

HELIX Environmental Planning, Inc.
11 Natoma Street, Suite 155
Folsom, CA 95630
916.365.8700
www.helixepi.com



November 15, 2019

BPF-02

Mr. Scott Roycroft
Better Place Forests
3717 Buchanan Street, Suite 400
San Francisco, CA 94123

Subject: Better Places Forests – Mariposa County Project Air Quality and Greenhouse Gas Emissions Assessment

Dear Mr. Roycroft:

HELIX Environmental Planning, Inc. (HELIX) has assessed the air quality and greenhouse gas (GHG) emissions associated with the construction and operation of the proposed Better Places Forests – Mariposa County Project (project). The analysis has been prepared to support a conditional use permit application to the County of Mariposa (County).

PROJECT DESCRIPTION

The project is located at 10967 Stout Lane in the unincorporated Greeley Hill area of Mariposa County. The project site is approximately 170 acres and comprises Assessor's Parcel Numbers (APNs) 003-010-034 and 003-010-035. The project site has a General Plan land use designation Natural Resource and is zoned Mountain General. Access to the site is provided via an existing driveway on Dexter Road.

The project would develop a memorial forest on approximately 100 acres of the 170-acre site with a total potential of approximately 5,000 trees available for memorial dedication by customers. Site improvements would include: a visitor center building up to 1,500 square-feet, including restroom facilities; a gravel-surface parking lot with approximately 18 parking spaces; a maintenance area with two approximately 120 square-foot storage sheds; an informal outdoor gathering area near the visitor center with picnic tables and benches; a memorial area with a gazebo and benches, a water tank for the visitor center and fire protection; a wastewater septic system/leachfield; compacted dirt paths for memorial tree access; and driveway improvements including widening and adding turnouts.

Project Construction

Project construction would commence between the fall of 2020 and spring of 2021 and would take between six months to one year to complete. Some grading would be required for creation of the visitor center pad, parking lot, and driveway improvements. Cut and fill of earth during grading would be balanced on-site (no import or export of material). The project site is vacant, no demolition would be required.

AIR QUALITY ANALYSIS

Setting

The project site is located in Mariposa County and the Mountain Counties Air Basin (MCAB), which covers an area of approximately 11,000 square miles. The MCAB lies along the northern part of the Sierra Nevada mountains and encompasses El Dorado (western portion), Plumas, Sierra, Nevada, Placer (middle portion), Amador, Calaveras, Tuolumne, and Mariposa counties. The Mariposa County Air Pollution Control District (MCAPCD) is responsible for implementing emissions standards and other requirements of federal and state laws in the Mariposa County portion of the MCAB. Attainment plans for meeting the federal air quality standards are incorporated into the State Implementation Plan (SIP), which is subsequently submitted to the U.S. Environmental Protection Agency (USEPA), the federal agency that administrates the Federal Clean Air Act (CAA) of 1970, as amended in 1990.

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

The California Air Resources Board (CARB) is required to designate areas of the state as attainment, nonattainment, or unclassified for the ambient air quality standards. An “attainment” designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A “nonattainment” designation indicates that a pollutant concentration violated the standard at least once. An “unclassified” designation indicates that insufficient data exists to make a status determination. The air quality attainment status of Mariposa County is shown in Table 1, *Mariposa County Attainment Status*. Mariposa County is designated as nonattainment for the state and national ozone standards and attainment or unclassified for all other criteria pollutants.

Table 1
MARIPOSA COUNTY ATTAINMENT STATUS

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

Source: CARB 2018

Ground-level ozone is not emitted directly into the environment but is generated from complex chemical reactions between Reactive Organic Gases (ROG), or non-methane hydrocarbons, and Oxides of Nitrogen (NO_x) that occur in the presence of sunlight. PM₁₀ and PM_{2.5} is generated from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations and windblown dust. In addition, PM₁₀ and PM_{2.5} can also be formed through chemical and photochemical reactions in the atmosphere. Anthropogenic ROG, NO_x, PM₁₀, and PM_{2.5} sources in the County include motor vehicles and other transportation sources, residential wood burning for heating, and open burning of vegetation related to agriculture and wildfire fuel management. Mariposa County is mostly rural and sparsely populated, and sources of ROG, NO_x, PM₁₀ and PM_{2.5} within the County are limited. The County's nonattainment status for ozone is primarily due to the transport of pollutants from population centers and intense agriculture activity in California's central valley to the west.

