# Dignity Mercy Medical Center, Redding

# North State Pavilion Project

# Greenhouse Gas Report

Prepared for:

**Dignity Health**

Prepared by:

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## TABLE OF CONTENTS

## LIST OF TABLES

## APPENDIX

## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AB | Assembly Bill |
| AEP | Association of Environmental Professionals |
| AQMD | Air Quality Management District |
| CAA | Clean Air Act |
| CalEEMod | California Emissions Estimator Model |
| Cal/EPA | California Environmental Protection Agency |
| CAP | climate action plan |
| CARB | California Air Resources Board |
| CAT | Climate Action Team |
| CCR | California Code of Regulations |
| $CO_2e$ | carbon dioxide equivalent |
| EO | Executive Order |
| EPA | Environmental Protection Agency |
| GGRP | greenhouse gas reduction plan |
| GHG | greenhouse gas |
| LCFS | low carbon fuel standard |
| lb/MWh | pound per megawatt hour |
| MT | metric ton |
| MMT | million metric ton |
| MPO | metropolitan planning organization |
| RABA | Redding Area Bus Authority |
| RCAP | regional climate action plan |
| RPS | Renewable Portfolio Standards |
| RTP | Regional Transportation Plan |
| PG&E | Pacific Gas and Electric Company |

| | |
|---|---|
| SB | Senate Bill |
| SCS | Sustainable Communities Strategy |
| SGA | strategic growth area |
| SRTA | Shasta Regional Transit Agency |
| TIAR | Traffic Impact Analysis Report |

# Executive Summary

## Purpose of Analysis

This report contains an evaluation of the greenhouse gas (GHG) emissions associated with the proposed North State Pavilion Project and the project's compliance with applicable GHG emission reduction regulations. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). In determining the approach to analysis, GHD consulted with the City of Redding (City) planning staff, Shasta County Air Quality Management District (AQMD), and the Shasta Regional Transit Agency (SRTA). This report also contains an evaluation of the GHG emissions associated with potential alternatives to the proposed project.

## Project Summary

Dignity Mercy Medical Center Redding (Dignity) proposes the development of the North State Pavilion Project (project) an approximate 10.55-acre site in the City of Redding. The site is located west of Interstate 5, southwest of the intersection Cypress Avenue and Hartnell Avenue, in close proximity to the Sacramento River to the west. The site is largely vacant, containing open fields, an approximate 7,500-square-foot building, and approximately 64,000 square feet of concrete and asphalt pavement.

Dignity proposes to demolish and remove the existing building and pavement, and construction three buildings totaling approximately 129,600 square feet. It is estimated that up to 180 persons will be employed once the project is completed. The approximate square footages for each building are:

- Building "A" – 80,000 square feet
- Building "B" – 27,800 square feet
- Building "C" – 21,800 square feet

Other project features include but are not limited to parking, bicycle parking, landscaping, hardscape features, three (3) emergency generators with enclosures, solid waste bin enclosures, decorative fencing, monument signs, a pole sign, and parking lot, driveway and walkway lighting. The project would implement on-site and off-site pedestrian improvements. Pedestrian sidewalks, crosswalks, and accessible paths of travel would be provided within the project area as follows:

- Within the developed core to allow easy access to each building and crosswalk
- Where feasible, configure sidewalks to channel pedestrians to crosswalks
- Between public streets and the developed core

Off-site pedestrian improvements include adding sidewalks along the following project frontages: Henderson Road (North), Parkview Avenue (South), Henderson Road (South), and Parkview Avenue (Open Space Access).

Overall, 549 parking spaces are proposed, which is a 5 percent reduction in required parking spaces as allowed by the Redding Area Bus Authority (RABA) credit area. Parking includes ADA and van accessible spaces, and compact and motorcycle spaces. In addition, 33 of the parking spaces will have electric vehicle charging stations, and 44 spaces will be preferential parking for clean vehicles. Bicycle racks will also be provided.

### Phasing and Construction Schedule

The project is currently proposed to develop in two phases. Phase 1 will include Building "A" that is 80,000 square feet in size, and would start construction in 2020 and be completed in 2022. Phase I proposes 338 parking spaces and 1 of the emergency back-up generators. Phase 2 will include Building "B" and "C" and the remaining 2 emergency back-up generators. It is estimated that Phase 2 would start construction in 2022 and be operational by 2024.

## Summary of Impact Analysis Results

The following is a summary of the analysis results:

**Impact GHG-1**: The project would generate direct and indirect greenhouse gas emissions that would result in a significant impact on the environment. Implementation of Mitigation Measure GHG-1 would reduce this impact to less than significant.

The project would not exceed the project-specific 2024 threshold of 3.7 metric tons of carbon dioxide equivalent (MT $CO_2e$) per person. The project would exceed the project-specific 2035 threshold of 2.0 MT $CO_2e$ per person. The project would not exceed the 2035 threshold after implementation of mitigation measure GHG-1.

**Impact GHG-2:** The project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases.

The project would not conflict with the 2015 Regional Transportation Plan/Sustainable Communities Strategy. The project would not conflict with the California Air Resources Board's Scoping Plan.

### Mitigation Measure Applied to the Project

**Mitigation Measure GHG-1: Reduce Greenhouse Gas Emissions**

Dignity Health shall prepare and implement a Greenhouse Gas Reduction Plan (GGRP) that contains specific design features and actions to be implemented by the project prior to year 2035, and quantify the emission reductions associated with those features and actions. The GGRP shall demonstrate achievement of a project emissions inventory that is less than the 2035 threshold of 2.0 metric tons of carbon dioxide equivalent ($CO_2e$) per service population by year 2035. The emissions inventory must be prepared using model(s) and methodology accepted by the Shasta County Air Quality Management District. The GGRP shall be submitted to the City for approval prior to the issuance of grading permits. The GGRP may be updated after City approval to account for emission reductions associated with new regulations, as applicable. Any updates to the GGRP must be submitted to the City for approval. Specific measures may include (but are not limited to):

- Implement a voluntary trip reduction program for all employees
- Implement a voluntary ride sharing program for all employees
- Provide a Commute Trip Reduction subsidy for employees consistent with California Air Pollution Control Officer's Association's Greenhouse Gas Measure TRT-4 (CAPCOA 2010).

- Utilize high pressure sodium cutoff lights in outdoor lighted areas
- Enroll in PG&E's Solar Choice Program to purchase solar energy at 100 percent of the project's energy use.
- Use Energy Star energy efficient fans and refrigerators
- Generate at least 15 percent of the project's energy demand through on-site renewable energy
- Use 100 percent electric lawnmowers and leafblowers

The bullet points listed above are provided as a guide and can be substituted with other measures when shown to achieve the same result of reducing annual emissions to less than 2.0 MT $CO_2e$ per service population by year 2035.

## Alternatives to the Proposed Project

Alternatives to the proposed project include the No Project Alternative, Reduced Intensity Alternative, and Mercy Oaks Campus Alternative.

### No Project Alternative

The No Project Alternative would develop the 10.55-acre project site as generally allowed under the existing General Plan land use classifications and zoning designations for the property. The development assumptions include approximately 10,800 square feet (sf) of restaurant space, 95,400 sf of general office, 5,600 sf general retail, and 22,800 sf of general commercial.

### Reduced Intensity Alternative

The Reduced Intensity Alternative would develop an approximate 9.72-acre portion of the Proposed Project site with 109,000 square feet of medical office land uses, and 461 parking spaces. This alternative proposes three buildings to be closely grouped, with pedestrian plazas and promenades connecting the buildings to each other as well as outdoor spaces and parking areas. The Reduced Intensity Alternative's buildings would be 84 percent of the square footage of the Proposed Project's buildings.

### Mercy Oaks Alternative

The Mercy Oaks Campus Alternative would develop the project facilities on an undeveloped portion of the existing Mercy Oaks Campus, located at College View Drive and Mercy Oaks Drive more than 3.5 miles northeast of the proposed project site. Approximately 13.2 net acres of the Mercy Oaks Campus is suitable for development. Development of Mercy Oaks Campus Alternative would require a substantial amount of tree removal. Under this alternative, the same amount of development as the Proposed Project would be constructed, but at the Mercy Oaks Campus Location.

# Environmental Setting

Gases that trap heat in the atmosphere are referred to as GHGs because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse. The accumulation of GHG has been implicated as the driving force for global climate change. The primary GHGs are carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), ozone ($O_3$), and water vapor ($H_2O$).

While GHGs in the atmosphere are naturally occurring, the emission rate of $CO_2$, $CH_4$ and $N_2O$ has been accelerated by human activities. Emissions of $CO_2$ are largely by-products of fossil fuel combustion, whereas $CH_4$ results from off-gassing associated with such activities as agricultural practices and landfills. Other GHGs include hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride, which are generated during certain industrial processes. GHGs are typically reported in "carbon-dioxide-equivalent" measures ($CO_2e$) as each GHG has a different global warming potential.

Potential climate change impacts in California may include, but are not limited to, a decrease in snowpack; sea level rise; and a greater number of extreme heat days per year, high ozone days, large forest fires, and drought years. Secondary effects are likely to include impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity (CARB 2014).

The Environmental Protection Agency (EPA) reports U.S. GHG emissions for 2014 as 6,870 million metric tons of $CO_2e$ (MMT $CO_2e$). Electricity production accounted for approximately 30 percent of national GHG emissions, followed by the transportation sector at approximately 26 percent and the industrial sector at approximately 21 percent. Commercial and residential fuel use and the agricultural sector accounted for the remaining 21 percent (U.S. EPA 2016).

The California Air Resources Board (CARB) estimated that in 2015 California produced about 440 MMT $CO_2e$. The transportation sector was the highest source at 39 percent of the State's total GHGs, followed by the industrial sector at 23 percent, and electricity generation (both in-state and out-of-state) at 19 percent. Commercial and residential fuel use, recycling and waste, high global warming potential, and agricultural sectors accounted for the remaining 19 percent of the State's total GHG emissions (CARB 2017a).

# Project Vicinity

## Pedestrian Facilities

Henderson Road (North), from Hartnell Avenue to the proposed project frontage, does not contain any sidewalks on the easterly or westerly sides of the roadway. Henderson Road (South) from the existing open space access to the intersection of Henderson Road & Parkview Avenue does not contain any sidewalks on the northerly or southerly sides of the roadway. No marked crosswalks are present within the North or South segments of Henderson Road.

## Bicycle Facilities

Within the City of Redding, the goals for bicycle and trail facilities are contained in the Bikeway Action Plan 2010-2015. The City of Redding Bikeway Action Plan 2010-2015 may be viewed at http://healthyshasta.org/downloads/biking/ReddingBikePlan2010.pdf. As related to the proposed projects' study area, the plans identify the following existing and future bicycle facilities:

- Class I: Henderson Road to Inez Street (Proposed)
- Class II: Cypress Avenue from State Route 273 to Ishi Drive (Existing/Upgrade/Proposed)
- Class II: Hartnell Avenue from Cypress Avenue to Old Oregon Trail/ Airport Road (Existing/Upgrade/Proposed)

Class I bikeways are bike paths or shared use paths with a completely separated right-of-way designated for the exclusive use of bicycles and with cross-flows by motorists minimized.

Class II bikeways are bike lanes that provide a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted.

## Transit Service

Existing transit service is provided primarily by the Redding Area Bus Authority (RABA). RABA provides fixed route services, express route services and demand response services to the general public within the urbanized area of the Shasta County. RABA operates 15 fixed routes within the Cities of Redding, Shasta Lake and Anderson with the route maps available at: http://www.rabaride.com/stops.html.

Route 5 is a north-south direction service on Hartnell Avenue from the Downtown Transit Center. Route 5, which originates and terminates at the Downtown Transit Center, provides bus stops at the Sequoia Middle School, Village Plaza Shopping Center, Parsons Junior High School, and Alta Mesa Elementary School. The nearest Route 5 bus stop is on west side of Hartnell Avenue south of Henderson Road, approximately 200 feet from the proposed project.

# Regulatory Setting

## Federal

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the Clean Air Act (CAA). The U.S. Supreme Court ruled on April 2, 2007, that $CO_2$ is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. In response to the mounting issue of climate change, EPA has taken actions to regulate, monitor, and potentially reduce GHG emissions. Actions include a national program to reduce GHG emissions and improve fuel economy for all new cars and trucks sold in the United States. However, there are no federal plans, policies, regulations, or laws related to GHGs that are directly applicable to the Project.

## State

### Executive Order S-3-05

In 2005, the Governor of California signed Executive Order (EO) S-3-05, which established GHG emission reduction targets to reduce emissions as follows:

- By 2010, reduce GHG emissions to 2000 levels
- By 2020, reduce GHG emissions to 1990 levels
- By 2050, reduce GHG emissions to 80 percent below 1990 levels

The Secretary of the California Environmental Protection Agency (Cal/EPA) was designated to coordinate oversight of the multi-agency efforts made to meet the targets.

The Cal/EPA Secretary must also submit biannual reports to the governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the Secretary of Cal/EPA created the California Climate Action Team (CAT), made up of members from various State agencies and commissions. The team released its first CAT Report in March 2006, with its most recent S-3-05-mandated CAT Report released in 2010. The report proposes to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

### Executive Order B-30-15

On April 29, 2015, California Governor Jerry Brown announced EO B-30-15, which contains the following GHG emissions target:

- By 2030, California shall reduce GHG emissions to 40 percent below 1990 levels

The emission reduction target of 40 percent below 1990 levels by 2030 is an interim-year goal to provide substantial progress toward the ultimate goal of reducing emissions by 80 percent below 1990 levels by 2050.

### Executive Order B-55-18

On September 10, 2018, California Governor Jerry Brown issued EO B-55-18, which establishes the following GHG emissions target:

- By 2045, California shall achieve carbon net neutrality

EO B-55-18 identifies that new statewide goal is to achieve carbon neutrality as soon as possible, and no later than 245, and achieve and maintain net negative emissions thereafter. This emissions goal is in addition to the existing targets established by EO B-30-15 and SB 32, and EO S-3-05. The order also directs the CARB to work with other state agencies to identify and recommend measures to achieve this goal.

### Assembly Bill 32 (California Global Warming Solutions Act of 2006)

In 2006, the Governor of California signed the Global Warming Solutions Act of 2006 (AB 32), committing the State of California to reducing GHG emissions to 1990 levels by 2020. The statute requires the CARB to track emissions through mandatory reporting, determine the 1990 emission levels, set annual emissions limits that will result in meeting the 2020 target, and design and implement regulations and other feasible and cost effective measures to ensure that statewide GHG emissions will be reduced to 1990 levels by 2020. The CARB approved the 2020 emissions limit at 431 MMT $CO_2e$ (CARB 2017b). Projected business-as-usual emissions for 2020 are 509 MMT $CO_2e$. A reduction of 78 MMT $CO_2e$ is needed to meet the goal (CARB 2014). The 2017 Edition of the California GHG inventory updates the emission inventory for years 2000 to 2015. The 2015 annual emissions for the State of California were an estimate 440.4 MMT $CO_2e$ (CARB 2017a).

### Senate Bill 32 and Assembly Bill 197

Senate Bill (SB) 32, passed in 2016, extended the goals of AB 32 and codifies the GHG reduction target of 40 percent below 1990 levels by year 2030, consistent with EO B-30-15. The companion bill to SB 32, AB 197 provides additional direction to CARB for developing the Updated Scoping Plan.

### Executive Order S-1-07 and Low Carbon Fuels Standard

Executive Order S-01-07 (2007) requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California. The CARB approved the Low Carbon Fuel Standard (LCFS) regulation in 2009 and began implementation on January 1, 2011. CARB approved amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016.

### Assembly Bill 1493 (Pavley Standards)

Assembly Bill (AB) 1493 (“the Pavley Standard”) (Health and Safety Code Sections 42823 and 43018.5) aims to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks of model years 2009–2016 by achieving “the maximum feasible reduction of GHG emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State.” To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) in 2004 by adding GHG emissions standards to California’s existing standards for motor vehicle emissions.

By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer $CO_2e$ emissions and 75 percent fewer smog-forming emissions (CARB 2012a)

### Senate Bill 375

SB 375 (codified in the Government Code and the Public Resources Code) took effect in 2008 and provides a new planning process to coordinate land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires metropolitan planning organizations (MPOs) to incorporate a Sustainable Communities Strategy (SCS) in their Regional Transportation Plans (RTPs) that will achieve GHG emissions reduction targets by reducing vehicle miles traveled from light-duty vehicles through the development of more compact, complete, and efficient communities.

CARB, in consultation with MPOs, provided each affected region with reduction targets for passenger car and light truck regional emissions for 2020 and 2035. CARB is also charged with reviewing each MPO's SCS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may be ineligible for funding programmed after January 1, 2012. Pursuant to SB 375, the CARB established emission reduction targets for California's eighteen MPO regions for the year 2020 and 2035. Shasta County was assigned a 0 percent per capita change when compared to the 2005 baseline year.

### Renewables Portfolio Standard

California's Renewables Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020. The 33 percent standard is consistent with the RPS goal established in the Scoping Plan. The passage of SB 350 in 2015 updates the RPS to require the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to increase to 50 percent by December 31, 2030. The bill would make other revisions to the RPS program and to certain other requirements on public utilities and publicly owned electric utilities.

### Senate Bill 100

SB 100, the 100 Percent Clean Energy Act of 2018, sets a state policy that eligible renewable energy and zero-carbon energy resources supply 100 percent of all retail sales of electricity in California by 2045. The bill accelerates the existing RPS goals to:

- 50 percent renewable by 2025
- 60 percent renewable by 2030

The bill became effective January 1, 2019.

### California Building Energy Efficiency Standards and Green Building Standards

Title 24 of the California Code of Regulations regulates how each new home and business is built or altered in California. It includes requirements for the structural, plumbing, electrical, and mechanical systems of buildings, and for fire and life safety, energy conservation, green design, and accessibility in and about buildings. Two sections of Title 24 – Part 6, the California Energy Code, and Part 11, the California Green Building Standards Code or CalGreen Code – contain standards that address GHG emissions related to construction.

The California Green Building Standards Code, or CalGreen, became a mandatory code beginning January 1, 2011. The code takes a holistic approach to green building by including minimum requirements in the areas of planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. The CalGreen code has minimum mandatory standards and two additional tiers of voluntary measures

intended to achieve greater levels of efficiency that result in lower levels of GHG emissions. Local governments must enforce the minimum standards and can choose to adopt either Tier 1 or Tier 2 standards to achieve greater positive environmental impacts. The current 2016 Title 24 standards became effective January 1, 2017. However, the 2019 Title 24 standards have been adopted and will be effective January 1, 2020, prior to the operation of the project. Nonresidential buildings constructed under the 2019 Title 24 standards are estimated to use about 30 percent less energy than those constructed under the 2016 Title 24 standards (CEC 2018).

### Climate Change Scoping Plan

In December 2008, pursuant to AB 32, the CARB adopted the Climate Change Scoping Plan (Scoping Plan), which outlined measures to attain the 2020 GHG emissions limit. The Scoping Plan estimated that implementation of identified measures would result in a reduction of 105.3 MMT $CO_2e$ from various sectors including transportation, energy, forestry, and high global warming potential gas sectors (originally reported as 174 MMT $CO_2e$, but updated to 105.3 MMT $CO_2e$ in the Status of Scoping Plan Recommended Measures [CARB 2012]). This is 24 percent more than is needed to meet the 2020 mandate.

The CARB has updated the Scoping Plan twice, approving the First Update to the Climate Change Scoping Plan (Updated Scoping Plan) in May 2014, and the 2017 Scoping Plan in December 2017.

The 2017 Scoping Plan identifies progress made to meet the near-term (2020) objectives of AB 32 and defines California's climate change priorities and activities for the next several years (CARB 2017). The 2017 Scoping Plan identifies the 2020 emissions limit as 431 MMT $CO_2e$ and the 2020 business-as-usual forecast as 509 MMT $CO_2e$. The 2017 Climate Change Scoping Plan provides strategies for meeting the mid-term 2030 greenhouse gas reduction target set by SB 32. The plan also identifies how the State can substantially advance toward the 2050 greenhouse gas reduction target of Executive Order S-3-05, which consists of reducing greenhouse gas emissions to 80 percent below 1990 levels. The recommendations cover the key sectors, including: energy and industry; transportation; natural and working lands; waste management; and water. The recommended measures in the 2017 Scoping Plan are broad policy and regulatory initiatives that will be implemented at the State level and do not relate to the construction and operation of individual projects.

The initial Scoping Plan recommended that local governments achieve a 15-percent reduction below 2005 levels by 2020, which aligns with the State's goal of not exceeding 1990 emissions levels by 2020. However, the 2017 Scoping Plan does not contain a recommended reduction level or percent for local government's municipal operations.

### Assembly Bill 341

AB 341 establishes a policy goal for California of no less than 75 percent reduction in solid waste generation by year 2020 through source reduction, recycling or composting. The California Department of Resources Recycling and Recovery (CalRecycle) tracks the reduction in solid waste generation throughout the State, and prepares reports summarizing the current state of recycling in California with respect to implementation of AB 341. The most recent report, the State of Recycling in California Updated 2016, details recycling and composting in the State, current regulation of recycling and composting, and other parameters of recycling infrastructure and market.

# Regional

## City of Redding

The City of Redding does not have an adopted Climate Action Plan, greenhouse gas threshold of significance, or guidance document for assessing project-level greenhouse gas impacts under CEQA. In 2010, the Shasta County AQMD initiated the regional climate action planning (RCAP) process, and released a draft RCAP in 2011. The Draft RCAP included jurisdictional climate action plan components for the City of Redding. The Draft RCAP contains a 2008 baseline GHG emissions inventory for the community, business-as-usual emissions forecasts for year 2020, the adjusted business-as-usual forecasts for 2020, emission reduction measures the City may implement. However, the draft RCAP has not been adopted and, therefore, is not used to assess the project's greenhouse gas impacts within this report.

The City's General Plan 2000-2020 was adopted in 2000, with amendments in 2012, 2013, and 2014. The General Plan does not contain goals or policies directly aimed at reducing greenhouse gas emissions. Goals and policies within the Community Development and Design Element, Transportation Element, Transportation Element, and Air Quality Element affect or reduce greenhouse gas generation through requiring or promote alternative transit infrastructure. Applicable goals and policies are listed below.

**GOAL CDD10** Provide a pattern of development that:

- Increased residential densities in the SGAs
- Establishes distinct neighborhoods, districts, and activity centers
- Links open-space areas to each other and to developed areas such as parks, schools, residences, and commercial developments
- Promotes mixed-use developments
- Places employment, shopping, and other activity centers in or near residential neighborhoods
- Encourages walking, bicycling, and transit use

  **Policy CDD10F**. Provide comprehensive transportation facilities, including bicycle and pedestrian routes. Integrate pedestrian and bicycle routes into developments to provide alternative access to public and private parks and open space, transit stops, nearby commercial developments, and schools.

**GOAL T1** Provide safe, efficient, and comfortable routes for walking, bicycling, and public transportation to increase the use of these modes of transportation, enable convenient and active travel as part of daily activities, and meet the needs of all users of the streets.

**GOAL T5** Coordinate transportation and land use planning; protect existing and planned land uses from transportation-related conflicts; promote multi-modal transportation options.

> **Policy T5D**. Encourage employers to provide incentives for employees utilizing alternatives to the single-occupant automobile, such as car pools, van pools, buses, bicycling, and walking.
>
> **Policy T5E**. Encourage employers, including government agencies, to allow telecommuting and flex time and to promote staggered shifts or base work hours that do not coincide with peak-period traffic to reduce peak-hour trips.

**GOAL T10** Provide an attractive, safe, and continuous system of sidewalks and other pedestrian facilities.

> **Policy T10A**. Provide pedestrian-oriented features, such as benches, enhanced landscape, and trash receptacles, in commercial areas, particularly in the Downtown and Park Marina areas.
>
> **Policy T10B**. Require new development to provide sidewalks or other pedestrian-dedicated facilities on both sides of new public streets. Exceptions may be appropriate where topography is difficult, proposed lots are of a rural or semi-rural nature, or where the development plan illustrates that pedestrians will be accommodated by alternative means.
>
> **Policy T10F**. Require all new or renovated pedestrian facilities to be of a sufficient width to ensure pedestrian comfort and safety and to accommodate the special needs of the physically disabled.

**GOAL T12** Make it easier and safer for people to travel by bicycle.

> **Policy T12G**. Require new development to provide bicycle facilities or pay in-lieu fees based on the fair share of that development's impacts on the bikeway system and needs identified on the Comprehensive Bikeway Plan.

**Air Quality GOAL 2** Reduce motor vehicle trips and vehicle miles traveled and increase average vehicle ridership (AVR).

> **Policy 17**. Transit and Pedestrian-Oriented Design Guidelines

### Shasta County Air Quality Management District

The Shasta County AQMD does not have an adopted Climate Action Plan, greenhouse gas threshold of significance, or guidance document for assessing project-level greenhouse gas impacts under CEQA. The following Shasta County AQMD rule is applicable to the project:

- **Rule 3:28 Stationary Internal Combustion Engines**. This rule apply to any gaseous, diesel, or any other liquid-fueled stationary internal combustion engine within the boundaries of the air district, including emergency standby engines. Emergency standby internal engines may be operated only during emergencies and for testing and maintenance purposes. Testing and maintenance shall be limited to no more than 100 hours per year.

### Shasta Regional Transportation Agency

In June 2015, Shasta Regional Transportation Agency (SRTA) adopted the 2015 Regional Transportation Plan (RTP) for Shasta County, which contains SRTA's Sustainable Communities Strategy (SCS). The per-capita regional emission reduction target set by CARB under the purview of SB 375 are as follows:

- 0 percent (no increase) below 2005 rates by 2020
- 0 percent (no increase) below 2005 rates by 2035

Development of the SCS included testing three (3) different growth scenarios using the UPlan urban growth model: Scenario A, Rural & Peripheral Growth; Scenario B, Urban Core & Corridors;

and Scenario C, District Cities & Towns. It was determined that the preferred regional growth vision is a melding of Scenario B and Scenario C. The preferred regional growth vision was used to then identify Strategic Growth Areas (SGA), which were then refined based on travel demand modeling and emissions modeling to achieve the emission reduction targets of the SCS. The SCS assumed that growth within the SGAs would be slightly higher (an increase of 6 to 10 percent) than the current growth rate. The SCS determined that increased density within the SGAs, if accompanied by coordinated local and regional policies, programs, incentives, and investment strategies, the region would achieve the required emission reduction targets. In addition to increased growth within the SGAs, the SCS assumed the following:

- Increased residential densities in the SGAs
- Increased automobile operating costs
- Increased public transportation services
- Accelerated delivery of active transportation investment in SGAs

The project is not located within an SGA, but is located approximately 0.83 mile from the Redding SGA. Therefore, the 2015 RTP/SCS recommendation for increased density does not apply to the project.

The 2015 RTP/SCS determined that not only would Shasta County achieve the per capita emission reduction goals set by CARB, but would further reduce emissions to 4.9 percent below 2005 emissions by 2020, and 0.5 percent below 2005 emissions by 2035. CARB accepted the GHG quantification determination from the 2015 RTP/SCS in October 2015.

# Significance Threshold Development

Climate change is global in scope, with individual projects contributing to a cumulative impact. However, the geographic boundary for this analysis is the State of California.

## CEQA Guidelines

The basic purposes of CEQA are to:

- Inform governmental decision makers and the public about the potential significant environmental effects of proposed activities;
- Identify ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on GHGs, the type, level, and impact of emissions generated by the project must be evaluated.

The following GHG questions are contained in Appendix G of the CEQA Guidelines, and are applied herein as impact criteria. A significant impact would occur if the project would:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
(b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Addressing GHG generation impacts requires an agency to make a determination as to what constitutes a significant impact. The amendments to the CEQA Guidelines specifically allow lead agencies to determine thresholds of significance that illustrate the extent of an impact and are a basis from which to apply mitigation measures. This means that each agency is left to determine whether a project's GHG emissions will have a "significant" impact on the environment. The guidelines direct that agencies are to use "careful judgment" and "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" the project's GHG emissions (14 California Code of Regulations Section 15064.4(a)).

