

DOCKETED

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MEMORANDUM

To: Simon Casey
Vantage Data Centers

From: Shari Beth Libicki, PhD and Emily Weissinger, PE
Ramboll US Consulting, Inc.

Subject: **EVALUATION OF PROPOSED CHANGES IN CONSTRUCTION PHASING FOR THE VANTAGE CA3 DATA CENTER PROJECT ON AIR QUALITY IMPACT CONCLUSIONS SANTA CLARA, CALIFORNIA**

OVERVIEW

Ramboll US Consulting Inc. (“Ramboll”) was asked by Vantage Data Centers (“Vantage”) to evaluate whether proposed changes in construction phasing for Vantage’s CA3 Project would alter the air quality impact conclusions previously presented to the California Energy Commission (CEC) in Vantage’s Small Power Plant Exemption (SPPE) application and in subsequent responses to CEC data requests. Ramboll understands that the previous air quality analysis depicted construction for the project as occurring in two distinct phases, with site work (i.e., demolition, site preparation, grading) and construction of the substation occurring in Phase 1 and construction of the data center building and placement of the emergency generators evenly split between Phase 1 and Phase 2. Under the current proposal, Vantage is proposing to construct the entire shell of the data center building in Phase 1 and leave only the interior buildout and placement of the emergency generators for the second half of the building in Phase 2. According to Vantage, this construction approach would be more efficient than if the building were constructed as two structures as originally contemplated.

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METHODOLOGY

To evaluate the effect of these changes, Ramboll updated the CalEEMod runs from the project’s Phase 1 and Phase 2 construction emission estimates following the methodology described in Section 2 of Appendix A-2 of Vantage’s SPPE application. The updated CalEEMod output files are provided as **Attachment A** and a summary of the updated project inputs can be found in Tables B-1 through B-5 in **Attachment B**.

The proposed project is in the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The BAAQMD has published CEQA Guidelines¹ that provide suggested thresholds of significance for impacts from projects. These thresholds are based on regionwide modeling for attainment and levels that are considered to not affect the region’s attainment status. The BAAQMD’s thresholds for construction

¹ BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines. May. Available at: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed: August 2021.

impacts are average daily emission rates for pollutants. Projects with average daily construction emissions below these levels are not expected to cause significant impacts. As a result, the updated average daily construction emissions from this analysis were compared against the BAAQMD thresholds for construction. Additionally, the change in the amount of diesel particulate matter (DPM) emissions from construction was evaluated to determine the effect of the updated construction phasing on the prior construction health risk assessment.

In addition, the updated construction emissions were converted to model emission rates and compared against the modeled emission rates from the prior construction analysis to evaluate whether the project would exceed applicable California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). Since the prior analysis demonstrated compliance with the CAAQS and NAAQS, lower model emission rates would also demonstrate compliance.

RESULTS

Mass Emissions

A comparison of the project’s average daily construction emissions against BAAQMD construction significance thresholds is presented in **Table 1**. A detailed emissions summary for this analysis can be found in Table B-6 of **Attachment B**.

Table 1. Average Daily Construction Emissions				
Phase	ROG	NO_x	PM₁₀	PM_{2.5}
	lbs/day			
Phase 1	15.9	9.9	2.5	0.8
Phase 2	0.3	0.7	0.8	0.2
BAAQMD CEQA Threshold	54	54	82	54
Exceeds Threshold?	No	No	No	No

The previous health risk analysis for the project incorporated the DPM exhaust emissions from the project’s on-site off-road equipment and off-site vendor and haul truck trips. **Table 2** presents a comparison of the DPM emissions from the prior construction analysis as compared to the updated analysis.

Table 2. Total DPM Emissions	
	DPM
	lbs
Prior Analysis	22.76
Updated Analysis	20.06
Comparison	-12%

Modeling

The previous construction modeling for the project included the exhaust emissions from the project’s on-site off-road equipment, as well as the exhaust emissions from the project’s off-site on-road sources up to 2,000 feet from the project boundary. An updated summary of these emissions can be found in Table B-7 of **Attachment B**. These emissions were converted to model emission rates and

compared against those values from the prior construction analysis, as shown in **Tables 3, 4, and 5**. The derivation of the emission rates for this analysis can be found in Tables B-8 through B-10 of **Attachment B**.

