

DOCKETED	
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Reference: Air Quality Technical Memorandum Update for the Fountain Wind Energy Project

METHODOLOGY

The construction emissions were calculated with the California Emissions Estimator Model (CalEEMod), the California Air Resources Board’s 2021 Emission FACTor (EMFAC) Database, and helicopter emission factors. Off-road equipment and off-site vehicle particulate matter (PM) emissions were calculated using CalEEMod. On-site pickup truck and off-site vehicle reactive organic gas (ROG) and nitrogen oxide (NOx) emissions were calculated using EMFAC. The emissions for the Concrete Batch Plants phase incorporates PM emissions associated with aggregate transport derived from the U.S. Environmental Protection Agency’s (USEPA’s) AP-42 Emission Factors. The emissions for the Overhead Collector System phase incorporates the use of helicopters using emission factors and fuel burn rates obtained from the Federal Office of Civil Aviation (FOCA) Guidance on Determination of Helicopter Emissions, Edition 2.

Based on the 2019 Analysis, it was assumed that construction phases may occur concurrently during Year 1 and Year 2. Concurrent activities for each Project component that would emit the greatest amount of daily emissions would be as follows:

Year 1 of Construction

- Timber Removal and Grubbing; and
- Grading and Access Road Work

Year 2 of Construction

- Turbine and Transformer Installation;
- Substation and O&M Building Installation;
- Underground Collector System; and
- Overhead Collector Systems.

Modeling assumptions, calculation spreadsheets, and CalEEMod output files are provided in Attachment A.

RESULTS

Construction

Construction emissions are generated from off-road construction equipment, worker and hauling vehicle trips, and dust emissions from unpaved roadways. Table 1 below shows the unmitigated construction emissions from the Project.

Table 1: Unmitigated Construction Emissions

Phase	Source	ROG	NOx	PM ₁₀	PM _{2.5}
Peak Construction Emissions - First Year (pounds per day)					
Timber Removal and Grubbing	Equipment	11.29	80.27	3.04	2.80
	Vehicles	0.89	19.00	1,507.64	151.40

Reference: Air Quality Technical Memorandum Update for the Fountain Wind Energy Project

Phase	Source	ROG	NOx	PM ₁₀	PM _{2.5}
Grading and Access Road Work	Equipment	23.87	178.76	14.68	7.04
	Vehicles	0.52	6.90	516.79	52.27
Year 1 Total		36.57	284.93	2,042.15	213.51
Peak Construction Emissions - Second Year (pounds per day)					
Turbine and Transformer Installation	Equipment	6.65	65.15	2.84	2.65
	Vehicles	0.48	15.67	536.34	56.82
	On-Site Pick Up Trucks	0.10	1.12	0.05	0.03
Substation and O&M Building Installation	Equipment	1.26	12.97	0.56	0.52
	Vehicles	0.30	1.37	121.05	12.61
	On-Site Pick Up Trucks	0.29	6.12	0.23	0.12
Underground Collector System	Equipment	2.47	24.44	1.39	1.28
	Vehicles	0.13	0.25	113.85	11.75
	On-Site Pick Up Trucks	0.43	9.18	0.35	0.18
Overhead Collector System	Equipment	3.65	30.91	1.13	1.04
	Vehicles	0.13	0.25	113.85	11.75
	Helicopter	5.25	7.84	4.36	0.64
	On-Site Pick Up Trucks	0.36	7.65	0.29	0.15
Year 2 Total		21.50	182.92	896.29	99.54

Source: See Attachment A

Mitigation requires the use of Tier 4 Final equipment and implementation of fugitive dust control measures. Table 2 below shows the mitigated construction emissions from the Project.

Table 2: Mitigated Construction Emissions

Phase	Source	ROG	NOx	PM ₁₀	PM _{2.5}
Peak Construction Emissions - First Year (pounds per day)					
Timber Removal and Grubbing	Equipment	3.64	18.16	0.48	0.48
	Vehicles	0.89	19.00	151.29	15.99
Grading and Access Road Work	Equipment	7.17	31.09	8.93	1.83
	Vehicles	0.52	6.90	53.51	6.00
Year 1 Total		12.22	75.15	214.21	24.30
Peak Construction Emissions - Second Year (pounds per day)					
Turbine and Transformer Installation	Equipment	1.54	6.70	0.21	0.21
	Vehicles	0.48	15.67	65.16	9.66
	On-Site Pick Up Trucks	0.10	1.12	0.05	0.03

Reference: Air Quality Technical Memorandum Update for the Fountain Wind Energy Project

Phase	Source	ROG	NOx	PM ₁₀	PM _{2.5}
Substation and O&M Building Installation	Equipment	0.38	3.98	0.04	0.04
	Vehicles	0.30	1.37	14.03	1.90
	On-Site Pick Up Trucks	0.29	6.12	0.23	0.12
Underground Collector System	Equipment	0.60	7.32	0.06	0.06
	Vehicles	0.13	0.25	12.67	1.64
	On-Site Pick Up Trucks	0.43	9.18	0.35	0.18
Overhead Collector System	Equipment	1.33	11.51	0.16	0.16
	Vehicles	0.13	0.25	12.67	1.64
	Helicopter	5.25	7.84	4.36	0.64
	On-Site Pick Up Trucks	0.36	7.65	0.29	0.15
Year 2 Total		11.32	78.96	110.28	16.43

Source: See Attachment A

Operation

According to the Traffic Study, during post-construction activities, the Project would generate approximately 240 vehicle miles traveled per day. The operational emissions calculated within Stantec's 2023 Air Quality Technical Memorandum are more conservative than this estimate. The 2023 Air Quality Technical Memorandum assumed up to 24 vehicle trips per day with each vehicle traveling 50 miles per trip (1,200 VMT per day). Therefore, the operational emissions disclosed within the 2023 Air Quality Technical Memorandum presents a conservative estimate.

Respectfully,

STANTEC CONSULTING SERVICES INC.



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Attachment A: Air Quality Emissions Calculations

**ATTACHMENT A
EMISSIONS CALCULATIONS**

Fountain Wind, Year 1 - Shasta County, Summer

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

**Fountain Wind, Year 1
Shasta County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	82
Climate Zone	3			Operational Year	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction schedule provided, no construction anticipated during winter months (January through March).

Off-road Equipment - provided

Off-road Equipment - construction equipment provided

Off-road Equipment - equipment provided

Off-road Equipment - support equipment necessary during Year 1 construction

Off-road Equipment - equipment provided

Trips and VMT - construction trips pulled from 2019, reduced based on project description. vendor trip added based on TIA.

