical neighborhood will have houses facing in a variety of directions; therefore, the roof planes available for solar panel installation could also be facing a variety of directions. It is still possible for any given home to reach ZNE, regardless of which direction the home faces; however, annual solar generation will vary depending on the directional attributes of the installed solar panels. In some cases, the size of the solar system for a given house may be larger than the system identified by the model for the prototype residence (e.g., if some panels need to be installed facing north, east or west). In some cases, the size of the solar system could be smaller than the system identified by the model (e.g., if the house is facing an orientation where energy use is lower and there is south or west facing roof available for PV panel installation). In each analysis, given the orientation of the building and the actual roof design of the sample residence, an example is given of how the PV system size may differ from the size the CBECC model calculates.

Estimated Energy Consumption – 1,815 Square Foot / 2-Story / Single Family

CBECC-Res estimates an annual site energy consumption for the 1,815 square foot house in Escondido (Climate Zone 10) that complies with the 2016 code of 1,106 kWh and 176 therms for the regulated loads and 5,448 kWh and 17 therms for the unregulated loads. This equates to a total annual site energy consumption of 6,554 kWh and 193 therms for the 2016 code compliant residence. The energy consumption of the home designed to achieve ZNE is calculated to be 1,009 kWh and 151 therms for regulated loads and 5,448 kWh and 17 therms for the unregulated loads. This equates to a total annual site energy consumption of 6,457 kWh and 168 therms for the ZNE residence (these figures can be seen in Table 2). While conservatively not reflected in the model, it is reasonable to anticipate future decreases in the calculated energy use of unregulated loads as the CEC (and others) adopt regulations and programs to minimize the energy consumption of appliances and other plug loads.

The CBECC-Res software calculates the TDV energy use of the residence to verify that the proposed design complies with the current code. As previously mentioned, for a residence to be code compliant, the proposed design TDV energy must be equal to or less than the standard design TDV energy. In this analysis, the home designed to comply with the 2016 Standards has a TDV energy of 44.84 kTDV/ft^2-yr. This is a 0.2% (0.07 kTDV/ft^2-yr) improvement over the standard design. The TDV energy use for the home designed to achieve ZNE is calculated to be 39.82 kTDV/ft^2-yr, an 11.3% (5.09 kTDV/ft^2-yr) improvement over the 2016 code standard design.

PV Sizing to meet ZNE – 1,815 Square Foot / 2-Story / Single Family

ConSol also used the CBECC-Res software to determine the required PV system size needed to achieve ZNE as defined in the 2015 IEPR. The PV system was sized in the CBECC model using the worst-case building orientation, which represents the largest PV system required to achieve ZNE. The inputs used assume standard efficiency panels with all PV panels facing south.

The system configuration for this prototype residence requires a 4.9 kW PV system to reach ZNE. A minimum of 8,118 kWh of annual PV production is needed for the residence to be ZNE. Standard 285-watt panels and a standard central inverter were used to calculate the PV system size. More efficient panels, however, may be used to achieve ZNE if the minimum annual PV production is achieved.

To meet the required production, seventeen standard 285 W panels (approx. 5.5 ft x 3.5 ft) are needed if they are all facing south. This equates to approximately 327.25 square feet of south facing roof area. The California Fire Code (Section 605.11) dictates that PV arrays must be a minimum of three feet from the ridge, have one-and-a-half-foot clearance on each side of the array, as well as one-and-a-half-foot clearance from hips and valleys. If the required roof area is unavailable on south facing roofs, additional PV panels can be located on remaining roof orientations to meet the minimum required yearly production. If additional roof orientations are used, the PV system size may need to be increased due to PV production being proportional to orientation, as described above.

A 2 story, approximately 1,800 square foot home has a smaller roof footprint than other possible single family home designs and represents the challenge of a smaller roof accommodating enough solar for the home to be ZNE. In developing a plan for ZNE homes or a ZNE community, it is important to design buildings with adequate solar roof areas. During the building design phase, it is recommended that builders be mindful of roof penetrations (vents, chimneys, skylights, etc.) in roof surfaces where the PV system will be located to maximize the roof area available for solar. A possible option for roof penetrations is to locate those penetrations in the clearance areas required by the Fire Code.

The analysis provided in this report demonstrates the energy efficiency features and PV system size that would need to be included in the construction of a single-family residence, similar in size to the sample building, in Climate Zone 10 (Escondido), to achieve ZNE. The building plans used for the sample residence are representative of an entry-level single-family residence. Single-family residences of varying sizes likely would have different energy profiles and therefore, different PV requirements to meet the ZNE definition.

PV Sizing to cover site electric use only – 1,815 Square Foot / 2-Story / Single Family

When the same single-family home is modeled to size the PV system to only cover the electric load of the building, the required PV system size would be 3.2 kW, consisting of 11 standard 285 watt solar panels, all facing south, and producing a minimum of 5,301 kWh / year.

Estimated Energy Consumption – 22,950 Square Foot / 3-Story / 15-Plex

CBECC-Res estimates the annual site energy consumption for the 22,950 square foot multi-family building in Escondido (Climate Zone 10) that meets the 2016 code is 14,353 kWh and 1,488 therms for the regulated loads and 61,775 kWh and 209 therms for the unregulated loads. This equates to a total annual site energy consumption of 76,128 kWh and 1,697 therms for the 2016 code compliant residence. The energy consumption of the residence designed to achieve ZNE is calculated to be 12,523 kWh and 1,427 therms for regulated loads and 61,775 kWh and 209 therms for the unregulated loads. This equates to a total annual site energy consumption of 74,298 kWh and 1,636 therms for the ZNE residence.

The CBECC-Res software calculates the TDV energy use of the multi-family residence to verify that the proposed design complies with the current code. As previously mentioned, for a residence to be code compliant, the proposed design TDV energy must be equal to or less than the standard design TDV energy. In this analysis, the residence designed to meet the 2016 code has a TDV energy of 36.92 kTDV/ft²-yr. This is a 0.8% (0.31 kTDV/ft²-yr) improvement over the standard design. The TDV energy use for the residence designed to achieve ZNE is calculated to be 32.49 kTDV/ft²-yr, a 12.7% (4.72 kTDV/ft²-yr) improvement over the 2016 code standard design.

PV Sizing to cover site electric use only – 22,950 Square Foot / 3-Story / 15-Plex

ConSol also used the CBECC-Res software to determine the required PV system size needed to achieve ZNE as defined in the 2015 IEPR. The PV system was sized in the CBECC model using the worst-case building orientation, which represents the largest PV system required to achieve ZNE; and the inputs used assume standard efficiency panels with all PV panels facing south.

The system configuration for this prototype residence requires a 53 kW PV system to reach ZNE. A minimum of 87,804 kWh of annual PV production is needed for the residence to be ZNE. Standard 285 W panels and a standard central inverter were used to calculate the PV system size. More efficient panels, however, may be used to achieve ZNE if the minimum annual PV production is achieved.

To meet the required production, one hundred and eighty six (186) standard 285 W panels (approx. 5.5 ft x 3.5 ft) are needed, if all panels are facing 180°. This equates to approximately 3,580.5 square feet of south facing roof area. The California Fire Code (Section 605.11) dictates that PV arrays must be a minimum of three feet from the ridge, have one-and-a-half-foot clearance on each side of the array, as well as one-and-a-half-foot clearance from hips and valleys. If the required roof area is unavailable on south facing roofs, additional PV panels can be located on remaining roof orientations to meet the minimum required yearly production. If additional roof orientations are used, the PV system size may need to be increased due to PV production being proportional to orientation, as described above. For example, the prototype residence analyzed in this report would not be able to accommodate any solar panels facing south. An alternate configuration of 110 solar panels facing west (270°) and 105 solar panels facing east (90°) is possible, and would produce an estimated 88,005 kWh / year, thereby meeting the minimum PV production required for the building to be ZNE.

The analysis provided in this section demonstrates the energy efficiency features and PV system size that would need to be included in the construction of a multi-family residence, similar in size to the sample building, in Climate Zone 10 (Escondido), to reach the current working definition of ZNE. The building plans used for the prototype residence are representative of a 3 story 15-unit, multi-family residence; multi-family buildings of varying sizes likely would have different energy profiles and therefore different PV requirements to meet the ZNE definition.