Table 3. Construction 1-hr, 3-hr, and 8-hr Model Emission Rates (g/s)				
		NO_x	CO	SO₂
Prior Analysis	Phase 1 Max	0.050	0.37	0.00069
	Phase 2 Max	0.061	0.21	0.00036
Updated Analysis	Phase 1 Max	0.043	0.37	0.00063
	Phase 2 Max	0.0061	0.056	0.00011
Comparison	Phase 1 Max	-15%	0%	-9%
	Phase 2 Max	-90%	-73%	-68%

Table 4. Construction 24-hr Model Emission Rates (g/s)				
		SO₂	Exhaust PM₁₀	Exhaust PM_{2.5}
Prior Analysis	Phase 1 Max	0.00050	0.00077	0.00077
	Phase 2 Max	0.00026	0.00035	0.00035
Updated Analysis	Phase 1 Max	0.00046	0.00073	0.00073
	Phase 2 Max	0.000082	0.00013	0.00013
Comparison	Phase 1 Max	-9%	-5%	-5%
	Phase 2 Max	-68%	-62%	-62%

Table 5. Construction Annual Model Emission Rates (g/s)				
		NO_x	Exhaust PM₁₀	Exhaust PM_{2.5}
Prior Analysis	Phase 1 Max	0.020	0.00036	0.00036
	Phase 2 Max	0.024	0.00020	0.00020
Updated Analysis	Phase 1 Max	0.021	0.00037	0.00037
	Phase 2 Max	0.0019	0.000055	0.000055
Comparison	Phase 1 Max	4%	2%	2%
	Phase 2 Max	-92%	-72%	-72%

DISCUSSION

Table 1 demonstrates that the project’s updated construction phasing would not exceed BAAQMD’s average daily construction significance thresholds. This finding is consistent with the prior construction analysis. Table 2 shows that the updated construction phasing would result in an overall decrease in the project’s DPM emissions from on-site off-road equipment and off-site vendor and haul truck trips. Because the previously reported maximum incremental cancer risk was 1.5 in a million at a residential receptor, the new construction phasing also will be below a level of significance.

Tables 3 and 4 demonstrate that the updated construction phasing would result in decreases in the hourly and 24-hour model emission rates. Since the prior construction analysis demonstrated compliance with all applicable CAAQS and NAAQS, one can conclude that the proposed updates to the construction phasing would also show compliance with CAAQS and NAAQS that have 1-hour, 3-hour, 8-hour, and 24-hour averaging periods. Table 5 shows that there would be a slight increase in the annual modeled emission rate for Phase 1 of construction under the updated phasing. In the previous construction analysis, it was shown that the annual construction impacts for Phase 1 of construction were only a small fraction (<2%) of the applicable CAAQS/NAAQS and were well below the applicable Significance Impact Levels (SILs). As a result, the small increase in the annual modeled emission rate for Phase 1 under the proposed construction phasing will not result in an exceedance of an applicable annual air quality standard.

Under the project's proposed construction phasing there would be a small period (<1 year) in which half of the project operational activities could occur concurrently with Phase 2 construction activities. The prior operational and construction modeling results were reported in relation to the applicable CAAQS/NAAQS and were for full operations. This overlap would not likely cause potential issues on compliance with the 1-hour NO₂ CAAQS (339 µg/m³). Previous results indicated that the maximum 1-hour NO₂ modeled impact from operations was 327 micrograms per cubic meter (µg/m³), which included the ambient background concentration. In November 2021, Ramboll evaluated the effect proposed changes on the building design (i.e., a change in the configuration of the administrative space and decrease in the building footprint) would have on the operational modeling results and found that it would decrease the maximum impact for the 1-hour NO₂ concentration to 305 µg/m³. Prior modeling results for Phase 2 of construction indicated that the maximum 1-hour NO₂ modeled impact would be 86 µg/m³, excluding background. As shown in Table 3, the proposed changes to construction phasing would result in a 90% decrease in the 1-hour NO_x model emission rate. Because modeled impacts scale linearly with the modeled emission rate, the new maximum 1-hour NO₂ impact for Phase 2 would be approximately 9 µg/m³. Therefore, during the small overlap of operational activities with Phase 2 construction activities, we would not expect an exceedance of the 1-hour NO₂ CAAQS.

CONCLUSION

The updated construction emissions analysis and comparison against BAAQMD CEQA thresholds and prior modeling results as described in this memorandum indicate that Vantage's proposed changes in construction phasing for the CA3 Project would not alter the air quality conclusions previously presented to the CEC in Vantage's SPPE application and in subsequent responses to CEC data requests.