On-road Fugitive Dust - per 2019 CalEEMod assumptions

Grading - total acres graded and material exported assumed to be ~0.67 of 2019 assumptions

Vehicle Trips - construction only

Fountain Wind, Year 1 - Shasta County, Summer

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

Construction Off-road Equipment Mitigation - based on 2019 assumptions

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	77.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	100.00	70.00

Fountain Wind, Year 1 - Shasta County, Summer

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

tblConstructionPhase	NumDays	2.00	126.00
tblConstructionPhase	NumDays	1.00	55.00
tblConstructionPhase	NumDays	1.00	70.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	866.25	923.13
tblGrading	MaterialExported	0.00	170,752.00
tblOffRoadEquipment	HorsePower	8.00	89.00
tblOffRoadEquipment	HorsePower	367.00	247.00
tblOffRoadEquipment	HorsePower	65.00	187.00
tblOffRoadEquipment	LoadFactor	0.43	0.20
tblOffRoadEquipment	LoadFactor	0.48	0.40
tblOffRoadEquipment	LoadFactor	0.37	0.41
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOnRoadDust	HaulingPercentPave	100.00	70.00
tblOnRoadDust	HaulingPercentPave	100.00	73.00
tblOnRoadDust	HaulingPercentPave	100.00	88.00
tblOnRoadDust	WorkerPercentPave	100.00	68.00
tblOnRoadDust	WorkerPercentPave	100.00	94.00
tblOnRoadDust	WorkerPercentPave	100.00	68.00
tblOnRoadDust	WorkerPercentPave	100.00	68.00

Fountain Wind, Year 1 - Shasta County, Summer

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

tbITripsAndVMT	HaulingTripLength	20.00	22.00
tbITripsAndVMT	HaulingTripLength	20.00	50.00
tbITripsAndVMT	HaulingTripLength	20.00	0.00
tbITripsAndVMT	HaulingTripNumber	0.00	8,667.00
tbITripsAndVMT	HaulingTripNumber	21,344.00	5,887.00
tbITripsAndVMT	HaulingTripNumber	0.00	73.00
tbITripsAndVMT	VendorTripLength	7.30	34.79
tbITripsAndVMT	VendorTripLength	7.30	34.79
tbITripsAndVMT	VendorTripLength	7.30	35.74
tbITripsAndVMT	VendorTripLength	7.30	34.79
tbITripsAndVMT	VendorTripNumber	0.00	50.00
tbITripsAndVMT	VendorTripNumber	0.00	50.00
tbITripsAndVMT	VendorTripNumber	0.00	87.00
tbITripsAndVMT	VendorTripNumber	0.00	50.00
tbITripsAndVMT	WorkerTripLength	10.80	10.00
tbITripsAndVMT	WorkerTripLength	10.80	50.00
tbITripsAndVMT	WorkerTripLength	10.80	10.00
tbITripsAndVMT	WorkerTripLength	10.80	10.00
tbITripsAndVMT	WorkerTripNumber	55.00	24.00
tbITripsAndVMT	WorkerTripNumber	118.00	24.00
tbITripsAndVMT	WorkerTripNumber	0.00	24.00
tbITripsAndVMT	WorkerTripNumber	90.00	24.00
tbIVehicleTrips	CC_TL	7.30	0.00
tbIVehicleTrips	CNW_TL	7.30	0.00
tbIVehicleTrips	CW_TL	9.50	0.00
tbIVehicleTrips	ST_TR	6.42	0.00
tbIVehicleTrips	SU_TR	5.09	0.00
tbIVehicleTrips	WD_TR	3.93	0.00

Fountain Wind, Year 1 - Shasta County, Summer

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

Fountain Wind, Year 1 - Shasta County, Summer

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0284	5.5600e-003	4.7700e-003	3.0000e-005	0.0000	4.2000e-004	4.2000e-004	0.0000	4.2000e-004	4.2000e-004		6.6723	6.6723	1.3000e-004	1.2000e-004	6.7119

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0284	5.5600e-003	4.7700e-003	3.0000e-005	0.0000	4.2000e-004	4.2000e-004	0.0000	4.2000e-004	4.2000e-004		6.6723	6.6723	1.3000e-004	1.2000e-004	6.7119

Fountain Wind, Year 1 - Shasta County, Summer

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Timber Removal and Grubbing	Site Preparation	4/1/2024	6/3/2024	6	55	
2	Grading and Access Road Work	Grading	5/7/2024	9/30/2024	6	126	
3	Concrete Batch Plants	Building Construction	9/5/2024	12/11/2024	5	70	
4	Foundations	Site Preparation	10/1/2024	12/20/2024	6	70	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 923.13

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Timber Removal and Grubbing	Off-Highway Trucks	16	10.00	402	0.38
Timber Removal and Grubbing	Other Construction Equipment	2	10.00	172	0.42
Timber Removal and Grubbing	Skid Steer Loaders	2	10.00	65	0.37
Timber Removal and Grubbing	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Grading and Access Road Work	Graders	3	10.00	187	0.41
Grading and Access Road Work	Off-Highway Trucks	30	10.00	402	0.38
Grading and Access Road Work	Plate Compactors	4	10.00	8	0.43

Fountain Wind, Year 1 - Shasta County, Summer

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

Grading and Access Road Work	Scrapers	4	10.00	247	0.40
Grading and Access Road Work	Tractors/Loaders/Backhoes	6	10.00	97	0.37
Concrete Batch Plants	Cement and Mortar Mixers	10	10.00	9	0.56
Concrete Batch Plants	Generator Sets	3	10.00	84	0.74
Concrete Batch Plants	Off-Highway Trucks	11	10.00	402	0.38
Concrete Batch Plants	Skid Steer Loaders	3	10.00	65	0.37
Foundations	Cranes	3	10.00	231	0.29
Foundations	Excavators	3	10.00	158	0.38
Foundations	Off-Highway Trucks	20	10.00	402	0.38
Foundations	Plate Compactors	4	10.00	89	0.20
Foundations	Skid Steer Loaders	3	10.00	187	0.41
Foundations	Tractors/Loaders/Backhoes	3	10.00	97	0.37

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
Timber Removal and Grubbing	22	24.00	50.00	8,667.00	10.00	34.79	20.00	LD_Mix	HDT_Mix	HHDT
Grading and Access Road Work	47	24.00	50.00	5,887.00	50.00	34.79	22.00	LD_Mix	HDT_Mix	HHDT
Concrete Batch Plants	27	24.00	87.00	73.00	10.00	35.74	50.00	LD_Mix	HDT_Mix	HHDT
Foundations	36	24.00	50.00	0.00	10.00	34.79	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

Fountain Wind, Year 1 - Shasta County, Summer

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

3.2 Timber Removal and Grubbing - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	11.2859	80.2713	84.0867	0.2930		3.0432	3.0432		2.7997	2.7997		28,358.45 50	28,358.45 50	9.1717		28,587.74 74
Total	11.2859	80.2713	84.0867	0.2930	0.0000	3.0432	3.0432	0.0000	2.7997	2.7997		28,358.45 50	28,358.45 50	9.1717		28,587.74 74

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3954	20.6463	4.4644	0.0921	1,393.595 0	0.1997	1,393.794 7	139.4539	0.1911	139.6449		9,752.017 2	9,752.017 2	0.0184	1.5328	10,209.23 62
Vendor	0.1937	8.9673	1.5881	0.0457	1.6103	0.0758	1.6862	0.4632	0.0726	0.5357		4,815.875 8	4,815.875 8	9.6500e- 003	0.6952	5,023.290 8
Worker	0.0835	0.0410	0.6410	1.6700e- 003	113.1567	9.6000e- 004	113.1577	11.3144	8.8000e- 004	11.3153		169.1364	169.1364	4.6100e- 003	4.2800e- 003	170.5262
Total	0.6726	29.6546	6.6935	0.1395	1,508.362 0	0.2765	1,508.638 6	151.2315	0.2645	151.4960		14,737.02 94	14,737.02 94	0.0327	2.2322	15,403.05 31