PV Sizing to cover site electric use only – 22,950 Square Foot / 3-Story / 15-Plex

When the model for the same multi-family building is run to size the PV system to only cover the electric load of the building, the required PV system size would be 36 kW, consisting of 126 standard 285 W solar panels, all facing south, and producing a minimum of 59,640 kWh / year. The prototype multi-family building analyzed for this report could accommodate a 41.6 kW system, with 80 panels facing west and 66 panels facing east to produce an estimated 59,864 kWh / year, thereby meeting the electric use of the building.

All-electric Buildings

Code updates

The mixed fuel buildings were modeled using the 2016 Title 24 Standards. The standards have been updated, with the 2016 Standards being replaced by the 2019 Standards. This section details the results found when the original models were updated to meet the 2019 Standards using the 2019 CBECC-Res software. In accordance with the increasing focus on electrification by the California Energy Commission, the models have been changed from mixed-fuel to all-electric.

The changes to the Title 24 standards between the 2016 and 2019 versions have the effect of increasing the overall energy efficiency of residential buildings. There were many changes made to the standards, but the most significant ones were

1. The prescriptive value for wall insulation was raised to encourage the use of 2x6 stud walls and continuous exterior sheathing
2. The solar tradeoff was eliminated and replaced with a solar mandate. This tradeoff had allowed builders to use an optional solar PV system to reduce the required building shell performance. The elimination of the solar tradeoff reduces the ability of builders to avoid using high performance walls and attics.
3. Single family and low-rise multi-family buildings, which includes the buildings modeled here, are required to have solar PV systems. These must be large enough to generate as much electricity as would be used by a standard mixed fuel building (the required size is the same for all-electric as for mixed-fuel to avoid 'penalizing' all-electric buildings)

Modeling results

Other than being updated to meet the 2019 code and eliminating natural gas use, the buildings modeled are the same as previously: an 1,815 square foot single-family detached two-story home, and a 22,950 square foot, three-story multi-family building, with 15 flat units. Results for both buildings are for a base case, designed using typical building practices and equipment, and three options which each use different tradeoffs between building envelope and equipment efficiencies. For each option, the tradeoff is between better envelope performance (higher insulation levels for example) and lower efficiency equipment, and vice versa. The options chosen do not significantly impact either building energy use or the size of the solar PV required to meet either Title 24 requirements or TDV ZNE because the building must meet the same energy use standards, but are included to provide an idea of possible design tradeoffs. The construction details of the construction of the base case buildings and the different options are shown in the Excel workbook "Harmony_Grove_FeatureCompSheet01" embedded at the end of this document.

The results of the modeling are summarized in Table 1, which gives the following information:

- Efficiency EDR: this is the Energy Design Rating of the building. The EDR of the proposed building must be less than or equal to the EDR of the standard building
- PV area is calculated for 320W panels with standard dimensions

TABLE 1: ENERGY USE AND PV SIZING USING 2019 STANDARDS

		Efficiency EDR		Energy use (kWh)		PV sizing (kW)		PV sizing (sqft)		PV generation (kWh)	
		Standard	Proposed	Regulated	Unregulated	Title 24	ZNE	Title 24	ZNE	Title 24	ZNE
Single family	Base	51.1	51.1	2514	4581	2.68	5.66	151	319	4448	9380
	Option 1	51.1	51.1	2515	4581	2.68	5.67	151	319	4448	9396
	Option 2	51.1	51.1	2539	4580	2.68	5.67	151	319	4448	9388
	Option 3	51.1	51.1	2380	4576	2.68	5.67	151	319	4448	9396
Multi-family	Base	64.2	63.9	33130	66133	37.25	76.74	2096	4317	61686	127081
	Option 1	64.2	63.9	32983	66113	37.23	76.24	2095	4289	61697	126330
	Option 2	64.2	63.9	33130	66133	37.25	76.74	2096	4317	61716	127164
	Option 3	64.2	64.1	32973	66146	37.25	76.99	2096	4331	61716	127576

Rooftop PV capacity

Note: without detailed roof layouts it is not possible to accurately determine the area available for rooftop solar installation. In addition to the need for setbacks from edges and ridges, as well as clearance for rooftop penetrations, the slope and orientation of the roof will play a significant role. The numbers here are based on analyses using typical roof layouts and orientations.

The efficiency of solar PV panels has increased in recent years. High efficiency panels currently have efficiencies of approximately 22.3%, which equates to generating 20.5 W/sqft. Different sized panels will have different wattages, but the power per unit area is similar for all high efficiency panels. For this report, numbers are based on SunPower X-series panels[4].

For the single-family building modeled here, the roof area is 1196 sqft, and the solar PV required to meet the 2016 ZNE requirement needed 327 sqft (assuming it is optimally oriented) using 285 W panels, giving a system size of 4.9 kW. Using current high efficiency panels, generating 360 W each, would provide 6.5 kW from the same area.

For the multifamily building, the roof covers an area of 7650 sqft, and the PV system needed to meet the 2016 ZNE standard would need 3580 sqft of 285 W panels, giving a system size of 53 kW. The same area of 360 W panels would give a system size of 72 kW.

To calculate the largest possible onsite generation, ConSol has considered the maximum number of panels that can be placed on an individual roof. For the single-family home, the area available for panels was based on using a single pitched roof with a 3' safety zone at the edges and ridge. Panel capacity if based on an average of north (worst case) and south (best case) facing panels, to allow for all possible building orientations. The multifamily project was modeled as a flat roof, and, following typical assumptions, the area available for panel installation was estimated at 60% of the actual roof area. The table below summarizes the results of this analysis:

	Total roof Area (sqft)	Usable roof Area (sqft)	Number of panels[5]	PV capacity using 360 W panels (kW)	Annual possible generation (MWh)[6]
Single family	1196	672	37	13.3	19.0
Multi family	7650	4590	256	92.2	151.7

[4] https://us.sunpower.com/sites/default/files/media-library/data-sheets/sunpower-x-series-residential-solar-panels-x22-360-datasheet-514618-revc.pdf

[5] Assumes a 1/2" separation between panels, giving each panel an effective area of 17.9 sqft.

[6] This uses 1430 kWh/kW for annual generation (the average of the best and worst orientations) for single-family, and 1645 kWh/kW for multi-family.

Additional PV for offsets

The Project is also looking to install offsite PV to provide additional GHG reductions. A 1MW system was utilized to derive the required roof top area required. A 1MW system will produce 1.645 GWH annually. To meet this system size would require 2778 360W panels, which would cover an area of 49,726 sqft. Assuming a single building with typical flat roof characteristics giving 60% usable roof area, the building size needed to mount the PV to cover the shorftall in onsite generation would be approximately 83,000 sqft.

Harmony_Grove_Fe
atureCompSheet01.:

ATTACHMENT

C - Vehicle Per Household Calculation

Source: https://data.census.gov/
See 5 Year American Community Survey
Raw Data Table Also provide in this Attachment

Vehicles Available	Households	Total Vehicles
0	13,872.00	0.00
1	132,332.00	132,332.00
2	258,555.00	517,110.00
3	130,775.00	392,325.00
4	53,589.00	214,356.00
5	27,070.00	135,350.00
0	47,712.00	0.00
1	204,928.00	204,928.00
2	196,195.00	392,390.00
3	51,901.00	155,703.00
4	16,137.00	64,548.00
5	6,833.00	34,165.00
	1,139,899.00	2,243,207.00
Vehcles Per Household		1.97

TENURE BY VEHICLES AVAILABLE

Note: This is a modified view of the original table produced by the U.S. Census Bureau. This download or printed version may have missing information from the original table.

	San Diego County, California	
Label	**Estimate**	**Margin of Error**
Total:	1,139,899	±3,376
Owner occupied:	616,193	±5,044
No vehicle available	13,872	±935
1 vehicle available	132,332	±2,395
2 vehicles available	258,555	±3,738
3 vehicles available	130,775	±2,447
4 vehicles available	53,589	±1,772
5 or more vehicles available	27,070	±1,142
Renter occupied:	523,706	±4,504
No vehicle available	47,712	±1,902
1 vehicle available	204,928	±3,745
2 vehicles available	196,195	±3,898
3 vehicles available	51,901	±2,045
4 vehicles available	16,137	±1,092
5 or more vehicles available	6,833	±602

Table Notes

Universe: Occupied housing units

Year: 2021

Estimates: 5-Year

Table ID: B25044

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.