Attachments:

- A: CalEEMod Output Files
- B: Supporting Data and Calculations

**ATTACHMENT A
CALEEMOD OUTPUT FILES**

Vantage CA3 Data Center (Ph 1 Const) Jan. 2022 Update - Santa Clara County, Annual

Vantage CA3 Data Center (Ph 1 Const) Jan. 2022 Update
Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	33.00	1000sqft	0.27	33,000.00	0
General Office Building	32.00	1000sqft	0.26	32,000.00	0
General Light Industry	295.50	1000sqft	2.43	295,500.00	0
General Light Industry	50.00	1000sqft	0.41	50,000.00	0
General Light Industry	17.75	1000sqft	0.15	17,750.00	0
General Light Industry	25.00	1000sqft	0.57	25,000.00	0
Parking Lot	66.22	1000sqft	1.52	66,220.00	0
City Park	0.92	Acre	0.92	40,075.20	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2023
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	222	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Vantage CA3 Data Center (Ph 1 Const) Jan. 2022 Update - Santa Clara County, Annual

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
tblGrading	MaterialExported	0.00	10,000.00
tblLandUse	LotAcreage	0.76	0.27
tblLandUse	LotAcreage	0.73	0.26
tblLandUse	LotAcreage	6.78	2.43
tblLandUse	LotAcreage	1.15	0.41
tblLandUse	LotAcreage	0.41	0.15
tblProjectCharacteristics	CH4IntensityFactor	0	0.029
tblProjectCharacteristics	CO2IntensityFactor	0	222
tblProjectCharacteristics	N2OIntensityFactor	0	0.006

2.0 Emissions Summary

Vantage CA3 Data Center (Ph 1 Const) Jan. 2022 Update - Santa Clara County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	1.1181	0.3762
2	4-1-2022	6-30-2022	0.8945	0.4148
3	7-1-2022	9-30-2022	0.9043	0.4193
4	10-1-2022	12-31-2022	0.9115	0.4266
5	1-1-2023	3-31-2023	2.7413	2.5015
		Highest	2.7413	2.5015

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0130	4.0000e-005	4.7800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3000e-003	9.3000e-003	2.0000e-005	0.0000	9.9100e-003
Energy	0.0610	0.5542	0.4655	3.3300e-003		0.0421	0.0421		0.0421	0.0421	0.0000	1,045.3044	1,045.3044	0.0693	0.0230	1,053.8927
Mobile	0.5922	2.3032	7.5260	0.0280	2.7080	0.0215	2.7295	0.7249	0.0200	0.7449	0.0000	2,563.7544	2,563.7544	0.0791	0.0000	2,565.7326
Waste						0.0000	0.0000		0.0000	0.0000	110.0130	0.0000	110.0130	6.5016	0.0000	272.5525
Water						0.0000	0.0000		0.0000	0.0000	32.1491	58.0970	90.2460	3.3096	0.0795	196.6886
Total	2.6662	2.8575	7.9963	0.0313	2.7080	0.0636	2.7716	0.7249	0.0622	0.7870	142.1621	3,667.1650	3,809.3271	9.9596	0.1026	4,088.8762

Vantage CA3 Data Center (Ph 1 Const) Jan. 2022 Update - Santa Clara 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	2.0130	4.0000e-005	4.7800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3000e-003	9.3000e-003	2.0000e-005	0.0000	9.9100e-003
Energy	0.0610	0.5542	0.4655	3.3300e-003		0.0421	0.0421		0.0421	0.0421	0.0000	1,045.3044	1,045.3044	0.0693	0.0230	1,053.8927
Mobile	0.5922	2.3032	7.5260	0.0280	2.7080	0.0215	2.7295	0.7249	0.0200	0.7449	0.0000	2,563.7544	2,563.7544	0.0791	0.0000	2,565.7326
Waste						0.0000	0.0000		0.0000	0.0000	110.0130	0.0000	110.0130	6.5016	0.0000	272.5525
Water						0.0000	0.0000		0.0000	0.0000	32.1491	58.0970	90.2460	3.3096	0.0795	196.6886
Total	2.6662	2.8575	7.9963	0.0313	2.7080	0.0636	2.7716	0.7249	0.0622	0.7870	142.1621	3,667.1650	3,809.3271	9.9596	0.1026	4,088.8762