## Thresholds and CEQA Case Law

A number of expert agencies throughout the state have drafted or adopted varying threshold approaches and guidelines for analyzing 2020 operational GHG emissions in CEQA documents. The different thresholds include (1) compliance with a qualified GHG reduction strategy, (2) performance-based reductions, (3) numeric "bright-line" thresholds, and (4) efficiency-based thresholds.

Efficiency-based thresholds represent the rate of emission reductions needed to achieve a fair share of California's GHG emissions reduction target established under AB 32, SB 32, EO B-30-

15, and EO S-03-05. As noted earlier, the state has the following GHG emissions reductions goals:

- By 2020, achieve 1990 levels emissions (AB 32)
- By 2030, 40 percent below 1990 levels (EO B-30-15, SB 32)
- By 2045, net carbon neutrality (EO B-55-18)
- By 2050, 80 percent below 1990 levels (EO S-03-05)

Efficiency-based thresholds are typically calculated by dividing emissions associated with residential and commercial uses within the state by the sum of jobs and residents. The sum of jobs and residents is called the "service population," and a project's service population is defined as the people that work, study, live and congregate within the project site. Therefore, for the purposes of this analysis, the proposed project is compared to an efficiency-based significance threshold.

The California Supreme Court decision in the Centers for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company (November 30, 2015, Case No. S217763) (hereafter Newhall Ranch) confirmed that when an "agency chooses to rely completely on a single quantitative method to justify a no-significance finding, CEQA demands the agency research and document the quantitative parameters essential to that method."

The Newhall Ranch decision did not comment on use of an efficiency-based threshold for analyzing project-level GHG emissions. However, U.S. Supreme Court rulings establish that the U.S. Constitution limits exactions on new development to those having a "nexus" and "rough proportionality" to the impact actually caused by the new development. While there is a nexus for requiring GHG reductions for new development that results in new GHG emissions, the reductions mandated must be proportional to the impact caused by new development. Requiring new development to meet the average statewide GHG efficiency is a proportional measure, but requiring more than average levels of efficiency would be mitigating the effects of existing development by imposing requirements beyond the fair share of new development's effect. Because it meets the nexus and rough proportionality requirements, the efficiency threshold is an appropriate and fair threshold for evaluation of the significance of new land use development, including the proposed project.

Given the recent legislative attention and case law regarding post-2020 goals and the scientific evidence that additional GHG reductions are needed through 2050 to stabilize $CO_2$ concentrations, the Association of Environmental Professionals' (AEP) Climate Change Committee (2015) recommended in its Beyond 2020: The Challenges of Greenhouse Gas Reduction Planning by Local Governments in California (Beyond 2020) white paper that CEQA analyses for most land use development projects can continue to rely on current thresholds for the immediate future, but that long-term projects should consider "post-2020 emissions consistent with 'substantial progress' along a post-2020 reduction trajectory toward meeting the 2050 target." The Beyond 2020 white paper further recommends that the "significance determination… should be based on consistency with 'substantial progress' along a post-2020 trajectory."

## Scale and Source of Thresholds

As noted above, the state has established state-wide GHG emission reduction goals. It is noted that the state-wide emission reduction goals do not equate to an equal project-level emission reduction goal for all land uses or economic sectors. Statewide and regional planning documents were reviewed to identify the most-appropriate emission reduction goal for the proposed project. Available planning documents that may be used as the source of project-level emission reduction

goals include the state-wide applicable 2017 Scoping Plan, and the county-specific 2015 RTP/SCS. The City of Redding does not have an adopted Climate Action Plan, greenhouse gas threshold of significance, adopted emissions reduction goal, or guidance document for assessing project-level greenhouse gas impacts under CEQA. In addition, the Shasta County AMQD does not have adopted GHG emissions thresholds, targets, or goals.

Although the county-specific 2015 RTP/SCS contains region-specific emission reduction targets set by CARB under the purview of SB 375, CARB has identified that the adopted SCS targets are not enough to achieve the statewide per capita reductions necessary to meet adopted climate goals (CARB 2017). Additionally, the emission reduction targets of the 2015 RTP/SCS applied only to mobile emissions. Therefore, it was determined that the 2015 RTP/SCS was not appropriate to determine the project-level emissions thresholds for the proposed project. Therefore, the best available and most-applicable source of emissions reduction goals are the state-wide goals set by AB 32, SB 32, EO B-30-15, EO S-03-05, and EO B-55-18. At the time of analysis, there is no known documentation or substantiated analysis available to guide or support an adjustment the state-wide average GHG emission reduction goals for specific land uses, development types, or regions.

## Project-Specific Threshold

As detailed in the prior section, efficiency-based thresholds represent the rate of emissions reductions needed to achieve a fair share of California's GHG emissions reduction target established under AB 32, SB 32, EO B-30-15, EO S-03-05, and EO B-55-18. Therefore, an efficiency-based threshold approach is applied in this report to assess the project's greenhouse gas impacts.

### Analysis Years

For the purposes of this analysis, project-related impacts in both 2024 and 2035 are considered. Year 2024 represents the first year of full project operation. Year 2035 is consistent with the future-year horizon of SRTA's 2015 RTP/SCS.

### Service Population

The California Air Pollution Control Officers Association's (CAPCOA) 2008 CEQA & Climate Change white paper defines service population (SP):

> *…the sum of the number of residents and the number of jobs supported by the project*.

CAPCOA's guidance is unclear if the residents supported by a project must need to reside at the project location, or be supported by the project location through provision of services, goods, or other means. The guidance further states:

> *The subcommittee believes this methodology may eventually be appropriate to evaluate the long-term GHG emissions from a project in the context of meeting AB 32 goals. However, this methodology will need substantially more work and is not considered viable for the interim guidance presented in this white paper.* (CAPCOA 2008)

The project would provide medical services within a developed metropolitan area. The project would support jobs and patients. It is assumed that the patients would be residents of the general Redding metropolitan area. The estimated number of patients served by the project was estimated using CalEEMod default data for commercial-customer trips, as detailed in the

methodology section. The project would support an estimated 1,203 patients (residents) per day. For reference, a population of 1,203 residents is equal to approximately 421 households.

Because of the projects location within an urbanized area, and because the project supports residents of the urban area, the project's service population is calculated as the number of jobs and residents supported by the project.

The project would support 180 jobs (employees) and an estimate 1,203 residents (patients) per day. Therefore, the project is calculated to support a service population of 1,383. This service population is applicable to both the 2024 and 2035 analysis years.

## Efficiency-Based Threshold

In developing the efficiency-based threshold, the statewide emission reduction goals for years 2024 and 2035 were calculated. Then, the statewide population and employment (service population) for those years were identified, and the emission rate per service population was calculated.

The emission reduction goals established for the State are based on the statewide 1990 greenhouse gas emissions inventory. Since the land use sector inventory only includes residential and commercial emission sources; industrial, marine vessels, aviation, and other emission sources not applicable to land use developments are not included as part of the project efficiency-based threshold, and are excluded from the 1990 inventory. Transportation emissions related to the land use sector were included in the 1990 inventory. The statewide 1990 land use GHG emissions inventory of 263.26 MMT $CO_2e$ is used in this report.

### *2024 Threshold*

The 2024 GHG inventory goal was calculated based on the 1990 inventory and a linear interpolation of the reduction goals of AB 32, SB 32, and EO B-30-15 for years 2020 and 2030. The State's 2020 emissions goal is the 1990 emissions level, and the 2030 emissions goal is 40 percent below 1990 levels. Linear interpolation between the 2020 and 2035 goals shows a reduction goal of 16 percent below 1990 levels by year 2024.

The resulting 2024 "full operation" efficiency threshold is 3.7 MT $CO_2e$ per service population, and was calculated using the following equation:

$$2024\ Threshold = \frac{2024\ Inventory\ Goal}{(2024\ Population + 2024\ Employment)}$$

Where:

2024 Inventory Goal = 16 percent below statewide 1990 land use GHG emissions levels, calculated as 221.14 MMT $CO_2e$

2024 Population = Statewide population in 2024 of 42 million (CA DOF 2016)

2024 Employment = Statewide jobs in 2024 of 18.2 million (Caltrans 2017)

### *2035 Threshold*

The 2035 GHG inventory goal was calculated based on the 1990 inventory and a linear interpolation of the reduction goals of SB 32, EO B-30-15, and EO B-55-18 for years 2030 and 2045. The State's 2030 emissions goal is 40 percent below 1990 levels, and the 2045 goal is net carbon neutrality (0 $MTCO_2e$). Linear interpolation between the 2030 and 2045 goals shows a 31.25 percent increase of the reduction goal every 5 years, equating to a 2035 reduction goal of 58.75 percent below 1990 levels.

The resulting 2035 "substantial progress" efficiency threshold is 1.7 MT $CO_2e$ per service population, and was calculated using the following equation:

$$2035\ Threshold = \frac{2035\ Inventory\ Goal}{(2035\ Population + 2035\ Employment)}$$

Where:

2035 Inventory Goal = 58.75 percent below statewide 1990 land use GHG emissions levels, calculated as 108.60 MMT $CO_2e$

2035 Population = Statewide population in 2035 of 45.5 million (CA DOF 2016)

2035 Employment = Statewide jobs in 2035 of 19.9 million (Caltrans 2017)

### *Project Threshold Summary*

Based on the above analysis, the project must achieve an average emissions efficiency of 3.7 MT $CO_2e$ per service population in the year 2024, and 1.7 MT $CO_2e$ per service population in year 2035. Emissions in excess of the thresholds may conflict with the trajectory of the State's GHG reduction goals, and the project's cumulative contribution of long-term GHG emissions would be considered significant.

The Shasta County AQMD does not provide specific guidance regarding construction emissions. Therefore, total construction-generated GHG emissions were conservatively amortized over the estimated life of the development and included with operational emissions for comparison to the significance thresholds. A life of 30 years was assumed for the proposed project based on a standard 30-year project lifetime assumption developed by the South Coast Air Quality Management District (SCAQMD 2009).

# Modeling Parameters and Assumptions

## Model Selection

Air pollutant emissions can be estimated by using emission factors and a level of activity. Emission factors are the emission rate of a pollutant given the activity over time. The CARB has published emission factors for on-road mobile vehicles/trucks in the emission factors (EMFAC) mobile source emissions model, and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. An air emissions model (or calculator) combines the emission factors and the various levels of activity, and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was developed in cooperation with the South Coast Air Quality Management District and other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with construction and operation from a variety of land uses.

Emission factors are often updated and there is a normal lag time between the development of new emission factors and the integration of the new emissions factors into the appropriate models. The CalEEMod version 2016.3.2 uses OFFROAD2011 and EMFAC2014 emission factors.

CalEEMod version 2016.3.2 was used to estimate construction-generated and operational GHG emissions for the project. Emissions output is provided in Appendix A.

## Project Construction

Construction emissions can vary substantially from day to day, depending on the level of activity, and the specific type of operation. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, and motor vehicle operation. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles and worker traffic.

### Schedule and Activity Assumptions

Phase 1 of the project includes demolition and removal of an existing 7,500-square-foot building and approximately 64,000 square feet of pavement. Phase 1 also includes mass grading of the entire 10.55-acre project site, and construction of Building “A”, interior roads and 338 parking spaces. This analysis assumes Phase 1 construction would commence in 2020 and be complete by 2022. It is anticipated that Phase 1 construction would occur for 2 years.

Phase 2 construction is assumed to commence in 2022, after completion of Phase 1. Phase 2 would include construction of Buildings “B” and “C” and the remaining 211 parking spaces. It is anticipated that Phase 2 construction would occur for 2 years.

CalEEMod requires a land use type and amount. The land use input utilized for CalEEMod construction analyses is provided in Table 1. A conceptual construction schedule is provided in Table 2. Construction is assumed to occur 5 days a week.

**TABLE 1**
**CALEEMOD LAND USE ENTRY**

| Project Phase | Land Use | Size | Units | Lot Acreage |
|---|---|---|---|---|
| Phase 1 | Medical Office Building | 80.00 | 1,000 square feet | 7.51 acres |
| | Parking Lot | 338 | Space | 3.04 acres |
| Phase 2 | Medical Office Building | 49.60 | 1,000 square feet | 1.14 acres |
| | Parking Lot | 211 | Space | 1.90 acres |

**TABLE 2**
**CONCEPTUAL CONSTRUCTION SCHEDULE**

| Project Phase | Construction Phase | Duration (Working Days) |
|---|---|---|
| Phase 1 | Demolition | 20 |
| | Site Preparation | 10 |
| | Grading | 30 |
| | Building Construction | 300 |
| | Paving | 20 |
| | Architectural Coating | 20 |
| Phase 2 | Building Construction | 230 |
| | Paving | 18 |
| | Architectural Coating | 18 |

*Notes: Construction phasing and durations based on CalEEMod defaults.*

The construction equipment list for Phase 1 and Phase 2 are shown in Table 3 and Table 4, respectively. The construction equipment list was derived from the default equipment assumptions contained in the CalEEMod model for the land uses entered per Table 1. The activity for construction equipment is based on the horsepower and load factors of the equipment. The load factor is the average power of a given piece of equipment while in operation compared with its maximum rated horsepower. A load factor of 1.0 indicates that a piece of equipment continually operates at its maximum operating capacity. This analysis uses the CalEEMod default load factors for off-road equipment.

**TABLE 3**
**PHASE 1 CONSTRUCTION EQUIPMENT ASSUMPTIONS**

| Construction Phase | Equipment | Number | Hours per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|
| Demolition | Excavator | 3 | 8.00 | 158 | 0.38 |
| | Concrete/Industrial Saw | 1 | 8.00 | 81 | 0.73 |
| | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| | Graders | 1 | 8.00 | 187 | 0.41 |
| | Rubber-Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| | Scrapers | 2 | 8.00 | 367 | 0.48 |
| | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| | Forklifts | 3 | 8.00 | 89 | 0.20 |
| | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressor | 1 | 6.00 | 78 | 0.48 |

*Notes: CalEEMod Defaults*

**TABLE 4**
**PHASE 2 CONSTRUCTION EQUIPMENT ASSUMPTIONS**

| Construction Phase | Equipment | Number | Hours per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| | Forklifts | 3 | 8.00 | 89 | 0.20 |
| | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Cement and Mortar Mixers | 2 | 6.00 | 9 | 0.56 |
| | Pavers | 1 | 8.00 | 130 | 0.42 |
| | Paving Equipment | 2 | 6.00 | 132 | 0.36 |
| | Rollers | 2 | 6.00 | 80 | 0.38 |
| | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Architectural Coating | Air Compressor | 1 | 6.00 | 78 | 0.48 |

*Notes: CalEEMod Defaults*

### Equipment Tiers and Emission Factors

CalEEMod contains an inventory of construction equipment that incorporates estimates of the number of equipment, their age, their horsepower, and equipment tier from which rates of emissions are developed. The CalEEMod default tier mix was used in this analysis for the estimation of emissions from on-site construction equipment.

### Demolition

Phase 1 construction includes demolition and removal of an existing 7,500-square-foot building and approximately 64,000 square feet of concrete and asphalt pavement. The tonnage of materials to be removed was estimated using EPA's estimated demolition materials amounts (EPA 2003). A total of 6,129 tons of demolition materials (building and pavement) was entered into CalEEMod.

### Grading and Soils Movement

Phase 1 would include site prep and grading of the entire 10.55-acre site. All cut and fill would be balanced on-site. Therefore, the project's CalEEMod analysis does not include import or export of soils.

### Construction Off-site Trips

CalEEMod default values for worker trip generation, trip length, and vehicle fleet were used in this analysis. Vendor trips were also calculated using CalEEMod default values. Off-site construction trips would include the export demolition debris, as detailed above. A summary of the construction related trips is shown in Table 5.

**TABLE 5**
**CONSTRUCTION OFF-SITE TRIPS**

| | | Daily Trips | | Total Haul |
|---|---|---|---|---|
| **Project Phase** | **Construction Phase** | **Worker** | **Vendor** | **Trips** |
| Phase 1 | Demolition | 15 | 0 | 606 |
| | Site Preparation | 18 | 0 | 0 |
| | Grading | 20 | 0 | 0 |
| | Building Construction | 82 | 35 | 0 |
| | Paving | 15 | 0 | 0 |
| | Architectural Coating | 16 | 0 | 0 |
| Phase 2 | Building Construction | 51 | 22 | 0 |
| | Paving | 20 | 0 | 0 |
| | Architectural Coating | 10 | 0 | 0 |

*Source: CalEEMod version 2016.3.2*

## Operation

Operational emissions are those emissions that occur during operation of the project. The major sources are summarized below.

### On-road Vehicles

On-road vehicle emissions refer to exhaust emissions from the motor vehicles that would travel to and from the project site. The emissions modeling used the ITE trip generation rate for medical office building, consistent with the project's Traffic Impact Analysis Report (TIAR). CalEEMod

default trip generation rates and trip type percentages are provided in Table 6. Non-residential trip types are defined as commercial-customer (C-C), commercial-work (C-W), and commercial-nonwork (C-NW) such as delivery trips.

**TABLE 6**
**OPERATIONAL TRIPS**

| | Size | Trip Generation Rates | | | Trip Types | | |
|---|---|---|---|---|---|---|---|
| **Land Use Type** | **(1,000 sf)** | **Weekday** | **Sat** | **Sun** | **C-C** | **C-W** | **C-NE** |
| Medical Office Building | 129.6 | 36.13 | 8.96 | 1.55 | 51.4 % | 29.6 % | 19 % |

*Notes: CalEEMod Defaults*

Using the data provided in Table 6, the project is estimated to generate approximately 4,682 trips during the weekday, 2,407 of which would be generated by customers (C-C). It is assumed that each customer visiting the site would generate 2 trips per day – one trip to the site, and one trip from the site. Therefore, it is estimated that the project site would serve 1,203 customers during the average weekday.

Certain specifics of the project location and design reduce the estimated trip generation. These specifics were incorporated into the project's operational emissions analysis. The project site is located approximately 0.83 mile from a Strategic Growth Area, as shown in the 2015 RTP/SCS, and approximately 1.5 miles from the RABA Downtown Transfer Station. In addition, the project would improve the pedestrian network on-site and on adjacent roadways. CalEEMod accounts for trip reductions (and GHG emission reductions) associated with those specifics through the 'mitigation' module. These specifics are considered a part of the project.

### Electricity

CalEEMod does not contain a default energy intensity for energy for Redding Electric Utility (REU). REU's power content labels for years 2013 through 2017 were reviewed to determine the energy sources and fuel types. Between 2013 and 2017, the majority of electricity for REU came from eligible renewable energy sources and large hydroelectric facilities. An average of 32 percent of the energy came from natural gas consumption. Therefore, the carbon dioxide energy intensity factor in pounds per megawatt hour (lb/MWh) was calculated by applying the 32 percent factor to the to CalEEMod default greenhouse gas intensity factors for natural gas from a non-residential land use. The energy intensity factors input are:

- Carbon dioxide: 128.34 pound per megawatt hour (lb/MWh)
- Methane: 0.002 lb/MWh
- Nitrous oxide: 0.00235 lb/MWh

### Natural Gas

Defaults for energy consumption for a medical office building were used.

### Water and Wastewater

There would be GHG emissions from the use of electricity to pump water to the project and to treat wastewater. The project-specific values were used for water consumption and wastewater generation as follows:

- Indoor Use: 7.2 acre-feet per year (AF/yr) = 2,346,127.20 gallons
- Outdoor Use: 4.6 AF/yr = 1,498,914.60 gallons

It is assumed that the project-specific water consumption incorporates reductions for -flow interior water fixtures and a water-efficient irrigation system, as required under the Green Building Standards. Therefore, no additional water consumption reductions were incorporated into the unmitigated emissions analysis.

### Solid Waste

Greenhouse gas emissions would be generated from the decomposition of solid waste generated by the project. The CalEEMod default waste generation values were used for this analysis. The emissions analysis incorporates the use of recycling and composting service with a 75 percent reduction in waste disposed, consistent with California's 75 percent recycling goal and current diversion rates for the City of Redding. CalEEMod accounts for GHG emission reductions associated with waste diversion through the 'mitigation' module. These specifics are considered a part of the project.

### Emergency Generator

The project would include three emergency diesel backup generators. Emergency backup generators are regulated by Shasta County AQMD and typically have testing and maintenance limited to 100 hours per year, per Shasta County AQMD Rule 3:28. It is assumed that each generator would be a 500 horsepower diesel generator and operate a maximum of 30 minutes per day when tested, and up to 50 hours for testing annually.

### Vegetation

The project would construct buildings on-site as well as asphalt parking areas, thereby changing the land use and reducing potential carbon sequestration. The project would remove 58 existing trees. The project would also plant trees and integrate landscape into the project design, thereby increasing carbon sequestration. The project would include installation of 210 trees. The sequestration benefits of these trees were quantified in CalEEMod, using the project specific details of vegetation types and net increase shown in Table 7. CalEEMod estimates total $CO_2$ sequestration over an assumed 20-year vegetative growth-span.

**TABLE 7**
**ON-SITE SEQUESTRATION**

| CalEEMod Category | Number Removed | Number Added | Net Increase |
|---|---|---|---|
| Cedar/Larch | 0 | 5 | 5 |
| Miscellaneous | 1 | 61 | 60 |
| Mixed Hardwood | 55 | 131 | 76 |
| Pine | 1 | 0 | -1 |
| Soft Maple | 1 | 13 | 12 |
| ***Total*** | ***58*** | ***210*** | **152** |

*Source: GHD Inc. 2018*

# Impact Analysis

## CEQA Appendix G Questions

*Impact a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (Less than Significant with Mitigation)*

Project construction activities would result in a temporary increase in GHG emissions, primarily in the form of $CO_2$ from exhaust emissions associated with haul trucks, construction worker commute vehicles, and construction equipment. Project construction emissions are provided in Table 8. As shown in the table, construction activities are estimated to generate approximately 1,162 MT $CO_2e$. When annualized over an assumed 30-year project lifespan, project construction would generate approximately 38.7 MT $CO_2e$ per year.

**TABLE 8**
**PROJECT CONSTRUCTION GREENHOUSE GAS EMISSIONS**

| Parameter | Emissions (MT $CO_2e$) |
|---|---|
| Phase 1 Construction | 767 |
| Phase 2 Construction | 395 |
| Total Project Construction | 1,162 |
| Annualized Emissions (per year) | 38.7 |

*Notes: CalEEMod output provided in Appendix A.*

The project's planned landscaping is estimated to result in a total 110.66 MT $CO_2e$ of sequestration over 20 years, or approximately 5.5 MT $CO_2e$ per year.

Operational or long-term emissions would occur annually over the life of the project. The project's operational emissions in years 2024 and 2035 are shown in Table 9 and Table 10, respectively. The project's annualized construction emissions and sequestration are also provided in the tables. The project would generate approximately 3,482.9 MT $CO_2e$ per year in 2024. With a service population of 1,383, the project would achieve an efficiency metric of 2.52 MT $CO_2e$ per service population, which is less than the significance threshold of 3.7 MT $CO_2e$ per service population. Therefore, the project would result in a less than significant impact in 2024.

The project would generate approximately 3,117.4 MT $CO_2e$ per year in 2035. With a service population of 1,383, the project would achieve an efficiency metric of 2.25 MT $CO_2e$ per service population, which exceeds the significance threshold of 1.7 MT $CO_2e$ per service population. Therefore, the project would result in a potentially significant impact in 2035.

**TABLE 9**
**ANNUAL PROJECT GREENHOUSE GAS EMISSIONS 2024**

| Emissions Category | MT $CO_2e$ |
|---|---|
| Area | <0.1 |
| Energy | 164.4 |
| Mobile | 3,075.8 |
| Stationary | 28.7 |
| Waste | 176.5 |
| Water | 4.2 |
| Sequestration (annualized) | -5.5 |
| Construction (annualized) | 38.7 |
| **Total Project Emissions** | **3,482.9** |
| *Service Population* | 1,383 |
| *Project Efficiency (MT $CO_2e$ / Service Population)* | 2.52 |
| *Threshold of Significance 2024* | 3.7 |
| *Significant Impact?* | No |

*Emissions output provided in Appendix B.*

**TABLE 10**
**ANNUAL PROJECT GREENHOUSE GAS EMISSIONS 2035**

| Emissions Category | MT $CO_2e$ |
|---|---|
| Area | <0.1 |
| Energy | 164.4 |
| Mobile | 2,710.3 |
| Stationary | 28.7 |
| Waste | 176.5 |
| Water | 4.2 |
| Sequestration (annualized) | -5.5 |
| Construction (annualized) | 38.7 |
| **Total Project Emissions** | **3,117.4** |
| *Service Population* | 1,383 |
| *Project Efficiency (MT $CO_2e$ / Service Population)* | 2.25 |
| *Threshold of Significance 2035* | 1.7 |
| *Significant Impact?* | Yes |

*Emissions output provided in Appendix B.*

**Mitigation Measure GHG-1: Reduce Greenhouse Gas Emissions**

Dignity Health shall prepare and implement a Greenhouse Gas Reduction Plan (GGRP) that contains specific design features and actions to be implemented by the project prior to year 2035, and quantify the emission reductions associated with those features and actions. The GGRP shall demonstrate achievement of a project emissions inventory that is less than the 2035 threshold of 1.7 metric tons of carbon dioxide equivalent ($CO_2e$) per service population by year 2035. The emissions inventory must be prepared using model(s) and methodology accepted by the Shasta County Air Quality Management District. The GGRP shall be submitted to the City for approval prior to the issuance of grading permits. The GGRP may be updated after City approval to account for emission reductions associated with new regulations, as applicable. Any updates to the GGRP must be submitted to the City for approval. Specific measures may include (but are not limited to):

- Implement a voluntary trip reduction program for all employees
- Implement a voluntary ride sharing program for all employees
- Provide a Commute Trip Reduction subsidy for employees consistent with California Air Pollution Control Officer's Association's Greenhouse Gas Measure TRT-4 (CAPCOA 2010).
- Utilize high pressure sodium cutoff lights in outdoor lighted areas
- Use Energy Star energy efficient fans and refrigerators
- Utilize 100 percent renewable energy through a community choice aggregate (CCA), buy-in to 100 percent renewable from the local energy utility, or onsite generation, or a combination thereof.
- Use 100 percent electric lawnmowers and leafblowers.
- Purchase verifiable greenhouse gas offsets.

The bullet points listed above are provided as a guide and can be substituted with other measures when shown to achieve the same result of reducing annual emissions to less than 1.7 MT $CO_2e$ per service population by year 2035.

As demonstrated in Table 11, implementation of the recommended actions in Mitigation Measure GHG-1, would reduce estimated emissions to less than the applied 2035 threshold of 1.7 MT $CO_2e$ per service population; therefore, the Project would have a less-than-significant impact for generation of GHG emissions after incorporation of mitigation.

**TABLE 11**
**MITIGATED ANNUAL PROJECT GREENHOUSE GAS EMISSIONS 2035**

| Emissions Category | MT $CO_2e$ |
|---|---|
| Area | <0.1 |
| Energy | 77.5 |
| Mobile | 2,323.3 |
| Stationary | 28.7 |
| Waste | 176.5 |
| Water | 4.2 |
| Sequestration (annualized) | -5.5 |
| Construction (annualized) | 38.7 |

| | |
|---|---|
| Verifiable Emissions Offsets | -400 |
| **Total Project Emissions** | **2,243.4** |
| *Service Population* | 1,383 |
| *Project Efficiency (MT $CO_2e$ / Service Population)* | 1.62 |
| *Threshold of Significance 2035* | 1.7 |
| *Significant Impact?* | No |

*Emissions output provided in Appendix B.*

*Impact b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. (No Impact)*

The project is not located within a jurisdiction covered by an applicable, or "qualified", Climate Action Plan. However, the SCS component of the 2015 RTP/SCS was adopted for the purpose of reducing GHGs. For the purposes of analysis, this section uses the 2015 RTP/SCS and the 2017 Scoping Plan as the applicable plans adopted for the purpose of reducing emissions of greenhouse gases.