The 2017-2021 American Community Survey (ACS) data generally reflect the March 2020 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas. In certain instances, the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineation lists due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Explanation of Symbols:

The estimate could not be computed because there were an insufficient number of sample observations. For a ratio of medians estimate, one or both of the median estimates falls in the lowest interval or highest interval of an open-ended distribution. For a 5-year median estimate, the margin of error associated with a median was larger than the median itself.

N

The estimate or margin of error cannot be displayed because there were an insufficient number of sample cases in the selected geographic area.

(X)

The estimate or margin of error is not applicable or not available.

median-

The median falls in the lowest interval of an open-ended distribution (for example "2,500-")

median+

The median falls in the highest interval of an open-ended distribution (for example "250,000+").

**

The margin of error could not be computed because there were an insufficient number of sample observations.

***

The margin of error could not be computed because the median falls in the lowest interval or highest interval of an open-ended distribution.

*****

A margin of error is not appropriate because the corresponding estimate is controlled to an independent population or housing estimate. Effectively, the corresponding estimate has no sampling error and the margin of error may be treated as zero.

ATTACHMENT

D – EV Calculations 8 Guest Chargers

Attachemt D - Guest Chargers

Guest Charger Usage (Hours of Charge per Charger per Day)	4	hours	
Charger Usage Typical Year (25%)	91.25	Days	
Offsite or Guest EV	8	Chargers	
Total EV Charging Duration Per Year	2920	Hours	
Level II Charger Capacity	19.2	kWh	
Total Energy Per Year	56064	kWh per Year	2920 x 19.2
EV Miles Per Year			
Assumed EV Fuel Efficiency	100	MPGe	
Electrical Energy Per Gallon of Gasoline	33.7	kWh/Gallon	
Miles Traveled per kWh	2.97	miles/kWh	100/33.7
Guest EV will travel	166,362.02	Miles per Year	
GHG Emissions from CalEEMod per Mile	0.000278688	MT CO2e/Mile	
GHG Emissions Avoided	46.36	MT CO2e	166,362/0.000278
Energy Requierd from Driving	56,064	kWh	166,362/2.97
Project Energy (From CalEEMod)	3147533	kWh	
GHGs produced by SDG&E (From CalEEMod)	461.83	MT CO2e	
`	0.000146726	MT CO2e/kWh	461.83/3147533
Total GHGs produced from SDG&E from EV Charging	-8.23	MT CO2e	"-56,064 x 0.0001467"
Total GHG Emissions Avoided from 8 EV Chargers for guests	**38.14**	**MT CO2e**	"46.36 - 8.23"

Attachemt D - 453 Garage Chargers

Project Daily Trip Generation	4010	ADT	
GHG Emissions Generated from Daily Trip (From CalEEMod)	2846.07	MT CO2e	
Miles Driven Per Year (From CalEEMod)	10,212,371	Miles/Year	
Number of Units	453	Homes	
Vehicles per Home	1.97	Vehicles/Home	
Number of Project Vehicles	892.41	Vehicles/Project	
Average Distance Traveled Per Vehicle per Year	11,443.59	Miles/Year	
Average Distance Traveled Per Vehicle per Day	31.35	Miles/Day	
State Goal	14.4	Percent	
Electric Vehicles (EV) (Project)	128.51	Cars	
EMFAC EV Percentage Included In CalEEMOd 2030	3.4	Percent	
EV Percentage added from the Project beyond CalEEMod Assumptions (Project)	11.0	Percent	
EV not Calculated within CalEEMod	98.17	Vehicles	
Miles Driven from EV not expected in CalEEMod	1,123,360.81	Miles	
GHG Emissions Per Mile (2030)	0.000278688	MT CO2e/Mile	
Total GHG Emissions Avoided from EV	313.07	MT CO2e	"1,123,360 x 0.000279"
Assumed EV Fuel Efficiency	100	MPGe	
Electrical Energy Per Gallon of Gasoline	33.7	kWh/Gallon	
Miles Traveled per kWh	2.967	kWh/mile	
Total kWh required for Charging	378,573	kWh	"1,123,360 /2.97"
`	0.000146726	MT CO2e/kWh	
Total GHGs produced from SDG&E from EV Charging	-55.55	MT CO2e	"-378,573*0.000147"
Total GHG Emissions Avoided from 8 EV Chargers for guests	**257.52**	**MT CO2e**	"313.07 - 55.55"

ATTACHMENT

E - CALEEMOD 2020.4.0 (Project Solar)

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego County, Annual

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

Harmony Grove Solar (6,296,470 kwh) - Operations

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2028
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	805.94	**CH4 Intensity (lb/MWhr)**	0.049	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 6,296,470 kwh Solar Calcuation based on CONSOL 2023

Land Use - Rooftop Solar installed on SF and MF units per CONSOL 2023

Construction Phase -

Off-road Equipment -

Off-road Equipment - No Site Prep

Trips and VMT - No trips

Grading -

Architectural Coating -

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego County, Annual

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

Woodstoves - Project Solar Calculation

Area Coating -

Landscape Equipment - zero

Energy Use -

Water And Wastewater -

Area Mitigation -

Energy Mitigation - Project Solar Calculation based on CONSOL2023

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.049
tblProjectCharacteristics	CO2IntensityFactor	539.98	805.94
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.006
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	3.00	0.00

2.0 Emissions Summary

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego 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					
2026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter				

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego County, Annual

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

		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego County, Annual

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

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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	-2,301.7894	-2,301.7894	-0.1400	-0.0171	-2,310.3946
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**-2,301.7894**	**-2,301.7894**	**-0.1400**	**-0.0171**	**-2,310.3946**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11,508,947,100.00**	**11,508,947,100.00**	**0.00**	**0.00**	**11,551,973,200.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/2/2026	5/4/2026	5	1	

Acres of Grading (Site Preparation Phase): 0

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego County, Annual

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

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	0.00	174	0.41

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego County, Annual

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

3.2 Site Preparation - 2026

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego County, Annual

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

3.2 Site Preparation - 2026

Mitigated Construction Off-Site

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

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego County, Annual

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

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.571163	0.061971	0.173016	0.114025	0.023169	0.006440	0.009521	0.006303	0.000689	0.000605	0.027981	0.000899	0.004218

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego County, Annual

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-2,301.7894	-2,301.7894	-0.1400	-0.0171	-2,310.3946
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego 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 - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego 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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	-6.29647e+006	-2,301.7894	-0.1400	-0.0171	-2,310.3946
Total		**-2,301.7894**	**-0.1400**	**-0.0171**	**-2,310.3946**

6.0 Area Detail

6.1 Mitigation Measures Area

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego 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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego 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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego 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	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego 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			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego 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	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

Harmony Grove Solar (6,296,470 kwh) - Operations - San Diego County, Annual

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT

F - CALEEMOD 2020.4.0 (1MW Offsite Solar Construction and Operations)

Install 1MW Solar - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Install 1MW Solar

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2025
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	805.94	**CH4 Intensity (lb/MWhr)**	0.049	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Installing 1 MW of Power includes the installation of 2,778 - 360W solar panels, hardware etc. Each semi delivery truck can hold roughly 650 panels.