Significance Criteria

While the final determination of whether or not a project has a significant effect is within the purview of the lead agency pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15064(b), the MCAPCD has recommended the emissions associated with development projects be compared to the thresholds developed for the County of Mariposa General Plan Environmental Impact Report: Mass emissions of 100 tons per year of any criteria pollutants or precursor (MCAPCD 2006). The MCAPCD has not recommended thresholds for emissions associated with construction activities. For this analysis, total construction emissions (anticipated to occur within a twelve-month period) are compared to the operational emissions thresholds of 100 tons per year of any criteria pollutants or precursor.

Project Analysis

a) Consistency with Applicable Air Quality Plans

The CAA requires states with areas in violation of a NAAQS to prepare a SIP containing strategies and control measures to attain the NAAQS. CARB is responsible for creating and periodically updating the SIP for California to reflect the latest emissions inventories, planning documents, rules, and regulations of air basins as reported by the agencies with jurisdiction over them, including the Mariposa County portion of the MCAB. The USEPA reviews SIPs to determine if they conform to the mandates of the CAA amendments and would achieve air quality goals when implemented. The California 2018 updated SIP is the applicable air quality plan.

As discussed in topic b), below, the project's estimated construction and operational emissions would be below the thresholds recommended by the MCAPCD. The mass emissions thresholds for the ozone precursors ROG and NO_x recommended by the MCAPCD are developed such that projects with emissions below the thresholds would not be expected to affect the MCAPCD's and CARB's plans to attain the NAAQS and CAAQS. Therefore, the project would not conflict with or obstruct implementation of the SIP.

b) Criteria Pollutant Emissions

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, the potential for a project's

individual emissions to contribute to existing cumulatively significant adverse air quality impacts is evaluated.

Criteria pollutant and precursor emissions for project construction and operation were calculated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip generation, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User’s Guide Appendices A, D, and E (CAPCOA 2017). The input data and subsequent emission estimates for the proposed project are discussed below. The CalEEMod output files for the project are included as Attachment A to this letter report.

Construction of the project would result in emissions of criteria pollutants and precursors from: the exhaust of construction equipment and vehicles for construction workers and vendors traveling to and from the project site; construction equipment moving soil or other materials; vehicle traveling on unpaved surfaces; and the application of architectural coatings (e.g., painting). The project’s estimated construction emissions are shown below in Table 2, *Construction Criteria Pollutant and Precursor Emissions*. The emissions estimates assume: cut and fill operations would be balanced on-site (no import or export of soil); CalEEMod default construction equipment for each construction phase; and CalEEMod default worker and vendor trips and distances. The emissions estimate also assumes the implementation of best manage practices (BMPs) to comply with the MCAPCD Rule 202 – Visible Emissions and Rule 205 – Nuisance. The BMPs assumed in the modeling are: watering exposed areas a minimum of twice per day; enforcing a 15 mile-per-hour speed limit on unpaved surfaces; and maintaining a minimum 12 percent moisture content on unpaved roads. As shown in Table 2, the project’s construction emissions would not exceed the MCAPCD thresholds.

Table 2
CONSTRUCTION CRITERIA POLLUTANT AND PRECURSOR EMISSIONS

Year	Emissions (tons per year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2020	0.03	0.25	0.26	<0.01	0.16	0.03
2021	0.08	0.32	0.44	<0.01	0.31	0.05
TOTAL CONSTRUCTION EMISSIONS	0.11	0.57	0.70	<0.01	0.47	0.08
Threshold	100	100	100	100	100	100
<i>Threshold exceeded?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Source: CalEEMod version 2016.3.2; Thresholds MCAPCD 2006

Long-term operation of the project would result in emissions of criteria pollutants and precursors from mobile sources related to the use of vehicles of project patrons and employees traveling to and from the project site; energy sources related to the use of natural gas or propane used for space or water

heating; and area sources such as the use of landscape maintenance equipment, cleaning products, and the re-application of architectural coatings for maintenance. The project’s estimated operational emissions are shown below in Table 3, *Operational Criteria Pollutant and Precursor Emissions*. The emissions estimates assume: daily vehicle trips per the project trip generation analysis (Kimley-Horn 2019); CalEEMod default trip distances and purposes for Mariposa County; approximately 1,500 feet (0.28 mile) of every trip would be on the unpaved project driveway with a speed of 15 miles per hour; and CalEEMod default natural gas (or propane) use.