**2015 Regional Transportation Plan/Sustainable Communities Strategy**

The SCS identifies the need for growth to have high location efficiency, meaning more compact and connected to meet community needs with fewer trips and fewer miles traveled, and a smaller urban footprint. To achieve the per-capita emission reduction goals set by CARB, the SCS identified SGAs for increased density and growth. The SCS determined that increased density within the SGAs, if accompanied by coordinated local and regional policies, programs, incentives, and investment strategies, the region would achieve the required emission reduction targets. In addition to increased growth within the SGAs, the SCS assumed the following:

- Increased residential densities in the SGAs
- Increased automobile operating costs
- Increased public transportation services
- Accelerated delivery of active transportation investment in SGAs

The project is not located within a SGA. However, the project is located within City limits, adjacent to existing development, and approximately 0.83 mile from an existing urban corridor and SGA. Existing commercial, office, and residential development is located with 0.5 mile of the project site. The project would fully develop a mostly vacant, underutilized parcel and result in 180 employees and 1,203 population served per day, for a total service population of 1,383. The project site is located near existing and planned alternative and active transportation infrastructure, including:

- **Pedestrian Infrastructure.** The project would implement on-site and off-site pedestrian improvements that would allow pedestrian movement within the project site and connecting the project facilities to off-site sidewalks.
- **Bicycle Facilities.** The project site is in close proximity to existing and proposed Class I and Class II bicycle facilities. In addition, the project would include bike parking on-site.
- **Transit Service.** The nearest bus stop (Route 5) is approximately 900 feet from the proposed project.

The project would not conflict with the SGA growth assumptions or policy assumptions detailed above because it is not in an SGA. Therefore, the project would not conflict with the 2015 RTP/SCS. The project would result in no impact.

**2017 Climate Change Scoping Plan**

The 2017 Scoping Plan is guided by the state-wide 2030 GHG target of 40 percent emissions reductions below 1990 levels (EO B-30-15 and SB 32), and demonstrates that California is doing its part in the global effort under the Paris Agreement to limit global temperature rise below 2 degrees Celsius in this century.

The 2017 Scoping Plan demonstrates that the state is on-track to achieve and exceed the AB 32 emissions reduction goals of achieving 1990 emissions levels by 2020. The Scoping Plan provides California's climate policy portfolio and recommended strategies to put the state on a path to achieve the 2030 target. The scenario includes ongoing and statutorily required programs, continuing the Cap-and-Trade Program, and high-level objectives and goals to reduce GHGs across multiple economic sectors. Existing programs, also known as "known commitments", identified by the 2017 Scoping Plan include: SB 350, the LCFS, CARB's Mobile Source Strategy, Senate Bill 1383 for short-lived climate pollutants, California's Sustainable Freight Action Plan. The high-level objective and goals recommendations cover the energy, transportation, industry, water, waste management, agriculture, and natural and working lands, and are to be implemented by a variety of State agencies.

The recommendations are broad policy and regulatory initiatives that will be implemented at the State level and do not relate to the construction and operation of individual projects such as the project. Although project construction and operation may benefit from some of the state-level regulations and policies that will be implemented, such as SB 100's requirement that 100 percent or retail sales of electricity be renewable by 2045, the project would not impede the State developing or implementing the greenhouse gas reduction measures identified in the Updated Scoping Plan. The project facilities would comply with applicable State requirements, such as Title 24 energy efficiency standards and the California Green Building Standards mandatory measures. The project would not conflict with this statewide policy document.

# Comparison of Alternatives to the Proposed Project

A technical memorandum was prepared to present the results from an analysis of the potential greenhouse gas (GHG) emissions that the development of the proposed alternatives for the Dignity Health North State Pavilion project may have relative to the proposed project. Alternatives reviewed in this memo include: No Project Alternative, Reduced Intensity Alternative, and Mercy Oaks Campus Alternative. The memorandum is provided as Appendix C. Appendix C contains the emissions modeling assumptions, service population calculations, and emissions modeling output of each alternative.

A comparison of the greenhouse gas impacts for each alternative and proposed project is provided in Table 12. As shown in the table, the No Project Alternative would have the greatest greenhouse gas emissions per service population, and the Reduced Intensity Alternative would have the lowest greenhouse gas emissions per service population among the alternatives reviewed. However, the proposed project remains more efficient per service population than all alternatives reviewed. Therefore, all alternatives reviewed would have a greater greenhouse gas impact than the proposed project.

**TABLE 12**
**COMPARISON OF ALTERNATIVES AND PROPOSED PROJECT GREENHOUSE GAS IMPACTS**

| | Emissions (MT $CO_2e$/SP) in Analysis Year | |
|---|---|---|
| **Parameter** | **2024** | **2035** |
| Threshold Applied | 3.7 | 1.7 |
| Proposed Project Impact | 2.52 | 2.25 |
| No Project Alternative | 6.18 | 5.57 |
| Reduced Intensity Alternative Impact | 2.56 | 2.29 |
| Mercy Oaks Campus Alternative | 2.98 | 2.64 |

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# Appendices

# Appendix A: CalEEMod Output Construction

# Dignity Health North State Pavilion - Phase 1_2020

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Medical Office Building | 80.00 | 1000sqft | 7.51 | 80,000.00 | 0 |
| Parking Lot | 338.00 | Space | 3.04 | 135,200.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - Phase I - Bldg A and Mass Grading of Site. 338 Parking Spaces. Total project site of 10.55 acres

Construction Phase - Default Phasing and Durations

Off-road Equipment - Default Equipment

Trips and VMT - Default Construction Trips

Demolition - 6,129 tons of bldg and pavement removal

Grading - All cut and fill to be balanced onsite

Architectural Coating -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblLandUse | LotAcreage | 1.84 | 7.51 |
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblStationaryGeneratorsPumpsUse | HorsePowerValue | 0.00 | 500.00 |
| tblStationaryGeneratorsPumpsUse | HoursPerDay | 0.00 | 0.50 |
| tblStationaryGeneratorsPumpsUse | HoursPerYear | 0.00 | 50.00 |
| tblStationaryGeneratorsPumpsUse | NumberOfEquipment | 0.00 | 1.00 |

# 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2020 | 0.3876 | 3.7716 | 2.8842 | 6.1800e-003 | 0.3836 | 0.1757 | 0.5593 | 0.1400 | 0.1642 | 0.3041 | 0.0000 | 548.6809 | 548.6809 | 0.1096 | 0.0000 | 551.4196 |
| 2021 | 1.1099 | 1.2141 | 1.1517 | 2.4300e-003 | 0.0454 | 0.0560 | 0.1014 | 0.0124 | 0.0526 | 0.0649 | 0.0000 | 214.9727 | 214.9727 | 0.0390 | 0.0000 | 215.9478 |
| **Maximum** | **1.1099** | **3.7716** | **2.8842** | **6.1800e-003** | **0.3836** | **0.1757** | **0.5593** | **0.1400** | **0.1642** | **0.3041** | **0.0000** | **548.6809** | **548.6809** | **0.1096** | **0.0000** | **551.4196** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2020 | 1/28/2020 | 5 | 20 | |
| 2 | Site Preparation | Site Preparation | 1/29/2020 | 2/11/2020 | 5 | 10 | |
| 3 | Grading | Grading | 2/12/2020 | 3/24/2020 | 5 | 30 | |
| 4 | Building Construction | Building Construction | 3/26/2020 | 5/19/2021 | 5 | 300 | |
| 5 | Paving | Paving | 5/19/2021 | 6/15/2021 | 5 | 20 | |
| 6 | Architectural Coating | Architectural Coating | 6/16/2021 | 7/13/2021 | 5 | 20 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 75**

**Acres of Paving: 3.04**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 120,000; Non-Residential Outdoor: 40,000; Striped Parking**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 606.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 82.00 | 35.00 | 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 | 16.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2020

### 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 | | | | | 0.0666 | 0.0000 | 0.0666 | 0.0101 | 0.0000 | 0.0101 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0331 | 0.3320 | 0.2175 | 3.9000e-004 | | 0.0166 | 0.0166 | | 0.0154 | 0.0154 | 0.0000 | 33.9986 | 33.9986 | 9.6000e-003 | 0.0000 | 34.2386 |
| **Total** | **0.0331** | **0.3320** | **0.2175** | **3.9000e-004** | **0.0666** | **0.0166** | **0.0832** | **0.0101** | **0.0154** | **0.0255** | **0.0000** | **33.9986** | **33.9986** | **9.6000e-003** | **0.0000** | **34.2386** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 2.4200e-003 | 0.0853 | 0.0121 | 2.4000e-004 | 5.0800e-003 | 3.3000e-004 | 5.4100e-003 | 1.4000e-003 | 3.1000e-004 | 1.7100e-003 | 0.0000 | 23.2552 | 23.2552 | 1.2900e-003 | 0.0000 | 23.2873 |
| 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 | 6.2000e-004 | 5.0000e-004 | 4.7600e-003 | 1.0000e-005 | 1.1700e-003 | 1.0000e-005 | 1.1800e-003 | 3.1000e-004 | 1.0000e-005 | 3.2000e-004 | 0.0000 | 1.0855 | 1.0855 | 4.0000e-005 | 0.0000 | 1.0864 |
| **Total** | **3.0400e-003** | **0.0858** | **0.0168** | **2.5000e-004** | **6.2500e-003** | **3.4000e-004** | **6.5900e-003** | **1.7100e-003** | **3.2000e-004** | **2.0300e-003** | **0.0000** | **24.3406** | **24.3406** | **1.3300e-003** | **0.0000** | **24.3737** |

## 3.3 Site Preparation - 2020

### 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 | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0204 | 0.2121 | 0.1076 | 1.9000e-004 | | 0.0110 | 0.0110 | | 0.0101 | 0.0101 | 0.0000 | 16.7153 | 16.7153 | 5.4100e-003 | 0.0000 | 16.8505 |
| **Total** | **0.0204** | **0.2121** | **0.1076** | **1.9000e-004** | **0.0903** | **0.0110** | **0.1013** | **0.0497** | **0.0101** | **0.0598** | **0.0000** | **16.7153** | **16.7153** | **5.4100e-003** | **0.0000** | **16.8505** |

### 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 | 3.7000e-004 | 3.0000e-004 | 2.8500e-003 | 1.0000e-005 | 7.0000e-004 | 1.0000e-005 | 7.1000e-004 | 1.9000e-004 | 0.0000 | 1.9000e-004 | 0.0000 | 0.6513 | 0.6513 | 2.0000e-005 | 0.0000 | 0.6518 |
| **Total** | **3.7000e-004** | **3.0000e-004** | **2.8500e-003** | **1.0000e-005** | **7.0000e-004** | **1.0000e-005** | **7.1000e-004** | **1.9000e-004** | **0.0000** | **1.9000e-004** | **0.0000** | **0.6513** | **0.6513** | **2.0000e-005** | **0.0000** | **0.6518** |

## 3.4 Grading - 2020

### 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 | | | | | 0.1301 | 0.0000 | 0.1301 | 0.0540 | 0.0000 | 0.0540 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0668 | 0.7530 | 0.4794 | 9.3000e-004 | | 0.0326 | 0.0326 | | 0.0300 | 0.0300 | 0.0000 | 81.7264 | 81.7264 | 0.0264 | 0.0000 | 82.3872 |
| **Total** | **0.0668** | **0.7530** | **0.4794** | **9.3000e-004** | **0.1301** | **0.0326** | **0.1627** | **0.0540** | **0.0300** | **0.0840** | **0.0000** | **81.7264** | **81.7264** | **0.0264** | **0.0000** | **82.3872** |

### 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 | 1.2500e-003 | 1.0000e-003 | 9.5100e-003 | 2.0000e-005 | 2.3400e-003 | 2.0000e-005 | 2.3600e-003 | 6.2000e-004 | 2.0000e-005 | 6.4000e-004 | 0.0000 | 2.1709 | 2.1709 | 8.0000e-005 | 0.0000 | 2.1728 |
| **Total** | **1.2500e-003** | **1.0000e-003** | **9.5100e-003** | **2.0000e-005** | **2.3400e-003** | **2.0000e-005** | **2.3600e-003** | **6.2000e-004** | **2.0000e-005** | **6.4000e-004** | **0.0000** | **2.1709** | **2.1709** | **8.0000e-005** | **0.0000** | **2.1728** |

## 3.5 Building Construction - 2020

### 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 | 0.2130 | 1.9282 | 1.6933 | 2.7000e-003 | | 0.1123 | 0.1123 | | 0.1056 | 0.1056 | 0.0000 | 232.7680 | 232.7680 | 0.0568 | 0.0000 | 234.1877 |
| **Total** | **0.2130** | **1.9282** | **1.6933** | **2.7000e-003** | | **0.1123** | **0.1123** | | **0.1056** | **0.1056** | **0.0000** | **232.7680** | **232.7680** | **0.0568** | **0.0000** | **234.1877** |

### 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 | 0.0153 | 0.4317 | 0.0959 | 1.0200e-003 | 0.0229 | 2.3900e-003 | 0.0253 | 6.6300e-003 | 2.2800e-003 | 8.9100e-003 | 0.0000 | 96.6740 | 96.6740 | 7.8400e-003 | 0.0000 | 96.8700 |
| Worker | 0.0343 | 0.0275 | 0.2614 | 6.6000e-004 | 0.0644 | 4.8000e-004 | 0.0649 | 0.0172 | 4.4000e-004 | 0.0176 | 0.0000 | 59.6356 | 59.6356 | 2.0600e-003 | 0.0000 | 59.6872 |
| **Total** | **0.0496** | **0.4592** | **0.3573** | **1.6800e-003** | **0.0873** | **2.8700e-003** | **0.0902** | **0.0238** | **2.7200e-003** | **0.0265** | **0.0000** | **156.3096** | **156.3096** | **9.9000e-003** | **0.0000** | **156.5572** |

## 3.5 Building Construction - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0941 | 0.8629 | 0.8205 | 1.3300e-003 | | 0.0475 | 0.0475 | | 0.0446 | 0.0446 | 0.0000 | 114.6605 | 114.6605 | 0.0277 | 0.0000 | 115.3520 |
| **Total** | **0.0941** | **0.8629** | **0.8205** | **1.3300e-003** | | **0.0475** | **0.0475** | | **0.0446** | **0.0446** | **0.0000** | **114.6605** | **114.6605** | **0.0277** | **0.0000** | **115.3520** |

### 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 | 6.2800e-003 | 0.1938 | 0.0414 | 5.0000e-004 | 0.0113 | 6.0000e-004 | 0.0119 | 3.2700e-003 | 5.7000e-004 | 3.8400e-003 | 0.0000 | 47.2149 | 47.2149 | 3.7200e-003 | 0.0000 | 47.3080 |
| Worker | 0.0156 | 0.0120 | 0.1162 | 3.1000e-004 | 0.0317 | 2.3000e-004 | 0.0320 | 8.4400e-003 | 2.1000e-004 | 8.6600e-003 | 0.0000 | 28.3550 | 28.3550 | 9.0000e-004 | 0.0000 | 28.3774 |
| **Total** | **0.0219** | **0.2058** | **0.1577** | **8.1000e-004** | **0.0430** | **8.3000e-004** | **0.0438** | **0.0117** | **7.8000e-004** | **0.0125** | **0.0000** | **75.5700** | **75.5700** | **4.6200e-003** | **0.0000** | **75.6854** |

## 3.6 Paving - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0126 | 0.1292 | 0.1465 | 2.3000e-004 | | 6.7800e-003 | 6.7800e-003 | | 6.2400e-003 | 6.2400e-003 | 0.0000 | 20.0235 | 20.0235 | 6.4800e-003 | 0.0000 | 20.1854 |
| Paving | 3.9800e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0165** | **0.1292** | **0.1465** | **2.3000e-004** | | **6.7800e-003** | **6.7800e-003** | | **6.2400e-003** | **6.2400e-003** | **0.0000** | **20.0235** | **20.0235** | **6.4800e-003** | **0.0000** | **20.1854** |

### 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 | 5.8000e-004 | 4.4000e-004 | 4.2900e-003 | 1.0000e-005 | 1.1700e-003 | 1.0000e-005 | 1.1800e-003 | 3.1000e-004 | 1.0000e-005 | 3.2000e-004 | 0.0000 | 1.0479 | 1.0479 | 3.0000e-005 | 0.0000 | 1.0487 |
| **Total** | **5.8000e-004** | **4.4000e-004** | **4.2900e-003** | **1.0000e-005** | **1.1700e-003** | **1.0000e-005** | **1.1800e-003** | **3.1000e-004** | **1.0000e-005** | **3.2000e-004** | **0.0000** | **1.0479** | **1.0479** | **3.0000e-005** | **0.0000** | **1.0487** |

## 3.7 Architectural Coating - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9740 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.1900e-003 | 0.0153 | 0.0182 | 3.0000e-005 | | 9.4000e-004 | 9.4000e-004 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 2.5533 | 2.5533 | 1.8000e-004 | 0.0000 | 2.5576 |
| **Total** | **0.9762** | **0.0153** | **0.0182** | **3.0000e-005** | | **9.4000e-004** | **9.4000e-004** | | **9.4000e-004** | **9.4000e-004** | **0.0000** | **2.5533** | **2.5533** | **1.8000e-004** | **0.0000** | **2.5576** |

### 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 | 6.1000e-004 | 4.7000e-004 | 4.5800e-003 | 1.0000e-005 | 1.2500e-003 | 1.0000e-005 | 1.2600e-003 | 3.3000e-004 | 1.0000e-005 | 3.4000e-004 | 0.0000 | 1.1177 | 1.1177 | 4.0000e-005 | 0.0000 | 1.1186 |
| **Total** | **6.1000e-004** | **4.7000e-004** | **4.5800e-003** | **1.0000e-005** | **1.2500e-003** | **1.0000e-005** | **1.2600e-003** | **3.3000e-004** | **1.0000e-005** | **3.4000e-004** | **0.0000** | **1.1177** | **1.1177** | **4.0000e-005** | **0.0000** | **1.1186** |

# Dignity Health North State Pavilion - Phase 2_2024 Const

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Medical Office Building | 49.60 | 1000sqft | 1.14 | 49,600.00 | 0 |
| Parking Lot | 211.00 | Space | 1.90 | 84,400.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2024 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 420.84 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E IF Adjusted to 420.84 (5-yr avg based on 2011-2015 Actual)

Land Use - Phase II Construction Only. Bldg B & C, 211 Parking Spaces.

Construction Phase - No Demo or Mass Grading

Off-road Equipment - Default Equipment

Trips and VMT - Default Construction Trips

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | PhaseEndDate | 1/10/2022 | 1/10/2023 |
| tblConstructionPhase | PhaseEndDate | 11/19/2021 | 11/21/2022 |
| tblConstructionPhase | PhaseEndDate | 12/15/2021 | 12/14/2022 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | PhaseStartDate | 12/16/2021 | 12/16/2022 |
| tblConstructionPhase | PhaseStartDate | 1/4/2021 | 1/4/2022 |
| tblConstructionPhase | PhaseStartDate | 11/20/2021 | 11/20/2022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 420.84 |
| tblStationaryGeneratorsPumpsUse | HorsePowerValue | 0.00 | 500.00 |
| tblStationaryGeneratorsPumpsUse | HoursPerDay | 0.00 | 0.50 |
| tblStationaryGeneratorsPumpsUse | HoursPerYear | 0.00 | 50.00 |
| tblStationaryGeneratorsPumpsUse | NumberOfEquipment | 0.00 | 2.00 |

# 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.6081 | 2.1725 | 2.2157 | 4.4600e-003 | 0.0641 | 0.0990 | 0.1631 | 0.0175 | 0.0931 | 0.1105 | 0.0000 | 392.0519 | 392.0519 | 0.0750 | 0.0000 | 393.9260 |
| 2023 | 0.2357 | 4.6400e-003 | 7.1700e-003 | 1.0000e-005 | 2.7000e-004 | 2.5000e-004 | 5.2000e-004 | 7.0000e-005 | 2.5000e-004 | 3.2000e-004 | 0.0000 | 1.1204 | 1.1204 | 6.0000e-005 | 0.0000 | 1.1219 |
| **Maximum** | **0.6081** | **2.1725** | **2.2157** | **4.4600e-003** | **0.0641** | **0.0990** | **0.1631** | **0.0175** | **0.0931** | **0.1105** | **0.0000** | **392.0519** | **392.0519** | **0.0750** | **0.0000** | **393.9260** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Building Construction | Building Construction | 1/4/2022 | 11/21/2022 | 5 | 230 | |
| 2 | Paving | Paving | 11/20/2022 | 12/14/2022 | 5 | 18 | |
| 3 | Architectural Coating | Architectural Coating | 12/16/2022 | 1/10/2023 | 5 | 18 | |

**Acres of Grading (Site Preparation Phase): 0**
**Acres of Grading (Grading Phase): 0**
**Acres of Paving: 1.9**
**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 74,400; Non-Residential Outdoor: 24,800; Striped Parking**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Cement and Mortar Mixers | 2 | 6.00 | 9 | 0.56 |
| Paving | Pavers | 1 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 6.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 6.00 | 80 | 0.38 |
| Paving | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

### Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Building Construction | 9 | 51.00 | 22.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 10.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Building Construction - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1962 | 1.7958 | 1.8818 | 3.1000e-003 | | 0.0930 | 0.0930 | | 0.0875 | 0.0875 | 0.0000 | 266.4840 | 266.4840 | 0.0638 | 0.0000 | 268.0801 |
| **Total** | **0.1962** | **1.7958** | **1.8818** | **3.1000e-003** | | **0.0930** | **0.0930** | | **0.0875** | **0.0875** | **0.0000** | **266.4840** | **266.4840** | **0.0638** | **0.0000** | **268.0801** |

### 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 | 0.2672 | 0.0558 | 7.2000e-004 | 0.0165 | 7.6000e-004 | 0.0172 | 4.7700e-003 | 7.3000e-004 | 5.5000e-003 | 0.0000 | 68.3544 | 68.3544 | 5.2100e-003 | 0.0000 | 68.4846 |
| Worker | 0.0209 | 0.0154 | 0.1523 | 4.4000e-004 | 0.0458 | 3.2000e-004 | 0.0462 | 0.0122 | 3.0000e-004 | 0.0125 | 0.0000 | 39.4886 | 39.4886 | 1.1500e-003 | 0.0000 | 39.5173 |
| **Total** | **0.0294** | **0.2826** | **0.2081** | **1.1600e-003** | **0.0623** | **1.0800e-003** | **0.0634** | **0.0170** | **1.0300e-003** | **0.0180** | **0.0000** | **107.8430** | **107.8430** | **6.3600e-003** | **0.0000** | **108.0019** |

## 3.3 Paving - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 8.7900e-003 | 0.0857 | 0.1098 | 1.7000e-004 | | 4.3900e-003 | 4.3900e-003 | | 4.0500e-003 | 4.0500e-003 | 0.0000 | 14.7383 | 14.7383 | 4.6300e-003 | 0.0000 | 14.8540 |
| Paving | 2.4900e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0113** | **0.0857** | **0.1098** | **1.7000e-004** | | **4.3900e-003** | **4.3900e-003** | | **4.0500e-003** | **4.0500e-003** | **0.0000** | **14.7383** | **14.7383** | **4.6300e-003** | **0.0000** | **14.8540** |

### 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 | 6.4000e-004 | 4.7000e-004 | 4.6700e-003 | 1.0000e-005 | 1.4100e-003 | 1.0000e-005 | 1.4200e-003 | 3.7000e-004 | 1.0000e-005 | 3.8000e-004 | 0.0000 | 1.2119 | 1.2119 | 4.0000e-005 | 0.0000 | 1.2128 |
| **Total** | **6.4000e-004** | **4.7000e-004** | **4.6700e-003** | **1.0000e-005** | **1.4100e-003** | **1.0000e-005** | **1.4200e-003** | **3.7000e-004** | **1.0000e-005** | **3.8000e-004** | **0.0000** | **1.2119** | **1.2119** | **4.0000e-005** | **0.0000** | **1.2128** |

## 3.4 Architectural Coating - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.3692 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.1200e-003 | 7.7500e-003 | 9.9700e-003 | 2.0000e-005 | | 4.5000e-004 | 4.5000e-004 | | 4.5000e-004 | 4.5000e-004 | 0.0000 | 1.4043 | 1.4043 | 9.0000e-005 | 0.0000 | 1.4066 |
| **Total** | **0.3703** | **7.7500e-003** | **9.9700e-003** | **2.0000e-005** | | **4.5000e-004** | **4.5000e-004** | | **4.5000e-004** | **4.5000e-004** | **0.0000** | **1.4043** | **1.4043** | **9.0000e-005** | **0.0000** | **1.4066** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.0000e-004 | 1.4000e-004 | 1.4300e-003 | 0.0000 | 4.3000e-004 | 0.0000 | 4.3000e-004 | 1.1000e-004 | 0.0000 | 1.2000e-004 | 0.0000 | 0.3703 | 0.3703 | 1.0000e-005 | 0.0000 | 0.3706 |
| **Total** | **2.0000e-004** | **1.4000e-004** | **1.4300e-003** | **0.0000** | **4.3000e-004** | **0.0000** | **4.3000e-004** | **1.1000e-004** | **0.0000** | **1.2000e-004** | **0.0000** | **0.3703** | **0.3703** | **1.0000e-005** | **0.0000** | **0.3706** |

## 3.4 Architectural Coating - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.2349 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 6.7000e-004 | 4.5600e-003 | 6.3400e-003 | 1.0000e-005 | | 2.5000e-004 | 2.5000e-004 | | 2.5000e-004 | 2.5000e-004 | 0.0000 | 0.8936 | 0.8936 | 5.0000e-005 | 0.0000 | 0.8950 |
| **Total** | **0.2356** | **4.5600e-003** | **6.3400e-003** | **1.0000e-005** | | **2.5000e-004** | **2.5000e-004** | | **2.5000e-004** | **2.5000e-004** | **0.0000** | **0.8936** | **0.8936** | **5.0000e-005** | **0.0000** | **0.8950** |

### 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 | 1.2000e-004 | 8.0000e-005 | 8.3000e-004 | 0.0000 | 2.7000e-004 | 0.0000 | 2.8000e-004 | 7.0000e-005 | 0.0000 | 7.0000e-005 | 0.0000 | 0.2268 | 0.2268 | 1.0000e-005 | 0.0000 | 0.2269 |
| **Total** | **1.2000e-004** | **8.0000e-005** | **8.3000e-004** | **0.0000** | **2.7000e-004** | **0.0000** | **2.8000e-004** | **7.0000e-005** | **0.0000** | **7.0000e-005** | **0.0000** | **0.2268** | **0.2268** | **1.0000e-005** | **0.0000** | **0.2269** |

# Appendix B: CalEEMod Output Operation

Dignity Health North State Pavilion - Full Op 2024 - Shasta County, Annual

# Dignity Health North State Pavilion - Full Op 2024

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Medical Office Building | 129.60 | 1000sqft | 2.98 | 129,600.00 | 0 |
| Parking Lot | 549.00 | Space | 4.94 | 219,600.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2024 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - Full Project Operation 129.6 ksf

Construction Phase - Op Only

Vehicle Trips - ITE Trip Generation Rates, Consistent with TIAR

Water And Wastewater - Adjusted to 2.35 MGAL and 1.50 MGAL per project-specifics

Sequestration - Net 152 trees to be planted

Mobile Land Use Mitigation - 0.83 mile to Priority Development Area. 1.5 miles to Downtown Transfer Station. Improved Ped network.