Land Use - Industrial use was selected for the installation of solar panels. All construction estimates are based on the install of 1 MW of power or 2,778 360W watt panels

Construction Phase - A crew of 9 people installing solar panels and equipment is expected. 6 members to install panels at a rate of 20 panels with infrastructure per day. The two additional members would install inverters, wires etc.. Commissioning by one person

Off-road Equipment - Utilzed for commissioning

Off-road Equipment - 1 forklift to remove solar panels from trailers

Off-road Equipment - Forklifts onsite to move panels to each location. Worst case aerial lift to assist in panel installation

Trips and VMT - 2,380 panels would be delivered on 4 semi trucks. remainder equipment would be on 2 additional semi trucks delivered in one day. Total 12 trips. Vendor Trips assumed 20 miles

Energy Mitigation -

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	NumDays	0.00	20.00
tblConstructionPhase	NumDays	0.00	20.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.049
tblProjectCharacteristics	CO2IntensityFactor	539.98	805.94
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.006
tblTripsAndVMT	VendorTripLength	7.30	20.00
tblTripsAndVMT	VendorTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	0.00	16.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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					
2025	1.3700e-003	0.0132	0.0277	5.0000e-005	1.7300e-003	3.0000e-004	2.0300e-003	4.6000e-004	2.8000e-004	7.4000e-004	0.0000	4.6780	4.6780	1.0600e-003	8.0000e-005	4.7268
Maximum	**1.3700e-003**	**0.0132**	**0.0277**	**5.0000e-005**	**1.7300e-003**	**3.0000e-004**	**2.0300e-003**	**4.6000e-004**	**2.8000e-004**	**7.4000e-004**	**0.0000**	**4.6780**	**4.6780**	**1.0600e-003**	**8.0000e-005**	**4.7268**

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					
2025	1.3700e-003	0.0132	0.0277	5.0000e-005	1.7300e-003	3.0000e-004	2.0300e-003	4.6000e-004	2.8000e-004	7.4000e-004	0.0000	4.6780	4.6780	1.0600e-003	8.0000e-005	4.7268
Maximum	**1.3700e-003**	**0.0132**	**0.0277**	**5.0000e-005**	**1.7300e-003**	**3.0000e-004**	**2.0300e-003**	**4.6000e-004**	**2.8000e-004**	**7.4000e-004**	**0.0000**	**4.6780**	**4.6780**	**1.0600e-003**	**8.0000e-005**	**4.7268**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Install 1MW Solar - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
7	12-13-2024	3-12-2025	0.0142	0.0142
		Highest	0.0142	0.0142

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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	-601.3598	-601.3598	-0.0366	-0.0045	-603.6079
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**-601.3597**	**-601.3597**	**-0.0366**	**-0.0045**	**-603.6079**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3,006,798,750.00**	**3,006,798,750.00**	**0.00**	**0.00**	**3,018,039,600.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Panel and Equipment Delivery	Building Construction	1/1/2025	1/1/2025	5	1	
2	Panel Equipment Installation	Building Construction	1/2/2025	1/29/2025	5	20	
3	Commissioning	Building Construction	1/2/2025	1/29/2025	5	20	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Panel and Equipment Delivery	Rough Terrain Forklifts	1	8.00	100	0.40
Panel Equipment Installation	Aerial Lifts	1	4.00	63	0.31
Panel Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
Commissioning	Aerial Lifts	1	4.00	63	0.31

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
Panel and Equipment Delivery	1	4.00	12.00	0.00	10.80	20.00	20.00	LD_Mix	HDT_Mix	HHDT
Panel Equipment Installation	2	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Commissioning	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Panel and Equipment Delivery - 2025

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	5.0000e-005	6.4000e-004	1.1400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.1514	0.1514	5.0000e-005	0.0000	0.1526
Total	**5.0000e-005**	**6.4000e-004**	**1.1400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.1514**	**0.1514**	**5.0000e-005**	**0.0000**	**0.1526**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	6.0000e-004	1.5000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.3032	0.3032	1.0000e-005	4.0000e-005	0.3165
Worker	0.0000	0.0000	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0122	0.0122	0.0000	0.0000	0.0123
Total	**1.0000e-005**	**6.0000e-004**	**1.9000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.3154**	**0.3154**	**1.0000e-005**	**4.0000e-005**	**0.3288**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Panel and Equipment Delivery - 2025

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	5.0000e-005	6.4000e-004	1.1400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.1514	0.1514	5.0000e-005	0.0000	0.1526
Total	**5.0000e-005**	**6.4000e-004**	**1.1400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.1514**	**0.1514**	**5.0000e-005**	**0.0000**	**0.1526**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	6.0000e-004	1.5000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.3032	0.3032	1.0000e-005	4.0000e-005	0.3165
Worker	0.0000	0.0000	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0122	0.0122	0.0000	0.0000	0.0123
Total	**1.0000e-005**	**6.0000e-004**	**1.9000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.3154**	**0.3154**	**1.0000e-005**	**4.0000e-005**	**0.3288**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Panel Equipment Installation - 2025

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	6.5000e-004	9.0200e-003	0.0169	3.0000e-005		2.2000e-004	2.2000e-004		2.1000e-004	2.1000e-004	0.0000	2.2514	2.2514	7.3000e-004	0.0000	2.2696
Total	**6.5000e-004**	**9.0200e-003**	**0.0169**	**3.0000e-005**		**2.2000e-004**	**2.2000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**2.2514**	**2.2514**	**7.3000e-004**	**0.0000**	**2.2696**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.4000e-004	3.2100e-003	1.0000e-005	1.2800e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	0.9778	0.9778	3.0000e-005	2.0000e-005	0.9858
Total	**3.8000e-004**	**2.4000e-004**	**3.2100e-003**	**1.0000e-005**	**1.2800e-003**	**1.0000e-005**	**1.2900e-003**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**0.9778**	**0.9778**	**3.0000e-005**	**2.0000e-005**	**0.9858**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Panel Equipment Installation - 2025

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	6.5000e-004	9.0200e-003	0.0169	3.0000e-005		2.2000e-004	2.2000e-004		2.1000e-004	2.1000e-004	0.0000	2.2514	2.2514	7.3000e-004	0.0000	2.2696
Total	**6.5000e-004**	**9.0200e-003**	**0.0169**	**3.0000e-005**		**2.2000e-004**	**2.2000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**2.2514**	**2.2514**	**7.3000e-004**	**0.0000**	**2.2696**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.4000e-004	3.2100e-003	1.0000e-005	1.2800e-003	1.0000e-005	1.2900e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	0.9778	0.9778	3.0000e-005	2.0000e-005	0.9858
Total	**3.8000e-004**	**2.4000e-004**	**3.2100e-003**	**1.0000e-005**	**1.2800e-003**	**1.0000e-005**	**1.2900e-003**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**0.9778**	**0.9778**	**3.0000e-005**	**2.0000e-005**	**0.9858**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Commissioning - 2025

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	1.7000e-004	2.6000e-003	5.4600e-003	1.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.7376	0.7376	2.4000e-004	0.0000	0.7436
Total	**1.7000e-004**	**2.6000e-003**	**5.4600e-003**	**1.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.7376**	**0.7376**	**2.4000e-004**	**0.0000**	**0.7436**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	6.0000e-005	8.0000e-004	0.0000	3.2000e-004	0.0000	3.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2444	0.2444	1.0000e-005	1.0000e-005	0.2465
Total	**1.0000e-004**	**6.0000e-005**	**8.0000e-004**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2444**	**0.2444**	**1.0000e-005**	**1.0000e-005**	**0.2465**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Commissioning - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7000e-004	2.6000e-003	5.4600e-003	1.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.7376	0.7376	2.4000e-004	0.0000	0.7436
Total	**1.7000e-004**	**2.6000e-003**	**5.4600e-003**	**1.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.7376**	**0.7376**	**2.4000e-004**	**0.0000**	**0.7436**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	6.0000e-005	8.0000e-004	0.0000	3.2000e-004	0.0000	3.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2444	0.2444	1.0000e-005	1.0000e-005	0.2465
Total	**1.0000e-004**	**6.0000e-005**	**8.0000e-004**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2444**	**0.2444**	**1.0000e-005**	**1.0000e-005**	**0.2465**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-601.3598	-601.3598	-0.0366	-0.0045	-603.6079
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	-1.645e +006	-601.3598	-0.0366	-0.0045	-603.6079
Total		**-601.3598**	**-0.0366**	**-0.0045**	**-603.6079**

6.0 Area Detail

6.1 Mitigation Measures Area

Install 1MW Solar - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT

G - Off-Site Solar Panel Installation Set Aside Fund

Baker Electric
Established 1938

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OFF-SITE SOLAR PANEL INSTALLATION FOR GHG MITIGATION
Set Aside Fund Review
August 15, 2024

PURPOSE

The purpose of this document is to summarize the rationale supporting the determination of an effective capital allocation for the establishment of a "set aside fund" component within the overall Harmony Grove Village South ("Project") Greenhouse Gas (GHG) mitigation program.

REPORT ASSUMPTIONS AND CONCLUSIONS

1. As part of the Project's overall GHG mitigation program, Project will include securing installation of solar energy panels on existing off-site (from Project) commercial, industrial and/or residential building(s), compliant with the terms of the Project mitigation measure (i.e., M-GHG-1.)

2. The Project "set aside fund" is intended as a financial resource that can be utilized by the HOA to repair and/or replace any solar panels (and/or other relevant system operational functions) that may be needed at the off-site location(s) should the installation agreement warranty and/or insurance components not cover such required actions, or delayed repairs or replacement is anticipated.