Fountain Wind, Year 1 - Shasta County, Summer

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

3.2 Timber Removal and Grubbing - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	3.6464	18.1551	140.1100	0.2930		0.4777	0.4777		0.4777	0.4777	0.0000	28,358.45 50	28,358.45 50	9.1717		28,587.74 74
Total	3.6464	18.1551	140.1100	0.2930	0.0000	0.4777	0.4777	0.0000	0.4777	0.4777	0.0000	28,358.45 50	28,358.45 50	9.1717		28,587.74 74

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3954	20.6463	4.4644	0.0921	138.3122	0.1997	138.5119	14.1551	0.1911	14.3462		9,752.017 2	9,752.017 2	0.0184	1.5328	10,209.23 62
Vendor	0.1937	8.9673	1.5881	0.0457	1.5069	0.0758	1.5827	0.4378	0.0726	0.5103		4,815.875 8	4,815.875 8	9.6500e- 003	0.6952	5,023.290 8
Worker	0.0835	0.0410	0.6410	1.6700e- 003	11.1940	9.6000e- 004	11.1949	1.1369	8.8000e- 004	1.1378		169.1364	169.1364	4.6100e- 003	4.2800e- 003	170.5262
Total	0.6726	29.6546	6.6935	0.1395	151.0130	0.2765	151.2895	15.7298	0.2645	15.9943		14,737.02 94	14,737.02 94	0.0327	2.2322	15,403.05 31

Fountain Wind, Year 1 - Shasta County, Summer

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

3.3 Grading and Access Road Work - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.9697	0.0000	7.9697	0.8692	0.0000	0.8692			0.0000			0.0000
Off-Road	23.8742	178.7551	160.0934	0.5889		6.7060	6.7060		6.1734	6.1734		56,940.00 12	56,940.00 12	18.3777		57,399.44 34
Total	23.8742	178.7551	160.0934	0.5889	7.9697	6.7060	14.6757	0.8692	6.1734	7.0427		56,940.00 12	56,940.00 12	18.3777		57,399.44 34

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1227	6.6387	1.3704	0.0299	409.1520	0.0651	409.2171	40.9586	0.0623	41.0208		3,165.348 8	3,165.348 8	5.7100e-003	0.4975	3,313.748 2
Vendor	0.1937	8.9673	1.5881	0.0457	1.6103	0.0758	1.6862	0.4632	0.0726	0.5357		4,815.875 8	4,815.875 8	9.6500e-003	0.6952	5,023.290 8
Worker	0.2346	0.1580	2.7655	8.1800e-003	106.8251	4.3500e-003	106.8295	10.8036	4.0000e-003	10.8076		826.9474	826.9474	0.0127	0.0157	831.9426
Total	0.5510	15.7641	5.7240	0.0838	517.5875	0.1453	517.7327	52.2254	0.1388	52.3642		8,808.172 1	8,808.172 1	0.0281	1.2084	9,168.981 5

Fountain Wind, Year 1 - Shasta County, Summer

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

3.3 Grading and Access Road Work - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.9697	0.0000	7.9697	0.8692	0.0000	0.8692			0.0000			0.0000
Off-Road	7.1739	31.0867	270.1628	0.5889		0.9565	0.9565		0.9565	0.9565	0.0000	56,940.00 11	56,940.00 11	18.3777		57,399.44 34
Total	7.1739	31.0867	270.1628	0.5889	7.9697	0.9565	8.9262	0.8692	0.9565	1.8258	0.0000	56,940.00 11	56,940.00 11	18.3777		57,399.44 34

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1227	6.6387	1.3704	0.0299	40.6826	0.0651	40.7477	4.1781	0.0623	4.2404		3,165.348 8	3,165.348 8	5.7100e-003	0.4975	3,313.748 2
Vendor	0.1937	8.9673	1.5881	0.0457	1.5069	0.0758	1.5827	0.4378	0.0726	0.5103		4,815.875 8	4,815.875 8	9.6500e-003	0.6952	5,023.290 8
Worker	0.2346	0.1580	2.7655	8.1800e-003	11.1771	4.3500e-003	11.1814	1.2480	4.0000e-003	1.2520		826.9474	826.9474	0.0127	0.0157	831.9426
Total	0.5510	15.7641	5.7240	0.0838	53.3666	0.1453	53.5118	5.8639	0.1388	6.0027		8,808.172 1	8,808.172 1	0.0281	1.2084	9,168.981 5

Fountain Wind, Year 1 - Shasta County, Summer

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

3.4 Concrete Batch Plants - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	8.8711	63.0016	67.4766	0.2232		2.3413	2.3413		2.2015	2.2015		21,324.77 91	21,324.77 91	6.0971		21,477.20 72
Total	8.8711	63.0016	67.4766	0.2232		2.3413	2.3413		2.2015	2.2015		21,324.77 91	21,324.77 91	6.0971		21,477.20 72

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.4400e-003	0.3098	0.0452	1.4800e-003	0.0457	3.2900e-003	0.0489	0.0125	3.1400e-003	0.0157		156.2491	156.2491	2.1000e-004	0.0246	163.5725
Vendor	0.3444	15.9989	2.8126	0.0816	2.8785	0.1356	3.0140	0.8279	0.1297	0.9576		8,603.981 4	8,603.981 4	0.0171	1.2420	8,974.525 2
Worker	0.0835	0.0410	0.6410	1.6700e-003	113.1567	9.6000e-004	113.1577	11.3144	8.8000e-004	11.3153		169.1364	169.1364	4.6100e-003	4.2800e-003	170.5262
Total	0.4323	16.3497	3.4988	0.0848	116.0808	0.1398	116.2206	12.1549	0.1337	12.2885		8,929.366 9	8,929.366 9	0.0220	1.2708	9,308.623 9

Fountain Wind, Year 1 - Shasta County, Summer

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

3.4 Concrete Batch Plants - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6603	15.0591	102.5970	0.2232		0.3420	0.3420		0.3420	0.3420	0.0000	21,324.77 91	21,324.77 91	6.0971		21,477.20 72
Total	2.6603	15.0591	102.5970	0.2232		0.3420	0.3420		0.3420	0.3420	0.0000	21,324.77 91	21,324.77 91	6.0971		21,477.20 72

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.4400e-003	0.3098	0.0452	1.4800e-003	0.0426	3.2900e-003	0.0458	0.0118	3.1400e-003	0.0149		156.2491	156.2491	2.1000e-004	0.0246	163.5725
Vendor	0.3444	15.9989	2.8126	0.0816	2.6935	0.1356	2.8290	0.7825	0.1297	0.9122		8,603.981 4	8,603.981 4	0.0171	1.2420	8,974.525 2
Worker	0.0835	0.0410	0.6410	1.6700e-003	11.1940	9.6000e-004	11.1949	1.1369	8.8000e-004	1.1378		169.1364	169.1364	4.6100e-003	4.2800e-003	170.5262
Total	0.4323	16.3497	3.4988	0.0848	13.9300	0.1398	14.0698	1.9312	0.1337	2.0649		8,929.366 9	8,929.366 9	0.0220	1.2708	9,308.623 9