Table 3
OPERATIONAL CRITERIA POLLUTANT AND PRECURSOR EMISSIONS

Source	Emissions (tons per year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Energy	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Vehicular (mobile)	0.04	0.12	0.47	<0.01	1.93	0.20
TOTAL OPERATIONAL EMISSIONS	0.05	0.12	0.47	<0.01	1.93	0.20
Threshold	100	100	100	100	100	100
<i>Threshold exceeded?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Source: CalEEMod version 2016.3.2; Thresholds MCAPCD 2006

As shown in Table 3, the project long-term operation emissions criteria pollutants and precursors would not exceed the MCAPCD thresholds. Therefore, the project would not result in a cumulatively considerable net increase of any criteria pollutant.

c) Localized Pollutant Concentrations

Toxic Air Contaminants

Construction of the project would result in emissions of diesel particulate matter (DPM) from the use of construction equipment. In 1998, the CARB identified DPM as a toxic air contaminant (TAC) based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. The amount to which a given receptor could be exposed, which is a function of concentration and duration of exposure, is the primary factor used to determine health risk. Current models and methodologies for conducting cancer health risk assessments are associated with longer-term exposure periods (typically 30 years for individual residents) and are best suited for evaluation of long duration TAC emissions with predictable schedules and locations. These assessment models and methodologies do not correlate well with the temporary and highly variable nature of construction activities.

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. The closest sensitive land uses to project construction activities are three residences approximately 800 feet to the west of the project driveway improvement area. Concentrations of DPM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB 2005). The generation of DPM during construction would be variable and sporadic due to the nature of construction activity. Additionally, as shown in Table 2, total

construction period PM₁₀ emissions, of which DPM is a part, would be relatively low, especially when compared to the MCAPCD threshold. Therefore, due to the low levels of DPM being emitted, the distance to the nearest sensitive receptors, the highly dispersive nature of DPM, and the sporadic nature of construction activities requiring the use of heavy diesel-powered equipment, project construction related DPM emissions during construction would not expose sensitive receptors to substantial pollutant concentrations. Once operational, the project would not be a significant source of TACs.

Carbon Monoxide Hotspots

An area of high CO concentrations or “hotspot” is an area of localized CO pollution in excess of the NAAQS concentration limit that is typically caused by severe vehicle congestion on major roadways. Transport of the criteria pollutant CO is extremely limited; CO disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. CO hot spots are typically associated with high volume intersections in urban areas. The project site is located in a rural area. According to the project trip generation analysis, the peak hourly trips associated with the project would occur on Sundays on Dexter Roads. During the Sunday peak hour, the project would contribute approximately 24 trips to the existing 48 trips on Dexter Road (Kimley-Horn 2019). Therefore, due to the limited number of vehicles on the local roadways, operation of the project would not result in CO hot spots that would expose sensitive receptors to substantial pollutant concentrations.

d) Odors

Heavy diesel equipment could generate odors during construction activities. The generation of odors during the construction period would be temporary and would tend to be dispersed within a short distance from the active work area. Once operational, the project would not be a significant source odor. Therefore, due to the short duration of construction activity near any individual residence, the project would not result in other odors adversely affecting a substantial number of people.

GREENHOUSE GAS ANALYSIS

Setting

GHGs, as defined under California’s Assembly Bill (AB) 32, include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆). AB 32, the California Global Warming Solutions Act of 2006, recognizes that California is a source of substantial amounts of GHG emissions. The statute states (State of California Legislature 2006):

Global warming poses a serious threat to the economic wellbeing, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

In order to help avert these potential consequences, AB 32 established a State goal of reducing GHG emissions to 1990 levels by the year 2020, which is a reduction of approximately 16 percent from forecasted emission levels, with further reductions to follow. In addition, AB 32 required CARB develop the Climate Change Scoping Plan (Scoping Plan) to help the state achieve the targeted GHG reductions. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in AB 32. In 2015, Executive Order (EO) B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28 nation European Union. As a follow-up to AB 32 and in response to EO-B-30-15, Senate Bill (SB) 32 was passed by the California legislature in 2016 to codify the EO's California GHG emission reduction target of 40 percent below 1990 levels by 2030. The most recent update to the Scoping Plan was adopted in December 2017 and establishes a proposed framework for California to meet the EO-B-30-15 reduction target (CARB 2017).

Significance Criteria

Given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts.

The MCAQMD recommends a threshold of 500 tons of CO₂ or methane per year for a project's GHG emissions, as developed for the County of Mariposa General Plan Environmental Impact Report (MCAQMD 2006). The MCAQMD's GHG thresholds were developed to meet the year 2020 statewide GHG emissions targets as mandated by AB 32 and implemented by the CARB Scoping Plan. The MCAQMD has not adopted guidance or revised thresholds to account for GHG reduction targets beyond 2020. Accordingly, a threshold reduced by 4.98 percent for each year between 2020 and 2030 would meet the mandates of SB 32. The first full year of operation for the project is anticipated to be 2022. Therefore, a threshold 9.6 percent below the MCAQMD threshold of 500 tons CO₂ or methane per year (or 452 tons per year) is used in this analysis.