3. For purposes of this report, Project offsite GHG mitigation, stated in electrical energy, is assumed to be an approximate 2.0 MW (Mega-Watts) solar system. Please refer to the Project's GHG Technical Report for more information.

4. The term of the Project mitigation measure is 30 years. California mandates a minimum 10-year workmanship warranty and typical solar energy product warranties range anywhere from 10-25 years. Therefore, a financial adjustment will be implemented in the Project installation agreement to ensure the 30-year functional term requirement is met.

   The Project implementation agreement will also require comprehensive installation system maintenance programming and function-reporting, as well as insurance coverage over the required term. The Project's Homeowner's Association ("HOA") will be named as an additionally insured party on the insurance coverage.

5. The HOA will be charged with the responsibility of receiving and reviewing annual reports monitoring the performance of the off-site solar installation, to ensure that the Project's GHG mitigation functions properly over the entirety of the required term.

6. Based on Baker Electric's 86-years of experience in serving the greater San Diego region as an Electrical Contractor, including 20+ years as a Design-Build contactor for solar energy projects (see resume enclosed), it is our opinion that almost all repairs and equipment replacement should be covered by the warranty and/or insurance components as required within the financial agreements. Such industry-standard insurance and warranty programs are highly reliable and effective and are in active use in the marketplace

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It is also our experience that it is the rare occurrence when out-of-pocket expenses (set aside funds) could be required to resolve interim issues while, say, warranty and/or insurance coverages are being processed. For establishment of the capital amount provided for the set aside fund, our assumption is that such instances occur less than 5% of the operational time, both annually and collectively.

Based on the size, specifications and productive life of the subject installation system, the above 5% incidence rate would equate to a total-period cost forecast of approximately $150,000. We would recommend that a conservative “redundancy,” supporting the effectiveness of the set aside fund be implemented at a 2x factor, bringing the total set aside capitalization to $300,000 at initiation. Application of this factor also closely tracks historical and projected trending with respected construction industry cost indexes (i.e., California Construction Cost Index, or similar construction industry standard indexes).

This amount will be funded as required by the GHG mitigation measure and will be subject to the Department of Real Estate rules for HOA funding.

Baker Electric

Established 1938

Baker Electric, Inc.
1298 Pacific Oaks Place
Escondido, CA 92029

WE DELIVER ENERGY THROUGH PEOPLE.

www.baker-electric.com/renewables
Licenses C-10 / A / B / C-46 / C-7 #161756

Powering California for Over 85 Years

Since 1938, Baker Electric Inc. has delivered solar & electrical contracting services throughout municipalities in Southern California with uncompromising quality, innovation, and integrity. Our experience includes projects in healthcare, education, hospitality/gaming, multi-family housing, solar power, public works, military, transportation, water, wastewater, service, special projects, tenant improvements, lighting retrofits, and more.

Baker is one of California's foremost, full-service electrical contractors. You can count on us to be your strategic partner for the life of your project as well as your business.

- **Expertise in design-build, BIM modeling, and pre-fabrication**
- **Single largest contract for electrical $37.5 million**
- **Over 1300 office and field staff**
- **$100 million single, $500 million aggregate bonding capacity**
- **2022 annual revenue in excess of $325 million**
- **2023 EMR - 0.98**

Overview of the Company

In 1938, Leroy Baker founded a simple electrical business focused on rewiring household appliances and performing other home-based energy needs. Baker received our Electrical Contracting License in 1956. In 1957, Baker became a member of the National Electrical Contractors Association and has since been engineering and installing electrical systems for a variety of industries in both public and private arenas. Baker Electric is now widely recognized and respected as one of Southern California's leaders for its innovative and comprehensive portfolio of electrical contracting solutions.

For 85 years, Baker Electric has thrived on the leadership of 4 generations of the Baker family. Our expertise in electrical contracting has been carefully honed over the years and we're proud of the trust our customers have placed in the company. We're keenly aware of the importance of treating our customers and Baker colleagues with respect and integrity while following through on our commitments. In 2021, Baker changed it's ownership structure into an ESOP.

We put our customers first, exceed industry standards, use high-quality products and offer unmatched service. We call it The Baker Way, and it's how we've done business for over 84 years here in Southern California. Our core values consist of team building, relentless follow-through, being 100% dedicated to our craft with an all in mind-set, and looking out for the well-being and safety of our team members and clients. What Baker would promise to deliver would be nothing short of this.




Baker Electric | *Community Involvement*

Giving Back to Our Community

Baker Electric is dedicated to giving back to helping those in need with charitable donations, fundraising, volunteering and gifting electrical resources.

We partner with local non-profits to give back to our community. Below are Baker Electric's corporate giving priorities and organizations:

Families in Need & Families in Transition

Father Joe's Villages (my.neighbor.org)

Father Joe's Villages offers innovative tailored-to-client solutions committed to ending homelessness, one life at a time.

Ronald McDonald House Charities of San Diego (rmhcsd.org)

Ronald McDonald House Charities of San Diego provides a "home-away-from-home" for families with children being treated for serious, often life-threatening conditions at local hospitals.

San Diego Food Bank (sandiegofoodbank.org)

The largest hunger-relief organization in San Diego County, the Jacobs & Cushman San Diego Food Bank serves an average of 370,000 people per month in San Diego County.

Children & Youth Development

Boys and Girls Club (bgca.org)

Mission - To enable all young people, especially those who need us most, to reach their full potential as productive, caring, responsible citizens.

Memberships

National Electrical Contractors Association (NECA), American Subcontractors Association (ASA), Associated General Contractors of America (AGC), National Association of Women in Construction (NAWIC), Solar Energy Industries Association (SEIA), American Solar Energy Society (ASES), U.S. Green Building Council (USGBC), Professional Association of Specialty Contractors (PASC).

Baker Volunteers at the Ronald McDonald House San Diego Fundraiser

Baker Electric | *Safety*

CERTIFICATIONS

- Arc Flash
- Code Training
- Competent Person
- Confined Space
- CPR / First Aid
- Crane Hoisting
- Fall Protection
- Fiber Optics
- Forklift Training
- HighVoltageSplicing
- LEED Certification
- Lockout / Tagout
- Low Voltage
- OSHA 10
- OSHA 30
- Scaffold
- Solar Power
- NABCEP

2023 EMR RATE: 0.98

Comittment to Safety

Baker Electric is committed to keeping our employees and all others in the workplace safe. Our belief that people and property are our most valuable assets is the cornerstone of our Safety Program.

Programs and Procedures

Baker Electric has a written safety plan, pro-active accident program, Code of Safe Work Practices, Hazardous Communication Program, Safety Council, Injury and Illness Prevention program (IIPP). In addition to a designated Safety Director, there are Safety Managers and a strictly enforced substance abuse program.

We hold weekly safety "tailgate" meetings, monthly safety committee meetings, quarterly foreman meetings, pre-job planning conferences with management, and random job site audits by our Safety Managers. Every project Baker is involved with has a safety plan developed for that specific site. Our Superintendents regularly inspect job sites, and, each month, senior management reviews company wide job safety performance.

Training

Our management and foremen have all completed extensive course work in Occupational Safety and Health. The curriculum includes the OSHA 10, Competent Person for Excavation, Forklift Operator Certification and First Aid / CPR.

Baker Electric | *Renewables Group*

The Renewables Group is a part of the Baker Electric group of businesses. Baker has been designing and installing electrical systems for over 80 years, making the Renewables Group a standout solar integrator in Southern California. Baker has been building solar projects since 2003, and has contracted for over 2 Gigawatts of commercial and utility scale solar installations. Baker is one of the top design-build solar, storage, and microgrid firms in Southern California.

With extensive experience in the design and installation of roof, canopy, and ground mounted solar arrays, our expertise allows us to analyze electric usage and provide cost-saving solutions specific to each individual project.

Solar, Storage, and Microgrid

We are built to meet the needs of commercial and industrial (C&I) projects including:

- Small to large commercial facilities
- Non-profit organizations
- Education, including K-12, charter & private schools, public & private higher education institutions, with DSA expertise
- Government & military installations
- Utility-scale solar power plants
- Energy Storage Systems (ESS)
- EV charging stations
- Preventative maintenance and monitoring
- Innovative project financing

Grossmont Union High School District

San Diego County, CA

System Overview: Ground Mount and Carport
Number of Panels: 7,819
System Size: 3.291 MW

Three photovoltaic systems installed at Steele Canyon High School, Granite Hills High School, and Helix High School. The three systems together will produce nearly 5 million kWh of energy per year. These projects were developed utilizing a combination of carport and ground mounted solar arrays. Each of the solar arrays provides enough electricity to offset 95% of each school's energy needs on an annual basis.