Fountain Wind, Year 1 - Shasta County, Summer

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

3.5 Foundations - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	14.8853	107.0291	108.5382	0.3834		4.0506	4.0506		3.7266	3.7266		37,111.90 87	37,111.90 87	12.0027		37,411.97 73
Total	14.8853	107.0291	108.5382	0.3834	0.0000	4.0506	4.0506	0.0000	3.7266	3.7266		37,111.90 87	37,111.90 87	12.0027		37,411.97 73

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1937	8.9673	1.5881	0.0457	1.6103	0.0758	1.6862	0.4632	0.0726	0.5357		4,815.875 8	4,815.875 8	9.6500e- 003	0.6952	5,023.290 8
Worker	0.0835	0.0410	0.6410	1.6700e- 003	113.1567	9.6000e- 004	113.1577	11.3144	8.8000e- 004	11.3153		169.1364	169.1364	4.6100e- 003	4.2800e- 003	170.5262
Total	0.2772	9.0084	2.2291	0.0474	114.7670	0.0768	114.8439	11.7776	0.0734	11.8510		4,985.012 3	4,985.012 3	0.0143	0.6995	5,193.817 0

Fountain Wind, Year 1 - Shasta County, Summer

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

3.5 Foundations - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	4.6879	20.3141	181.4051	0.3834		0.6251	0.6251		0.6251	0.6251	0.0000	37,111.9086	37,111.9086	12.0027		37,411.9772
Total	4.6879	20.3141	181.4051	0.3834	0.0000	0.6251	0.6251	0.0000	0.6251	0.6251	0.0000	37,111.9086	37,111.9086	12.0027		37,411.9772

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1937	8.9673	1.5881	0.0457	1.5069	0.0758	1.5827	0.4378	0.0726	0.5103		4,815.8758	4,815.8758	9.6500e-003	0.6952	5,023.2908
Worker	0.0835	0.0410	0.6410	1.6700e-003	11.1940	9.6000e-004	11.1949	1.1369	8.8000e-004	1.1378		169.1364	169.1364	4.6100e-003	4.2800e-003	170.5262
Total	0.2772	9.0084	2.2291	0.0474	12.7008	0.0768	12.7776	1.5747	0.0734	1.6481		4,985.0123	4,985.0123	0.0143	0.6995	5,193.8170

Fountain Wind, Year 1 - Shasta County, Summer

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
General Heavy Industry	0.00	0.00	0.00	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.496817	0.053869	0.185478	0.139329	0.040637	0.008838	0.009512	0.023153	0.000626	0.000165	0.034569	0.001403	0.005605

Fountain Wind, Year 1 - Shasta County, Summer

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117
NaturalGas Unmitigated	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	56.7123	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117
Total		6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117

Fountain Wind, Year 1 - Shasta County, Summer

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0.0567123	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117
Total		6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117

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	lb/day										lb/day					
Mitigated	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Fountain Wind, Year 1 - Shasta County, Summer

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.3500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Fountain Wind, Year 1 - Shasta County, Summer

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.3500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

Fountain Wind, Year 1 - Shasta County, Summer

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Boilers

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

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

11.0 Vegetation

Fountain Wind, Year 2 - Shasta County, Summer

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

Fountain Wind, Year 2

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	82
Climate Zone	3			Operational Year	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction schedule provided, no construction anticipated during winter months (January through March).

Off-road Equipment - provided

Off-road Equipment - construction equipment provided

Off-road Equipment - construction equipment provided

Off-road Equipment - construction equipment provided

Off-road Equipment - construction equipment provided

Off-road Equipment - construction equipment provided. Turbine delivery trucks modeled within hauling truck trips.

Off-road Equipment - construction equipment provided

Trips and VMT - construction trips pulled from 2019, reduced based on project description

On-road Fugitive Dust - per 2019 CalEEMod assumptions

Fountain Wind, Year 2 - Shasta County, Summer

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

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	100.00	66.00
tblConstructionPhase	NumDays	100.00	95.00
tblConstructionPhase	NumDays	100.00	15.00
tblConstructionPhase	NumDays	100.00	20.00
tblConstructionPhase	NumDays	1.00	160.00
tblConstructionPhase	NumDays	1.00	95.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	10.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	10.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	10.00
tblOffRoadEquipment	UsageHours	4.00	10.00
tblOffRoadEquipment	UsageHours	4.00	10.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	10.00

Fountain Wind, Year 2 - Shasta County, Summer

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

tblOnRoadDust	HaulingPercentPave	100.00	98.00
tblOnRoadDust	HaulingPercentPave	100.00	88.00
tblOnRoadDust	HaulingPercentPave	100.00	70.00
tblOnRoadDust	WorkerPercentPave	100.00	68.00
tblOnRoadDust	WorkerPercentPave	100.00	94.00
tblOnRoadDust	WorkerPercentPave	100.00	68.00
tblOnRoadDust	WorkerPercentPave	100.00	68.00
tblOnRoadDust	WorkerPercentPave	100.00	68.00
tblOnRoadDust	WorkerPercentPave	100.00	68.00
tblOnRoadDust	WorkerPercentPave	100.00	68.00
tblTripsAndVMT	HaulingTripLength	20.00	258.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,557.00
tblTripsAndVMT	HaulingTripNumber	0.00	243.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,411.00
tblTripsAndVMT	VendorTripLength	7.30	22.44
tblTripsAndVMT	VendorTripLength	7.30	34.79
tblTripsAndVMT	VendorTripLength	7.30	34.79
tblTripsAndVMT	VendorTripLength	7.30	34.79
tblTripsAndVMT	VendorTripLength	7.30	34.79
tblTripsAndVMT	VendorTripLength	7.30	34.79
tblTripsAndVMT	VendorTripLength	7.30	34.79
tblTripsAndVMT	VendorTripNumber	0.00	94.59
tblTripsAndVMT	VendorTripNumber	0.00	49.82
tblTripsAndVMT	VendorTripNumber	0.00	49.82
tblTripsAndVMT	VendorTripNumber	0.00	49.82
tblTripsAndVMT	VendorTripNumber	0.00	49.82
tblTripsAndVMT	VendorTripNumber	0.00	49.82
tblTripsAndVMT	WorkerTripLength	10.80	10.00
tblTripsAndVMT	WorkerTripLength	10.80	50.00
tblTripsAndVMT	WorkerTripLength	10.80	10.00

Fountain Wind, Year 2 - Shasta County, Summer

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

tblTripsAndVMT	WorkerTripLength	10.80	10.00
tblTripsAndVMT	WorkerTripLength	10.80	10.00
tblTripsAndVMT	WorkerTripLength	10.80	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	23.79
tblTripsAndVMT	WorkerTripNumber	18.00	23.79
tblTripsAndVMT	WorkerTripNumber	33.00	23.79
tblTripsAndVMT	WorkerTripNumber	0.00	23.79
tblTripsAndVMT	WorkerTripNumber	0.00	23.79
tblTripsAndVMT	WorkerTripNumber	0.00	23.79
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	6.42	0.00
tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblWater	IndoorWaterUseRate	231,250.00	0.00