Waste Mitigation - State requirement for 75 percent diversion by 2020

Stationary Sources - Emergency Generators and Fire Pumps - Assumed 3 x 500 hp engine, 30 minutes per testing day, up to 50 hours testing per year

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblSequestration | NumberOfNewTrees | 0.00 | 5.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 60.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 76.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | -1.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 12.00 |
| tblStationaryGeneratorsPumpsUse | HoursPerYear | 0.00 | 50.00 |
| tblStationaryGeneratorsPumpsUse | NumberOfEquipment | 0.00 | 3.00 |
| tblWater | IndoorWaterUseRate | 16,312,469.88 | 2,346,127.20 |
| tblWater | OutdoorWaterUseRate | 3,107,137.12 | 1,498,914.60 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Not Applicable**

### 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 | 0.6792 | 6.0000e-005 | 6.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| Energy | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 163.5337 | 163.5337 | 2.8700e-003 | 2.8000e-003 | 164.4389 |
| Mobile | 0.9487 | 8.0006 | 7.7119 | 0.0331 | 1.9030 | 0.0244 | 1.9274 | 0.5120 | 0.0229 | 0.5349 | 0.0000 | 3,070.2408 | 3,070.2408 | 0.2234 | 0.0000 | 3,075.8257 |
| Stationary | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 71.2498 | 0.0000 | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.7443 | 1.0444 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| **Total** | **1.6986** | **8.2555** | **7.9447** | **0.0339** | **1.9030** | **0.0398** | **1.9428** | **0.5120** | **0.0383** | **0.5503** | **71.9942** | **3,263.3908** | **3,335.3849** | **4.5175** | **4.6200e-003** | **3,449.6990** |

| | ROG | NOx | 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** | **4.72** | **8.53** | **17.31** | **20.05** | **26.04** | **15.24** | **25.85** | **26.04** | **14.96** | **25.36** | **74.80** | **19.37** | **23.02** | **73.68** | **0.00** | **27.58** |

### 2.3 Vegetation

**Vegetation**

| | CO2e |
|---|---|
| Category | MT |
| New Trees | 110.6580 |
| **Total** | **110.6580** |

## 3.0 Construction Detail

**Not Applicable**

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Limit Parking Supply

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.9487 | 8.0006 | 7.7119 | 0.0331 | 1.9030 | 0.0244 | 1.9274 | 0.5120 | 0.0229 | 0.5349 | 0.0000 | 3,070.2408 | 3,070.2408 | 0.2234 | 0.0000 | 3,075.8257 |
| Unmitigated | 1.0329 | 8.7709 | 9.3748 | 0.0416 | 2.5730 | 0.0316 | 2.6046 | 0.6923 | 0.0296 | 0.7219 | 0.0000 | 3,854.1806 | 3,854.1806 | 0.2396 | 0.0000 | 3,860.1704 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Medical Office Building | 4,682.45 | 1,161.22 | 200.88 | 6,927,081 | 5,123,161 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 4,682.45 | 1,161.22 | 200.88 | 6,927,081 | 5,123,161 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Medical Office Building | 9.50 | 7.30 | 7.30 | 29.60 | 51.40 | 19.00 | 60 | 30 | 10 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Medical Office Building | 0.538831 | 0.031280 | 0.180238 | 0.098915 | 0.025981 | 0.005683 | 0.012706 | 0.096234 | 0.001312 | 0.001172 | 0.005254 | 0.001260 | 0.001133 |
| Parking Lot | 0.538831 | 0.031280 | 0.180238 | 0.098915 | 0.025981 | 0.005683 | 0.012706 | 0.096234 | 0.001312 | 0.001172 | 0.005254 | 0.001260 | 0.001133 |

## 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 | 73.2805 | 73.2805 | 1.1400e-003 | 1.1400e-003 | 73.6494 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 73.2805 | 73.2805 | 1.1400e-003 | 1.1400e-003 | 73.6494 |
| NaturalGas Mitigated | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| NaturalGas Unmitigated | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |

### 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 | | | | | |
| Medical Office Building | 1.69128e+006 | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **9.1200e-003** | **0.0829** | **0.0696** | **5.0000e-004** | | **6.3000e-003** | **6.3000e-003** | | **6.3000e-003** | **6.3000e-003** | **0.0000** | **90.2531** | **90.2531** | **1.7300e-003** | **1.6500e-003** | **90.7895** |

**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 | | | | | |
| Medical Office Building | 1.69128e+006 | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **9.1200e-003** | **0.0829** | **0.0696** | **5.0000e-004** | | **6.3000e-003** | **6.3000e-003** | | **6.3000e-003** | **6.3000e-003** | **0.0000** | **90.2531** | **90.2531** | **1.7300e-003** | **1.6500e-003** | **90.7895** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 1.18195e+006 | 68.8062 | 1.0700e-003 | 1.0700e-003 | 69.1525 |
| Parking Lot | 76860 | 4.4743 | 7.0000e-005 | 7.0000e-005 | 4.4969 |
| **Total** | | **73.2805** | **1.1400e-003** | **1.1400e-003** | **73.6494** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 1.18195e+006 | 68.8062 | 1.0700e-003 | 1.0700e-003 | 69.1525 |
| Parking Lot | 76860 | 4.4743 | 7.0000e-005 | 7.0000e-005 | 4.4969 |
| **Total** | | **73.2805** | **1.1400e-003** | **1.1400e-003** | **73.6494** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.6792 | 6.0000e-005 | 6.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| Unmitigated | 0.6792 | 6.0000e-005 | 6.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |

## 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 | 0.1583 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.7000e-004 | 6.0000e-005 | 6.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| **Total** | **0.6792** | **6.0000e-005** | **6.2300e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0129** |

### 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 | 0.1583 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.7000e-004 | 6.0000e-005 | 6.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| **Total** | **0.6792** | **6.0000e-005** | **6.2300e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0129** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Unmitigated | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 2.34613 / 1.49891 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.7887** | **0.0765** | **1.8200e-003** | **4.2431** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 2.34613 / 1.49891 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.7887** | **0.0765** | **1.8200e-003** | **4.2431** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

### Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Unmitigated | 284.9993 | 16.8430 | 0.0000 | 706.0737 |

## 8.2 Waste by Land Use

### Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 1404 | 284.9993 | 16.8430 | 0.0000 | 706.0737 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **284.9993** | **16.8430** | **0.0000** | **706.0737** |

### Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 351 | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **71.2498** | **4.2107** | **0.0000** | **176.5184** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|
| Emergency Generator | 3 | 0.5 | 50 | 500 | 0.73 | Diesel |

### Boilers

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

### User Defined Equipment

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

## 10.1 Stationary Sources

### 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 | | | | | |
| Emergency Generator - Diesel | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| **Total** | **0.0615** | **0.1720** | **0.1569** | **3.0000e-004** | | **9.0500e-003** | **9.0500e-003** | | **9.0500e-003** | **9.0500e-003** | **0.0000** | **28.5598** | **28.5598** | **4.0000e-003** | **0.0000** | **28.6599** |

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | 110.6580 | 0.0000 | 0.0000 | 110.6580 |

## 11.2 Net New Trees

### Species Class

| | Number of Trees | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | | MT | | | |
| Cedar/Larch | 5 | 2.6400 | 0.0000 | 0.0000 | 2.6400 |
| Miscellaneous | 60 | 42.4800 | 0.0000 | 0.0000 | 42.4800 |
| Mixed Hardwood | 76 | 55.7840 | 0.0000 | 0.0000 | 55.7840 |
| Pine | -1 | -0.6380 | 0.0000 | 0.0000 | -0.6380 |
| Soft Maple | 12 | 10.3920 | 0.0000 | 0.0000 | 10.3920 |
| **Total** | | **110.6580** | **0.0000** | **0.0000** | **110.6580** |

Dignity Health North State Pavilion - Full Op 2035 - Shasta County, Annual

# Dignity Health North State Pavilion - Full Op 2035

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Medical Office Building | 129.60 | 1000sqft | 2.98 | 129,600.00 | 0 |
| Parking Lot | 549.00 | Space | 4.94 | 219,600.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2035 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - Full Project Operation 129.6 ksf

Construction Phase - Op Only

Vehicle Trips - ITE Trip Generation Rates, Consistent with TIAR

Water And Wastewater - Adjusted to 2.35 MGAL and 1.50 MGAL per project-specifics

Sequestration - Net 152 trees to be planted

Mobile Land Use Mitigation - 0.83 mile to Priority Development Area. 1.5 miles to Downtown Transfer Station. Improved Ped network.

Waste Mitigation - State requirement for 75 percent diversion by 2020

Stationary Sources - Emergency Generators and Fire Pumps - Assumed 3 x 500 hp engine, 30 minutes per testing day, up to 50 hours testing per year

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblSequestration | NumberOfNewTrees | 0.00 | 5.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 60.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 76.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | -1.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 12.00 |
| tblWater | IndoorWaterUseRate | 16,312,469.88 | 2,346,127.20 |
| tblWater | OutdoorWaterUseRate | 3,107,137.12 | 1,498,914.60 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Not Applicable**

### 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 | 0.6792 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| Energy | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 163.5337 | 163.5337 | 2.8700e-003 | 2.8000e-003 | 164.4389 |
| Mobile | 0.5208 | 7.0742 | 4.1672 | 0.0290 | 1.9007 | 0.0123 | 1.9129 | 0.5108 | 0.0115 | 0.5223 | 0.0000 | 2,704.5150 | 2,704.5150 | 0.2312 | 0.0000 | 2,710.2957 |
| Stationary | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 71.2498 | 0.0000 | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.7443 | 1.0444 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| **Total** | **1.2706** | **7.3291** | **4.3999** | **0.0298** | **1.9007** | **0.0277** | **1.9283** | **0.5108** | **0.0269** | **0.5377** | **71.9942** | **2,897.6651** | **2,969.6592** | **4.5253** | **4.6200e-003** | **3,084.1689** |

| | ROG | NOx | 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** | **3.84** | **5.51** | **17.63** | **19.28** | **26.04** | **11.29** | **25.87** | **26.04** | **10.97** | **25.41** | **74.80** | **18.55** | **22.73** | **73.64** | **0.00** | **27.84** |

### 2.3 Vegetation

**Vegetation**

| | CO2e |
|---|---|
| Category | MT |
| New Trees | 110.6580 |
| **Total** | **110.6580** |

## 3.0 Construction Detail

**Not Applicable**

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Limit Parking Supply

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.5208 | 7.0742 | 4.1672 | 0.0290 | 1.9007 | 0.0123 | 1.9129 | 0.5108 | 0.0115 | 0.5223 | 0.0000 | 2,704.5150 | 2,704.5150 | 0.2312 | 0.0000 | 2,710.2957 |
| Unmitigated | 0.5714 | 7.5016 | 5.1090 | 0.0361 | 2.5699 | 0.0158 | 2.5857 | 0.6906 | 0.0148 | 0.7055 | 0.0000 | 3,364.5726 | 3,364.5726 | 0.2396 | 0.0000 | 3,370.5626 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Medical Office Building | 4,682.45 | 1,161.22 | 200.88 | 6,927,081 | 5,123,161 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 4,682.45 | 1,161.22 | 200.88 | 6,927,081 | 5,123,161 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Medical Office Building | 9.50 | 7.30 | 7.30 | 29.60 | 51.40 | 19.00 | 60 | 30 | 10 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Medical Office Building | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |
| Parking Lot | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |

## 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 | 73.2805 | 73.2805 | 1.1400e-003 | 1.1400e-003 | 73.6494 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 73.2805 | 73.2805 | 1.1400e-003 | 1.1400e-003 | 73.6494 |
| NaturalGas Mitigated | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| NaturalGas Unmitigated | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |

### 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 | | | | | |
| Medical Office Building | 1.69128e+006 | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **9.1200e-003** | **0.0829** | **0.0696** | **5.0000e-004** | | **6.3000e-003** | **6.3000e-003** | | **6.3000e-003** | **6.3000e-003** | **0.0000** | **90.2531** | **90.2531** | **1.7300e-003** | **1.6500e-003** | **90.7895** |

**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 | | | | | |
| Medical Office Building | 1.69128e+006 | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **9.1200e-003** | **0.0829** | **0.0696** | **5.0000e-004** | | **6.3000e-003** | **6.3000e-003** | | **6.3000e-003** | **6.3000e-003** | **0.0000** | **90.2531** | **90.2531** | **1.7300e-003** | **1.6500e-003** | **90.7895** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 1.18195e+006 | 68.8062 | 1.0700e-003 | 1.0700e-003 | 69.1525 |
| Parking Lot | 76860 | 4.4743 | 7.0000e-005 | 7.0000e-005 | 4.4969 |
| **Total** | | **73.2805** | **1.1400e-003** | **1.1400e-003** | **73.6494** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 1.18195e+006 | 68.8062 | 1.0700e-003 | 1.0700e-003 | 69.1525 |
| Parking Lot | 76860 | 4.4743 | 7.0000e-005 | 7.0000e-005 | 4.4969 |
| **Total** | | **73.2805** | **1.1400e-003** | **1.1400e-003** | **73.6494** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.6792 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| Unmitigated | 0.6792 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |

## 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 | 0.1583 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.7000e-004 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| **Total** | **0.6792** | **6.0000e-005** | **6.2000e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0129** |

### 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 | 0.1583 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.7000e-004 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| **Total** | **0.6792** | **6.0000e-005** | **6.2000e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0129** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Unmitigated | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 2.34613 / 1.49891 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.7887** | **0.0765** | **1.8200e-003** | **4.2431** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 2.34613 / 1.49891 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.7887** | **0.0765** | **1.8200e-003** | **4.2431** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

### Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Unmitigated | 284.9993 | 16.8430 | 0.0000 | 706.0737 |

## 8.2 Waste by Land Use

### Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 1404 | 284.9993 | 16.8430 | 0.0000 | 706.0737 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **284.9993** | **16.8430** | **0.0000** | **706.0737** |

### Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 351 | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **71.2498** | **4.2107** | **0.0000** | **176.5184** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|
| Emergency Generator | 3 | 0.5 | 50 | 500 | 0.73 | Diesel |

### Boilers

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

### User Defined Equipment

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

## 10.1 Stationary Sources

### 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 | | | | | |
| Emergency Generator - Diesel | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| **Total** | **0.0615** | **0.1720** | **0.1569** | **3.0000e-004** | | **9.0500e-003** | **9.0500e-003** | | **9.0500e-003** | **9.0500e-003** | **0.0000** | **28.5598** | **28.5598** | **4.0000e-003** | **0.0000** | **28.6599** |

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | 110.6580 | 0.0000 | 0.0000 | 110.6580 |

## 11.2 Net New Trees

**Species Class**

| | Number of Trees | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | | MT | | | |
| Cedar/Larch | 5 | 2.6400 | 0.0000 | 0.0000 | 2.6400 |
| Miscellaneous | 60 | 42.4800 | 0.0000 | 0.0000 | 42.4800 |
| Mixed Hardwood | 76 | 55.7840 | 0.0000 | 0.0000 | 55.7840 |
| Pine | -1 | -0.6380 | 0.0000 | 0.0000 | -0.6380 |
| Soft Maple | 12 | 10.3920 | 0.0000 | 0.0000 | 10.3920 |
| **Total** | | **110.6580** | **0.0000** | **0.0000** | **110.6580** |

# Dignity Health North State Pavilion - Full Op 2035 MITIGATED

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Medical Office Building | 129.60 | 1000sqft | 2.98 | 129,600.00 | 0 |
| Parking Lot | 549.00 | Space | 4.94 | 219,600.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2035 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - Full Project Operation 129.6 ksf

Construction Phase - Op Only

Vehicle Trips - ITE Trip Generation Rates, Consistent with TIAR

Water And Wastewater - Adjusted to 2.35 MGAL and 1.50 MGAL per project-specifics

Sequestration - Net 152 trees to be planted

Mobile Land Use Mitigation - 0.83 mile to Priority Development Area. 1.5 miles to Downtown Transfer Station. Improved Ped network.

Mobile Commute Mitigation - Implement Voluntary trip reduction program, $5.96 transit subsidy, and provide ride sharing program

Area Mitigation - 100 percent electric lawnmowers and leafblowers

Energy Mitigation - PG&E Solar Program (100 percent renewable, off-site). Exceed 2016 Title 24 requirements by 15 percent. High efficiency outdoor lighting (40%). All fan, refrigerator, dishwasher and clothes washer energy efficient

Waste Mitigation - State requirement for 75 percent diversion by 2020

Stationary Sources - Emergency Generators and Fire Pumps - Assumed 3 x 500 hp engine, 30 minutes per testing day, up to 50 hours testing per year

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblSequestration | NumberOfNewTrees | 0.00 | 5.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 60.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 76.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | -1.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 12.00 |
| tblWater | IndoorWaterUseRate | 16,312,469.88 | 2,346,127.20 |
| tblWater | OutdoorWaterUseRate | 3,107,137.12 | 1,498,914.60 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Not Applicable**

### 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 | 0.6789 | 3.0000e-005 | 3.5900e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 6.5400e-003 | 6.5400e-003 | 1.0000e-005 | 0.0000 | 6.8700e-003 |
| Energy | 7.7800e-003 | 0.0707 | 0.0594 | 4.2000e-004 | | 5.3800e-003 | 5.3800e-003 | | 5.3800e-003 | 5.3800e-003 | 0.0000 | 77.0056 | 77.0056 | 1.4800e-003 | 1.4100e-003 | 77.4633 |
| Mobile | 0.4910 | 6.8237 | 3.6151 | 0.0248 | 1.5084 | 0.0102 | 1.5186 | 0.4054 | 9.5600e-003 | 0.4149 | 0.0000 | 2,317.6348 | 2,317.6348 | 0.2263 | 0.0000 | 2,323.2926 |
| Stationary | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 71.2498 | 0.0000 | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.7443 | 1.0444 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| **Total** | **1.2392** | **7.0664** | **3.8350** | **0.0255** | **1.5084** | **0.0247** | **1.5330** | **0.4054** | **0.0240** | **0.4294** | **71.9942** | **2,424.2512** | **2,496.2453** | **4.5190** | **3.2300e-003** | **2,610.1842** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **6.21** | **8.90** | **28.21** | **30.82** | **41.31** | **20.92** | **41.06** | **41.31** | **20.48** | **40.43** | **74.80** | **31.86** | **35.05** | **73.67** | **30.09** | **38.93** |

### 2.3 Vegetation

**Vegetation**

| | CO2e |
|---|---|
| Category | MT |
| New Trees | 110.6580 |
| **Total** | **110.6580** |

## 3.0 Construction Detail

**Not Applicable**

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Limit Parking Supply

Implement Trip Reduction Program

Transit Subsidy

Provide Riade Sharing Program

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.4910 | 6.8237 | 3.6151 | 0.0248 | 1.5084 | 0.0102 | 1.5186 | 0.4054 | 9.5600e-003 | 0.4149 | 0.0000 | 2,317.6348 | 2,317.6348 | 0.2263 | 0.0000 | 2,323.2926 |
| Unmitigated | 0.5714 | 7.5016 | 5.1090 | 0.0361 | 2.5699 | 0.0158 | 2.5857 | 0.6906 | 0.0148 | 0.7055 | 0.0000 | 3,364.5726 | 3,364.5726 | 0.2396 | 0.0000 | 3,370.5626 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Medical Office Building | 4,682.45 | 1,161.22 | 200.88 | 6,927,081 | 4,065,828 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 4,682.45 | 1,161.22 | 200.88 | 6,927,081 | 4,065,828 |

### 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 |
| Medical Office Building | 9.50 | 7.30 | 7.30 | 29.60 | 51.40 | 19.00 | 60 | 30 | 10 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Medical Office Building | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |
| Parking Lot | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 73.2805 | 73.2805 | 1.1400e-003 | 1.1400e-003 | 73.6494 |
| NaturalGas Mitigated | 7.7800e-003 | 0.0707 | 0.0594 | 4.2000e-004 | | 5.3800e-003 | 5.3800e-003 | | 5.3800e-003 | 5.3800e-003 | 0.0000 | 77.0056 | 77.0056 | 1.4800e-003 | 1.4100e-003 | 77.4633 |
| NaturalGas Unmitigated | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |

### 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 | | | | | |
| Medical Office Building | 1.69128e+006 | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **9.1200e-003** | **0.0829** | **0.0696** | **5.0000e-004** | | **6.3000e-003** | **6.3000e-003** | | **6.3000e-003** | **6.3000e-003** | **0.0000** | **90.2531** | **90.2531** | **1.7300e-003** | **1.6500e-003** | **90.7895** |

**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 | | | | | |
| Medical Office Building | 1.44303e+006 | 7.7800e-003 | 0.0707 | 0.0594 | 4.2000e-004 | | 5.3800e-003 | 5.3800e-003 | | 5.3800e-003 | 5.3800e-003 | 0.0000 | 77.0056 | 77.0056 | 1.4800e-003 | 1.4100e-003 | 77.4633 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **7.7800e-003** | **0.0707** | **0.0594** | **4.2000e-004** | | **5.3800e-003** | **5.3800e-003** | | **5.3800e-003** | **5.3800e-003** | **0.0000** | **77.0056** | **77.0056** | **1.4800e-003** | **1.4100e-003** | **77.4633** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 1.18195e+006 | 68.8062 | 1.0700e-003 | 1.0700e-003 | 69.1525 |
| Parking Lot | 76860 | 4.4743 | 7.0000e-005 | 7.0000e-005 | 4.4969 |
| **Total** | | **73.2805** | **1.1400e-003** | **1.1400e-003** | **73.6494** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Electric Lawnmower
Use Electric Leafblower
Use Electric Chainsaw

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.6789 | 3.0000e-005 | 3.5900e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 6.5400e-003 | 6.5400e-003 | 1.0000e-005 | 0.0000 | 6.8700e-003 |
| Unmitigated | 0.6792 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |

### 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 | 0.1583 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.7000e-004 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| **Total** | **0.6792** | **6.0000e-005** | **6.2000e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0129** |

**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 | 0.1583 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.4000e-004 | 3.0000e-005 | 3.5900e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 6.5400e-003 | 6.5400e-003 | 1.0000e-005 | 0.0000 | 6.8700e-003 |
| **Total** | **0.6789** | **3.0000e-005** | **3.5900e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **6.5400e-003** | **6.5400e-003** | **1.0000e-005** | **0.0000** | **6.8700e-003** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Unmitigated | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 2.34613 / 1.49891 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.7887** | **0.0765** | **1.8200e-003** | **4.2431** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 2.34613 / 1.49891 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.7887** | **0.0765** | **1.8200e-003** | **4.2431** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

### Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Unmitigated | 284.9993 | 16.8430 | 0.0000 | 706.0737 |

## 8.2 Waste by Land Use

### Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 1404 | 284.9993 | 16.8430 | 0.0000 | 706.0737 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **284.9993** | **16.8430** | **0.0000** | **706.0737** |

### Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 351 | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **71.2498** | **4.2107** | **0.0000** | **176.5184** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|
| Emergency Generator | 3 | 0.5 | 50 | 500 | 0.73 | Diesel |

### Boilers

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

### User Defined Equipment

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

## 10.1 Stationary Sources

### 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 | | | | | |
| Emergency Generator - Diesel | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| **Total** | **0.0615** | **0.1720** | **0.1569** | **3.0000e-004** | | **9.0500e-003** | **9.0500e-003** | | **9.0500e-003** | **9.0500e-003** | **0.0000** | **28.5598** | **28.5598** | **4.0000e-003** | **0.0000** | **28.6599** |

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | 110.6580 | 0.0000 | 0.0000 | 110.6580 |

## 11.2 Net New Trees

**Species Class**

| | Number of Trees | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | | MT | | | |
| Cedar/Larch | 5 | 2.6400 | 0.0000 | 0.0000 | 2.6400 |
| Miscellaneous | 60 | 42.4800 | 0.0000 | 0.0000 | 42.4800 |
| Mixed Hardwood | 76 | 55.7840 | 0.0000 | 0.0000 | 55.7840 |
| Pine | -1 | -0.6380 | 0.0000 | 0.0000 | -0.6380 |
| Soft Maple | 12 | 10.3920 | 0.0000 | 0.0000 | 10.3920 |
| **Total** | | **110.6580** | **0.0000** | **0.0000** | **110.6580** |

# Appendix C: Alternatives Analysis Memorandum

# Technical Memorandum No. 2

Date: May 2, 2019

| | | | |
|---|---|---|---|
| To: | City of Redding | Project: | Dignity Health Mercy Medical Center Redding - North State Pavilion |
| Attn: | Lily Toy | | |
| From: | Russ Wenham, P.E., T.E. | Ref/Job No.: | 11145024 |
| CC: | J. Lofton Moore, Dignity Health<br>Bruce Grove, SHN | File No.: | C1966MEM011.DOCX |

**Subject:** GHG Analysis for Project Alternatives

## Introduction

GHD has prepared this memorandum to present the results from an analysis of the potential greenhouse gas (GHG) emissions that the development of the proposed alternatives for the Dignity Health North State Pavilion project may have relative to the Proposed Project. Alternatives reviewed in this memo include: No Project Alternative, Reduced Intensity Alternative, and Mercy Oaks Campus Alternative.

### No Project Alternative

The No Project Alternative would develop the 10.55-acre project site as generally allowed under the existing General Plan land use classifications and zoning designations for the property. The development assumptions of the No Project Alternative are provided in Table 1.

**TABLE 1**
**NO PROJECT ALTERNATIVE LAND USE ASSUMPTIONS**

| Land Use | Size | Units | Acres |
|---|---|---|---|
| Restaurant | 10.8 | ksf | 3.66 |
| General Office | 19.2 | ksf | |
| General Retail | 5.6 | ksf | |
| General Commercial | 22.8 | ksf | 1.60 |
| General Office | 76.2 | kfs | 5.29 |
| **Total** | **134.6** | **-** | **10.55** |

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**Reduced Intensity Alternative**

The Reduced Intensity Alternative would develop an approximate 9.72-acre portion of the Proposed Project site with 109,000 square feet of medical office land uses, and 461 parking spaces. This alternative proposes three buildings to be closely grouped, with pedestrian plazas and promenades connecting the buildings to each other as well as outdoor spaces and parking areas.

**Mercy Oaks Campus Alternative**

The Mercy Oaks Campus Alternative would develop the project facilities on an undeveloped portion of the existing Mercy Oaks Campus, located at College View Drive and Mercy Oaks Drive more than 3.5 miles northeast of the proposed project site. Approximately 13.2 net acres of the Mercy Oaks Campus is suitable for development. Under this alternative, the same amount of development as the Proposed Project would be constructed, but at the Mercy Oaks Campus Location.

## Significance Threshold and Service Population

The Dignity Mercy Medical Center North State Pavilion Project Greenhouse Gas Report (Project Report) provides a detailed basis for a project-specific threshold (GHD 2019). As provided in the Project Report, project-related impacts in both 2024 and 2035 are considered. The project-specific thresholds are presented as an efficiency metric of metric tons of carbon dioxide equivalent (MT $CO_2e$) per service population. The thresholds identified in the Project Report are:

- 3.7 MT $CO_2e$ per service population in 2024
- 1.7 MT $CO_2e$ per service population in 2035

The service population for the alternatives were estimated as follows:

**No Project Alternative**

ITE employee rates for restaurant (High Turnover Sit-down) and general office (suburbs), and San Diego Association of Governments (SANDAG) employee rates for community retail, as aggregated by the US Green Building Council, were used to estimate the jobs generated by the No Project Alternative (USGBC 2019). The No Project Alternative would support an estimated 496 jobs. This service population is applicable to both the 2024 and 2035 analysis years.

**Reduced Intensity Alternative**

The service population was estimated by scaling the Proposed Project's estimated job creation, and applying the same methodology to estimate patients (residents) per day as detailed within the Project Report. The Reduced Intensity Alternative would support 151 jobs (employees) and an estimated 1,012 residents (patients) per day. Therefore, this alternative is calculated to support a service population of 1,163. This service population is applicable to both the 2024 and 2035 analysis years.

**Mercy Oaks Campus Alternative**

This alternative would support the same estimated job creation and patients (residents) per day as detailed within the Project Report for the Proposed Project. The Mercy Oaks Campus Alternative would support 180 jobs (employees) and an estimated 1,203 residents (patients) per day. Therefore, this alternative is calculated to support a service population of 1,383. This service population is applicable to both the 2024 and 2035 analysis years.

## Emissions Modeling and Parameters

The alternative's greenhouse gas emissions were estimated using California Emissions Estimator Model (CalEEMod) version 2016.3.2.

### Construction

For the purposes of analysis, it is assumed that each alternative would be built in one phase. Construction was assumed to begin in 2020. As with the Proposed Project, the alternatives emissions analysis used:

- Model default construction equipment list, activity, and default load factors for off-road equipment
- Balanced cut and fill
- Model default off-site trip generation

Additional construction parameters are as follows:

**No Project Alternative**

- Demolition of 7,500 square feet of building and 64,000 square feet of concrete and asphalt

**Reduced Intensity Alternative**

- Demolition of 7,500 square feet of building and 64,000 square feet of concrete and asphalt

**Mercy Oaks Campus Alternative**

- No demolition

### Operation

**No Project Alternative**

The emissions modeling used the ITE trip generation rate for restaurant (high turnover sit-down), general office (office park) and general retail (strip mall) were used. The following modeling inputs identified in the Project Report were used: energy intensity factors for Redding Utility District and waste reduction of 75 percent. It is assumed that the No Project Alternative would remove a similar number of trees as the Proposed Project. At the standard retail rate of 1 parking space per 250 square feet, it is assumed that the No Project Alternative would require 540 parking space. Per the City's Screening and Landscape requirements (Municipal Code 18.41.100.C), parking lot shade

trees are required at a rate of 1 tree per 4 spaces. Therefore, it is assumed that 135 shade trees would be planted, for a net increase of 77 trees. The on-site sequestration assumptions are provided in Table 2.