Project Analysis

a) Greenhouse Gas Emissions

Construction GHG emission sources include construction equipment exhaust, vendor trucks exhaust, and worker commuting vehicle exhaust. Neither the County nor the MCAQMD have adopted guidance or thresholds for the evaluation of the significance of construction GHG emissions. To be conservative in accounting for all project sources of GHG emissions, the construction period GHG emissions were amortized (i.e., averaged) over 30 years and added to operational emissions. Averaged over 30 years, the proposed construction activities would contribute approximately 4.1 tons of CO₂ per year. The estimated construction GHG emissions for the project are shown in Table 4, *Annual GHG Emissions from Project Construction*.

Table 4
ANNUAL GHG EMISSIONS FROM PROJECT CONSTRUCTION

Construction Year	Emissions (tons per year)	
	CO ₂	CH ₄
2020	45.2	<0.1
2021	76.5	<0.1
TOTAL	121.7	<0.1
Amortized Emissions (total/30 years)	4.1	<0.1

Source: CalEEMod version 2016.3.2

Notes: Total may not sum due to rounding.

Operational GHG emissions sources would include: area sources such as the use of landscape equipment and consumer products; energy sources associated with the on-site use of natural gas or propane and the off-site generation of electricity; vehicular sources associated with exhaust from vehicles traveling to and from the project site; solid waste sources associated with the collection and disposal of solid waste; and water/wastewater sources associated with electricity to pump water and the emissions from the septic system for treatment of wastewater. The project total operation GHG emissions, including the amortized annual construction emissions are shown in Table 5, *Annual GHG Emissions from Project Operation*.

Table 5
ANNUAL GHG EMISSIONS FROM PROJECT OPERATION

Construction Year	Emissions (tons per year)	
	CO ₂	CH ₄
Area	<0.1	<0.1
Energy	7.1	<0.1
Vehicular (Mobile)	83.2	<0.1
Solid Waste	0.3	<0.1
Water and Wastewater	0.4	<0.1
Operational Subtotal	90.9	<0.1
<i>Construction (Annualized over 30 years)</i>	<i>4.1</i>	<i><0.1</i>
TOTAL OPERATIONAL EMISSIONS	95.0	<0.1
<i>Adjusted (2022) Threshold</i>	<i>452</i>	<i>452</i>
Exceed Threshold?	No	No

Source: CalEEMod version 2016.3.2; Thresholds – BAAQMD 2017a

Notes: Total may not sum due to rounding.

As shown in Table 5, The project’s annual emissions of 95.0 tons of CO₂ would be below the MCAPCD 2022 adjusted threshold of 452 ton of CO₂ per year. Therefore, the project’s GHG emissions would be less than cumulatively considerable and the project would not Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The impact would be **less than significant**.

b) Consistency with Greenhouse Gas Reduction Plans

As discussed in topic a), above, the project would not exceed the GHG emissions threshold during long-term operations. In addition, many long-term GHG reduction plans, including the CARB Scoping Plan, estimate future GHG emissions and corresponding reduction targets based on local and statewide growth estimates. The project would not result in regional population growth and the project's estimated contribution to the County employment growth of 2 to 4 employees would be minimal (Better Places Forests 2019). Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

SUMMARY

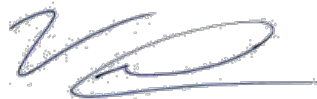
As described above, the project's construction emissions of criteria pollutants and precursors, would be below MCAPCD thresholds and would result in a less than significant impact. The project would not result in exposure of sensitive receptors to substantial concentrations of DPM during construction, nor would long-term operation of the project result in CO hotspots. The project would not result in odors affecting a substantial number of people. No mitigation measures are required in regard to air quality.

The project GHG emissions would also be below the MCAPCD 2022 adjusted threshold and would be less than significant. No mitigation measures are required in regard to GHG emissions.