2.0 Emissions Summary

Fountain Wind, Year 2 - Shasta County, Summer

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0284	5.5600e-003	4.7700e-003	3.0000e-005	0.0000	4.2000e-004	4.2000e-004	0.0000	4.2000e-004	4.2000e-004		6.6723	6.6723	1.3000e-004	1.2000e-004	6.7119

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0284	5.5600e-003	4.7700e-003	3.0000e-005	0.0000	4.2000e-004	4.2000e-004	0.0000	4.2000e-004	4.2000e-004		6.6723	6.6723	1.3000e-004	1.2000e-004	6.7119

Fountain Wind, Year 2 - Shasta County, Summer

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Turbine and Transformer Installation	Building Construction	4/1/2025	6/16/2025	6	66	
2	Substation and O&M Building Installation	Site Preparation	4/22/2025	10/24/2025	6	160	
3	Underground Collection System	Site Preparation	5/14/2025	9/1/2025	6	95	
4	Overhead Collector System	Building Construction	7/25/2025	11/12/2025	6	95	
5	Substation Aggregate and Security Fence	Building Construction	9/30/2025	10/16/2025	6	15	
6	Transmission Line Connection	Building Construction	11/13/2025	12/5/2025	6	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Turbine and Transformer Installation	Cranes	10	10.00	231	0.29
Turbine and Transformer Installation	Forklifts	10	10.00	89	0.20
Turbine and Transformer Installation	Generator Sets	4	10.00	84	0.74
Turbine and Transformer Installation	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Substation and O&M Building Installation	Cranes	2	10.00	231	0.29

Fountain Wind, Year 2 - Shasta County, Summer

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

Substation and O&M Building Installation	Forklifts	3	10.00	89	0.20
Substation and O&M Building Installation	Skid Steer Loaders	2	10.00	65	0.37
Underground Collection System	Forklifts	4	10.00	89	0.20
Underground Collection System	Skid Steer Loaders	4	10.00	65	0.37
Underground Collection System	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Underground Collection System	Trenchers	4	10.00	78	0.50
Overhead Collector System	Aerial Lifts	6	10.00	63	0.31
Overhead Collector System	Cranes	2	10.00	231	0.29
Overhead Collector System	Off-Highway Trucks	3	10.00	402	0.38
Overhead Collector System	Tractors/Loaders/Backhoes	5	10.00	97	0.37
Substation Aggregate and Security Fence	Skid Steer Loaders	1	10.00	65	0.37
Transmission Line Connection	Aerial Lifts	6	10.00	63	0.31
Transmission Line Connection	Cranes	6	10.00	231	0.29
Transmission Line Connection	Excavators	2	10.00	158	0.38
Transmission Line Connection	Off-Highway Trucks	4	10.00	402	0.38
Transmission Line Connection	Tractors/Loaders/Backhoes	1	10.00	97	0.37

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
Turbine and Transformer Installation	26	23.79	94.59	3,557.00	10.00	22.44	258.00	LD_Mix	HDT_Mix	HHDT
Substation and O&M Building Installation	7	23.79	49.82	243.00	50.00	34.79	50.00	LD_Mix	HDT_Mix	HHDT
Underground Collection System	13	23.79	49.82	0.00	10.00	34.79	20.00	LD_Mix	HDT_Mix	HHDT
Overhead Collector System	16	23.79	49.82	0.00	10.00	34.79	20.00	LD_Mix	HDT_Mix	HHDT
Substation Aggregate and Security Fence	1	23.79	49.82	1,411.00	10.00	34.79	20.00	LD_Mix	HDT_Mix	HHDT
Transmission Line Connection	19	23.79	49.82	0.00	10.00	34.79	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Fountain Wind, Year 2 - Shasta County, Summer

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

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Turbine and Transformer Installation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.6586	65.1459	59.7492	0.1319		2.8431	2.8431		2.6538	2.6538		12,706.0258	12,706.0258	3.2170		12,786.4506
Total	6.6586	65.1459	59.7492	0.1319		2.8431	2.8431		2.6538	2.6538		12,706.0258	12,706.0258	3.2170		12,786.4506

Fountain Wind, Year 2 - Shasta County, Summer

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

3.2 Turbine and Transformer Installation - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8643	76.3189	7.9043	0.3780	421.2489	0.8620	422.1110	44.1307	0.8248	44.9554		40,009.6460	40,009.6460	0.0403	6.2883	41,884.5774
Vendor	0.2536	11.1926	2.2239	0.0554	1.9659	0.0915	2.0574	0.5655	0.0875	0.6530		5,834.3390	5,834.3390	0.0126	0.8420	6,085.5560
Worker	0.0774	0.0365	0.5947	1.6000e-003	112.1666	9.1000e-004	112.1675	11.2154	8.4000e-004	11.2163		166.9263	166.9263	4.1300e-003	3.9600e-003	168.2089
Total	1.1953	87.5480	10.7229	0.4349	535.3814	0.9544	536.3358	55.9117	0.9131	56.8247		46,010.9113	46,010.9113	0.0570	7.1343	48,138.3423

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5454	6.6968	73.1479	0.1319		0.2061	0.2061		0.2061	0.2061	0.0000	12,706.0258	12,706.0258	3.2170		12,786.4505
Total	1.5454	6.6968	73.1479	0.1319		0.2061	0.2061		0.2061	0.2061	0.0000	12,706.0258	12,706.0258	3.2170		12,786.4505

Fountain Wind, Year 2 - Shasta County, Summer

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

3.2 Turbine and Transformer Installation - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8643	76.3189	7.9043	0.3780	51.2665	0.8620	52.1285	7.0876	0.8248	7.9124		40,009.64 60	40,009.64 60	0.0403	6.2883	41,884.57 74
Vendor	0.2536	11.1926	2.2239	0.0554	1.8396	0.0915	1.9311	0.5346	0.0875	0.6220		5,834.339 0	5,834.339 0	0.0126	0.8420	6,085.556 0
Worker	0.0774	0.0365	0.5947	1.6000e-003	11.0960	9.1000e-004	11.0970	1.1270	8.4000e-004	1.1278		166.9263	166.9263	4.1300e-003	3.9600e-003	168.2089
Total	1.1953	87.5480	10.7229	0.4349	64.2021	0.9544	65.1565	8.7492	0.9131	9.6622		46,010.91 13	46,010.91 13	0.0570	7.1343	48,138.34 23

3.3 Substation and O&M Building Installation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.2561	12.9696	12.0407	0.0253		0.5611	0.5611		0.5162	0.5162		2,453.368 6	2,453.368 6	0.7935		2,473.205 3
Total	1.2561	12.9696	12.0407	0.0253	0.0000	0.5611	0.5611	0.0000	0.5162	0.5162		2,453.368 6	2,453.368 6	0.7935		2,473.205 3