**TABLE 2**
**NO PROJECT SEQUESTRATION ASSUMPTIONS**

| CalEEMod Category | Trees Removed | Tees Added | Net Increase |
|---|---|---|---|
| Cedar/Larch | 0 | 3 | 3 |
| Miscellaneous | 1 | 39 | 38 |
| Mixed Hardwood | 55 | 85 | 30 |
| Pine | 1 | 0 | -1 |
| Soft Maple | 1 | 8 | 7 |
| ***Total*** | ***58*** | 135 | **77** |

**Reduced Intensity Alternative**

The emissions modeling used the ITE trip generation rate for medical office building, consistent with the project's Traffic Impact Analysis Report (TIAR). The following modeling inputs identified in the Project Report were used: energy intensity factors for Redding Utility District, waste reduction of 75 percent, emergency generator quantity and use, and vegetation sequestration. The Reduced Intensity Alternative is 84 percent the size of the Proposed Project; therefore, indoor and outdoor water consumption values were input at 84 percent of those used for the Proposed Project, or approximately 1.97 million gallons of water (MGAL) per year for indoor water and 1.26 MGAL per year for outdoor water.

The Reduced Intensity Alternative's buildings would be 16 percent less than the square footage of the Proposed Project's buildings. Reasonable assumptions were applied to estimate the net increase in trees associated with this alternative. The Reduced Intensity Alternative would include 88 fewer parking spaces, or 16 percent fewer parking spaces than the Proposed Project. Therefore, it is assumed that this alternative would remove 16 percent fewer trees, or 9 fewer trees, than the Proposed Project. Additionally, at parking lot shading requirement of 1 tree per 4 parking spaces, the Reduced Alternative would include 115 new trees, or 95 fewer new trees than the proposed project. It was assumed that the Reduced Alternative would remove fewer mixed hardwood trees, and install approximately the same mix of new trees (cedar/larch, mixed hardwood, etc.) as the Proposed Project. The on-site sequestration assumptions are provided in Table 3.

**TABLE 3**
**REDUCED INTENSITY SEQUESTRATION ASSUMPTIONS**

| CalEEMod Category | Trees Removed | Tees Added | Net Increase |
|---|---|---|---|
| Cedar/Larch | 0 | 3 | 3 |
| Miscellaneous | 1 | 33 | 32 |
| Mixed Hardwood | 46 | 72 | 26 |
| Pine | 1 | 0 | -1 |
| Soft Maple | 1 | 7 | 6 |
| ***Total*** | ***49*** | ***115*** | **66** |

### Mercy Oaks Campus Alternative

The emissions modeling used the ITE trip generation rate for medical office building, consistent with the project's Traffic Impact Analysis Report (TIAR). The following modeling inputs identified in the Project Report were used: energy intensity factors for Redding Utility District, waste reduction of 75 percent, emergency generator quantity and use. It is assumed that the Mercy Oaks Campus Alternative would include a similar tree removal and planting as the Proposed Project, for a net increase of 152 trees. In addition, the Mercy Oaks Campus is not located in close proximity to a priority development area or transit station.

## Emissions Output

The each alternative's construction activities would result in a temporary increase in GHG emissions. Operational or long-term emissions would occur annually over the life of the project.

**No Project Alternative**

Construction activities are estimated to generate approximately 690 MT $CO_2e$. When annualized over an assumed 30-year project lifespan, construction would generate approximately 23.0 MT $CO_2e$ per year.

Estimated landscaping is estimated to result in a total 55.93 MT $CO_2e$ of sequestration over 20 years, or approximately 2.8 MT $CO_2e$ per year. The No Project Alternative's operational emissions in years 2024 and 2035 are shown in Table 4. The annualized construction emissions also provided in the table. The No Project Alternative would generate approximately 3,063 MT $CO_2e$ per year in 2024. With a service population of 496, the alternative would achieve an efficiency metric of 6.18 MT $CO_2e$ per service population, which is greater than the significance threshold of 3.7 MT $CO_2e$ per service population. Therefore, the alternative would result in a potentially significant impact in 2024.

The alternative would generate approximately 2,765 MT $CO_2e$ per year in 2035. With a service population of 496, the project would achieve an efficiency metric of 5.57 MT $CO_2e$ per service population, which exceeds the significance threshold of 1.7 MT $CO_2e$ per service population. Therefore, the alternative would result in a potentially significant impact in 2035.

**TABLE 4**
**ANNUAL NO PROJECT ALTERNATIVE GREENHOUSE GAS EMISSIONS**

| | **MT $CO_2e$** | |
|---|---|---|
| **Emissions Category** | **Year 2024** | **Year 2035** |
| Area | <0.1 | <0.1 |
| Energy | 356.3 | 356.3 |
| Mobile | 2,615.4 | 2,317.7 |
| Waste | 31.1 | 31.1 |
| Water | 39.9 | 39.9 |
| Sequestration (annualized) | -2.8 | -2.8 |
| Construction (annualized) | 23.0 | 23.0 |
| **Total Project Emissions** | **3,062.9** | **2,765.2** |
| *Service Population* | 496 | 496 |
| *Project Efficiency (MT $CO_2e$ / Service Population)* | 6.18 | 5.57 |
| *Threshold of Significance* | 3.7 | 1.7 |
| *Significant Impact?* | Yes | Yes |

*Emissions output provided in Attachment A.*

**Reduced Intensity Alternative**

Construction activities are estimated to generate approximately 854 MT $CO_2e$. When annualized over an assumed 30-year project lifespan, construction would generate approximately 28.5 MT $CO_2e$ per year.

Planned landscaping is estimated to result in a total 47.88 MT $CO_2e$ of sequestration over 20 years, or approximately 2.4 MT $CO_2e$ per year. The Reduced Intensity Alternative's operational emissions in years 2024 and 2035 are shown in Table 5. The annualized construction emissions and sequestration are also provided in the table. The Reduced Intensity Alternative would generate approximately 2,979 MT $CO_2e$ per year in 2024. With a service population of 1,163, the alternative would achieve an efficiency metric of 2.56 MT $CO_2e$ per service population, which is less than the significance threshold of 3.7 MT $CO_2e$ per service population. Therefore, the alternative would result in a less than significant impact in 2024.

The alternative would generate approximately 2,664 MT $CO_2e$ per year in 2035. With a service population of 1,163, the project would achieve an efficiency metric of 2.29 MT $CO_2e$ per service population, which exceeds the significance threshold of 1.7 MT $CO_2e$ per service population. Therefore, the alternative would result in a potentially significant impact in 2035.

**TABLE 5**
**ANNUAL REDUCED INTENSITY ALTERNATIVE GREENHOUSE GAS EMISSIONS**

| | MT $CO_2e$ | |
|---|---|---|
| **Emissions Category** | **Year 2024** | **Year 2035** |
| Area | <0.1 | <0.1 |
| Energy | 137.9 | 137.9 |
| Mobile | 2,635.0 | 2,319.9 |
| Stationary | 28.7 | 28.7 |
| Waste | 148.0 | 148.0 |
| Water | 3.6 | 3.6 |
| Sequestration (annualized) | -2.4 | -2.4 |
| Construction (annualized) | 28.5 | 28.5 |
| **Total Project Emissions** | **2,979.1** | **2,664.1** |
| *Service Population* | 1,163 | 1,163 |
| *Project Efficiency (MT $CO_2e$ / Service Population)* | 2.56 | 2.29 |
| *Threshold of Significance 2024* | 3.7 | 1.7 |
| *Significant Impact?* | No | Yes |

*Emissions output provided in Attachment A.*

**Mercy Oaks Campus Alternative**

Construction activities for the Mercy Oaks Campus is assumed to be identical to the construction activity for the Proposed Project, except there would be no demolition with the Mercy Oaks Campus. Therefore, this alternative is estimated to generate approximately 631 MT $CO_2e$. When annualized over an assumed 30-year project lifespan, construction would generate approximately 21.0 MT $CO_2e$ per year.

Planned landscaping is estimated to result in a total 110.66 MT $CO_2e$ of sequestration over 20 years, or approximately 5.5 MT $CO_2e$ per year. The Mercy Oaks Campus Alternative's operational emissions in years 2024 and 2035 are shown in Table 6. The annualized construction emissions also provided in the table. The Mercy Oaks Campus Alternative would generate approximately 4,116 MT $CO_2e$ per year in 2024. With a service population of 1,383, the alternative would achieve an efficiency metric of 2.98 MT $CO_2e$ per service population, which is less than the significance threshold of 3.7 MT $CO_2e$ per service population. Therefore, the alternative would result in a less than significant impact in 2024.

The alternative would generate approximately 3,647 MT $CO_2e$ per year in 2035. With a service population of 1,383, the project would achieve an efficiency metric of 2.64 MT $CO_2e$ per service population, which exceeds the significance threshold of 1.7 MT $CO_2e$ per service population. Therefore, the alternative would result in a potentially significant impact in 2035.

**TABLE 6**
**ANNUAL MERCY OAKS CAMPUS ALTERNATIVE GREENHOUSE GAS EMISSIONS**

| | MT $CO_2e$ | |
|---|---|---|
| **Emissions Category** | **Year 2024** | **Year 2035** |
| Area | <0.1 | <0.1 |
| Energy | 164.4 | 164.4 |
| Mobile | 3,726.1 | 3,257.7 |
| Stationary | 28.7 | 28.7 |
| Waste | 176.5 | 176.5 |
| Water | 4.2 | 4.2 |
| Sequestration (annualized) | -5.5 | -5.5 |
| Construction (annualized) | 21.0 | 21.0 |
| **Total Project Emissions** | **4,115.5** | **3,647.1** |
| *Service Population* | 1,383 | 1,383 |
| *Project Efficiency (MT $CO_2e$ / Service Population)* | 2.98 | 2.64 |
| *Threshold of Significance 2024* | 3.7 | 1.7 |
| *Significant Impact?* | No | Yes |

*Emissions output provided in Attachment A.*

## Impact Assessment

A comparison of the greenhouse gas impacts for each alternative and Proposed Project is provided in Table 7. As shown in the table, the No Project Alternative would have the greatest greenhouse gas emissions per service population, and the Reduced Intensity Alternative would have the lowest greenhouse gas emissions per service population among the alternatives reviewed. However, the Proposed Project remains more efficient per service population than all alternatives reviewed. Therefore, all alternatives reviewed would have a greater greenhouse gas impact than the Proposed Project.

**TABLE 7**
**COMPARISON OF ALTERNATIVES AND PROPOSED PROJECT GREENHOUSE GAS IMPACTS**

| | Emissions (MT $CO_2e$/SP) in Analysis Year | |
|---|---|---|
| **Parameter** | **2024** | **2035** |
| Threshold Applied | 3.7 | 1.7 |
| Proposed Project Impact | 2.52 | 2.25 |
| No Project Alternative | 6.18 | 5.57 |
| Reduced Intensity Alternative Impact | 2.56 | 2.29 |
| Mercy Oaks Campus Alternative | 2.98 | 2.64 |

## References

GHD. 2019. Dignity Mercy Medical Center, Redding North State Pavilion Project Greenhouse Gas Report. March 17.

USGBC. 2019. Building Area Per Employee by Business Type. Website: https://www.usgbc.org/drupal/legacy/usgbc/docs/Archive/General/Docs4111.pdf. Accessed: March 18, 2019

Dignity - NO PROJECT Alternative Construction - Shasta County, Annual

# Dignity - NO PROJECT Alternative Construction

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Office Park | 95.40 | 1000sqft | 2.19 | 95,400.00 | 0 |
| Parking Lot | 540.00 | Space | 4.86 | 216,000.00 | 0 |
| High Turnover (Sit Down Restaurant) | 10.80 | 1000sqft | 0.25 | 10,800.00 | 0 |
| Strip Mall | 28.40 | 1000sqft | 0.65 | 28,400.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - No Project Alternative Total project site of 10.55 acres.

Construction Phase - Default Phasing and Durations

Off-road Equipment - Default Equipment

Trips and VMT - Default Construction Trips

Demolition - 6,129 tons of bldg and pavement removal

Grading - All cut and fill to be balanced onsite

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblStationaryGeneratorsPumpsUse | HorsePowerValue | 0.00 | 500.00 |
| tblStationaryGeneratorsPumpsUse | HoursPerDay | 0.00 | 0.50 |
| tblStationaryGeneratorsPumpsUse | HoursPerYear | 0.00 | 50.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2020 | 0.3924 | 3.7176 | 2.9146 | 6.9000e-003 | 0.3817 | 0.1640 | 0.5457 | 0.1368 | 0.1536 | 0.2904 | 0.0000 | 617.9670 | 617.9670 | 0.1018 | 0.0000 | 620.5110 |
| 2021 | 1.6811 | 0.3636 | 0.3730 | 7.7000e-004 | 0.0161 | 0.0166 | 0.0327 | 4.3700e-003 | 0.0155 | 0.0199 | 0.0000 | 68.8263 | 68.8263 | 0.0131 | 0.0000 | 69.1549 |
| **Maximum** | **1.6811** | **3.7176** | **2.9146** | **6.9000e-003** | **0.3817** | **0.1640** | **0.5457** | **0.1368** | **0.1536** | **0.2904** | **0.0000** | **617.9670** | **617.9670** | **0.1018** | **0.0000** | **620.5110** |

### 2.2 Overall Operational

**Not Applicable**

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2020 | 1/28/2020 | 5 | 20 | |
| 2 | Site Preparation | Site Preparation | 1/29/2020 | 2/11/2020 | 5 | 10 | |
| 3 | Grading | Grading | 2/12/2020 | 3/10/2020 | 5 | 20 | |
| 4 | Building Construction | Building Construction | 3/11/2020 | 1/26/2021 | 5 | 230 | |
| 5 | Paving | Paving | 1/27/2021 | 2/23/2021 | 5 | 20 | |
| 6 | Architectural Coating | Architectural Coating | 2/24/2021 | 3/23/2021 | 5 | 20 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 10**

**Acres of Paving: 4.86**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 201,900; Non-Residential Outdoor: 67,300; Striped Parking**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 1 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 606.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 135.00 | 57.00 | 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 | 27.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2020

### 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 | | | | | 0.0666 | 0.0000 | 0.0666 | 0.0101 | 0.0000 | 0.0101 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0331 | 0.3320 | 0.2175 | 3.9000e-004 | | 0.0166 | 0.0166 | | 0.0154 | 0.0154 | 0.0000 | 33.9986 | 33.9986 | 9.6000e-003 | 0.0000 | 34.2386 |
| **Total** | **0.0331** | **0.3320** | **0.2175** | **3.9000e-004** | **0.0666** | **0.0166** | **0.0832** | **0.0101** | **0.0154** | **0.0255** | **0.0000** | **33.9986** | **33.9986** | **9.6000e-003** | **0.0000** | **34.2386** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 2.4200e-003 | 0.0853 | 0.0121 | 2.4000e-004 | 5.0800e-003 | 3.3000e-004 | 5.4100e-003 | 1.4000e-003 | 3.1000e-004 | 1.7100e-003 | 0.0000 | 23.2552 | 23.2552 | 1.2900e-003 | 0.0000 | 23.2873 |
| 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 | 6.2000e-004 | 5.0000e-004 | 4.7600e-003 | 1.0000e-005 | 1.1700e-003 | 1.0000e-005 | 1.1800e-003 | 3.1000e-004 | 1.0000e-005 | 3.2000e-004 | 0.0000 | 1.0855 | 1.0855 | 4.0000e-005 | 0.0000 | 1.0864 |
| **Total** | **3.0400e-003** | **0.0858** | **0.0168** | **2.5000e-004** | **6.2500e-003** | **3.4000e-004** | **6.5900e-003** | **1.7100e-003** | **3.2000e-004** | **2.0300e-003** | **0.0000** | **24.3406** | **24.3406** | **1.3300e-003** | **0.0000** | **24.3737** |

## 3.3 Site Preparation - 2020

### 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 | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0204 | 0.2121 | 0.1076 | 1.9000e-004 | | 0.0110 | 0.0110 | | 0.0101 | 0.0101 | 0.0000 | 16.7153 | 16.7153 | 5.4100e-003 | 0.0000 | 16.8505 |
| **Total** | **0.0204** | **0.2121** | **0.1076** | **1.9000e-004** | **0.0903** | **0.0110** | **0.1013** | **0.0497** | **0.0101** | **0.0598** | **0.0000** | **16.7153** | **16.7153** | **5.4100e-003** | **0.0000** | **16.8505** |

### 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 | 3.7000e-004 | 3.0000e-004 | 2.8500e-003 | 1.0000e-005 | 7.0000e-004 | 1.0000e-005 | 7.1000e-004 | 1.9000e-004 | 0.0000 | 1.9000e-004 | 0.0000 | 0.6513 | 0.6513 | 2.0000e-005 | 0.0000 | 0.6518 |
| **Total** | **3.7000e-004** | **3.0000e-004** | **2.8500e-003** | **1.0000e-005** | **7.0000e-004** | **1.0000e-005** | **7.1000e-004** | **1.9000e-004** | **0.0000** | **1.9000e-004** | **0.0000** | **0.6513** | **0.6513** | **2.0000e-005** | **0.0000** | **0.6518** |

## 3.4 Grading - 2020

### 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 | | | | | 0.0655 | 0.0000 | 0.0655 | 0.0337 | 0.0000 | 0.0337 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0243 | 0.2639 | 0.1605 | 3.0000e-004 | | 0.0127 | 0.0127 | | 0.0117 | 0.0117 | 0.0000 | 26.0588 | 26.0588 | 8.4300e-003 | 0.0000 | 26.2694 |
| **Total** | **0.0243** | **0.2639** | **0.1605** | **3.0000e-004** | **0.0655** | **0.0127** | **0.0783** | **0.0337** | **0.0117** | **0.0454** | **0.0000** | **26.0588** | **26.0588** | **8.4300e-003** | **0.0000** | **26.2694** |

### 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 | 6.2000e-004 | 5.0000e-004 | 4.7600e-003 | 1.0000e-005 | 1.1700e-003 | 1.0000e-005 | 1.1800e-003 | 3.1000e-004 | 1.0000e-005 | 3.2000e-004 | 0.0000 | 1.0855 | 1.0855 | 4.0000e-005 | 0.0000 | 1.0864 |
| **Total** | **6.2000e-004** | **5.0000e-004** | **4.7600e-003** | **1.0000e-005** | **1.1700e-003** | **1.0000e-005** | **1.1800e-003** | **3.1000e-004** | **1.0000e-005** | **3.2000e-004** | **0.0000** | **1.0855** | **1.0855** | **4.0000e-005** | **0.0000** | **1.0864** |

## 3.5 Building Construction - 2020

### 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 | 0.2247 | 2.0337 | 1.7859 | 2.8500e-003 | | 0.1184 | 0.1184 | | 0.1113 | 0.1113 | 0.0000 | 245.5066 | 245.5066 | 0.0599 | 0.0000 | 247.0040 |
| **Total** | **0.2247** | **2.0337** | **1.7859** | **2.8500e-003** | | **0.1184** | **0.1184** | | **0.1113** | **0.1113** | **0.0000** | **245.5066** | **245.5066** | **0.0599** | **0.0000** | **247.0040** |

### 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 | 0.0263 | 0.7415 | 0.1647 | 1.7500e-003 | 0.0393 | 4.1000e-003 | 0.0434 | 0.0114 | 3.9200e-003 | 0.0153 | 0.0000 | 166.0567 | 166.0567 | 0.0135 | 0.0000 | 166.3933 |
| Worker | 0.0595 | 0.0478 | 0.4538 | 1.1500e-003 | 0.1118 | 8.4000e-004 | 0.1127 | 0.0298 | 7.7000e-004 | 0.0305 | 0.0000 | 103.5536 | 103.5536 | 3.5800e-003 | 0.0000 | 103.6432 |
| **Total** | **0.0859** | **0.7893** | **0.6185** | **2.9000e-003** | **0.1511** | **4.9400e-003** | **0.1561** | **0.0412** | **4.6900e-003** | **0.0459** | **0.0000** | **269.6104** | **269.6104** | **0.0170** | **0.0000** | **270.0366** |

## 3.5 Building Construction - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0171 | 0.1569 | 0.1492 | 2.4000e-004 | | 8.6300e-003 | 8.6300e-003 | | 8.1100e-003 | 8.1100e-003 | 0.0000 | 20.8474 | 20.8474 | 5.0300e-003 | 0.0000 | 20.9731 |
| **Total** | **0.0171** | **0.1569** | **0.1492** | **2.4000e-004** | | **8.6300e-003** | **8.6300e-003** | | **8.1100e-003** | **8.1100e-003** | **0.0000** | **20.8474** | **20.8474** | **5.0300e-003** | **0.0000** | **20.9731** |

### 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 | 1.8600e-003 | 0.0574 | 0.0123 | 1.5000e-004 | 3.3400e-003 | 1.8000e-004 | 3.5100e-003 | 9.7000e-004 | 1.7000e-004 | 1.1400e-003 | 0.0000 | 13.9805 | 13.9805 | 1.1000e-003 | 0.0000 | 14.0081 |
| Worker | 4.6700e-003 | 3.5900e-003 | 0.0348 | 9.0000e-005 | 9.4900e-003 | 7.0000e-005 | 9.5600e-003 | 2.5300e-003 | 6.0000e-005 | 2.5900e-003 | 0.0000 | 8.4876 | 8.4876 | 2.7000e-004 | 0.0000 | 8.4944 |
| **Total** | **6.5300e-003** | **0.0610** | **0.0471** | **2.4000e-004** | **0.0128** | **2.5000e-004** | **0.0131** | **3.5000e-003** | **2.3000e-004** | **3.7300e-003** | **0.0000** | **22.4682** | **22.4682** | **1.3700e-003** | **0.0000** | **22.5024** |

## 3.6 Paving - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0126 | 0.1292 | 0.1465 | 2.3000e-004 | | 6.7800e-003 | 6.7800e-003 | | 6.2400e-003 | 6.2400e-003 | 0.0000 | 20.0235 | 20.0235 | 6.4800e-003 | 0.0000 | 20.1854 |
| Paving | 6.3700e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0189** | **0.1292** | **0.1465** | **2.3000e-004** | | **6.7800e-003** | **6.7800e-003** | | **6.2400e-003** | **6.2400e-003** | **0.0000** | **20.0235** | **20.0235** | **6.4800e-003** | **0.0000** | **20.1854** |

### 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 | 5.8000e-004 | 4.4000e-004 | 4.2900e-003 | 1.0000e-005 | 1.1700e-003 | 1.0000e-005 | 1.1800e-003 | 3.1000e-004 | 1.0000e-005 | 3.2000e-004 | 0.0000 | 1.0479 | 1.0479 | 3.0000e-005 | 0.0000 | 1.0487 |
| **Total** | **5.8000e-004** | **4.4000e-004** | **4.2900e-003** | **1.0000e-005** | **1.1700e-003** | **1.0000e-005** | **1.1800e-003** | **3.1000e-004** | **1.0000e-005** | **3.2000e-004** | **0.0000** | **1.0479** | **1.0479** | **3.0000e-005** | **0.0000** | **1.0487** |

## 3.7 Architectural Coating - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.6348 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.1900e-003 | 0.0153 | 0.0182 | 3.0000e-005 | | 9.4000e-004 | 9.4000e-004 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 2.5533 | 2.5533 | 1.8000e-004 | 0.0000 | 2.5576 |
| **Total** | **1.6370** | **0.0153** | **0.0182** | **3.0000e-005** | | **9.4000e-004** | **9.4000e-004** | | **9.4000e-004** | **9.4000e-004** | **0.0000** | **2.5533** | **2.5533** | **1.8000e-004** | **0.0000** | **2.5576** |

### 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 | 1.0400e-003 | 8.0000e-004 | 7.7300e-003 | 2.0000e-005 | 2.1100e-003 | 2.0000e-005 | 2.1300e-003 | 5.6000e-004 | 1.0000e-005 | 5.8000e-004 | 0.0000 | 1.8861 | 1.8861 | 6.0000e-005 | 0.0000 | 1.8876 |
| **Total** | **1.0400e-003** | **8.0000e-004** | **7.7300e-003** | **2.0000e-005** | **2.1100e-003** | **2.0000e-005** | **2.1300e-003** | **5.6000e-004** | **1.0000e-005** | **5.8000e-004** | **0.0000** | **1.8861** | **1.8861** | **6.0000e-005** | **0.0000** | **1.8876** |

# Dignity - NO PROJECT Alternative Op 2024

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Office Park | 95.40 | 1000sqft | 2.19 | 95,400.00 | 0 |
| Parking Lot | 540.00 | Space | 4.86 | 216,000.00 | 0 |
| High Turnover (Sit Down Restaurant) | 10.80 | 1000sqft | 0.25 | 10,800.00 | 0 |
| Strip Mall | 28.40 | 1000sqft | 0.65 | 28,400.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2024 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - No Project Alt Operation

Construction Phase - Op Only

Vehicle Trips - ITE Trip Generation Rates, Consistent with TIAR

Water And Wastewater - Default

Sequestration - Net 77 trees to be planted

Mobile Land Use Mitigation - 0.83 mile to Priority Development Area. 1.5 miles to Downtown Transfer Station. Improved Ped network.