Sincerely,



Martin Rolph
Air Quality Specialist



Victor Ortiz
Senior Air Quality Specialist

Attachments:

Attachment A, CalEEMod Output

REFERENCES

- Better Places Forests. 2019. Electronic communication between Scott Roycroft (Planning Better Paces) and Martin Rolph (HELIX Environmental Planning). October 29.
- California Air Pollution Control Officers Association (CAPCOA). 2017. User's Guide for CalEEMod version 2016.3.2. Available at: <http://www.caleemod.com/>.
- California Air Resources Board (CARB). 2018. State and Federal Area Designation Maps. October. Available at: <https://ww3.arb.ca.gov/desig/adm/adm.htm>.
2017. California's 2017 Climate Change Scoping Plan. November. Available at: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.
2005. Air Quality and Land Use Handbook: A Community Health Perspective. April. Available at: <https://ww3.arb.ca.gov/ch/handbook.pdf>.
- California, State of, Legislature. 2006. Assembly Bill No. 32: California Global Warming Solutions Act of 2006. Available at: http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf.
- Kimley-Horn. 2019. Better Place Forests Trip Generation Memo – Mariposa County. October 30.
- Mariposa County Air Pollution Control District (MCAPCD). 2006. County of Mariposa General Plan – Volume IV Environmental Impact Report. Available at: <https://www.mariposacounty.org/DocumentCenter/View/59902/AP-Threshold-General-Plan-Volume-IV-48?bidId=>.

Attachment A

CalEEMod Output

This page intentionally left blank

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

**BPF-02 Better Places Forest Mariposa
Mariposa County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.50	1000sqft	0.03	1,500.00	0
Other Non-Asphalt Surfaces	18.00	1000sqft	0.41	18,000.00	0
City Park	2.00	Acre	2.00	87,120.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	1			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

Project Characteristics -

Land Use - General Office Building = visitor's center.

Other Non-Asphalt Surfaces = gravel lot, driveway, and turnouts.

City Park = improved outdoor spaces and trails.

Construction Phase - Construction phases adjusted to fit overall anticipated 6-month schedule.

Off-road Equipment -

Off-road Equipment - 1-story wood construction visitor's center, no cranes or welders anticipated.

Grading -

Vehicle Trips - Trip rates per project Trip Generation Memo (Kimley-Horn 2019).

Road Dust - 0.28 mile of unpaved (gravel) single-lane driveway.

15 mph assumed on driveway.

Water And Wastewater - Limited landscaped/irrigated area around visitor's center only.

Project would operate with a well and septic system.

Solid Waste - Solid waste generation for visitor's center only.

Operational Off-Road Equipment -

On-road Fugitive Dust - % Paved accounts for 0.28 miles on the project driveay for every trip.

Construction Off-road Equipment Mitigation - BMPs to meet MCAPCD Rule 202 and 205.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0.5	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	220.00	110.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOnRoadDust	VendorPercentPave	100.00	95.80
tblOnRoadDust	VendorPercentPave	100.00	95.80
tblOnRoadDust	VendorPercentPave	100.00	95.80
tblOnRoadDust	VendorPercentPave	100.00	95.80

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

tblOnRoadDust	WorkerPercentPave	100.00	98.30
tblOnRoadDust	WorkerPercentPave	100.00	98.30
tblOnRoadDust	WorkerPercentPave	100.00	98.30
tblOnRoadDust	WorkerPercentPave	100.00	98.30
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	MeanVehicleSpeed	40	15
tblRoadDust	RoadPercentPave	100	95.8
tblSolidWaste	SolidWasteGenerationRate	0.17	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	2.46	56.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	1.05	85.33
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	11.03	37.33
tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	OutdoorWaterUseRate	2,382,962.70	0.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	11-2-2020	2-1-2021	0.3893	0.3893
2	2-2-2021	5-1-2021	0.2867	0.2867
		Highest	0.3893	0.3893

2.2 Overall Operational
Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0102	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.1000e-004
Energy	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	6.3903	6.3903	2.5000e-004	7.0000e-005	6.4185
Mobile	0.0430	0.1197	0.4720	8.3000e-004	1.9261	1.0700e-003	1.9272	0.2031	1.0000e-003	0.2041	0.0000	75.4500	75.4500	4.8600e-003	0.0000	75.5716
Waste						0.0000	0.0000		0.0000	0.0000	0.2842	0.0000	0.2842	0.0168	0.0000	0.7041
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.4130	0.4130	0.0606	2.1000e-004	1.9896
Total	0.0534	0.1211	0.4734	8.4000e-004	1.9261	1.1800e-003	1.9273	0.2031	1.1100e-003	0.2043	0.2842	82.2537	82.5379	0.0825	2.8000e-004	84.6841