Fountain Wind, Year 2 - Shasta County, Summer

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

3.3 Substation and O&M Building Installation - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.3600e-003	0.4416	0.0656	2.1000e-003	13.4711	4.7200e-003	13.4759	1.3550	4.5200e-003	1.3595		222.4222	222.4222	3.0000e-004	0.0350	232.8471
Vendor	0.1852	8.7893	1.5165	0.0447	1.6046	0.0745	1.6790	0.4615	0.0712	0.5328		4,713.4437	4,713.4437	8.9800e-003	0.6795	4,916.1559
Worker	0.2185	0.1391	2.5525	7.8300e-003	105.8904	4.1300e-003	105.8946	10.7091	3.8000e-003	10.7129		816.1216	816.1216	0.0112	0.0144	820.6983
Total	0.4101	9.3699	4.1345	0.0547	120.9661	0.0833	121.0494	12.5256	0.0796	12.6051		5,751.9875	5,751.9875	0.0205	0.7289	5,969.7013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3751	3.9796	14.7777	0.0253		0.0415	0.0415		0.0415	0.0415	0.0000	2,453.3686	2,453.3686	0.7935		2,473.2053
Total	0.3751	3.9796	14.7777	0.0253	0.0000	0.0415	0.0415	0.0000	0.0415	0.0415	0.0000	2,453.3686	2,453.3686	0.7935		2,473.2053

Fountain Wind, Year 2 - Shasta County, Summer

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

3.3 Substation and O&M Building Installation - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	6.3600e-003	0.4416	0.0656	2.1000e-003	1.3702	4.7200e-003	1.3749	0.1467	4.5200e-003	0.1512		222.4222	222.4222	3.0000e-004	0.0350	232.8471
Vendor	0.1852	8.7893	1.5165	0.0447	1.5014	0.0745	1.5759	0.4362	0.0712	0.5074		4,713.4437	4,713.4437	8.9800e-003	0.6795	4,916.1559
Worker	0.2185	0.1391	2.5525	7.8300e-003	11.0793	4.1300e-003	11.0834	1.2371	3.8000e-003	1.2409		816.1216	816.1216	0.0112	0.0144	820.6983
Total	0.4101	9.3699	4.1345	0.0547	13.9509	0.0833	14.0343	1.8200	0.0796	1.8995		5,751.9875	5,751.9875	0.0205	0.7289	5,969.7013

3.4 Underground Collection System - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.4662	24.4383	28.1952	0.0388		1.3870	1.3870		1.2761	1.2761		3,756.8244	3,756.8244	1.2150		3,787.2002
Total	2.4662	24.4383	28.1952	0.0388	0.0000	1.3870	1.3870	0.0000	1.2761	1.2761		3,756.8244	3,756.8244	1.2150		3,787.2002

Fountain Wind, Year 2 - Shasta County, Summer

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

3.4 Underground Collection System - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1852	8.7893	1.5165	0.0447	1.6046	0.0745	1.6790	0.4615	0.0712	0.5328		4,713.4437	4,713.4437	8.9800e-003	0.6795	4,916.1559
Worker	0.0774	0.0365	0.5947	1.6000e-003	112.1666	9.1000e-004	112.1675	11.2154	8.4000e-004	11.2163		166.9263	166.9263	4.1300e-003	3.9600e-003	168.2089
Total	0.2627	8.8257	2.1112	0.0463	113.7711	0.0754	113.8465	11.6769	0.0721	11.7490		4,880.3700	4,880.3700	0.0131	0.6835	5,084.3648

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6025	7.3192	29.3077	0.0388		0.0634	0.0634		0.0634	0.0634	0.0000	3,756.8243	3,756.8243	1.2150		3,787.2002
Total	0.6025	7.3192	29.3077	0.0388	0.0000	0.0634	0.0634	0.0000	0.0634	0.0634	0.0000	3,756.8243	3,756.8243	1.2150		3,787.2002

Fountain Wind, Year 2 - Shasta County, Summer

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

3.4 Underground Collection System - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1852	8.7893	1.5165	0.0447	1.5014	0.0745	1.5759	0.4362	0.0712	0.5074		4,713.4437	4,713.4437	8.9800e-003	0.6795	4,916.1559
Worker	0.0774	0.0365	0.5947	1.6000e-003	11.0960	9.1000e-004	11.0970	1.1270	8.4000e-004	1.1278		166.9263	166.9263	4.1300e-003	3.9600e-003	168.2089
Total	0.2627	8.8257	2.1112	0.0463	12.5975	0.0754	12.6729	1.5632	0.0721	1.6353		4,880.3700	4,880.3700	0.0131	0.6835	5,084.3648

3.5 Overhead Collector System - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6540	30.9148	38.4047	0.0961		1.1257	1.1257		1.0356	1.0356		9,303.3464	9,303.3464	3.0089		9,378.5687
Total	3.6540	30.9148	38.4047	0.0961		1.1257	1.1257		1.0356	1.0356		9,303.3464	9,303.3464	3.0089		9,378.5687

Fountain Wind, Year 2 - Shasta County, Summer

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

3.5 Overhead Collector System - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1852	8.7893	1.5165	0.0447	1.6046	0.0745	1.6790	0.4615	0.0712	0.5328		4,713.4437	4,713.4437	8.9800e-003	0.6795	4,916.1559
Worker	0.0774	0.0365	0.5947	1.6000e-003	112.1666	9.1000e-004	112.1675	11.2154	8.4000e-004	11.2163		166.9263	166.9263	4.1300e-003	3.9600e-003	168.2089
Total	0.2627	8.8257	2.1112	0.0463	113.7711	0.0754	113.8465	11.6769	0.0721	11.7490		4,880.3700	4,880.3700	0.0131	0.6835	5,084.3648

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3308	11.5019	52.9220	0.0961		0.1568	0.1568		0.1568	0.1568	0.0000	9,303.3464	9,303.3464	3.0089		9,378.5687
Total	1.3308	11.5019	52.9220	0.0961		0.1568	0.1568		0.1568	0.1568	0.0000	9,303.3464	9,303.3464	3.0089		9,378.5687

Fountain Wind, Year 2 - Shasta County, Summer

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

3.5 Overhead Collector System - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1852	8.7893	1.5165	0.0447	1.5014	0.0745	1.5759	0.4362	0.0712	0.5074		4,713.4437	4,713.4437	8.9800e-003	0.6795	4,916.1559
Worker	0.0774	0.0365	0.5947	1.6000e-003	11.0960	9.1000e-004	11.0970	1.1270	8.4000e-004	1.1278		166.9263	166.9263	4.1300e-003	3.9600e-003	168.2089
Total	0.2627	8.8257	2.1112	0.0463	12.5975	0.0754	12.6729	1.5632	0.0721	1.6353		4,880.3700	4,880.3700	0.0131	0.6835	5,084.3648

3.6 Substation Aggregate and Security Fence - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0741	0.9901	1.7240	2.5900e-003		0.0300	0.0300		0.0276	0.0276		250.5937	250.5937	0.0811		252.6199
Total	0.0741	0.9901	1.7240	2.5900e-003		0.0300	0.0300		0.0276	0.0276		250.5937	250.5937	0.0811		252.6199