Waste Mitigation - State requirement for 75 percent diversion by 2020

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblSequestration | NumberOfNewTrees | 0.00 | 3.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 38.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 30.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | -1.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 7.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Not Applicable**

### 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 | 0.7037 | 6.0000e-005 | 6.1900e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0128 |
| Energy | 0.0256 | 0.2328 | 0.1956 | 1.4000e-003 | | 0.0177 | 0.0177 | | 0.0177 | 0.0177 | 0.0000 | 354.3024 | 354.3024 | 6.4300e-003 | 6.2200e-003 | 356.3162 |
| Mobile | 0.8736 | 7.3413 | 6.6863 | 0.0281 | 1.5398 | 0.0204 | 1.5601 | 0.4143 | 0.0191 | 0.4334 | 0.0000 | 2,610.2081 | 2,610.2081 | 0.2072 | 0.0000 | 2,615.3892 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 12.5377 | 0.0000 | 12.5377 | 0.7410 | 0.0000 | 31.0617 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 7.0867 | 9.4590 | 16.5457 | 0.7280 | 0.0173 | 39.9117 |
| **Total** | **1.6029** | **7.5742** | **6.8880** | **0.0295** | **1.5398** | **0.0381** | **1.5778** | **0.4143** | **0.0368** | **0.4511** | **19.6244** | **2,973.9816** | **2,993.6061** | **1.6827** | **0.0236** | **3,042.6917** |

| | ROG | NOx | 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** | **3.70** | **6.92** | **15.01** | **17.41** | **24.15** | **12.08** | **23.89** | **24.15** | **11.79** | **23.27** | **65.71** | **16.16** | **16.95** | **57.05** | **0.00** | **17.98** |

## 2.3 Vegetation

**Vegetation**

| | CO2e |
|---|---|
| Category | MT |
| New Trees | 55.9320 |
| **Total** | **55.9320** |

## 3.0 Construction Detail

**Not Applicable**

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.8736 | 7.3413 | 6.6863 | 0.0281 | 1.5398 | 0.0204 | 1.5601 | 0.4143 | 0.0191 | 0.4334 | 0.0000 | 2,610.2081 | 2,610.2081 | 0.2072 | 0.0000 | 2,615.3892 |
| Unmitigated | 0.9352 | 7.9048 | 7.9026 | 0.0343 | 2.0299 | 0.0256 | 2.0555 | 0.5462 | 0.0240 | 0.5702 | 0.0000 | 3,183.6254 | 3,183.6254 | 0.2191 | 0.0000 | 3,189.1026 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| High Turnover (Sit Down Restaurant) | 1,373.22 | 1,710.40 | 1423.87 | 1,657,582 | 1,257,356 |
| Office Park | 1,089.47 | 156.46 | 72.50 | 2,032,316 | 1,541,610 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Strip Mall | 1,258.69 | 1,193.94 | 580.21 | 1,774,907 | 1,346,353 |
| Total | 3,721.38 | 3,060.79 | 2,076.59 | 5,464,805 | 4,145,318 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| High Turnover (Sit Down Restaurant) | 9.50 | 7.30 | 7.30 | 8.50 | 72.50 | 19.00 | 37 | 20 | 43 |
| Office Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 82 | 15 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Strip Mall | 9.50 | 7.30 | 7.30 | 16.60 | 64.40 | 19.00 | 45 | 40 | 15 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| High Turnover (Sit Down Restaurant) | 0.538831 | 0.031280 | 0.180238 | 0.098915 | 0.025981 | 0.005683 | 0.012706 | 0.096234 | 0.001312 | 0.001172 | 0.005254 | 0.001260 | 0.001133 |
| Office Park | 0.538831 | 0.031280 | 0.180238 | 0.098915 | 0.025981 | 0.005683 | 0.012706 | 0.096234 | 0.001312 | 0.001172 | 0.005254 | 0.001260 | 0.001133 |
| Parking Lot | 0.538831 | 0.031280 | 0.180238 | 0.098915 | 0.025981 | 0.005683 | 0.012706 | 0.096234 | 0.001312 | 0.001172 | 0.005254 | 0.001260 | 0.001133 |
| Strip Mall | 0.538831 | 0.031280 | 0.180238 | 0.098915 | 0.025981 | 0.005683 | 0.012706 | 0.096234 | 0.001312 | 0.001172 | 0.005254 | 0.001260 | 0.001133 |

## 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 | 100.8442 | 100.8442 | 1.5700e-003 | 1.5700e-003 | 101.3518 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 100.8442 | 100.8442 | 1.5700e-003 | 1.5700e-003 | 101.3518 |
| NaturalGas Mitigated | 0.0256 | 0.2328 | 0.1956 | 1.4000e-003 | | 0.0177 | 0.0177 | | 0.0177 | 0.0177 | 0.0000 | 253.4582 | 253.4582 | 4.8600e-003 | 4.6500e-003 | 254.9644 |
| NaturalGas Unmitigated | 0.0256 | 0.2328 | 0.1956 | 1.4000e-003 | | 0.0177 | 0.0177 | | 0.0177 | 0.0177 | 0.0000 | 253.4582 | 253.4582 | 4.8600e-003 | 4.6500e-003 | 254.9644 |

### 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 | | | | | |
| High Turnover (Sit Down Restaurant) | 2.27254e+006 | 0.0123 | 0.1114 | 0.0936 | 6.7000e-004 | | 8.4700e-003 | 8.4700e-003 | | 8.4700e-003 | 8.4700e-003 | 0.0000 | 121.2712 | 121.2712 | 2.3200e-003 | 2.2200e-003 | 121.9918 |
| Office Park | 2.17321e+006 | 0.0117 | 0.1065 | 0.0895 | 6.4000e-004 | | 8.1000e-003 | 8.1000e-003 | | 8.1000e-003 | 8.1000e-003 | 0.0000 | 115.9709 | 115.9709 | 2.2200e-003 | 2.1300e-003 | 116.6600 |
| 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 |
| Strip Mall | 303880 | 1.6400e-003 | 0.0149 | 0.0125 | 9.0000e-005 | | 1.1300e-003 | 1.1300e-003 | | 1.1300e-003 | 1.1300e-003 | 0.0000 | 16.2162 | 16.2162 | 3.1000e-004 | 3.0000e-004 | 16.3126 |
| **Total** | | **0.0256** | **0.2328** | **0.1956** | **1.4000e-003** | | **0.0177** | **0.0177** | | **0.0177** | **0.0177** | **0.0000** | **253.4582** | **253.4582** | **4.8500e-003** | **4.6500e-003** | **254.9644** |

## 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 | | | | | |
| High Turnover (Sit Down Restaurant) | 2.27254e+006 | 0.0123 | 0.1114 | 0.0936 | 6.7000e-004 | | 8.4700e-003 | 8.4700e-003 | | 8.4700e-003 | 8.4700e-003 | 0.0000 | 121.2712 | 121.2712 | 2.3200e-003 | 2.2200e-003 | 121.9918 |
| Office Park | 2.17321e+006 | 0.0117 | 0.1065 | 0.0895 | 6.4000e-004 | | 8.1000e-003 | 8.1000e-003 | | 8.1000e-003 | 8.1000e-003 | 0.0000 | 115.9709 | 115.9709 | 2.2200e-003 | 2.1300e-003 | 116.6600 |
| 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 |
| Strip Mall | 303880 | 1.6400e-003 | 0.0149 | 0.0125 | 9.0000e-005 | | 1.1300e-003 | 1.1300e-003 | | 1.1300e-003 | 1.1300e-003 | 0.0000 | 16.2162 | 16.2162 | 3.1000e-004 | 3.0000e-004 | 16.3126 |
| **Total** | | **0.0256** | **0.2328** | **0.1956** | **1.4000e-003** | | **0.0177** | **0.0177** | | **0.0177** | **0.0177** | **0.0000** | **253.4582** | **253.4582** | **4.8500e-003** | **4.6500e-003** | **254.9644** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 312876 | 18.2138 | 2.8000e-004 | 2.8000e-004 | 18.3055 |
| Office Park | 1.11236e+006 | 64.7552 | 1.0100e-003 | 1.0100e-003 | 65.0812 |
| Parking Lot | 75600 | 4.4010 | 7.0000e-005 | 7.0000e-005 | 4.4231 |
| Strip Mall | 231460 | 13.4742 | 2.1000e-004 | 2.1000e-004 | 13.5421 |
| **Total** | | **100.8442** | **1.5700e-003** | **1.5700e-003** | **101.3518** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 312876 | 18.2138 | 2.8000e-004 | 2.8000e-004 | 18.3055 |
| Office Park | 1.11236e+006 | 64.7552 | 1.0100e-003 | 1.0100e-003 | 65.0812 |
| Parking Lot | 75600 | 4.4010 | 7.0000e-005 | 7.0000e-005 | 4.4231 |
| Strip Mall | 231460 | 13.4742 | 2.1000e-004 | 2.1000e-004 | 13.5421 |
| **Total** | | **100.8442** | **1.5700e-003** | **1.5700e-003** | **101.3518** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.7037 | 6.0000e-005 | 6.1900e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0128 |
| Unmitigated | 0.7037 | 6.0000e-005 | 6.1900e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0128 |

## 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 | 0.1635 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5396 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.7000e-004 | 6.0000e-005 | 6.1900e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0128 |
| **Total** | **0.7037** | **6.0000e-005** | **6.1900e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0128** |

### 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 | 0.1635 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5396 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.7000e-004 | 6.0000e-005 | 6.1900e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0128 |
| **Total** | **0.7037** | **6.0000e-005** | **6.1900e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0128** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 16.5457 | 0.7280 | 0.0173 | 39.9117 |
| Unmitigated | 16.5457 | 0.7280 | 0.0173 | 39.9117 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 3.27816 / 0.209245 | 2.1153 | 0.1068 | 2.5400e-003 | 5.5428 |
| Office Park | 16.9558 / 10.3923 | 12.8377 | 0.5526 | 0.0132 | 30.5756 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Strip Mall | 2.10366 / 1.28934 | 1.5927 | 0.0686 | 1.6300e-003 | 3.7934 |
| **Total** | | **16.5457** | **0.7280** | **0.0173** | **39.9117** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 3.27816 / 0.209245 | 2.1153 | 0.1068 | 2.5400e-003 | 5.5428 |
| Office Park | 16.9558 / 10.3923 | 12.8377 | 0.5526 | 0.0132 | 30.5756 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Strip Mall | 2.10366 / 1.28934 | 1.5927 | 0.0686 | 1.6300e-003 | 3.7934 |
| **Total** | | **16.5457** | **0.7280** | **0.0173** | **39.9117** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 12.5377 | 0.7410 | 0.0000 | 31.0617 |
| Unmitigated | 50.1510 | 2.9638 | 0.0000 | 124.2469 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 128.52 | 26.0884 | 1.5418 | 0.0000 | 64.6329 |
| Office Park | 88.72 | 18.0094 | 1.0643 | 0.0000 | 44.6174 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Strip Mall | 29.82 | 6.0532 | 0.3577 | 0.0000 | 14.9965 |
| **Total** | | **50.1510** | **2.9638** | **0.0000** | **124.2468** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 32.13 | 6.5221 | 0.3855 | 0.0000 | 16.1582 |
| Office Park | 22.18 | 4.5023 | 0.2661 | 0.0000 | 11.1544 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Strip Mall | 7.455 | 1.5133 | 0.0894 | 0.0000 | 3.7491 |
| **Total** | | **12.5377** | **0.7410** | **0.0000** | **31.0617** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | 55.9320 | 0.0000 | 0.0000 | 55.9320 |

## 11.2 Net New Trees

**Species Class**

| | Number of Trees | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | | MT | | | |
| Cedar/Larch | 3 | 1.5840 | 0.0000 | 0.0000 | 1.5840 |
| Miscellaneous | 38 | 26.9040 | 0.0000 | 0.0000 | 26.9040 |
| Mixed Hardwood | 30 | 22.0200 | 0.0000 | 0.0000 | 22.0200 |
| Pine | -1 | -0.6380 | 0.0000 | 0.0000 | -0.6380 |
| Soft Maple | 7 | 6.0620 | 0.0000 | 0.0000 | 6.0620 |
| **Total** | | **55.9320** | **0.0000** | **0.0000** | **55.9320** |

# Dignity - NO PROJECT Alternative Op 2035

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Office Park | 95.40 | 1000sqft | 2.19 | 95,400.00 | 0 |
| Parking Lot | 540.00 | Space | 4.86 | 216,000.00 | 0 |
| High Turnover (Sit Down Restaurant) | 10.80 | 1000sqft | 0.25 | 10,800.00 | 0 |
| Strip Mall | 28.40 | 1000sqft | 0.65 | 28,400.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2035 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - No Project Alt Operation

Construction Phase - Op Only

Vehicle Trips - ITE Trip Generation Rates, Consistent with TIAR

Water And Wastewater - Default

Sequestration - Net 77 trees to be planted

Mobile Land Use Mitigation - 0.83 mile to Priority Development Area. 1.5 miles to Downtown Transfer Station. Improved Ped network.

Waste Mitigation - State requirement for 75 percent diversion by 2020

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblSequestration | NumberOfNewTrees | 0.00 | 3.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 38.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 30.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | -1.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 7.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Not Applicable**

### 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 | 0.7037 | 6.0000e-005 | 6.1600e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0128 |
| Energy | 0.0256 | 0.2328 | 0.1956 | 1.4000e-003 | | 0.0177 | 0.0177 | | 0.0177 | 0.0177 | 0.0000 | 354.3024 | 354.3024 | 6.4300e-003 | 6.2200e-003 | 356.3162 |
| Mobile | 0.4776 | 6.5988 | 3.5946 | 0.0248 | 1.5379 | 0.0103 | 1.5482 | 0.4133 | 9.6200e-003 | 0.4229 | 0.0000 | 2,312.2126 | 2,312.2126 | 0.2181 | 0.0000 | 2,317.6641 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 12.5377 | 0.0000 | 12.5377 | 0.7410 | 0.0000 | 31.0617 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 7.0867 | 9.4590 | 16.5457 | 0.7280 | 0.0173 | 39.9117 |
| **Total** | **1.2069** | **6.8317** | **3.7963** | **0.0262** | **1.5379** | **0.0280** | **1.5659** | **0.4133** | **0.0273** | **0.4406** | **19.6244** | **2,675.9861** | **2,695.6106** | **1.6935** | **0.0236** | **2,744.9666** |

| | ROG | NOx | 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** | **2.98** | **4.38** | **15.36** | **16.60** | **24.14** | **8.44** | **23.91** | **24.14** | **8.13** | **23.32** | **65.71** | **15.28** | **16.18** | **56.83** | **0.00** | **17.35** |

## 2.3 Vegetation

**Vegetation**

| | CO2e |
|---|---|
| Category | MT |
| New Trees | 55.9320 |
| **Total** | **55.9320** |

## 3.0 Construction Detail

**Not Applicable**

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.4776 | 6.5988 | 3.5946 | 0.0248 | 1.5379 | 0.0103 | 1.5482 | 0.4133 | 9.6200e-003 | 0.4229 | 0.0000 | 2,312.2126 | 2,312.2126 | 0.2181 | 0.0000 | 2,317.6641 |
| Unmitigated | 0.5147 | 6.9115 | 4.2835 | 0.0300 | 2.0274 | 0.0129 | 2.0402 | 0.5449 | 0.0120 | 0.5569 | 0.0000 | 2,795.0155 | 2,795.0155 | 0.2242 | 0.0000 | 2,800.6202 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| High Turnover (Sit Down Restaurant) | 1,373.22 | 1,710.40 | 1423.87 | 1,657,582 | 1,257,356 |
| Office Park | 1,089.47 | 156.46 | 72.50 | 2,032,316 | 1,541,610 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Strip Mall | 1,258.69 | 1,193.94 | 580.21 | 1,774,907 | 1,346,353 |
| Total | 3,721.38 | 3,060.79 | 2,076.59 | 5,464,805 | 4,145,318 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| High Turnover (Sit Down Restaurant) | 9.50 | 7.30 | 7.30 | 8.50 | 72.50 | 19.00 | 37 | 20 | 43 |
| Office Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 82 | 15 | 3 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Strip Mall | 9.50 | 7.30 | 7.30 | 16.60 | 64.40 | 19.00 | 45 | 40 | 15 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| High Turnover (Sit Down Restaurant) | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |
| Office Park | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |
| Parking Lot | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |
| Strip Mall | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |

## 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 | 100.8442 | 100.8442 | 1.5700e-003 | 1.5700e-003 | 101.3518 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 100.8442 | 100.8442 | 1.5700e-003 | 1.5700e-003 | 101.3518 |
| NaturalGas Mitigated | 0.0256 | 0.2328 | 0.1956 | 1.4000e-003 | | 0.0177 | 0.0177 | | 0.0177 | 0.0177 | 0.0000 | 253.4582 | 253.4582 | 4.8600e-003 | 4.6500e-003 | 254.9644 |
| NaturalGas Unmitigated | 0.0256 | 0.2328 | 0.1956 | 1.4000e-003 | | 0.0177 | 0.0177 | | 0.0177 | 0.0177 | 0.0000 | 253.4582 | 253.4582 | 4.8600e-003 | 4.6500e-003 | 254.9644 |

### 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 | | | | | |
| High Turnover (Sit Down Restaurant) | 2.27254e+006 | 0.0123 | 0.1114 | 0.0936 | 6.7000e-004 | | 8.4700e-003 | 8.4700e-003 | | 8.4700e-003 | 8.4700e-003 | 0.0000 | 121.2712 | 121.2712 | 2.3200e-003 | 2.2200e-003 | 121.9918 |
| Office Park | 2.17321e+006 | 0.0117 | 0.1065 | 0.0895 | 6.4000e-004 | | 8.1000e-003 | 8.1000e-003 | | 8.1000e-003 | 8.1000e-003 | 0.0000 | 115.9709 | 115.9709 | 2.2200e-003 | 2.1300e-003 | 116.6600 |
| 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 |
| Strip Mall | 303880 | 1.6400e-003 | 0.0149 | 0.0125 | 9.0000e-005 | | 1.1300e-003 | 1.1300e-003 | | 1.1300e-003 | 1.1300e-003 | 0.0000 | 16.2162 | 16.2162 | 3.1000e-004 | 3.0000e-004 | 16.3126 |
| **Total** | | **0.0256** | **0.2328** | **0.1956** | **1.4000e-003** | | **0.0177** | **0.0177** | | **0.0177** | **0.0177** | **0.0000** | **253.4582** | **253.4582** | **4.8500e-003** | **4.6500e-003** | **254.9644** |

**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 | | | | | |
| High Turnover (Sit Down Restaurant) | 2.27254e+006 | 0.0123 | 0.1114 | 0.0936 | 6.7000e-004 | | 8.4700e-003 | 8.4700e-003 | | 8.4700e-003 | 8.4700e-003 | 0.0000 | 121.2712 | 121.2712 | 2.3200e-003 | 2.2200e-003 | 121.9918 |
| Office Park | 2.17321e+006 | 0.0117 | 0.1065 | 0.0895 | 6.4000e-004 | | 8.1000e-003 | 8.1000e-003 | | 8.1000e-003 | 8.1000e-003 | 0.0000 | 115.9709 | 115.9709 | 2.2200e-003 | 2.1300e-003 | 116.6600 |
| 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 |
| Strip Mall | 303880 | 1.6400e-003 | 0.0149 | 0.0125 | 9.0000e-005 | | 1.1300e-003 | 1.1300e-003 | | 1.1300e-003 | 1.1300e-003 | 0.0000 | 16.2162 | 16.2162 | 3.1000e-004 | 3.0000e-004 | 16.3126 |
| **Total** | | **0.0256** | **0.2328** | **0.1956** | **1.4000e-003** | | **0.0177** | **0.0177** | | **0.0177** | **0.0177** | **0.0000** | **253.4582** | **253.4582** | **4.8500e-003** | **4.6500e-003** | **254.9644** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 312876 | 18.2138 | 2.8000e-004 | 2.8000e-004 | 18.3055 |
| Office Park | 1.11236e+006 | 64.7552 | 1.0100e-003 | 1.0100e-003 | 65.0812 |
| Parking Lot | 75600 | 4.4010 | 7.0000e-005 | 7.0000e-005 | 4.4231 |
| Strip Mall | 231460 | 13.4742 | 2.1000e-004 | 2.1000e-004 | 13.5421 |
| **Total** | | **100.8442** | **1.5700e-003** | **1.5700e-003** | **101.3518** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 312876 | 18.2138 | 2.8000e-004 | 2.8000e-004 | 18.3055 |
| Office Park | 1.11236e+006 | 64.7552 | 1.0100e-003 | 1.0100e-003 | 65.0812 |
| Parking Lot | 75600 | 4.4010 | 7.0000e-005 | 7.0000e-005 | 4.4231 |
| Strip Mall | 231460 | 13.4742 | 2.1000e-004 | 2.1000e-004 | 13.5421 |
| **Total** | | **100.8442** | **1.5700e-003** | **1.5700e-003** | **101.3518** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.7037 | 6.0000e-005 | 6.1600e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0128 |
| Unmitigated | 0.7037 | 6.0000e-005 | 6.1600e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0128 |

## 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 | 0.1635 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5396 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.6000e-004 | 6.0000e-005 | 6.1600e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0128 |
| **Total** | **0.7037** | **6.0000e-005** | **6.1600e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0128** |

### 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 | 0.1635 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5396 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.6000e-004 | 6.0000e-005 | 6.1600e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0128 |
| **Total** | **0.7037** | **6.0000e-005** | **6.1600e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0128** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 16.5457 | 0.7280 | 0.0173 | 39.9117 |
| Unmitigated | 16.5457 | 0.7280 | 0.0173 | 39.9117 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 3.27816 / 0.209245 | 2.1153 | 0.1068 | 2.5400e-003 | 5.5428 |
| Office Park | 16.9558 / 10.3923 | 12.8377 | 0.5526 | 0.0132 | 30.5756 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Strip Mall | 2.10366 / 1.28934 | 1.5927 | 0.0686 | 1.6300e-003 | 3.7934 |
| **Total** | | **16.5457** | **0.7280** | **0.0173** | **39.9117** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 3.27816 / 0.209245 | 2.1153 | 0.1068 | 2.5400e-003 | 5.5428 |
| Office Park | 16.9558 / 10.3923 | 12.8377 | 0.5526 | 0.0132 | 30.5756 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Strip Mall | 2.10366 / 1.28934 | 1.5927 | 0.0686 | 1.6300e-003 | 3.7934 |
| **Total** | | **16.5457** | **0.7280** | **0.0173** | **39.9117** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 12.5377 | 0.7410 | 0.0000 | 31.0617 |
| Unmitigated | 50.1510 | 2.9638 | 0.0000 | 124.2469 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 128.52 | 26.0884 | 1.5418 | 0.0000 | 64.6329 |
| Office Park | 88.72 | 18.0094 | 1.0643 | 0.0000 | 44.6174 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Strip Mall | 29.82 | 6.0532 | 0.3577 | 0.0000 | 14.9965 |
| **Total** | | **50.1510** | **2.9638** | **0.0000** | **124.2468** |

## Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| High Turnover (Sit Down Restaurant) | 32.13 | 6.5221 | 0.3855 | 0.0000 | 16.1582 |
| Office Park | 22.18 | 4.5023 | 0.2661 | 0.0000 | 11.1544 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Strip Mall | 7.455 | 1.5133 | 0.0894 | 0.0000 | 3.7491 |
| **Total** | | **12.5377** | **0.7410** | **0.0000** | **31.0617** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

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

### Boilers

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

### User Defined Equipment

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

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | 55.9320 | 0.0000 | 0.0000 | 55.9320 |

## 11.2 Net New Trees

**Species Class**

| | Number of Trees | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | | MT | | | |
| Cedar/Larch | 3 | 1.5840 | 0.0000 | 0.0000 | 1.5840 |
| Miscellaneous | 38 | 26.9040 | 0.0000 | 0.0000 | 26.9040 |
| Mixed Hardwood | 30 | 22.0200 | 0.0000 | 0.0000 | 22.0200 |
| Pine | -1 | -0.6380 | 0.0000 | 0.0000 | -0.6380 |
| Soft Maple | 7 | 6.0620 | 0.0000 | 0.0000 | 6.0620 |
| **Total** | | **55.9320** | **0.0000** | **0.0000** | **55.9320** |

# Dignity - REDUCED INTENSITY Alt Construction

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Medical Office Building | 109.00 | 1000sqft | 6.04 | 109,000.00 | 0 |
| Parking Lot | 461.00 | Space | 4.15 | 184,400.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - Reduced Density Alternative. 109k sf, 461 Parking Spaces. Total project site of 9.72 acres

Construction Phase - Default Phasing and Durations

Off-road Equipment - Default Equipment

Trips and VMT - Default Construction Trips

Demolition - 6,129 tons of bldg and pavement removal

Grading - All cut and fill to be balanced onsite

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|

| | | | |
|---|---|---|---|
| tblLandUse | LotAcreage | 2.50 | 6.04 |
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblStationaryGeneratorsPumpsUse | HorsePowerValue | 0.00 | 500.00 |
| tblStationaryGeneratorsPumpsUse | HoursPerDay | 0.00 | 0.50 |
| tblStationaryGeneratorsPumpsUse | HoursPerYear | 0.00 | 50.00 |
| tblStationaryGeneratorsPumpsUse | NumberOfEquipment | 0.00 | 1.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2020 | 0.4072 | 3.9547 | 3.0263 | 6.8300e-003 | 0.4163 | 0.1773 | 0.5936 | 0.1489 | 0.1657 | 0.3146 | 0.0000 | 608.6292 | 608.6292 | 0.1136 | 0.0000 | 611.4683 |
| 2021 | 1.4715 | 1.2791 | 1.2009 | 2.7100e-003 | 0.0611 | 0.0558 | 0.1169 | 0.0166 | 0.0524 | 0.0690 | 0.0000 | 241.0992 | 241.0992 | 0.0404 | 0.0000 | 242.1087 |
| **Maximum** | **1.4715** | **3.9547** | **3.0263** | **6.8300e-003** | **0.4163** | **0.1773** | **0.5936** | **0.1489** | **0.1657** | **0.3146** | **0.0000** | **608.6292** | **608.6292** | **0.1136** | **0.0000** | **611.4683** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 1/1/2020 | 1/28/2020 | 5 | 20 | |
| 2 | Site Preparation | Site Preparation | 1/29/2020 | 2/11/2020 | 5 | 10 | |
| 3 | Grading | Grading | 2/12/2020 | 3/24/2020 | 5 | 30 | |
| 4 | Building Construction | Building Construction | 3/25/2020 | 5/18/2021 | 5 | 300 | |
| 5 | Paving | Paving | 5/19/2021 | 6/15/2021 | 5 | 20 | |
| 6 | Architectural Coating | Architectural Coating | 6/16/2021 | 7/13/2021 | 5 | 20 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 75**

**Acres of Paving: 4.15**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 163,500; Non-Residential Outdoor: 54,500; Striped Parking**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |

| | | | | | |
|---|---|---|---|---|---|
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 15.00 | 0.00 | 606.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 112.00 | 48.00 | 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 | 22.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2020

### 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 | | | | | 0.0666 | 0.0000 | 0.0666 | 0.0101 | 0.0000 | 0.0101 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0331 | 0.3320 | 0.2175 | 3.9000e-004 | | 0.0166 | 0.0166 | | 0.0154 | 0.0154 | 0.0000 | 33.9986 | 33.9986 | 9.6000e-003 | 0.0000 | 34.2386 |
| **Total** | **0.0331** | **0.3320** | **0.2175** | **3.9000e-004** | **0.0666** | **0.0166** | **0.0832** | **0.0101** | **0.0154** | **0.0255** | **0.0000** | **33.9986** | **33.9986** | **9.6000e-003** | **0.0000** | **34.2386** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 2.4200e-003 | 0.0853 | 0.0121 | 2.4000e-004 | 5.0800e-003 | 3.3000e-004 | 5.4100e-003 | 1.4000e-003 | 3.1000e-004 | 1.7100e-003 | 0.0000 | 23.2552 | 23.2552 | 1.2900e-003 | 0.0000 | 23.2873 |
| 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 | 6.2000e-004 | 5.0000e-004 | 4.7600e-003 | 1.0000e-005 | 1.1700e-003 | 1.0000e-005 | 1.1800e-003 | 3.1000e-004 | 1.0000e-005 | 3.2000e-004 | 0.0000 | 1.0855 | 1.0855 | 4.0000e-005 | 0.0000 | 1.0864 |
| **Total** | **3.0400e-003** | **0.0858** | **0.0168** | **2.5000e-004** | **6.2500e-003** | **3.4000e-004** | **6.5900e-003** | **1.7100e-003** | **3.2000e-004** | **2.0300e-003** | **0.0000** | **24.3406** | **24.3406** | **1.3300e-003** | **0.0000** | **24.3737** |

## 3.3 Site Preparation - 2020

### 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 | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0204 | 0.2121 | 0.1076 | 1.9000e-004 | | 0.0110 | 0.0110 | | 0.0101 | 0.0101 | 0.0000 | 16.7153 | 16.7153 | 5.4100e-003 | 0.0000 | 16.8505 |
| **Total** | **0.0204** | **0.2121** | **0.1076** | **1.9000e-004** | **0.0903** | **0.0110** | **0.1013** | **0.0497** | **0.0101** | **0.0598** | **0.0000** | **16.7153** | **16.7153** | **5.4100e-003** | **0.0000** | **16.8505** |

### 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 | 3.7000e-004 | 3.0000e-004 | 2.8500e-003 | 1.0000e-005 | 7.0000e-004 | 1.0000e-005 | 7.1000e-004 | 1.9000e-004 | 0.0000 | 1.9000e-004 | 0.0000 | 0.6513 | 0.6513 | 2.0000e-005 | 0.0000 | 0.6518 |
| **Total** | **3.7000e-004** | **3.0000e-004** | **2.8500e-003** | **1.0000e-005** | **7.0000e-004** | **1.0000e-005** | **7.1000e-004** | **1.9000e-004** | **0.0000** | **1.9000e-004** | **0.0000** | **0.6513** | **0.6513** | **2.0000e-005** | **0.0000** | **0.6518** |

## 3.4 Grading - 2020

### 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 | | | | | 0.1301 | 0.0000 | 0.1301 | 0.0540 | 0.0000 | 0.0540 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0668 | 0.7530 | 0.4794 | 9.3000e-004 | | 0.0326 | 0.0326 | | 0.0300 | 0.0300 | 0.0000 | 81.7264 | 81.7264 | 0.0264 | 0.0000 | 82.3872 |
| **Total** | **0.0668** | **0.7530** | **0.4794** | **9.3000e-004** | **0.1301** | **0.0326** | **0.1627** | **0.0540** | **0.0300** | **0.0840** | **0.0000** | **81.7264** | **81.7264** | **0.0264** | **0.0000** | **82.3872** |