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

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	0.0102	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.1000e-004
Energy	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	6.3903	6.3903	2.5000e-004	7.0000e-005	6.4185
Mobile	0.0430	0.1197	0.4720	8.3000e-004	1.9261	1.0700e-003	1.9272	0.2031	1.0000e-003	0.2041	0.0000	75.4500	75.4500	4.8600e-003	0.0000	75.5716
Waste						0.0000	0.0000		0.0000	0.0000	0.2842	0.0000	0.2842	0.0168	0.0000	0.7041
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.4130	0.4130	0.0606	2.1000e-004	1.9896
Total	0.0534	0.1211	0.4734	8.4000e-004	1.9261	1.1800e-003	1.9273	0.2031	1.1100e-003	0.2043	0.2842	82.2537	82.5379	0.0825	2.8000e-004	84.6841

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/2/2020	11/4/2020	5	3	
2	Grading	Grading	11/5/2020	11/12/2020	5	6	
3	Building Construction	Building Construction	11/13/2020	4/15/2021	5	110	
4	Architectural Coating	Architectural Coating	4/16/2021	4/29/2021	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0.41

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,250; Non-Residential Outdoor: 750; Striped Parking Area: 1,080 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	1	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

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	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	45.00	17.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4800e-003	0.0299	0.0169	4.0000e-005		1.1700e-003	1.1700e-003		1.0700e-003	1.0700e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551
Total	2.4800e-003	0.0299	0.0169	4.0000e-005	2.3900e-003	1.1700e-003	3.5600e-003	2.6000e-004	1.0700e-003	1.3300e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

3.2 Site Preparation - 2020

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	1.8000e-004	1.5000e-004	1.3200e-003	0.0000	4.3900e-003	0.0000	4.3900e-003	4.6000e-004	0.0000	4.6000e-004	0.0000	0.1389	0.1389	1.0000e-005	0.0000	0.1392
Total	1.8000e-004	1.5000e-004	1.3200e-003	0.0000	4.3900e-003	0.0000	4.3900e-003	4.6000e-004	0.0000	4.6000e-004	0.0000	0.1389	0.1389	1.0000e-005	0.0000	0.1392

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0700e-003	0.0000	1.0700e-003	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4800e-003	0.0299	0.0169	4.0000e-005		1.1700e-003	1.1700e-003		1.0700e-003	1.0700e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551
Total	2.4800e-003	0.0299	0.0169	4.0000e-005	1.0700e-003	1.1700e-003	2.2400e-003	1.2000e-004	1.0700e-003	1.1900e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.5000e-004	1.3200e-003	0.0000	1.5200e-003	0.0000	1.5200e-003	1.8000e-004	0.0000	1.8000e-004	0.0000	0.1389	0.1389	1.0000e-005	0.0000	0.1392
Total	1.8000e-004	1.5000e-004	1.3200e-003	0.0000	1.5200e-003	0.0000	1.5200e-003	1.8000e-004	0.0000	1.8000e-004	0.0000	0.1389	0.1389	1.0000e-005	0.0000	0.1392

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					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	5.7700e-003	0.0640	0.0298	6.0000e-005	0.0197	2.9700e-003	0.0226	0.0101	2.7300e-003	0.0128	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.6000e-004	3.3100e-003	0.0000	0.0110	0.0000	0.0110	1.1600e-003	0.0000	1.1600e-003	0.0000	0.3472	0.3472	3.0000e-005	0.0000	0.3480
Total	4.6000e-004	3.6000e-004	3.3100e-003	0.0000	0.0110	0.0000	0.0110	1.1600e-003	0.0000	1.1600e-003	0.0000	0.3472	0.3472	3.0000e-005	0.0000	0.3480

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.8500e-003	0.0000	8.8500e-003	4.5500e-003	0.0000	4.5500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	5.7700e-003	0.0640	0.0298	6.0000e-005	8.8500e-003	2.9700e-003	0.0118	4.5500e-003	2.7300e-003	7.2800e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.6000e-004	3.3100e-003	0.0000	3.8000e-003	0.0000	3.8100e-003	4.4000e-004	0.0000	4.4000e-004	0.0000	0.3472	0.3472	3.0000e-005	0.0000	0.3480
Total	4.6000e-004	3.6000e-004	3.3100e-003	0.0000	3.8000e-003	0.0000	3.8100e-003	4.4000e-004	0.0000	4.4000e-004	0.0000	0.3472	0.3472	3.0000e-005	0.0000	0.3480