Poway Center for the Performing Arts

Poway, CA

System Overview: Carport
Number of Panels: 1,701
System Size: 680.4 kW

The photovoltaic system consisted of seven photovoltaic carports, designed to decrease the energy costs at the PCPA by approximately 75 percent annually, reducing the city's greenhouse gas emissions and provide shaded parking spots. The system is expected to produce roughly 117,768 kWh monthly.

Cathedral Catholic High School

San Diego, CA

System Overview: Carport
Number of Panels: 3,124
System Size: 1.254 MW

Baker designed and installed 3,142 solar panels and 38 inverters using a carport configuration. The Baker solar system was built to complement the high school's building colors and façade. Additionally, Baker installed electric vehicle chargers that are available to faculty, staff, and students during the school day and to the community at large in the evenings.

Baker Electric
Established 1938

Project Experience | *Commercial*

Marine Group Boat Works

National City, CA

System Overview: Roof
Number of Panels: 1,558
System Size: 483 kW

MGWB's custom-designed solar system produces roughly 81% of its annual energy needs based on past consumption. Their system saves $154,196 in energy costs per year and will save the boatbuilder $3MM over 25 years. Energy savings from the solar system enables re-investment into the company's operational budget, focusing more resources on the construction and repair of ships and superyacht vessels.

J + D Labs

Vista CA

System Overview: Roof
Number of Panels: 2,850
System Size: 1.05 MW

J+D Labs is committed to being environmentally friendly and takes pride in giving back to the community. They have installed a clean energy UTC 400kw Hydrogen Fuel Cell on-site and their roof supports the largest privately owned photovoltaic system in Vista, CA which conserves enough energy to power 191 homes and offsets 1,139 tons of carbon annually.

BioLegend

San Diego, CA

System Overview: Carport
Number of Panels: 735
System Size: 294 kW

Baker Electric provided a renewable energy solution which allows Biolegend to save an estimated $2,281,070 on electrical costs over the next 25 years. BioLegend took advantage of the 30% federal tax credit and Federal and State incentives equaling an estimated total system cost savings of $642,000.

Del Mar Civic Center Solar + Battery Storage

Del Mar, CA

Battery Storage Size: 120 kWh
PV System Size: 71.6 kW
Panels: 199

Baker Electric installed a 71.6kWDC photovoltaic system with 199 Sunpower 360w modules, providing budgeting relief to the city through demand-shaving and energy production. The energy storage system includes a storage capacity of 120 kWh's and received a rebate to further project costs.

Vista Energy Storage

Vista, CA

Battery Storage Size: 40MW / 40MWh

The project consisted of a 40MW, 40MWh energy storage system in a new 8,000 SF metal building in Vista, California. The electrical scope included a 69kV substation, MV switches, transformers, inverters and underground ductbanks.

NEC Energy Solutions DESI Pilot #1

Orange, CA

Battery Storage Size: 2.5 MWh

Working on one of the first Distributed Energy Storage Integrations of our time, Baker Electric provided the site, civil and electrical design, while connecting output of NEC batteries, owned by Southern California Edison. The batteries charge at night and are selectively released at peak times during the day, limiting rate spikes for NEC and cutting their utility demand charges.

Baker Electric
Established 1938

Project Experience | *Non-Profit*

Jewish Family Service

San Diego, CA

System Overview: Roof
Number of Panels: 864
System Size: 216 kW

Baker Electric designed and installed a 216 kW rooftop solar system across two buildings. The agency will see a 70% reduction in their annual electricity bills based on past consumption and will save an estimated $76,000 in energy costs in the first year. Solar savings will go directly towards funding JFS programs that serve citizens of San Diego.

Casa De Balboa

San Diego, CA

System Overview: Roof
Number of Panels: 480
System Size: 177.6 kW

At the heart of Balboa Park, Casa De Balboa is the home of San Diego History Center and the Museum of Photographic arts, who's new solar system will save them a shared $62,000 in energy costs. Within the first year, the solar panels are expected to produce 281,000 kWh of renewable energy, allowing Casa de Balboa to put more funds towards their collections and educational programming.

Classical Academy - Coastal Campus

Oceanside, CA

System Overview: Roof
Number of Panels: 222
System Size: 87.69 kW

The solar system is expected to produce 180,370 kWh in the first year representing 73% of the annual electrical consumption for the Coastal campus. Funded by a Proposition 39 grant, the system was provided at no cost to Classical Academy, who will use the energy cost savings for other educational needs.

Baker Electric
Established 1938

Project Experience | *Military and Government*

Bachelor Enlisted Quarters

Twenty Nine Palms, CA

System Overview: Roof, Carport and Shade Structure
Number of Panels: 4,680
System Size: 1,488 kW

To help meet federal regulations for energy efficiency and to maximize much needed shade in the desert heat, this construction project incorporated one of the largest California military base solar installations to date. Baker Electric Solar installed four separate solar array structures. The installation is designed to cover two large parking areas, an amphitheater and recreational park area.

Food and Drug Administration

Irvine, CA

System Overview: Rooftop and Carport
Number of Panels: 2,577
System Size: 953 kW

The FDA–SCE project utilized an Utility Energy Service Contract (UESC) where the local utility SCE provided solar as an energy conservation measure to the FDA. Baker was responsible for the development, design, procurement, construction and commissioning of the project.

LA Air Force Base

El Segundo, CA

System Overview: Rooftop
Panels: 3,234
System Size: 1,215kW

Design-Build new construction on an occupied military base.

Stateline Solar Phase I & II

Lancaster, CA

System Overview: Utility Scale
System Size: 300 MW

The 300MW Desert Stateline Solar project is located on 1,685 acres of federally managed public land in San Bernardino County and consists of approximately 3.2 million of First Solar's thin-film photovoltaic modules mounted on fixed-tilt racking. The electricity and associated renewable energy credits generated by the facility will be sold under a 20-year power purchase agreement with Southern California Edison Co.

Anetelope Valley Solar Ranch 1

Antelope Valley, CA

System Overview: Utility Scale
System Size: 61.3 MW

Baker Electric was chosen to complete the final phase of the Antelope Valley Solar Ranch One, and installed 61.23 MW of the PV. Located in the Antelope Valley area of North Los Angeles County, the 230 MW AV Solar Ranch One is a utility scale solar project that will produce enough electricity to meet the annual energy needs of about 75,000 average homes.

Westmont Permacity

Los Angeles, CA

System Overview: Utility Scale
System Size: 16.4 MW

The Westmont project includes more than 50,000 solar panels, covering 50 acres of roof space, enough electricity to power 5,000 single family homes. It ranks second in size only to the solar project at Apple's headquarters in Cupertino — though Westmont's highly efficient solar panels and unique roof design enables it to surpass the project in total power generation.

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Baker Electric | *Utility Solar Experience*

Stateline Solar I & II

Nipton, CA

- 300MW Solar System | 3.2 million PV modules
- $38.1 Million in Electrical Value
- 12kV Distribution

Sletten Companies, General Contractor
Rafael Valenzuela | (702) 739-8770 | rvalenzuela@slettenInc.com

Wright Solar

Los Banos, CA

- 239MW Solar System
- $11.9 Million in Electrical Value
- 12kV Distribution

Swinerton Builders, General Contractor
Brian Irlbeck | (858) 622-4040 | birlbeck@swinerton.com

Techren Solar I & II

Boulder City, NV

- 384.54MW Solar System
- $23.4 Million in Electrical Value
- 12kV Distribution

Swinerton Builders, General Contractor
Mike Schott | (619) 372-1381 | mschott@swinerton.com

Baker Electric
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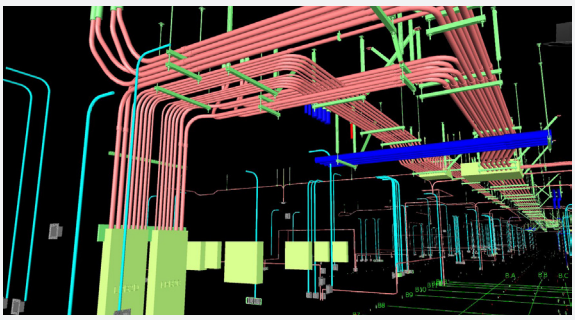
Planning | *BIM & Pre-Fab*

People, Process, Technology - Efficiently and in that order for more effective project delivery

Baker Electric has been successfully designing, modeling, coordinating, prefabricating, and constructing in 3D for over 11 years. We fully embraced Revit as our preferred BIM software platform in 2014. In doing so, we have gained valuable insight in how to truly leverage the benefits and information of BIM by collaboratively taking it from preconstruction and concept, through our prefabrication shop, and effectively communicating it to our field teams for installation.