### 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 | 1.2500e-003 | 1.0000e-003 | 9.5100e-003 | 2.0000e-005 | 2.3400e-003 | 2.0000e-005 | 2.3600e-003 | 6.2000e-004 | 2.0000e-005 | 6.4000e-004 | 0.0000 | 2.1709 | 2.1709 | 8.0000e-005 | 0.0000 | 2.1728 |
| **Total** | **1.2500e-003** | **1.0000e-003** | **9.5100e-003** | **2.0000e-005** | **2.3400e-003** | **2.0000e-005** | **2.3600e-003** | **6.2000e-004** | **2.0000e-005** | **6.4000e-004** | **0.0000** | **2.1709** | **2.1709** | **8.0000e-005** | **0.0000** | **2.1728** |

## 3.5 Building Construction - 2020

### 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 | 0.2141 | 1.9378 | 1.7017 | 2.7200e-003 | | 0.1128 | 0.1128 | | 0.1061 | 0.1061 | 0.0000 | 233.9261 | 233.9261 | 0.0571 | 0.0000 | 235.3528 |
| **Total** | **0.2141** | **1.9378** | **1.7017** | **2.7200e-003** | | **0.1128** | **0.1128** | | **0.1061** | **0.1061** | **0.0000** | **233.9261** | **233.9261** | **0.0571** | **0.0000** | **235.3528** |

### 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 | 0.0211 | 0.5950 | 0.1322 | 1.4100e-003 | 0.0315 | 3.2900e-003 | 0.0348 | 9.1400e-003 | 3.1400e-003 | 0.0123 | 0.0000 | 133.2412 | 133.2412 | 0.0108 | 0.0000 | 133.5112 |
| Worker | 0.0471 | 0.0378 | 0.3588 | 9.1000e-004 | 0.0884 | 6.6000e-004 | 0.0891 | 0.0235 | 6.1000e-004 | 0.0241 | 0.0000 | 81.8588 | 81.8588 | 2.8300e-003 | 0.0000 | 81.9296 |
| **Total** | **0.0682** | **0.6327** | **0.4909** | **2.3200e-003** | **0.1199** | **3.9500e-003** | **0.1239** | **0.0327** | **3.7500e-003** | **0.0364** | **0.0000** | **215.0999** | **215.0999** | **0.0136** | **0.0000** | **215.4408** |

## 3.5 Building Construction - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0932 | 0.8542 | 0.8122 | 1.3200e-003 | | 0.0470 | 0.0470 | | 0.0442 | 0.0442 | 0.0000 | 113.5023 | 113.5023 | 0.0274 | 0.0000 | 114.1868 |
| **Total** | **0.0932** | **0.8542** | **0.8122** | **1.3200e-003** | | **0.0470** | **0.0470** | | **0.0442** | **0.0442** | **0.0000** | **113.5023** | **113.5023** | **0.0274** | **0.0000** | **114.1868** |

### 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 | 8.5300e-003 | 0.2631 | 0.0562 | 6.8000e-004 | 0.0153 | 8.1000e-004 | 0.0161 | 4.4300e-003 | 7.7000e-004 | 5.2100e-003 | 0.0000 | 64.0979 | 64.0979 | 5.0500e-003 | 0.0000 | 64.2242 |
| Worker | 0.0211 | 0.0162 | 0.1571 | 4.2000e-004 | 0.0429 | 3.1000e-004 | 0.0432 | 0.0114 | 2.9000e-004 | 0.0117 | 0.0000 | 38.3376 | 38.3376 | 1.2100e-003 | 0.0000 | 38.3679 |
| **Total** | **0.0296** | **0.2794** | **0.2134** | **1.1000e-003** | **0.0582** | **1.1200e-003** | **0.0593** | **0.0159** | **1.0600e-003** | **0.0169** | **0.0000** | **102.4355** | **102.4355** | **6.2600e-003** | **0.0000** | **102.5921** |

## 3.6 Paving - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0126 | 0.1292 | 0.1465 | 2.3000e-004 | | 6.7800e-003 | 6.7800e-003 | | 6.2400e-003 | 6.2400e-003 | 0.0000 | 20.0235 | 20.0235 | 6.4800e-003 | 0.0000 | 20.1854 |
| Paving | 5.4400e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0180** | **0.1292** | **0.1465** | **2.3000e-004** | | **6.7800e-003** | **6.7800e-003** | | **6.2400e-003** | **6.2400e-003** | **0.0000** | **20.0235** | **20.0235** | **6.4800e-003** | **0.0000** | **20.1854** |

### 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 | 5.8000e-004 | 4.4000e-004 | 4.2900e-003 | 1.0000e-005 | 1.1700e-003 | 1.0000e-005 | 1.1800e-003 | 3.1000e-004 | 1.0000e-005 | 3.2000e-004 | 0.0000 | 1.0479 | 1.0479 | 3.0000e-005 | 0.0000 | 1.0487 |
| **Total** | **5.8000e-004** | **4.4000e-004** | **4.2900e-003** | **1.0000e-005** | **1.1700e-003** | **1.0000e-005** | **1.1800e-003** | **3.1000e-004** | **1.0000e-005** | **3.2000e-004** | **0.0000** | **1.0479** | **1.0479** | **3.0000e-005** | **0.0000** | **1.0487** |

## 3.7 Architectural Coating - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.3271 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.1900e-003 | 0.0153 | 0.0182 | 3.0000e-005 | | 9.4000e-004 | 9.4000e-004 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 2.5533 | 2.5533 | 1.8000e-004 | 0.0000 | 2.5576 |
| **Total** | **1.3293** | **0.0153** | **0.0182** | **3.0000e-005** | | **9.4000e-004** | **9.4000e-004** | | **9.4000e-004** | **9.4000e-004** | **0.0000** | **2.5533** | **2.5533** | **1.8000e-004** | **0.0000** | **2.5576** |

### 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 | 8.4000e-004 | 6.5000e-004 | 6.3000e-003 | 2.0000e-005 | 1.7200e-003 | 1.0000e-005 | 1.7300e-003 | 4.6000e-004 | 1.0000e-005 | 4.7000e-004 | 0.0000 | 1.5369 | 1.5369 | 5.0000e-005 | 0.0000 | 1.5381 |
| **Total** | **8.4000e-004** | **6.5000e-004** | **6.3000e-003** | **2.0000e-005** | **1.7200e-003** | **1.0000e-005** | **1.7300e-003** | **4.6000e-004** | **1.0000e-005** | **4.7000e-004** | **0.0000** | **1.5369** | **1.5369** | **5.0000e-005** | **0.0000** | **1.5381** |

# Dignity - REDUCED INTENSITY Alt Op 2024

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Medical Office Building | 109.00 | 1000sqft | 6.04 | 109,000.00 | 0 |
| Parking Lot | 461.00 | Space | 4.15 | 184,400.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2024 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - Full Project Operation 109 ksf, 461Parking Spaces. Total Site of 9.72 acres.

Construction Phase - Op Only

Vehicle Trips - ITE Trip Generation Rates, Consistent with TIAR

Water And Wastewater - Adjusted to 1.97 MGAL and 1.26 MGAL per project-specific rates

Sequestration - Net 66 trees to be planted

Mobile Land Use Mitigation - 0.83 mile to Priority Development Area. 1.5 miles to Downtown Transfer Station. Improved Ped network.

Waste Mitigation - State requirement for 75 percent diversion by 2020

Stationary Sources - Emergency Generators and Fire Pumps - Assumed 3 x 500 hp engine, 30 minutes per testing day, up to 50 hours testing per year

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblLandUse | LotAcreage | 2.50 | 6.04 |
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblSequestration | NumberOfNewTrees | 0.00 | 3.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 32.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 26.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | -1.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 6.00 |
| tblWater | IndoorWaterUseRate | 13,677,378.59 | 1,967,139.77 |
| tblWater | OutdoorWaterUseRate | 2,605,214.97 | 1,256,778.38 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Not Applicable**

### 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 | 0.5701 | 5.0000e-005 | 5.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0102 | 0.0102 | 3.0000e-005 | 0.0000 | 0.0109 |
| Energy | 7.6700e-003 | 0.0697 | 0.0586 | 4.2000e-004 | | 5.3000e-003 | 5.3000e-003 | | 5.3000e-003 | 5.3000e-003 | 0.0000 | 137.5339 | 137.5339 | 2.4200e-003 | 2.3500e-003 | 138.2952 |
| Mobile | 0.8031 | 6.7761 | 6.5880 | 0.0284 | 1.6415 | 0.0210 | 1.6625 | 0.4417 | 0.0197 | 0.4613 | 0.0000 | 2,630.2373 | 2,630.2373 | 0.1889 | 0.0000 | 2,634.9593 |
| Stationary | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 59.7402 | 0.0000 | 59.7402 | 3.5306 | 0.0000 | 148.0039 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.6241 | 0.8757 | 1.4998 | 0.0641 | 1.5300e-003 | 3.5577 |
| **Total** | **1.4424** | **7.0178** | **6.8087** | **0.0291** | **1.6415** | **0.0353** | **1.6769** | **0.4417** | **0.0340** | **0.4757** | **60.3643** | **2,797.2169** | **2,857.5812** | **3.7900** | **3.8800e-003** | **2,953.4868** |

| | ROG | NOx | 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** | **4.35** | **7.88** | **16.00** | **18.57** | **24.15** | **13.64** | **23.95** | **24.14** | **13.36** | **23.46** | **74.80** | **17.93** | **21.67** | **73.67** | **0.00** | **26.33** |

### 2.3 Vegetation

**Vegetation**

| | CO2e |
|---|---|
| Category | MT |
| New Trees | 47.8820 |
| **Total** | **47.8820** |

## 3.0 Construction Detail

**Not Applicable**

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.8031 | 6.7761 | 6.5880 | 0.0284 | 1.6415 | 0.0210 | 1.6625 | 0.4417 | 0.0197 | 0.4613 | 0.0000 | 2,630.2373 | 2,630.2373 | 0.1889 | 0.0000 | 2,634.9593 |
| Unmitigated | 0.8687 | 7.3768 | 7.8847 | 0.0350 | 2.1641 | 0.0265 | 2.1906 | 0.5822 | 0.0249 | 0.6072 | 0.0000 | 3,241.5562 | 3,241.5562 | 0.2015 | 0.0000 | 3,246.5939 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Medical Office Building | 3,938.17 | 976.64 | 168.95 | 5,826,017 | 4,419,315 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 3,938.17 | 976.64 | 168.95 | 5,826,017 | 4,419,315 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Medical Office Building | 9.50 | 7.30 | 7.30 | 29.60 | 51.40 | 19.00 | 60 | 30 | 10 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Medical Office Building | 0.538831 | 0.031280 | 0.180238 | 0.098915 | 0.025981 | 0.005683 | 0.012706 | 0.096234 | 0.001312 | 0.001172 | 0.005254 | 0.001260 | 0.001133 |
| Parking Lot | 0.538831 | 0.031280 | 0.180238 | 0.098915 | 0.025981 | 0.005683 | 0.012706 | 0.096234 | 0.001312 | 0.001172 | 0.005254 | 0.001260 | 0.001133 |

## 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 | 61.6266 | 61.6266 | 9.6000e-004 | 9.6000e-004 | 61.9368 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 61.6266 | 61.6266 | 9.6000e-004 | 9.6000e-004 | 61.9368 |
| NaturalGas Mitigated | 7.6700e-003 | 0.0697 | 0.0586 | 4.2000e-004 | | 5.3000e-003 | 5.3000e-003 | | 5.3000e-003 | 5.3000e-003 | 0.0000 | 75.9074 | 75.9074 | 1.4500e-003 | 1.3900e-003 | 76.3584 |
| NaturalGas Unmitigated | 7.6700e-003 | 0.0697 | 0.0586 | 4.2000e-004 | | 5.3000e-003 | 5.3000e-003 | | 5.3000e-003 | 5.3000e-003 | 0.0000 | 75.9074 | 75.9074 | 1.4500e-003 | 1.3900e-003 | 76.3584 |

### 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 | | | | | |
| Medical Office Building | 1.42245e+006 | 7.6700e-003 | 0.0697 | 0.0586 | 4.2000e-004 | | 5.3000e-003 | 5.3000e-003 | | 5.3000e-003 | 5.3000e-003 | 0.0000 | 75.9074 | 75.9074 | 1.4500e-003 | 1.3900e-003 | 76.3584 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **7.6700e-003** | **0.0697** | **0.0586** | **4.2000e-004** | | **5.3000e-003** | **5.3000e-003** | | **5.3000e-003** | **5.3000e-003** | **0.0000** | **75.9074** | **75.9074** | **1.4500e-003** | **1.3900e-003** | **76.3584** |

**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 | | | | | |
| Medical Office Building | 1.42245e+006 | 7.6700e-003 | 0.0697 | 0.0586 | 4.2000e-004 | | 5.3000e-003 | 5.3000e-003 | | 5.3000e-003 | 5.3000e-003 | 0.0000 | 75.9074 | 75.9074 | 1.4500e-003 | 1.3900e-003 | 76.3584 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **7.6700e-003** | **0.0697** | **0.0586** | **4.2000e-004** | | **5.3000e-003** | **5.3000e-003** | | **5.3000e-003** | **5.3000e-003** | **0.0000** | **75.9074** | **75.9074** | **1.4500e-003** | **1.3900e-003** | **76.3584** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 994080 | 57.8694 | 9.0000e-004 | 9.0000e-004 | 58.1607 |
| Parking Lot | 64540 | 3.7571 | 6.0000e-005 | 6.0000e-005 | 3.7761 |
| **Total** | | **61.6266** | **9.6000e-004** | **9.6000e-004** | **61.9368** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 994080 | 57.8694 | 9.0000e-004 | 9.0000e-004 | 58.1607 |
| Parking Lot | 64540 | 3.7571 | 6.0000e-005 | 6.0000e-005 | 3.7761 |
| **Total** | | **61.6266** | **9.6000e-004** | **9.6000e-004** | **61.9368** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.5701 | 5.0000e-005 | 5.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0102 | 0.0102 | 3.0000e-005 | 0.0000 | 0.0109 |
| Unmitigated | 0.5701 | 5.0000e-005 | 5.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0102 | 0.0102 | 3.0000e-005 | 0.0000 | 0.0109 |

## 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 | 0.1320 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.4376 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 4.8000e-004 | 5.0000e-005 | 5.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0102 | 0.0102 | 3.0000e-005 | 0.0000 | 0.0109 |
| **Total** | **0.5701** | **5.0000e-005** | **5.2300e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0102** | **0.0102** | **3.0000e-005** | **0.0000** | **0.0109** |

### 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 | 0.1320 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.4376 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 4.8000e-004 | 5.0000e-005 | 5.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0102 | 0.0102 | 3.0000e-005 | 0.0000 | 0.0109 |
| **Total** | **0.5701** | **5.0000e-005** | **5.2300e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0102** | **0.0102** | **3.0000e-005** | **0.0000** | **0.0109** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 1.4998 | 0.0641 | 1.5300e-003 | 3.5577 |
| Unmitigated | 1.4998 | 0.0641 | 1.5300e-003 | 3.5577 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 1.96714 / 1.25678 | 1.4998 | 0.0641 | 1.5300e-003 | 3.5577 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.4998** | **0.0641** | **1.5300e-003** | **3.5577** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 1.96714 / 1.25678 | 1.4998 | 0.0641 | 1.5300e-003 | 3.5577 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.4998** | **0.0641** | **1.5300e-003** | **3.5577** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

### Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 59.7402 | 3.5306 | 0.0000 | 148.0039 |
| Unmitigated | 238.9610 | 14.1222 | 0.0000 | 592.0157 |

## 8.2 Waste by Land Use

### Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 1177.2 | 238.9610 | 14.1222 | 0.0000 | 592.0157 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **238.9610** | **14.1222** | **0.0000** | **592.0157** |

### Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 294.3 | 59.7402 | 3.5306 | 0.0000 | 148.0039 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **59.7402** | **3.5306** | **0.0000** | **148.0039** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|
| Emergency Generator | 3 | 0.5 | 50 | 500 | 0.73 | Diesel |

### Boilers

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

### User Defined Equipment

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

## 10.1 Stationary Sources

### 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 | | | | | |
| Emergency Generator - Diesel | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| **Total** | **0.0615** | **0.1720** | **0.1569** | **3.0000e-004** | | **9.0500e-003** | **9.0500e-003** | | **9.0500e-003** | **9.0500e-003** | **0.0000** | **28.5598** | **28.5598** | **4.0000e-003** | **0.0000** | **28.6599** |

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | 47.8820 | 0.0000 | 0.0000 | 47.8820 |

## 11.2 Net New Trees

**Species Class**

| | Number of Trees | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | | MT | | | |
| Cedar/Larch | 3 | 1.5840 | 0.0000 | 0.0000 | 1.5840 |
| Miscellaneous | 32 | 22.6560 | 0.0000 | 0.0000 | 22.6560 |
| Mixed Hardwood | 26 | 19.0840 | 0.0000 | 0.0000 | 19.0840 |
| Pine | -1 | -0.6380 | 0.0000 | 0.0000 | -0.6380 |
| Soft Maple | 6 | 5.1960 | 0.0000 | 0.0000 | 5.1960 |
| **Total** | | **47.8820** | **0.0000** | **0.0000** | **47.8820** |

# Dignity - REDUCED INTENSITY ALT Op 2035

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Medical Office Building | 109.00 | 1000sqft | 6.04 | 109,000.00 | 0 |
| Parking Lot | 461.00 | Space | 4.15 | 184,400.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2035 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - Full Project Operation 109 ksf, 461 Parking Spaces. Total Site of 9.72 acres.

Construction Phase - Op Only

Vehicle Trips - ITE Trip Generation Rates, Consistent with TIAR

Water And Wastewater - Adjusted to 1.97 MGAL and 1.26 MGAL per project-specifics

Sequestration - Net 66 trees to be planted

Mobile Land Use Mitigation - 0.83 mile to Priority Development Area. 1.5 miles to Downtown Transfer Station. Improved Ped network.

Waste Mitigation - State requirement for 75 percent diversion by 2020

Stationary Sources - Emergency Generators and Fire Pumps - Assumed 3 x 500 hp engine, 30 minutes per testing day, up to 50 hours testing per year

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblLandUse | LotAcreage | 2.50 | 6.04 |
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblSequestration | NumberOfNewTrees | 0.00 | 3.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 32.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 26.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | -1.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 6.00 |
| tblWater | IndoorWaterUseRate | 13,677,378.59 | 1,967,139.77 |
| tblWater | OutdoorWaterUseRate | 2,605,214.97 | 1,256,778.38 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Not Applicable**

### 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 | 0.5701 | 5.0000e-005 | 5.2100e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0102 | 0.0102 | 3.0000e-005 | 0.0000 | 0.0108 |
| Energy | 7.6700e-003 | 0.0697 | 0.0586 | 4.2000e-004 | | 5.3000e-003 | 5.3000e-003 | | 5.3000e-003 | 5.3000e-003 | 0.0000 | 137.5339 | 137.5339 | 2.4200e-003 | 2.3500e-003 | 138.2952 |
| Mobile | 0.4411 | 5.9759 | 3.5625 | 0.0248 | 1.6395 | 0.0105 | 1.6501 | 0.4406 | 9.8700e-003 | 0.4505 | 0.0000 | 2,315.0566 | 2,315.0566 | 0.1950 | 0.0000 | 2,319.9312 |
| Stationary | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 59.7402 | 0.0000 | 59.7402 | 3.5306 | 0.0000 | 148.0039 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.6241 | 0.8757 | 1.4998 | 0.0641 | 1.5300e-003 | 3.5577 |
| **Total** | **1.0804** | **6.2177** | **3.7832** | **0.0255** | **1.6395** | **0.0249** | **1.6644** | **0.4406** | **0.0242** | **0.4649** | **60.3643** | **2,482.0362** | **2,542.4005** | **3.7961** | **3.8800e-003** | **2,638.4587** |

| | ROG | NOx | 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** | **3.53** | **5.09** | **16.26** | **17.88** | **24.14** | **9.94** | **23.97** | **24.15** | **9.62** | **23.50** | **74.80** | **17.18** | **21.44** | **73.63** | **0.00** | **26.66** |

### 2.3 Vegetation

**Vegetation**

| | CO2e |
|---|---|
| Category | MT |
| New Trees | 47.8820 |
| **Total** | **47.8820** |

## 3.0 Construction Detail

**Not Applicable**

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.4411 | 5.9759 | 3.5625 | 0.0248 | 1.6395 | 0.0105 | 1.6501 | 0.4406 | 9.8700e-003 | 0.4505 | 0.0000 | 2,315.0566 | 2,315.0566 | 0.1950 | 0.0000 | 2,319.9312 |
| Unmitigated | 0.4806 | 6.3092 | 4.2969 | 0.0304 | 2.1614 | 0.0133 | 2.1747 | 0.5809 | 0.0125 | 0.5933 | 0.0000 | 2,829.7717 | 2,829.7717 | 0.2015 | 0.0000 | 2,834.8096 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Medical Office Building | 3,938.17 | 976.64 | 168.95 | 5,826,017 | 4,419,315 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 3,938.17 | 976.64 | 168.95 | 5,826,017 | 4,419,315 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Medical Office Building | 9.50 | 7.30 | 7.30 | 29.60 | 51.40 | 19.00 | 60 | 30 | 10 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Medical Office Building | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |
| Parking Lot | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |

## 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 | 61.6266 | 61.6266 | 9.6000e-004 | 9.6000e-004 | 61.9368 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 61.6266 | 61.6266 | 9.6000e-004 | 9.6000e-004 | 61.9368 |
| NaturalGas Mitigated | 7.6700e-003 | 0.0697 | 0.0586 | 4.2000e-004 | | 5.3000e-003 | 5.3000e-003 | | 5.3000e-003 | 5.3000e-003 | 0.0000 | 75.9074 | 75.9074 | 1.4500e-003 | 1.3900e-003 | 76.3584 |
| NaturalGas Unmitigated | 7.6700e-003 | 0.0697 | 0.0586 | 4.2000e-004 | | 5.3000e-003 | 5.3000e-003 | | 5.3000e-003 | 5.3000e-003 | 0.0000 | 75.9074 | 75.9074 | 1.4500e-003 | 1.3900e-003 | 76.3584 |

### 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 | | | | | |
| Medical Office Building | 1.42245e+006 | 7.6700e-003 | 0.0697 | 0.0586 | 4.2000e-004 | | 5.3000e-003 | 5.3000e-003 | | 5.3000e-003 | 5.3000e-003 | 0.0000 | 75.9074 | 75.9074 | 1.4500e-003 | 1.3900e-003 | 76.3584 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **7.6700e-003** | **0.0697** | **0.0586** | **4.2000e-004** | | **5.3000e-003** | **5.3000e-003** | | **5.3000e-003** | **5.3000e-003** | **0.0000** | **75.9074** | **75.9074** | **1.4500e-003** | **1.3900e-003** | **76.3584** |

**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 | | | | | |
| Medical Office Building | 1.42245e+006 | 7.6700e-003 | 0.0697 | 0.0586 | 4.2000e-004 | | 5.3000e-003 | 5.3000e-003 | | 5.3000e-003 | 5.3000e-003 | 0.0000 | 75.9074 | 75.9074 | 1.4500e-003 | 1.3900e-003 | 76.3584 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **7.6700e-003** | **0.0697** | **0.0586** | **4.2000e-004** | | **5.3000e-003** | **5.3000e-003** | | **5.3000e-003** | **5.3000e-003** | **0.0000** | **75.9074** | **75.9074** | **1.4500e-003** | **1.3900e-003** | **76.3584** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 994080 | 57.8694 | 9.0000e-004 | 9.0000e-004 | 58.1607 |
| Parking Lot | 64540 | 3.7571 | 6.0000e-005 | 6.0000e-005 | 3.7761 |
| **Total** | | **61.6266** | **9.6000e-004** | **9.6000e-004** | **61.9368** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 994080 | 57.8694 | 9.0000e-004 | 9.0000e-004 | 58.1607 |
| Parking Lot | 64540 | 3.7571 | 6.0000e-005 | 6.0000e-005 | 3.7761 |
| **Total** | | **61.6266** | **9.6000e-004** | **9.6000e-004** | **61.9368** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.5701 | 5.0000e-005 | 5.2100e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0102 | 0.0102 | 3.0000e-005 | 0.0000 | 0.0108 |
| Unmitigated | 0.5701 | 5.0000e-005 | 5.2100e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0102 | 0.0102 | 3.0000e-005 | 0.0000 | 0.0108 |

## 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 | 0.1320 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.4376 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 4.8000e-004 | 5.0000e-005 | 5.2100e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0102 | 0.0102 | 3.0000e-005 | 0.0000 | 0.0108 |
| **Total** | **0.5701** | **5.0000e-005** | **5.2100e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0102** | **0.0102** | **3.0000e-005** | **0.0000** | **0.0108** |

### 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 | 0.1320 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.4376 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 4.8000e-004 | 5.0000e-005 | 5.2100e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0102 | 0.0102 | 3.0000e-005 | 0.0000 | 0.0108 |
| **Total** | **0.5701** | **5.0000e-005** | **5.2100e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0102** | **0.0102** | **3.0000e-005** | **0.0000** | **0.0108** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 1.4998 | 0.0641 | 1.5300e-003 | 3.5577 |
| Unmitigated | 1.4998 | 0.0641 | 1.5300e-003 | 3.5577 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 1.96714 / 1.25678 | 1.4998 | 0.0641 | 1.5300e-003 | 3.5577 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.4998** | **0.0641** | **1.5300e-003** | **3.5577** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 1.96714 / 1.25678 | 1.4998 | 0.0641 | 1.5300e-003 | 3.5577 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.4998** | **0.0641** | **1.5300e-003** | **3.5577** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 59.7402 | 3.5306 | 0.0000 | 148.0039 |
| Unmitigated | 238.9610 | 14.1222 | 0.0000 | 592.0157 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 1177.2 | 238.9610 | 14.1222 | 0.0000 | 592.0157 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **238.9610** | **14.1222** | **0.0000** | **592.0157** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 294.3 | 59.7402 | 3.5306 | 0.0000 | 148.0039 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **59.7402** | **3.5306** | **0.0000** | **148.0039** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|
| Emergency Generator | 3 | 0.5 | 50 | 500 | 0.73 | Diesel |

### Boilers

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

### User Defined Equipment

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

## 10.1 Stationary Sources

### 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 | | | | | |
| Emergency Generator - Diesel | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| **Total** | **0.0615** | **0.1720** | **0.1569** | **3.0000e-004** | | **9.0500e-003** | **9.0500e-003** | | **9.0500e-003** | **9.0500e-003** | **0.0000** | **28.5598** | **28.5598** | **4.0000e-003** | **0.0000** | **28.6599** |

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | 47.8820 | 0.0000 | 0.0000 | 47.8820 |

## 11.2 Net New Trees

**Species Class**

| | Number of Trees | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | | MT | | | |
| Cedar/Larch | 3 | 1.5840 | 0.0000 | 0.0000 | 1.5840 |
| Miscellaneous | 32 | 22.6560 | 0.0000 | 0.0000 | 22.6560 |
| Mixed Hardwood | 26 | 19.0840 | 0.0000 | 0.0000 | 19.0840 |
| Pine | -1 | -0.6380 | 0.0000 | 0.0000 | -0.6380 |
| Soft Maple | 6 | 5.1960 | 0.0000 | 0.0000 | 5.1960 |
| **Total** | | **47.8820** | **0.0000** | **0.0000** | **47.8820** |

# Dignity - Mercy Alt Const

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Medical Office Building | 129.60 | 1000sqft | 2.98 | 129,600.00 | 0 |
| Parking Lot | 549.00 | Space | 4.94 | 219,600.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2021 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - Mercy Oaks Campus Alternative