Fountain Wind, Year 2 - Shasta County, Summer

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

3.6 Substation Aggregate and Security Fence - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2331	12.0855	2.6592	0.0538	1.6485	0.1177	1.7661	0.4521	0.1126	0.5647		5,691.0194	5,691.0194	0.0109	0.8945	5,957.8410
Vendor	0.1852	8.7893	1.5165	0.0447	1.6046	0.0745	1.6790	0.4615	0.0712	0.5328		4,713.4437	4,713.4437	8.9800e-003	0.6795	4,916.1559
Worker	0.0774	0.0365	0.5947	1.6000e-003	112.1666	9.1000e-004	112.1675	11.2154	8.4000e-004	11.2163		166.9263	166.9263	4.1300e-003	3.9600e-003	168.2089
Total	0.4958	20.9112	4.7704	0.1001	115.4196	0.1930	115.6126	12.1291	0.1846	12.3137		10,571.3895	10,571.3895	0.0240	1.5779	11,042.2057

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0636	1.4528	1.9618	2.5900e-003		4.2400e-003	4.2400e-003		4.2400e-003	4.2400e-003	0.0000	250.5937	250.5937	0.0811		252.6199
Total	0.0636	1.4528	1.9618	2.5900e-003		4.2400e-003	4.2400e-003		4.2400e-003	4.2400e-003	0.0000	250.5937	250.5937	0.0811		252.6199

Fountain Wind, Year 2 - Shasta County, Summer

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

3.6 Substation Aggregate and Security Fence - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2331	12.0855	2.6592	0.0538	1.5365	0.1177	1.6542	0.4246	0.1126	0.5372		5,691.0194	5,691.0194	0.0109	0.8945	5,957.8410
Vendor	0.1852	8.7893	1.5165	0.0447	1.5014	0.0745	1.5759	0.4362	0.0712	0.5074		4,713.4437	4,713.4437	8.9800e-003	0.6795	4,916.1559
Worker	0.0774	0.0365	0.5947	1.6000e-003	11.0960	9.1000e-004	11.0970	1.1270	8.4000e-004	1.1278		166.9263	166.9263	4.1300e-003	3.9600e-003	168.2089
Total	0.4958	20.9112	4.7704	0.1001	14.1340	0.1930	14.3270	1.9878	0.1846	2.1725		10,571.3895	10,571.3895	0.0240	1.5779	11,042.2057

3.7 Transmission Line Connection - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.5722	46.7158	48.0689	0.1388		1.8063	1.8063		1.6618	1.6618		13,437.6373	13,437.6373	4.3460		13,546.2874
Total	5.5722	46.7158	48.0689	0.1388		1.8063	1.8063		1.6618	1.6618		13,437.6373	13,437.6373	4.3460		13,546.2874

Fountain Wind, Year 2 - Shasta County, Summer

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

3.7 Transmission Line Connection - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1852	8.7893	1.5165	0.0447	1.6046	0.0745	1.6790	0.4615	0.0712	0.5328		4,713.4437	4,713.4437	8.9800e-003	0.6795	4,916.1559
Worker	0.0774	0.0365	0.5947	1.6000e-003	112.1666	9.1000e-004	112.1675	11.2154	8.4000e-004	11.2163		166.9263	166.9263	4.1300e-003	3.9600e-003	168.2089
Total	0.2627	8.8257	2.1112	0.0463	113.7711	0.0754	113.8465	11.6769	0.0721	11.7490		4,880.3700	4,880.3700	0.0131	0.6835	5,084.3648

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8563	13.7789	71.4124	0.1388		0.2268	0.2268		0.2268	0.2268	0.0000	13,437.6373	13,437.6373	4.3460		13,546.2874
Total	1.8563	13.7789	71.4124	0.1388		0.2268	0.2268		0.2268	0.2268	0.0000	13,437.6373	13,437.6373	4.3460		13,546.2874

Fountain Wind, Year 2 - Shasta County, Summer

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

3.7 Transmission Line Connection - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1852	8.7893	1.5165	0.0447	1.5014	0.0745	1.5759	0.4362	0.0712	0.5074		4,713.4437	4,713.4437	8.9800e-003	0.6795	4,916.1559
Worker	0.0774	0.0365	0.5947	1.6000e-003	11.0960	9.1000e-004	11.0970	1.1270	8.4000e-004	1.1278		166.9263	166.9263	4.1300e-003	3.9600e-003	168.2089
Total	0.2627	8.8257	2.1112	0.0463	12.5975	0.0754	12.6729	1.5632	0.0721	1.6353		4,880.3700	4,880.3700	0.0131	0.6835	5,084.3648

Fountain Wind, Year 2 - Shasta County, Summer

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
General Heavy Industry	0.00	0.00	0.00	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.496817	0.053869	0.185478	0.139329	0.040637	0.008838	0.009512	0.023153	0.000626	0.000165	0.034569	0.001403	0.005605

Fountain Wind, Year 2 - Shasta County, Summer

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117
NaturalGas Unmitigated	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	56.7123	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117
Total		6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117

Fountain Wind, Year 2 - Shasta County, Summer

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

5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0.0567123	6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117
Total		6.1000e-004	5.5600e-003	4.6700e-003	3.0000e-005		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004		6.6720	6.6720	1.3000e-004	1.2000e-004	6.7117

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	lb/day										lb/day					
Mitigated	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Fountain Wind, Year 2 - Shasta County, Summer

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.3500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Fountain Wind, Year 2 - Shasta County, Summer

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.3500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	0.0278	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

Fountain Wind, Year 2 - Shasta County, Summer

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Substation Access and Security Fence	2	20	0.45	11.10	0.00	0.00	0.00	0.11	0.00	0.00	47.33	0.00	0.00	48.6333
Transmission Line Construction	2	95		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Support Equipment - Fuel Trucks, Maintenance Vehicles, Delivery Vehicles, Security Vehicles, EMT Vehicles, other	2	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total														

Summary (Worker and Trucking)

Phase	Year of Construction	Days per Construction Phase	Daily Emissions (lb/day)				Annual Emissions (tons/year)				CO2e			
			BOC	Non	PM10	PM2.5	BOC	Non	PM10	PM2.5	CO2	CH4		
Timber Removal and Grubbing	1	55	0.00	16.00	0.00	0.00	0.00	0.23	0.00	0.00	288.71	0.00	0.14	289.75
Grading and Access Road Work	1	120	0.00	0.00	0.14	0.00	0.00	0.44	0.00	0.00	1180.91	0.00	0.20	1181.04
Concrete Block Walls	1	70	0.16	15.12	0.00	0.00	0.00	0.20	0.00	0.00	509.62	0.00	0.10	509.65
Drains, Transmission, Substation and O&M Foundations	1	70	0.13	0.21	0.02	0.00	0.00	0.03	0.00	0.00	11.44	0.00	0.00	11.58
Turbine and Transformer Installation	2	60	0.40	15.67	0.00	0.00	0.32	0.00	0.00	0.00	389.97	0.00	0.00	410.81
Substation and O&M Foundation Construction	2	105	0.00	1.71	0.00	0.00	0.11	0.00	0.00	0.00	100.01	0.00	0.00	100.01
Underground Cable Installation	2	105	0.11	0.21	0.00	0.00	0.01	0.00	0.00	0.00	5.94	0.00	0.00	6.82
Overhead Cable, Poles	2	40	0.11	0.21	0.00	0.00	0.00	0.00	0.00	0.00	2.46	0.00	0.00	2.62
Substation Access and Security Fence	2	20	0.18	11.44	0.00	0.00	0.11	0.00	0.00	0.00	50.45	0.00	0.00	50.64
Transmission Line Construction	2	95	0.11	0.21	0.00	0.00	0.00	0.00	0.00	0.00	15.51	0.00	0.00	15.71
Support Equipment - Fuel Trucks, Maintenance Vehicles, Delivery Vehicles, Security Vehicles, EMT Vehicles, other	2	60	0.13	0.21	0.00	0.00	0.00	0.00	0.00	0.00	9.81	0.00	0.00	9.81
Total														