Baker believes that with these key steps, we are staying ahead of the curve in the 3D world of construction:

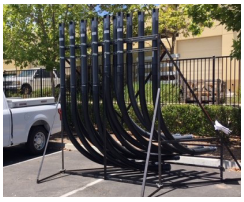
- Collaborative Planning Approach
- Meeting the Demand for Better Work in Less Time
- Taking a Modular Approach
- Keeping it Lean



BIM Modeling VS. Installation

Collaborative Planning Approach

Our advanced BIM approach is tightly woven into our planning and work process which helps us identify constructability issues early, maximize prefabrication opportunities and effectively communicate not only internally, but also externally with fellow contractors. As heavy practitioners of Standard Operating Procedures, we utilize highly skilled field experienced personnel on our BIM team to work side by side with our field and effectively guide them through our standardized planning processes. We are always looking for opportunities to not only improve our BIM and planning processes, but to continuously improve all of our business processes.



Meeting the Demand for Better Work in Less Time

Putting the right information and content into the model without bogging it down can only be learned through our years of experience, but having the right mix of people on our BIM and prefabrication teams to fuel innovation is maximized by the Baker way of delivering energy through people. By taking a lean construction mindset of documenting and standardizing our work, we are able to achieve and maintain our standards while continuously improving how we deliver projects.

Taking a Modular Approach

By integrating our BIM and prefabrication departments, it creates a diverse group collaborating and finding innovative ways to get our systems installed onsite. We are always looking for ways to set entire units of our systems in place and find continued success with our modular underground, overhead and equipment approaches.

Keeping it Lean

We are always looking to do more with less. From adhering to the 5S principles in our prefabrication shop, to reducing or eliminating excessive waiting/inventory/transportation to keep all deliveries on wheels and getting them set in the correct location 1 to 2 days prior to installation. Flow efficiency and detailed sequencing is always top of mind.

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Project Experience | *Labs & Clean Rooms*

Navigate BioPharma Lab, TI

Carlsbad, CA

- 25,000 SF facility
- $931,369 Electrical Value
- Labs and office space
- Biopharmaceuticals
- Clinical trials

Regulus Therapeutics, TI

San Diego, CA

- 46,000 SF tenant improvement
- $1,130,832 Electrical Value
- Labs and office space
- Biopharmaceuticals
- Vivarium

Sharp Healthcare Lab Remodels

Various Locations, CA

- Remodel of 4 Acute Care Hospital Labs
- $1,428,779 Electrical Value
- Construction phasing
- Temporary Phasing

Baker Electric
Established 1938

Project Experience | *Labs & Clean Rooms*

Kite Pharma RDMC Building B Office Space Densification

Santa Monica, CA

- 3-story tenant improvement
- $2,286,777 Electrical Value
- Labs and office space
- Biopharmaceuticals
- All new power & lighting

Novartis Gene Therapies

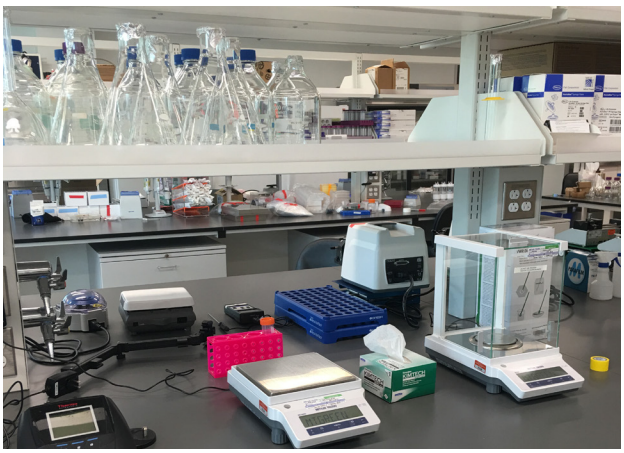
San Diego, CA

- Suite 220 lab tenant improvement
- $242,437 Electrical Value
- Clean rooms
- Research labs
- Clinical trials

Michelson Lab Wing NAWS

China Lake, Ridgecrest, CA

- 22,674 SF facility
- $2,226,285 Electrical Value
- Military Lab Renovation



Baker Electric
Established 1938

Project Experience | *Healthcare*

UCSD Koman Family Outpatient Pavilion

La Jolla, CA

- 156,834 SF Outpatient Clinical Facility
- $15,014,156 Electrical Value
- OSHPD-3
- LEED Gold Certification
- 8 Surgery Suites
- State-of-the-art Lighting Control

VA Loma Linda Ambulatory Care Center

Loma Linda, CA

- 271,000 SF Ambulatory Outpatient Center
- $10,176,290 Electrical Value
- LEED Gold Certification
- Primary Medical Care, Dental, and Rehabilitation Services
- Highly Collaborative Design-Assist

Sharp Rees-Stealy Santee Medical Office Building

Santee, CA

- 86,000 SF, 3-Story Medical Office Building
- $6,627,223 Electrical Value
- Supporting 21 Medical Clinics
- Design-Build Delivery Method
- 420 On-Site Parking Spaces

Baker Electric | *Education Project Experience*

Golden West Math & Science Building Phase 2

Huntington Beach, CA

- 120,561 SF, 3-story Math and Science Building
- $8,900,000 Electrical Value
- Project also included a STEM Center for students

Coast Community College District, Owner
Michael Golden | (714) 895-8143 | mgolden7@gwc.cccd.edu

Grossmont College Arts & Communications Complex Phase 1

El Cajon, CA

- 38,680 SF, 390-seat Performing & Visual Arts Center
- $9,300,000 Electrical Value
- Project also included Hyde Art Gallery

Balfour Beatty Construction, General Contractor
Chris Drinko | (858) 635-7400 | cdrinko@balfourbeattyus.com

Mesa Community College Commons Cafeteria & Bookstore

San Diego, CA

- 73,000 SF Cafeteria and Bookstore Commons Area
- $3,739,804 Electrical Value
- Included lounge spaces, conference rooms, & stockrooms

San Diego Community College District, Owner
Ryan Murphy | (619) 388-6500 | rmurphy@sdccd.edu

Baker Electric | *Education Project Experience*

Mira Mesa High School Site Mod 7

San Diego, CA

- New construction of 14 classrooms and demo of 22
- $3,500,000 Electrical Value
- Also includes new music building

Balfour Beatty Construction, General Contractor
Grant Muscavitch | Office: (858) 635-7400 | Cell: (714) 495-0344 | gmuscavitch@balfourbeattyus.com

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San Onofre Elementary School

San Clemente, CA

- 91,000 SF Elementary School
- $3,300,000 Electrical Value
- Also includes administration and multi-purpose centers

Balfour Beatty Construction, General Contractor
Gordon Stanley | (858) 635-7400 | gstanley@balfourbeattyus.com

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Chula Vista Elementary School District Feaster Charter School Mod

Chula Vista, CA

- Whole Site Modernization to Existing Elementary School
- $3,360,000 Electrical Value

Balfour Beatty Construction, General Contractor
Shawn O'Neil | (858) 635-7400 | soneil@balfourbeattyus.com

Baker Electric | *12kv Project Experience*

NASSCO 12kV Shorepower

San Diego, CA

- Installation of new shorepower feed, 12kV
- $2,618,772 Electrical Value
- Underground, switchgear, transformer & substations

NASSCO (National Steel and Shipbuilding), Owner
David Barbat | (619) 544-3535 | david.barbat@nassco.com

Grossmont Cuyamaca Community College District

El Cajon, CA

- New 12kV power supply to the college
- $1,867,768 Electrical Value
- Design-Build project on active campus