Construction Phase - Default Phasing and Durations

Off-road Equipment - Default Equipment

Trips and VMT - Default Construction Trips

Grading - All cut and fill to be balanced onsite

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |

| | | | |
|---|---|---|---|
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblStationaryGeneratorsPumpsUse | HorsePowerValue | 0.00 | 500.00 |
| tblStationaryGeneratorsPumpsUse | HoursPerDay | 0.00 | 0.50 |
| tblStationaryGeneratorsPumpsUse | HoursPerYear | 0.00 | 50.00 |
| tblStationaryGeneratorsPumpsUse | NumberOfEquipment | 0.00 | 1.00 |

# 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2020 | 0.3842 | 3.5532 | 2.8958 | 6.7600e-003 | 0.3209 | 0.1583 | 0.4792 | 0.1283 | 0.1484 | 0.2767 | 0.0000 | 604.6433 | 604.6433 | 0.0980 | 0.0000 | 607.0931 |
| 2021 | 1.5990 | 0.1327 | 0.1617 | 2.7000e-004 | 3.1600e-003 | 7.0600e-003 | 0.0102 | 8.4000e-004 | 6.5700e-003 | 7.4200e-003 | 0.0000 | 23.4036 | 23.4036 | 6.0900e-003 | 0.0000 | 23.5559 |
| **Maximum** | **1.5990** | **3.5532** | **2.8958** | **6.7600e-003** | **0.3209** | **0.1583** | **0.4792** | **0.1283** | **0.1484** | **0.2767** | **0.0000** | **604.6433** | **604.6433** | **0.0980** | **0.0000** | **607.0931** |

## 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 | 1/1/2020 | 1/14/2020 | 5 | 10 | |
| 2 | Grading | Grading | 1/15/2020 | 2/11/2020 | 5 | 20 | |
| 3 | Building Construction | Building Construction | 2/12/2020 | 12/29/2020 | 5 | 230 | |
| 4 | Paving | Paving | 12/30/2020 | 1/26/2021 | 5 | 20 | |
| 5 | Architectural Coating | Architectural Coating | 1/27/2021 | 2/23/2021 | 5 | 20 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 10**

**Acres of Paving: 4.94**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 194,400; Non-Residential Outdoor: 64,800; Striped Parking**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 1 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 134.00 | 57.00 | 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 | 27.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Site Preparation - 2020

### 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 | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0204 | 0.2121 | 0.1076 | 1.9000e-004 | | 0.0110 | 0.0110 | | 0.0101 | 0.0101 | 0.0000 | 16.7153 | 16.7153 | 5.4100e-003 | 0.0000 | 16.8505 |
| **Total** | **0.0204** | **0.2121** | **0.1076** | **1.9000e-004** | **0.0903** | **0.0110** | **0.1013** | **0.0497** | **0.0101** | **0.0598** | **0.0000** | **16.7153** | **16.7153** | **5.4100e-003** | **0.0000** | **16.8505** |

### 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 | 3.7000e-004 | 3.0000e-004 | 2.8500e-003 | 1.0000e-005 | 7.0000e-004 | 1.0000e-005 | 7.1000e-004 | 1.9000e-004 | 0.0000 | 1.9000e-004 | 0.0000 | 0.6513 | 0.6513 | 2.0000e-005 | 0.0000 | 0.6518 |
| **Total** | **3.7000e-004** | **3.0000e-004** | **2.8500e-003** | **1.0000e-005** | **7.0000e-004** | **1.0000e-005** | **7.1000e-004** | **1.9000e-004** | **0.0000** | **1.9000e-004** | **0.0000** | **0.6513** | **0.6513** | **2.0000e-005** | **0.0000** | **0.6518** |

## 3.3 Grading - 2020

### 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 | | | | | 0.0655 | 0.0000 | 0.0655 | 0.0337 | 0.0000 | 0.0337 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0243 | 0.2639 | 0.1605 | 3.0000e-004 | | 0.0127 | 0.0127 | | 0.0117 | 0.0117 | 0.0000 | 26.0588 | 26.0588 | 8.4300e-003 | 0.0000 | 26.2694 |
| **Total** | **0.0243** | **0.2639** | **0.1605** | **3.0000e-004** | **0.0655** | **0.0127** | **0.0783** | **0.0337** | **0.0117** | **0.0454** | **0.0000** | **26.0588** | **26.0588** | **8.4300e-003** | **0.0000** | **26.2694** |

### 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 | 6.2000e-004 | 5.0000e-004 | 4.7600e-003 | 1.0000e-005 | 1.1700e-003 | 1.0000e-005 | 1.1800e-003 | 3.1000e-004 | 1.0000e-005 | 3.2000e-004 | 0.0000 | 1.0855 | 1.0855 | 4.0000e-005 | 0.0000 | 1.0864 |
| **Total** | **6.2000e-004** | **5.0000e-004** | **4.7600e-003** | **1.0000e-005** | **1.1700e-003** | **1.0000e-005** | **1.1800e-003** | **3.1000e-004** | **1.0000e-005** | **3.2000e-004** | **0.0000** | **1.0855** | **1.0855** | **4.0000e-005** | **0.0000** | **1.0864** |

## 3.4 Building Construction - 2020

### 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 | 0.2438 | 2.2064 | 1.9376 | 3.1000e-003 | | 0.1285 | 0.1285 | | 0.1208 | 0.1208 | 0.0000 | 266.3515 | 266.3515 | 0.0650 | 0.0000 | 267.9760 |
| **Total** | **0.2438** | **2.2064** | **1.9376** | **3.1000e-003** | | **0.1285** | **0.1285** | | **0.1208** | **0.1208** | **0.0000** | **266.3515** | **266.3515** | **0.0650** | **0.0000** | **267.9760** |

### 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 | 0.0286 | 0.8045 | 0.1787 | 1.9000e-003 | 0.0427 | 4.4400e-003 | 0.0471 | 0.0124 | 4.2500e-003 | 0.0166 | 0.0000 | 180.1559 | 180.1559 | 0.0146 | 0.0000 | 180.5211 |
| Worker | 0.0641 | 0.0514 | 0.4887 | 1.2300e-003 | 0.1204 | 9.0000e-004 | 0.1213 | 0.0321 | 8.3000e-004 | 0.0329 | 0.0000 | 111.5137 | 111.5137 | 3.8600e-003 | 0.0000 | 111.6102 |
| **Total** | **0.0927** | **0.8559** | **0.6674** | **3.1300e-003** | **0.1631** | **5.3400e-003** | **0.1684** | **0.0444** | **5.0800e-003** | **0.0495** | **0.0000** | **291.6696** | **291.6696** | **0.0185** | **0.0000** | **292.1313** |

## 3.5 Paving - 2020

### 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 | 1.3600e-003 | 0.0141 | 0.0147 | 2.0000e-005 | | 7.5000e-004 | 7.5000e-004 | | 6.9000e-004 | 6.9000e-004 | 0.0000 | 2.0028 | 2.0028 | 6.5000e-004 | 0.0000 | 2.0190 |
| Paving | 6.5000e-004 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **2.0100e-003** | **0.0141** | **0.0147** | **2.0000e-005** | | **7.5000e-004** | **7.5000e-004** | | **6.9000e-004** | **6.9000e-004** | **0.0000** | **2.0028** | **2.0028** | **6.5000e-004** | **0.0000** | **2.0190** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.0000e-005 | 5.0000e-005 | 4.8000e-004 | 0.0000 | 1.2000e-004 | 0.0000 | 1.2000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.1086 | 0.1086 | 0.0000 | 0.0000 | 0.1086 |
| **Total** | **6.0000e-005** | **5.0000e-005** | **4.8000e-004** | **0.0000** | **1.2000e-004** | **0.0000** | **1.2000e-004** | **3.0000e-005** | **0.0000** | **3.0000e-005** | **0.0000** | **0.1086** | **0.1086** | **0.0000** | **0.0000** | **0.1086** |

## 3.5 Paving - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0113 | 0.1163 | 0.1319 | 2.1000e-004 | | 6.1000e-003 | 6.1000e-003 | | 5.6100e-003 | 5.6100e-003 | 0.0000 | 18.0211 | 18.0211 | 5.8300e-003 | 0.0000 | 18.1668 |
| Paving | 5.8200e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0171** | **0.1163** | **0.1319** | **2.1000e-004** | | **6.1000e-003** | **6.1000e-003** | | **5.6100e-003** | **5.6100e-003** | **0.0000** | **18.0211** | **18.0211** | **5.8300e-003** | **0.0000** | **18.1668** |

### 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 | 5.2000e-004 | 4.0000e-004 | 3.8700e-003 | 1.0000e-005 | 1.0500e-003 | 1.0000e-005 | 1.0600e-003 | 2.8000e-004 | 1.0000e-005 | 2.9000e-004 | 0.0000 | 0.9431 | 0.9431 | 3.0000e-005 | 0.0000 | 0.9438 |
| **Total** | **5.2000e-004** | **4.0000e-004** | **3.8700e-003** | **1.0000e-005** | **1.0500e-003** | **1.0000e-005** | **1.0600e-003** | **2.8000e-004** | **1.0000e-005** | **2.9000e-004** | **0.0000** | **0.9431** | **0.9431** | **3.0000e-005** | **0.0000** | **0.9438** |

## 3.6 Architectural Coating - 2021

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.5781 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.1900e-003 | 0.0153 | 0.0182 | 3.0000e-005 | | 9.4000e-004 | 9.4000e-004 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 2.5533 | 2.5533 | 1.8000e-004 | 0.0000 | 2.5576 |
| **Total** | **1.5803** | **0.0153** | **0.0182** | **3.0000e-005** | | **9.4000e-004** | **9.4000e-004** | | **9.4000e-004** | **9.4000e-004** | **0.0000** | **2.5533** | **2.5533** | **1.8000e-004** | **0.0000** | **2.5576** |

### 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 | 1.0400e-003 | 8.0000e-004 | 7.7300e-003 | 2.0000e-005 | 2.1100e-003 | 2.0000e-005 | 2.1300e-003 | 5.6000e-004 | 1.0000e-005 | 5.8000e-004 | 0.0000 | 1.8861 | 1.8861 | 6.0000e-005 | 0.0000 | 1.8876 |
| **Total** | **1.0400e-003** | **8.0000e-004** | **7.7300e-003** | **2.0000e-005** | **2.1100e-003** | **2.0000e-005** | **2.1300e-003** | **5.6000e-004** | **1.0000e-005** | **5.8000e-004** | **0.0000** | **1.8861** | **1.8861** | **6.0000e-005** | **0.0000** | **1.8876** |

# Dignity - Mercy Campus ALT Op 2024

**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Medical Office Building | 129.60 | 1000sqft | 2.98 | 129,600.00 | 0 |
| Parking Lot | 549.00 | Space | 4.94 | 219,600.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2024 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - Full Project Operation 129.6 ksf

Construction Phase - Op Only

Vehicle Trips - ITE Trip Generation Rates, Consistent with TIAR

Water And Wastewater - Adjusted to 2.35 MGAL and 1.50 MGAL per project-specifics

Sequestration - Net 152 trees to be planted

Mobile Land Use Mitigation - Improved Ped network.

Waste Mitigation - State requirement for 75 percent diversion by 2020

Stationary Sources - Emergency Generators and Fire Pumps - Assumed 3 x 500 hp engine, 30 minutes per testing day, up to 50 hours testing per year

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblSequestration | NumberOfNewTrees | 0.00 | 5.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 60.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 76.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | -1.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 12.00 |
| tblWater | IndoorWaterUseRate | 16,312,469.88 | 2,346,127.20 |
| tblWater | OutdoorWaterUseRate | 3,107,137.12 | 1,498,914.60 |

# 2.0 Emissions Summary

## 2.1 Overall Construction

**Not Applicable**

## 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 | 0.6792 | 6.0000e-005 | 6.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| Energy | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 163.5337 | 163.5337 | 2.8700e-003 | 2.8000e-003 | 164.4389 |
| Mobile | 1.0185 | 8.6393 | 9.0907 | 0.0401 | 2.4585 | 0.0303 | 2.4889 | 0.6615 | 0.0285 | 0.6900 | 0.0000 | 3,720.2204 | 3,720.2204 | 0.2368 | 0.0000 | 3,726.1410 |
| Stationary | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 71.2498 | 0.0000 | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.7443 | 1.0444 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| **Total** | **1.7684** | **8.8942** | **9.3234** | **0.0409** | **2.4585** | **0.0457** | **2.5042** | **0.6615** | **0.0439** | **0.7053** | **71.9942** | **3,913.3704** | **3,985.3645** | **4.5309** | **4.6200e-003** | **4,100.0142** |

| | ROG | NOx | 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** | **0.81** | **1.46** | **2.96** | **3.44** | **4.45** | **2.60** | **4.42** | **4.45** | **2.56** | **4.33** | **74.80** | **3.31** | **8.02** | **73.61** | **0.00** | **13.93** |

## 2.3 Vegetation

**Vegetation**

| | CO2e |
|---|---|
| Category | MT |
| New Trees | 110.6580 |
| **Total** | **110.6580** |

## 3.0 Construction Detail

**Not Applicable**

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

Limit Parking Supply

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 1.0185 | 8.6393 | 9.0907 | 0.0401 | 2.4585 | 0.0303 | 2.4889 | 0.6615 | 0.0285 | 0.6900 | 0.0000 | 3,720.2204 | 3,720.2204 | 0.2368 | 0.0000 | 3,726.1410 |
| Unmitigated | 1.0329 | 8.7709 | 9.3748 | 0.0416 | 2.5730 | 0.0316 | 2.6046 | 0.6923 | 0.0296 | 0.7219 | 0.0000 | 3,854.1806 | 3,854.1806 | 0.2396 | 0.0000 | 3,860.1704 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Medical Office Building | 4,682.45 | 1,161.22 | 200.88 | 6,927,081 | 6,618,826 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 4,682.45 | 1,161.22 | 200.88 | 6,927,081 | 6,618,826 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Medical Office Building | 9.50 | 7.30 | 7.30 | 29.60 | 51.40 | 19.00 | 60 | 30 | 10 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Medical Office Building | 0.538831 | 0.031280 | 0.180238 | 0.098915 | 0.025981 | 0.005683 | 0.012706 | 0.096234 | 0.001312 | 0.001172 | 0.005254 | 0.001260 | 0.001133 |
| Parking Lot | 0.538831 | 0.031280 | 0.180238 | 0.098915 | 0.025981 | 0.005683 | 0.012706 | 0.096234 | 0.001312 | 0.001172 | 0.005254 | 0.001260 | 0.001133 |

## 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 | 73.2805 | 73.2805 | 1.1400e-003 | 1.1400e-003 | 73.6494 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 73.2805 | 73.2805 | 1.1400e-003 | 1.1400e-003 | 73.6494 |
| NaturalGas Mitigated | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| NaturalGas Unmitigated | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |

### 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 | | | | | |
| Medical Office Building | 1.69128e+006 | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **9.1200e-003** | **0.0829** | **0.0696** | **5.0000e-004** | | **6.3000e-003** | **6.3000e-003** | | **6.3000e-003** | **6.3000e-003** | **0.0000** | **90.2531** | **90.2531** | **1.7300e-003** | **1.6500e-003** | **90.7895** |

**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 | | | | | |
| Medical Office Building | 1.69128e+006 | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **9.1200e-003** | **0.0829** | **0.0696** | **5.0000e-004** | | **6.3000e-003** | **6.3000e-003** | | **6.3000e-003** | **6.3000e-003** | **0.0000** | **90.2531** | **90.2531** | **1.7300e-003** | **1.6500e-003** | **90.7895** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 1.18195e+006 | 68.8062 | 1.0700e-003 | 1.0700e-003 | 69.1525 |
| Parking Lot | 76860 | 4.4743 | 7.0000e-005 | 7.0000e-005 | 4.4969 |
| **Total** | | **73.2805** | **1.1400e-003** | **1.1400e-003** | **73.6494** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 1.18195e+006 | 68.8062 | 1.0700e-003 | 1.0700e-003 | 69.1525 |
| Parking Lot | 76860 | 4.4743 | 7.0000e-005 | 7.0000e-005 | 4.4969 |
| **Total** | | **73.2805** | **1.1400e-003** | **1.1400e-003** | **73.6494** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.6792 | 6.0000e-005 | 6.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| Unmitigated | 0.6792 | 6.0000e-005 | 6.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |

### 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 | 0.1583 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.7000e-004 | 6.0000e-005 | 6.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| **Total** | **0.6792** | **6.0000e-005** | **6.2300e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0129** |

**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 | 0.1583 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.7000e-004 | 6.0000e-005 | 6.2300e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| **Total** | **0.6792** | **6.0000e-005** | **6.2300e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0129** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Unmitigated | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 2.34613 / 1.49891 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.7887** | **0.0765** | **1.8200e-003** | **4.2431** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 2.34613 / 1.49891 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.7887** | **0.0765** | **1.8200e-003** | **4.2431** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

### Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Unmitigated | 284.9993 | 16.8430 | 0.0000 | 706.0737 |

## 8.2 Waste by Land Use

### Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 1404 | 284.9993 | 16.8430 | 0.0000 | 706.0737 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **284.9993** | **16.8430** | **0.0000** | **706.0737** |

### Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 351 | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **71.2498** | **4.2107** | **0.0000** | **176.5184** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|
| Emergency Generator | 3 | 0.5 | 50 | 500 | 0.73 | Diesel |

### Boilers

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

### User Defined Equipment

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

## 10.1 Stationary Sources

### 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 | | | | | |
| Emergency Generator - Diesel (600 - 900 HP) | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| **Total** | **0.0615** | **0.1720** | **0.1569** | **3.0000e-004** | | **9.0500e-003** | **9.0500e-003** | | **9.0500e-003** | **9.0500e-003** | **0.0000** | **28.5598** | **28.5598** | **4.0000e-003** | **0.0000** | **28.6599** |

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | 110.6580 | 0.0000 | 0.0000 | 110.6580 |

## 11.2 Net New Trees

**Species Class**

| | Number of Trees | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | | MT | | | |
| Cedar/Larch | 5 | 2.6400 | 0.0000 | 0.0000 | 2.6400 |
| Miscellaneous | 60 | 42.4800 | 0.0000 | 0.0000 | 42.4800 |
| Mixed Hardwood | 76 | 55.7840 | 0.0000 | 0.0000 | 55.7840 |
| Pine | -1 | -0.6380 | 0.0000 | 0.0000 | -0.6380 |
| Soft Maple | 12 | 10.3920 | 0.0000 | 0.0000 | 10.3920 |
| **Total** | | **110.6580** | **0.0000** | **0.0000** | **110.6580** |

# Dignity - Mercy Alt Full Op 2035
**Shasta County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Medical Office Building | 129.60 | 1000sqft | 2.98 | 129,600.00 | 0 |
| Parking Lot | 549.00 | Space | 4.94 | 219,600.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 82 |
| **Climate Zone** | 3 | | | **Operational Year** | 2035 |
| **Utility Company** | User Defined | | | | |
| **CO2 Intensity (lb/MWhr)** | 128.34 | **CH4 Intensity (lb/MWhr)** | 0.002 | **N2O Intensity (lb/MWhr)** | 0.002 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Modified per Report

Land Use - Full Project Operation 129.6 ksf

Construction Phase - Op Only

Vehicle Trips - ITE Trip Generation Rates, Consistent with TIAR

Water And Wastewater - Adjusted to 2.35 MGAL and 1.50 MGAL per project-specifics

Sequestration - Net 152 trees to be planted

Mobile Land Use Mitigation - Improved Ped network.

Waste Mitigation - State requirement for 75 percent diversion by 2020

Stationary Sources - Emergency Generators and Fire Pumps - Assumed 3 x 500 hp engine, 30 minutes per testing day, up to 50 hours testing per year

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblProjectCharacteristics | CH4IntensityFactor | 0 | 0.002 |
| tblProjectCharacteristics | CO2IntensityFactor | 0 | 128.34 |
| tblProjectCharacteristics | N2OIntensityFactor | 0 | 0.002 |
| tblSequestration | NumberOfNewTrees | 0.00 | 5.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 60.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 76.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | -1.00 |
| tblSequestration | NumberOfNewTrees | 0.00 | 12.00 |
| tblWater | IndoorWaterUseRate | 16,312,469.88 | 2,346,127.20 |
| tblWater | OutdoorWaterUseRate | 3,107,137.12 | 1,498,914.60 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Not Applicable**

### 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 | 0.6792 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| Energy | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 163.5337 | 163.5337 | 2.8700e-003 | 2.8000e-003 | 164.4389 |
| Mobile | 0.5628 | 7.4286 | 4.9480 | 0.0349 | 2.4555 | 0.0152 | 2.4707 | 0.6599 | 0.0142 | 0.6742 | 0.0000 | 3,251.7814 | 3,251.7814 | 0.2382 | 0.0000 | 3,257.7357 |
| Stationary | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 71.2498 | 0.0000 | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.7443 | 1.0444 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| **Total** | **1.3126** | **7.6835** | **5.1808** | **0.0357** | **2.4555** | **0.0306** | **2.4861** | **0.6599** | **0.0296** | **0.6895** | **71.9942** | **3,444.9315** | **3,516.9256** | **4.5323** | **4.6200e-003** | **3,631.6089** |

| | ROG | NOx | 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** | **0.66** | **0.94** | **3.01** | **3.30** | **4.45** | **1.92** | **4.42** | **4.45** | **1.89** | **4.34** | **74.80** | **3.17** | **8.50** | **73.60** | **0.00** | **15.03** |

### 2.3 Vegetation

**Vegetation**

| | CO2e |
|---|---|
| Category | MT |
| New Trees | 110.6580 |
| **Total** | **110.6580** |

## 3.0 Construction Detail

**Not Applicable**

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

Limit Parking Supply

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.5628 | 7.4286 | 4.9480 | 0.0349 | 2.4555 | 0.0152 | 2.4707 | 0.6599 | 0.0142 | 0.6742 | 0.0000 | 3,251.7814 | 3,251.7814 | 0.2382 | 0.0000 | 3,257.7357 |
| Unmitigated | 0.5714 | 7.5016 | 5.1090 | 0.0361 | 2.5699 | 0.0158 | 2.5857 | 0.6906 | 0.0148 | 0.7055 | 0.0000 | 3,364.5726 | 3,364.5726 | 0.2396 | 0.0000 | 3,370.5626 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Medical Office Building | 4,682.45 | 1,161.22 | 200.88 | 6,927,081 | 6,618,826 |
| Parking Lot | 0.00 | 0.00 | 0.00 | | |
| Total | 4,682.45 | 1,161.22 | 200.88 | 6,927,081 | 6,618,826 |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C- | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Medical Office Building | 9.50 | 7.30 | 7.30 | 29.60 | 51.40 | 19.00 | 60 | 30 | 10 |
| Parking Lot | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Medical Office Building | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |
| Parking Lot | 0.569418 | 0.028499 | 0.176299 | 0.083993 | 0.011215 | 0.003707 | 0.013334 | 0.105464 | 0.001258 | 0.000968 | 0.004161 | 0.001140 | 0.000545 |

## 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 | 73.2805 | 73.2805 | 1.1400e-003 | 1.1400e-003 | 73.6494 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 73.2805 | 73.2805 | 1.1400e-003 | 1.1400e-003 | 73.6494 |
| NaturalGas Mitigated | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| NaturalGas Unmitigated | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |

### 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 | | | | | |
| Medical Office Building | 1.69128e+006 | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **9.1200e-003** | **0.0829** | **0.0696** | **5.0000e-004** | | **6.3000e-003** | **6.3000e-003** | | **6.3000e-003** | **6.3000e-003** | **0.0000** | **90.2531** | **90.2531** | **1.7300e-003** | **1.6500e-003** | **90.7895** |

#### 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 | | | | | |
| Medical Office Building | 1.69128e+006 | 9.1200e-003 | 0.0829 | 0.0696 | 5.0000e-004 | | 6.3000e-003 | 6.3000e-003 | | 6.3000e-003 | 6.3000e-003 | 0.0000 | 90.2531 | 90.2531 | 1.7300e-003 | 1.6500e-003 | 90.7895 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **9.1200e-003** | **0.0829** | **0.0696** | **5.0000e-004** | | **6.3000e-003** | **6.3000e-003** | | **6.3000e-003** | **6.3000e-003** | **0.0000** | **90.2531** | **90.2531** | **1.7300e-003** | **1.6500e-003** | **90.7895** |

## 5.3 Energy by Land Use - Electricity

### Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 1.18195e+006 | 68.8062 | 1.0700e-003 | 1.0700e-003 | 69.1525 |
| Parking Lot | 76860 | 4.4743 | 7.0000e-005 | 7.0000e-005 | 4.4969 |
| **Total** | | **73.2805** | **1.1400e-003** | **1.1400e-003** | **73.6494** |

### Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Medical Office Building | 1.18195e+006 | 68.8062 | 1.0700e-003 | 1.0700e-003 | 69.1525 |
| Parking Lot | 76860 | 4.4743 | 7.0000e-005 | 7.0000e-005 | 4.4969 |
| **Total** | | **73.2805** | **1.1400e-003** | **1.1400e-003** | **73.6494** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.6792 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| Unmitigated | 0.6792 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |

## 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 | 0.1583 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.7000e-004 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| **Total** | **0.6792** | **6.0000e-005** | **6.2000e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0129** |

### 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 | 0.1583 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.5204 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.7000e-004 | 6.0000e-005 | 6.2000e-003 | 0.0000 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 0.0121 | 0.0121 | 3.0000e-005 | 0.0000 | 0.0129 |
| **Total** | **0.6792** | **6.0000e-005** | **6.2000e-003** | **0.0000** | | **2.0000e-005** | **2.0000e-005** | | **2.0000e-005** | **2.0000e-005** | **0.0000** | **0.0121** | **0.0121** | **3.0000e-005** | **0.0000** | **0.0129** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Unmitigated | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |

## 7.2 Water by Land Use

### Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 2.34613 / 1.49891 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.7887** | **0.0765** | **1.8200e-003** | **4.2431** |

### Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Medical Office Building | 2.34613 / 1.49891 | 1.7887 | 0.0765 | 1.8200e-003 | 4.2431 |
| Parking Lot | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **1.7887** | **0.0765** | **1.8200e-003** | **4.2431** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

### Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Unmitigated | 284.9993 | 16.8430 | 0.0000 | 706.0737 |

## 8.2 Waste by Land Use

### Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 1404 | 284.9993 | 16.8430 | 0.0000 | 706.0737 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **284.9993** | **16.8430** | **0.0000** | **706.0737** |

### Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Medical Office Building | 351 | 71.2498 | 4.2107 | 0.0000 | 176.5184 |
| Parking Lot | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **71.2498** | **4.2107** | **0.0000** | **176.5184** |

## 9.0 Operational Offroad

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

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|
| Emergency Generator | 3 | 0.5 | 50 | 500 | 0.73 | Diesel |

### Boilers

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

### User Defined Equipment

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

## 10.1 Stationary Sources

### 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 | | | | | |
| Emergency Generator - Diesel | 0.0615 | 0.1720 | 0.1569 | 3.0000e-004 | | 9.0500e-003 | 9.0500e-003 | | 9.0500e-003 | 9.0500e-003 | 0.0000 | 28.5598 | 28.5598 | 4.0000e-003 | 0.0000 | 28.6599 |
| **Total** | **0.0615** | **0.1720** | **0.1569** | **3.0000e-004** | | **9.0500e-003** | **9.0500e-003** | | **9.0500e-003** | **9.0500e-003** | **0.0000** | **28.5598** | **28.5598** | **4.0000e-003** | **0.0000** | **28.6599** |

## 11.0 Vegetation

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT | | | |
| Unmitigated | 110.6580 | 0.0000 | 0.0000 | 110.6580 |

## 11.2 Net New Trees

**Species Class**

| | Number of Trees | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| | | MT | | | |
| Cedar/Larch | 5 | 2.6400 | 0.0000 | 0.0000 | 2.6400 |
| Miscellaneous | 60 | 42.4800 | 0.0000 | 0.0000 | 42.4800 |
| Mixed Hardwood | 76 | 55.7840 | 0.0000 | 0.0000 | 55.7840 |
| Pine | -1 | -0.6380 | 0.0000 | 0.0000 | -0.6380 |
| Soft Maple | 12 | 10.3920 | 0.0000 | 0.0000 | 10.3920 |
| **Total** | | **110.6580** | **0.0000** | **0.0000** | **110.6580** |