	ROG	NOx	CO	SO2	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

Vantage CA3 Data Center (Ph 1 Const) Jan. 2022 Update - Santa Clara County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Site Preparation	Site Preparation	1/29/2022	2/11/2022	5	10	
3	Grading	Grading	2/12/2022	3/11/2022	5	20	
4	Building Construction	Building Construction	3/12/2022	1/27/2023	5	230	
5	Paving	Paving	1/28/2023	2/24/2023	5	20	
6	Architectural Coating	Architectural Coating	2/25/2023	3/24/2023	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 1.52

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 679,875; Non-Residential Outdoor: 226,625; Striped Parking Area: 3,973 (Architectural Coating – sqft)

OffRoad Equipment

Vantage CA3 Data Center (Ph 1 Const) Jan. 2022 Update - Santa Clara County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	523.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	1,250.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	229.00	92.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	46.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0566	0.0000	0.0566	8.5700e-003	0.0000	8.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	0.0264	0.2572	0.2059	3.9000e-004	0.0566	0.0124	0.0690	8.5700e-003	0.0116	0.0201	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289

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3.2 Demolition - 2022

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	1.9300e-003	0.0642	0.0150	2.0000e-004	4.4300e-003	1.9000e-004	4.6200e-003	1.2200e-003	1.8000e-004	1.4000e-003	0.0000	19.4263	19.4263	8.7000e-004	0.0000	19.4482
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	4.3000e-004	2.9000e-004	3.1500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9490	0.9490	2.0000e-005	0.0000	0.9495
Total	2.3600e-003	0.0645	0.0181	2.1000e-004	5.6200e-003	2.0000e-004	5.8200e-003	1.5400e-003	1.9000e-004	1.7200e-003	0.0000	20.3754	20.3754	8.9000e-004	0.0000	20.3977

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0255	0.0000	0.0255	3.8600e-003	0.0000	3.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6200e-003	0.0200	0.2328	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	4.6200e-003	0.0200	0.2328	3.9000e-004	0.0255	6.2000e-004	0.0261	3.8600e-003	6.2000e-004	4.4800e-003	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289

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3.2 Demolition - 2022

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	1.9300e-003	0.0642	0.0150	2.0000e-004	4.4300e-003	1.9000e-004	4.6200e-003	1.2200e-003	1.8000e-004	1.4000e-003	0.0000	19.4263	19.4263	8.7000e-004	0.0000	19.4482
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	4.3000e-004	2.9000e-004	3.1500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9490	0.9490	2.0000e-005	0.0000	0.9495
Total	2.3600e-003	0.0645	0.0181	2.1000e-004	5.6200e-003	2.0000e-004	5.8200e-003	1.5400e-003	1.9000e-004	1.7200e-003	0.0000	20.3754	20.3754	8.9000e-004	0.0000	20.3977

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0909	0.0000	0.0909	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	0.0159	0.1654	0.0985	1.9000e-004	0.0909	8.0600e-003	0.0990	0.0497	7.4200e-003	0.0572	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549

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3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.6200e-003	0.1535	0.0358	4.8000e-004	0.0106	4.5000e-004	0.0110	2.9100e-003	4.3000e-004	3.3400e-003	0.0000	46.4301	46.4301	2.0900e-003	0.0000	46.4822
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.7000e-004	1.8900e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5694	0.5694	1.0000e-005	0.0000	0.5697
Total	4.8800e-003	0.1537	0.0377	4.9000e-004	0.0113	4.5000e-004	0.0118	3.1000e-003	4.3000e-004	3.5300e-003	0.0000	46.9995	46.9995	2.1000e-003	0.0000	47.0520

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0409	0.0000	0.0409	0.0224	0.0000	0.0224	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0101	0.1043	1.9000e-004		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	2.3300e-003	0.0101	0.1043	1.9000e-004	0.0409	3.1000e-004	0.0412	0.0224	3.1000e-004	0.0227	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549

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3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.6200e-003	0.1535	0.0358	4.8000e-004	0.0106	4.5000e-004	0.0110	2.9100e-003	4.3000e-004	3.3400e-003	0.0000	46.4301	46.4301	2.0900e-003	0.0000	46.4822
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.7000e-004	1.8900e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5694	0.5694	1.0000e-005	0.0000	0.5697
Total	4.8800e-003	0.1537	0.0377	4.9000e-004	0.0113	4.5000e-004	0.0118	3.1000e-003	4.3000e-004	3.5300e-003	0.0000	46.9995	46.9995	2.1000e-003	0.0000	47.0520