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	0.0119	0.1084	0.1128	1.8000e-004		6.6600e-003	6.6600e-003		6.4000e-003	6.4000e-003	0.0000	15.5287	15.5287	2.3800e-003	0.0000	15.5882
Total	0.0119	0.1084	0.1128	1.8000e-004		6.6600e-003	6.6600e-003		6.4000e-003	6.4000e-003	0.0000	15.5287	15.5287	2.3800e-003	0.0000	15.5882

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

3.4 Building Construction - 2020

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	1.6100e-003	0.0410	0.0121	8.0000e-005	0.1038	2.4000e-004	0.1040	0.0107	2.3000e-004	0.0109	0.0000	7.2393	7.2393	4.6000e-004	0.0000	7.2507
Worker	0.0121	9.5500e-003	0.0868	1.0000e-004	0.2880	1.1000e-004	0.2881	0.0303	1.0000e-004	0.0304	0.0000	9.1144	9.1144	8.1000e-004	0.0000	9.1347
Total	0.0137	0.0505	0.0989	1.8000e-004	0.3918	3.5000e-004	0.3921	0.0410	3.3000e-004	0.0413	0.0000	16.3536	16.3536	1.2700e-003	0.0000	16.3854

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0119	0.1084	0.1128	1.8000e-004		6.6600e-003	6.6600e-003		6.4000e-003	6.4000e-003	0.0000	15.5286	15.5286	2.3800e-003	0.0000	15.5881
Total	0.0119	0.1084	0.1128	1.8000e-004		6.6600e-003	6.6600e-003		6.4000e-003	6.4000e-003	0.0000	15.5286	15.5286	2.3800e-003	0.0000	15.5881

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6100e-003	0.0410	0.0121	8.0000e-005	0.0348	2.4000e-004	0.0350	3.7800e-003	2.3000e-004	4.0100e-003	0.0000	7.2393	7.2393	4.6000e-004	0.0000	7.2507
Worker	0.0121	9.5500e-003	0.0868	1.0000e-004	0.0998	1.1000e-004	0.0999	0.0115	1.0000e-004	0.0116	0.0000	9.1144	9.1144	8.1000e-004	0.0000	9.1347
Total	0.0137	0.0505	0.0989	1.8000e-004	0.1346	3.5000e-004	0.1349	0.0153	3.3000e-004	0.0156	0.0000	16.3536	16.3536	1.2700e-003	0.0000	16.3854

3.4 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	0.0229	0.2107	0.2401	3.8000e-004		0.0122	0.0122		0.0117	0.0117	0.0000	33.2791	33.2791	4.9900e-003	0.0000	33.4038
Total	0.0229	0.2107	0.2401	3.8000e-004		0.0122	0.0122		0.0117	0.0117	0.0000	33.2791	33.2791	4.9900e-003	0.0000	33.4038

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0500e-003	0.0815	0.0237	1.6000e-004	0.2224	3.3000e-004	0.2227	0.0229	3.2000e-004	0.0232	0.0000	15.4408	15.4408	8.5000e-004	0.0000	15.4620
Worker	0.0245	0.0184	0.1641	2.1000e-004	0.6171	2.3000e-004	0.6173	0.0650	2.1000e-004	0.0652	0.0000	18.9212	18.9212	1.5400e-003	0.0000	18.9596
Total	0.0275	0.0999	0.1878	3.7000e-004	0.8395	5.6000e-004	0.8400	0.0879	5.3000e-004	0.0884	0.0000	34.3620	34.3620	2.3900e-003	0.0000	34.4216

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0229	0.2107	0.2401	3.8000e-004		0.0122	0.0122		0.0117	0.0117	0.0000	33.2790	33.2790	4.9900e-003	0.0000	33.4038
Total	0.0229	0.2107	0.2401	3.8000e-004		0.0122	0.0122		0.0117	0.0117	0.0000	33.2790	33.2790	4.9900e-003	0.0000	33.4038

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0500e-003	0.0815	0.0237	1.6000e-004	0.0745	3.3000e-004	0.0749	8.1000e-003	3.2000e-004	8.4100e-003	0.0000	15.4408	15.4408	8.5000e-004	0.0000	15.4620
Worker	0.0245	0.0184	0.1641	2.1000e-004	0.2139	2.3000e-004	0.2141	0.0247	2.1000e-004	0.0249	0.0000	18.9212	18.9212	1.5400e-003	0.0000	18.9596
Total	0.0275	0.0999	0.1878	3.7000e-004	0.2884	5.6000e-004	0.2890	0.0328	5.3000e-004	0.0333	0.0000	34.3620	34.3620	2.3900e-003	0.0000	34.4216