Gafcon, General Contractor
Jim Davies | Office: (619) 644-7031 | Cell: (858) 414-8909

Palomar Community College

San Marcos, CA

- Campus-wide medium voltage upgrade
- $2,151,163 Electrical Value
- Existing 4160V feeders converted to 12kV power

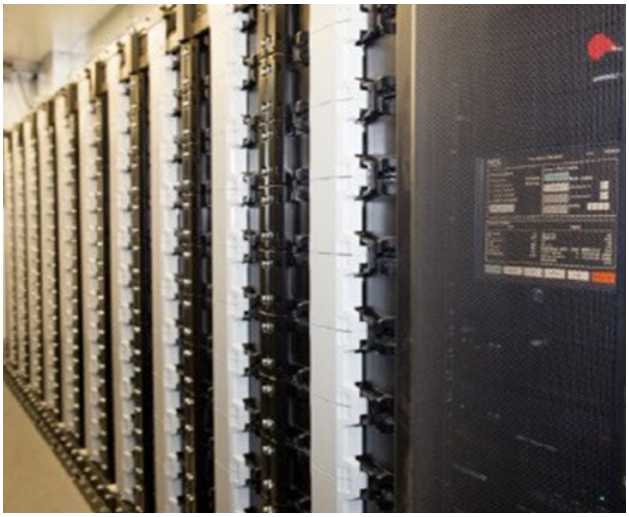
Palomar Community College, Owner
Chris Miller | (760) 744-1150 ext. 3333

Baker Electric | *BESS Project Experience*

NEC Energy Solution DESI Pilot #1

Orange, CA

- **2.5MVA/2.5 MWh Battery Energy Storage System**
- **Baker engineered, procured and constructed a grid tie as well as provided the site, civil, and electrical design**



Prime Contractor: Baker Electric
Delivery Method: Design-Build
Year Completed: 2015

Mira Loma ACES Project - Tesla

Mira Loma, CA

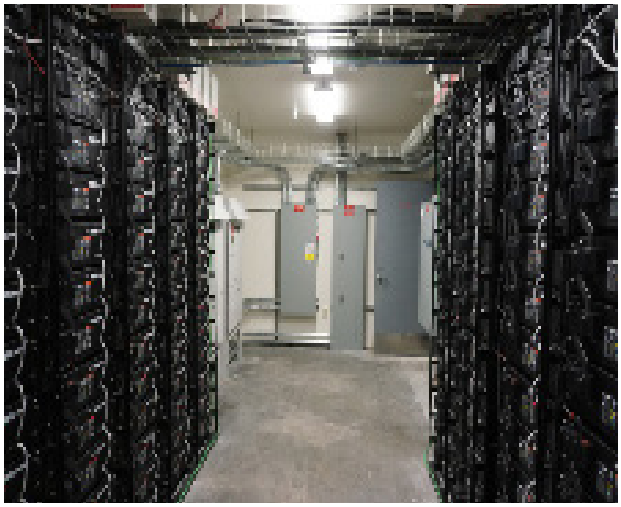
- **20MW/80 MWh Tesla Energy Storage System**
- **Installed in 2 phases: 8 2.5MVA//4000a Power Stations, 384 Tesla Power Packs, site MV collection switchgear, & SCADA**

Prime Contractor: Baker Electric
Delivery Method: Design-Build
Year Completed: 2017

UCSD Trade Street Battery Storage

La Jolla, CA

- **1.98MW/3.96 MWh Battery Energy Storage System**
- **Included lithium ion batteries, racks, inverters, charge / discharge controller, and associated software**



Prime Contractor: Baker Electric
Delivery Method: Design-Bid-Build
Year Completed: 2016

Baker Electric | *BESS Project Experience*

NEC Energy Solution DESI Pilot #2

Santa Ana, CA

- **1.4MW/3.7 MWh Lithium Energy Storage System**
- **1 Container, 1 Inverter, and 1 MV Transformer**
- **Owner of project: Southern California Edison**

Prime Contractor: Baker Electric
Delivery Method: Design-Build
Year Completed: 2017

Vista Energy Storage

Vista, CA

- **40MW/40 MWh Lithium Energy Storage System**
- **16 Inverters, 8 MV Transformers, and Aux Power**
- **Owner of project: LS Power**

Prime Contractor: RES-Americas
Delivery Method: Design-Build
Year Completed: 2018

Pronghorn

Lancaster, CA

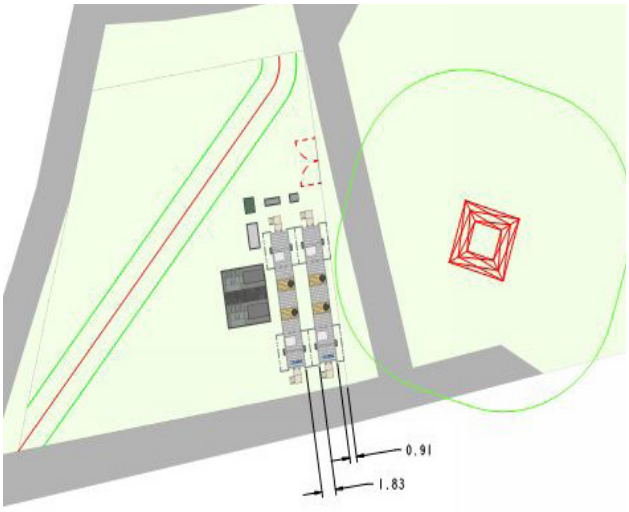
- **2.8MW/5.6 MWh Container Energy Storage System**
- **2 Containers, 1 Inverter, and 1 MV Transformer**
- **SCE Distributed Energy Storage Integration**

Prime Contractor: Baker Electric
Delivery Method: Design-Build
Year Completed: 2017

Baker Electric | *BESS Project Experience*

Yorktown BESS

Pico Rivera, CA

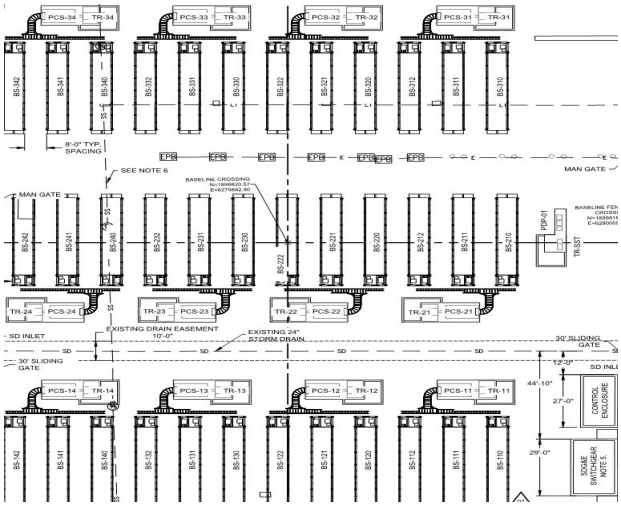


- **3MW/9 MWh Battery Energy Storage System**
- **Baker managed civil, structural, & electrical design**
- **Baker provided turn-key project delivery**

Prime Contractor: Baker Electric
Delivery Method: Design-Build
Year Completed: 2021

Top Gun BESS

San Diego, CA

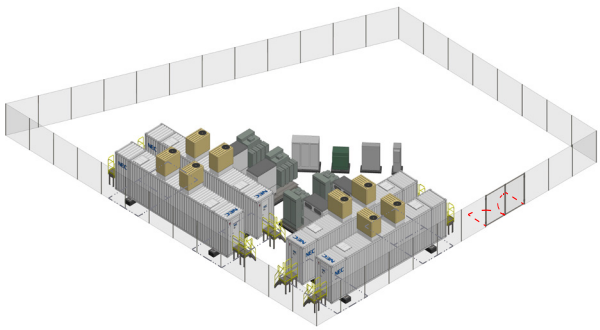


- **30MW/120 MWh Battery Energy Storage System**
- **Accelerated construction schedule**
- **In excess of 15,000 modules installed with no incidents**

Prime Contractor: RES-Americas
Delivery Method: Design-Build
Year Completed: 2020

Cadillac BESS

Pico Rivera, CA



- **3.5MW/8.75 MWh Battery Energy Storage System**
- **Baker managed civil, structural, & electrical design**
- **Baker provided turn-key project delivery**

Prime Contractor: NEC Energy Solutions
Delivery Method: Design-Build
Year Completed: 2021