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0195	0.2086	0.1527	3.0000e-004		9.4100e-003	9.4100e-003		8.6600e-003	8.6600e-003	0.0000	26.0548	26.0548	8.4300e-003	0.0000	26.2654
Total	0.0195	0.2086	0.1527	3.0000e-004	0.0655	9.4100e-003	0.0749	0.0337	8.6600e-003	0.0423	0.0000	26.0548	26.0548	8.4300e-003	0.0000	26.2654

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3.4 Grading - 2022

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	4.3000e-004	2.9000e-004	3.1500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9490	0.9490	2.0000e-005	0.0000	0.9495
Total	4.3000e-004	2.9000e-004	3.1500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9490	0.9490	2.0000e-005	0.0000	0.9495

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0295	0.0000	0.0295	0.0152	0.0000	0.0152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6300e-003	0.0157	0.1775	3.0000e-004		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	26.0547	26.0547	8.4300e-003	0.0000	26.2654
Total	3.6300e-003	0.0157	0.1775	3.0000e-004	0.0295	4.8000e-004	0.0300	0.0152	4.8000e-004	0.0156	0.0000	26.0547	26.0547	8.4300e-003	0.0000	26.2654

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3.4 Grading - 2022

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	4.3000e-004	2.9000e-004	3.1500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9490	0.9490	2.0000e-005	0.0000	0.9495
Total	4.3000e-004	2.9000e-004	3.1500e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9490	0.9490	2.0000e-005	0.0000	0.9495

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1792	1.6396	1.7182	2.8300e-003		0.0850	0.0850		0.0799	0.0799	0.0000	243.3115	243.3115	0.0583	0.0000	244.7688
Total	0.1792	1.6396	1.7182	2.8300e-003		0.0850	0.0850		0.0799	0.0799	0.0000	243.3115	243.3115	0.0583	0.0000	244.7688

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3.5 Building Construction - 2022

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	0.0294	0.9384	0.2489	2.5800e-003	0.0636	1.9100e-003	0.0655	0.0184	1.8300e-003	0.0202	0.0000	247.8285	247.8285	0.0104	0.0000	248.0888
Worker	0.0691	0.0460	0.5056	1.6800e-003	0.1907	1.1700e-003	0.1919	0.0507	1.0800e-003	0.0518	0.0000	152.1312	152.1312	3.2200e-003	0.0000	152.2117
Total	0.0985	0.9844	0.7544	4.2600e-003	0.2543	3.0800e-003	0.2574	0.0691	2.9100e-003	0.0720	0.0000	399.9597	399.9597	0.0136	0.0000	400.3005

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	0.0344	0.2346	1.8333	2.8300e-003		4.2800e-003	4.2800e-003		4.2800e-003	4.2800e-003	0.0000	243.3112	243.3112	0.0583	0.0000	244.7685
Total	0.0344	0.2346	1.8333	2.8300e-003		4.2800e-003	4.2800e-003		4.2800e-003	4.2800e-003	0.0000	243.3112	243.3112	0.0583	0.0000	244.7685

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3.5 Building Construction - 2022

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	0.0294	0.9384	0.2489	2.5800e-003	0.0636	1.9100e-003	0.0655	0.0184	1.8300e-003	0.0202	0.0000	247.8285	247.8285	0.0104	0.0000	248.0888
Worker	0.0691	0.0460	0.5056	1.6800e-003	0.1907	1.1700e-003	0.1919	0.0507	1.0800e-003	0.0518	0.0000	152.1312	152.1312	3.2200e-003	0.0000	152.2117
Total	0.0985	0.9844	0.7544	4.2600e-003	0.2543	3.0800e-003	0.2574	0.0691	2.9100e-003	0.0720	0.0000	399.9597	399.9597	0.0136	0.0000	400.3005

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0157	0.1439	0.1624	2.7000e-004		7.0000e-003	7.0000e-003		6.5800e-003	6.5800e-003	0.0000	23.1805	23.1805	5.5100e-003	0.0000	23.3183
Total	0.0157	0.1439	0.1624	2.7000e-004		7.0000e-003	7.0000e-003		6.5800e-003	6.5800e-003	0.0000	23.1805	23.1805	5.5100e-003	0.0000	23.3183