Helicopter (Bell 206L) Emission Calculations

Assumptions from 2019 AQ Calculations (assumed the same for Proposed Project)

Helicopter Model	Bell 206L
Engine Type	IOA250-CBP
Fuel Burn Rate (lb/hr)	149 gal/hr
Fuel Burn Rate (LTO)	24 gal/LTO
Aviation Gas Fuel Density	6.01 lb/gal
CO2 Emission Factor	18.38 lb/gal fuel
CH4 Emission Factor	0.0157 lb/gal fuel
N2O Emission Factor	0.00024 lb/gal
CH4 GWP	25
N2O GWP	298

Emission Factors

Activity	Combustion Emission Factors				Fugitive Emission Factors		GHG Emission Factors			
	HC	CO	Nox	PM	PM10	PM2.5	CO2	N2O	CH4	CO2e
Flight (lb/hr)	1.46	1.81	2.45	0.07			60.1	0.08	5.13	
LTO (lbs)	0.63	0.81	0.29	0.01	3.31	0.33	95.19	0.01	0.81	

Daily Emissions

Activity	Hours Per Day (2019 Assumption)	Ratio	Hours Per Day (Project Assumption)	Combustion Emissions (lbs/day)				Fugitive Emissions (lbs/day)		GHG Emissions (lbs/day)			
				HC	CO	Nox	PM	PM10	PM2.5	CO2	N2O	CH4	CO2e
Conductor Installation - Applicable to both the Overhead Collector System and transmission line connection phases													
Flight	7.75	0.416667	1.44375	1.46	1.81	2.45	0.07			60.1	0.08	5.13	
LTO	3	0.416667	1.25	0.7875	1.0125	0.3625	0.0125	4.1375	0.4125	1188.9875	0.0125	12.18.025	
Total	10.75	0.416667	2.69375	2.2475	2.8225	2.8125	0.0825	4.1375	0.4125	1197.9875	0.025	17.31025	

Annual Emissions

Activity	Working Days	Combustion Emissions (tons/year)				Fugitive Emissions (tons/year)		GHG Emissions (Metric tons/year)			
		HC	CO	Nox	PM	PM10	PM2.5	CO2	N2O	CH4	CO2e
Conductor Installation											
Overhead Collector System Stringing	5	0.0111477	0.0138201	0.0187068	0.000594479			41.70995801	0.000554148	0.0355347	42.76346362
Transmission Line Connection Stringing	1	0.0003938	0.0005063	0.0007133	0.00002625	0.00206875	0.00020625	2.6962385	0.00002833	0.0022964	2.7624807
Total	6	0.0115415	0.0143264	0.0194201	0.000620729	0.00206875	0.00020625	44.40619651	0.000582486	0.0378311	45.52594432

Notes:

Emission factors and fuel burn rates obtained from the FDCA Guidance on Delineation of Helicopter Emissions, Edition 2, December 2015. LTO = Landing and take-off cycle. Each day of helicopter operations was assumed to contain 3 LTOs, each 13.5 minutes long. The helicopter was assumed to be in flight during the remainder of the day's operations. Emission factors are for the Bell 206L (850 hp). Fugitive dust emission factor source: Dr. J. A. Gilles et al. December 31, 2007. Particulate Matter Emissions for Dust from Unique Military Activities. Measurements indicated approximately 0.5 kg of PM10 during takeoff and 1 kg during landing. Measurements were conducted in dry, unpaved, desert in Arizona. The model used in testing was a GH-14 Huey, generally similar to the helicopter above. The 0.5 kg takeoff and 1 kg landing emission factor is conservatively assumed for all helicopters. The landing and takeoff surface is assumed to be wetted, reducing fugitive dust emissions 55%. PM2.5/PM10 factor: Western Governors' Association, September 7, 2008. WPAU Fugitive Dust Handbook. The emission factor for PM2.5 for unpaved roads is 0.1 x PM10 emissions. Greenhouse gas emission factors and global warming potentials obtained from California Climate Action Registry General Reporting Protocol, Version 3.0, May 2019. Density of fuel from ExxonMobil Aviation World Jet Fuel Specifications, 2005 Edition. 775-840 kg/m³ = 6.47 - 7.01 lb/gallon. Average Density = 6.74 lb/gallon.

Proposed Project would construct 5 miles of overhead lines as compared to the 2019 analysis which assumed 12 miles. Therefore, only 42% (5/12 = 0.417) of helicopter hours required in 2019 would be required for the Proposed Project.

Fugitive Dust Associated Concrete Batch Plants

Source	PM10 (lb/CY)	2019 concrete (CY)	Ratio	2022 concrete (CY)	lbs PM10	lbs PM2.5
Aggregate Delivery to Ground Storage	0.0031	36,946	0.67	24630.67	76.36	51.46
San Delivery to Ground Storage	0.0007	36,946	0.67	24630.67	17.24	11.62
Aggregate Transfer to Conveyor	0.0031	36,946	0.67	24630.67	76.36	51.46
San Transfer to Conveyor	0.0007	36,946	0.67	24630.67	17.24	11.62
Aggregate Transfer to Elevated Storage	0.0031	36,946	0.67	24630.67	76.36	51.46
Sand Transfer to Elevated Storage	0.0007	36,946	0.67	24630.67	17.24	11.62
Cement Delivery to Silo	0.0001	36,946	0.67	24630.67	2.46	1.66
Cement Supplement to Silo	0.0002	36,946	0.67	24630.67	4.93	3.32
Total					288.18	194.23
Days					70	70
lb/day					4.11684	2.77475016

Notes:

2019 concrete volume derived from 2019 Air Quality and Greenhouse Gas Emissions calculations.

Emission factors obtained from AP-42 Table 11.12.6.

PM2.5 fraction of PM10 is 0.674 (SCAQMD, 2006. Final Methodology to Calculate PM2.5 and PM2.5 Significance Thresholds).

Website: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-\(pm\)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf?sfvrsn=2)

Proposed Project would construct 48 wind towers as compared to the 2019 analysis which assumed 72 wind turbines. Therefore, only 67% (48 / 72 = 0.67) of concrete required in 2019 would be required for the Proposed Project.