3.5 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	0.0236					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	0.0247	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

3.5 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-004	4.9000e-004	4.3700e-003	1.0000e-005	0.0165	1.0000e-005	0.0165	1.7300e-003	1.0000e-005	1.7400e-003	0.0000	0.5046	0.5046	4.0000e-005	0.0000	0.5056
Total	6.5000e-004	4.9000e-004	4.3700e-003	1.0000e-005	0.0165	1.0000e-005	0.0165	1.7300e-003	1.0000e-005	1.7400e-003	0.0000	0.5046	0.5046	4.0000e-005	0.0000	0.5056

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0236					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	0.0247	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

3.5 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5000e-004	4.9000e-004	4.3700e-003	1.0000e-005	5.7000e-003	1.0000e-005	5.7100e-003	6.6000e-004	1.0000e-005	6.6000e-004	0.0000	0.5046	0.5046	4.0000e-005	0.0000	0.5056
Total	6.5000e-004	4.9000e-004	4.3700e-003	1.0000e-005	5.7000e-003	1.0000e-005	5.7100e-003	6.6000e-004	1.0000e-005	6.6000e-004	0.0000	0.5046	0.5046	4.0000e-005	0.0000	0.5056

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0430	0.1197	0.4720	8.3000e-004	1.9261	1.0700e-003	1.9272	0.2031	1.0000e-003	0.2041	0.0000	75.4500	75.4500	4.8600e-003	0.0000	75.5716
Unmitigated	0.0430	0.1197	0.4720	8.3000e-004	1.9261	1.0700e-003	1.9272	0.2031	1.0000e-003	0.2041	0.0000	75.4500	75.4500	4.8600e-003	0.0000	75.5716

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	56.00	84.00	128.00	194,035	194,035
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	56.00	84.00	128.00	194,035	194,035

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.539445	0.043909	0.195996	0.139733	0.042842	0.007654	0.010599	0.005813	0.002619	0.000945	0.006360	0.002137	0.001949
General Office Building	0.539445	0.043909	0.195996	0.139733	0.042842	0.007654	0.010599	0.005813	0.002619	0.000945	0.006360	0.002137	0.001949
Other Non-Asphalt Surfaces	0.539445	0.043909	0.195996	0.139733	0.042842	0.007654	0.010599	0.005813	0.002619	0.000945	0.006360	0.002137	0.001949

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	4.8262	4.8262	2.2000e-004	5.0000e-005	4.8451
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4.8262	4.8262	2.2000e-004	5.0000e-005	4.8451
NaturalGas Mitigated	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5641	1.5641	3.0000e-005	3.0000e-005	1.5734
NaturalGas Unmitigated	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5641	1.5641	3.0000e-005	3.0000e-005	1.5734

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	29310	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5641	1.5641	3.0000e-005	3.0000e-005	1.5734
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5641	1.5641	3.0000e-005	3.0000e-005	1.5734

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	29310	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5641	1.5641	3.0000e-005	3.0000e-005	1.5734
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5641	1.5641	3.0000e-005	3.0000e-005	1.5734

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	16590	4.8262	2.2000e-004	5.0000e-005	4.8451
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		4.8262	2.2000e-004	5.0000e-005	4.8451

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	16590	4.8262	2.2000e-004	5.0000e-005	4.8451
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		4.8262	2.2000e-004	5.0000e-005	4.8451

6.0 Area Detail

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

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	0.0102	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.1000e-004
Unmitigated	0.0102	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.1000e-004

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	2.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.1000e-004
Total	0.0102	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.1000e-004

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.1000e-004
Total	0.0102	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.1000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4130	0.0606	2.1000e-004	1.9896
Unmitigated	0.4130	0.0606	2.1000e-004	1.9896

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.266601 / 0.1634	0.4130	0.0606	2.1000e-004	1.9896
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.4130	0.0606	2.1000e-004	1.9896

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.266601 / 0.1634	0.4130	0.0606	2.1000e-004	1.9896
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.4130	0.0606	2.1000e-004	1.9896

8.0 Waste Detail

8.1 Mitigation Measures Waste

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2842	0.0168	0.0000	0.7041
Unmitigated	0.2842	0.0168	0.0000	0.7041

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1.4	0.2842	0.0168	0.0000	0.7041
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.2842	0.0168	0.0000	0.7041

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1.4	0.2842	0.0168	0.0000	0.7041
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.2842	0.0168	0.0000	0.7041

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
----------------	--------

BPF-02 Better Places Forest Mariposa - Mariposa County, Annual

11.0 Vegetation