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3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1100e-003	0.0677	0.0213	2.4000e-004	6.0500e-003	8.0000e-005	6.1300e-003	1.7500e-003	8.0000e-005	1.8300e-003	0.0000	22.9317	22.9317	8.4000e-004	0.0000	22.9528
Worker	6.1700e-003	3.9400e-003	0.0443	1.5000e-004	0.0182	1.1000e-004	0.0183	4.8300e-003	1.0000e-004	4.9300e-003	0.0000	13.9383	13.9383	2.7000e-004	0.0000	13.9452
Total	8.2800e-003	0.0717	0.0656	3.9000e-004	0.0242	1.9000e-004	0.0244	6.5800e-003	1.8000e-004	6.7600e-003	0.0000	36.8700	36.8700	1.1100e-003	0.0000	36.8980

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	3.2800e-003	0.0224	0.1746	2.7000e-004		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	23.1805	23.1805	5.5100e-003	0.0000	23.3183
Total	3.2800e-003	0.0224	0.1746	2.7000e-004		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	23.1805	23.1805	5.5100e-003	0.0000	23.3183

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3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1100e-003	0.0677	0.0213	2.4000e-004	6.0500e-003	8.0000e-005	6.1300e-003	1.7500e-003	8.0000e-005	1.8300e-003	0.0000	22.9317	22.9317	8.4000e-004	0.0000	22.9528
Worker	6.1700e-003	3.9400e-003	0.0443	1.5000e-004	0.0182	1.1000e-004	0.0183	4.8300e-003	1.0000e-004	4.9300e-003	0.0000	13.9383	13.9383	2.7000e-004	0.0000	13.9452
Total	8.2800e-003	0.0717	0.0656	3.9000e-004	0.0242	1.9000e-004	0.0244	6.5800e-003	1.8000e-004	6.7600e-003	0.0000	36.8700	36.8700	1.1100e-003	0.0000	36.8980

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	1.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0123	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888

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3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9130	0.9130	2.0000e-005	0.0000	0.9134
Total	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9130	0.9130	2.0000e-005	0.0000	0.9134

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8000e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	1.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.7900e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888

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3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9130	0.9130	2.0000e-005	0.0000	0.9134
Total	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9130	0.9130	2.0000e-005	0.0000	0.9134

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.3772					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	2.3792	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571

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3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.2400e-003	7.9000e-004	8.9000e-003	3.0000e-005	3.6500e-003	2.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	2.7998	2.7998	6.0000e-005	0.0000	2.8012
Total	1.2400e-003	7.9000e-004	8.9000e-003	3.0000e-005	3.6500e-003	2.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	2.7998	2.7998	6.0000e-005	0.0000	2.8012

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	2.3772					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	2.3775	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571

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3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.2400e-003	7.9000e-004	8.9000e-003	3.0000e-005	3.6500e-003	2.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	2.7998	2.7998	6.0000e-005	0.0000	2.8012
Total	1.2400e-003	7.9000e-004	8.9000e-003	3.0000e-005	3.6500e-003	2.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	2.7998	2.7998	6.0000e-005	0.0000	2.8012

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5922	2.3032	7.5260	0.0280	2.7080	0.0215	2.7295	0.7249	0.0200	0.7449	0.0000	2,563.754 4	2,563.754 4	0.0791	0.0000	2,565.732 6
Unmitigated	0.5922	2.3032	7.5260	0.0280	2.7080	0.0215	2.7295	0.7249	0.0200	0.7449	0.0000	2,563.754 4	2,563.754 4	0.0791	0.0000	2,565.732 6

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.74	20.93	15.40	13,732	13,732
General Light Industry	2,059.64	390.06	200.94	4,541,581	4,541,581
General Light Industry	348.50	66.00	34.00	768,457	768,457
General Light Industry	123.72	23.43	12.07	272,802	272,802
General Light Industry	174.25	33.00	17.00	384,229	384,229
General Office Building	363.99	81.18	34.65	660,862	660,862
General Office Building	352.96	78.72	33.60	640,836	640,836
Parking Lot	0.00	0.00	0.00		
Total	3,424.79	693.32	347.66	7,282,499	7,282,499

4.3 Trip Type Information

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Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
General Light Industry	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
General Office Building	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Parking Lot	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	441.9686	441.9686	0.0577	0.0120	446.9716
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	441.9686	441.9686	0.0577	0.0120	446.9716
NaturalGas Mitigated	0.0610	0.5542	0.4655	3.3300e-003		0.0421	0.0421		0.0421	0.0421	0.0000	603.3358	603.3358	0.0116	0.0111	606.9211
NaturalGas Unmitigated	0.0610	0.5542	0.4655	3.3300e-003		0.0421	0.0421		0.0421	0.0421	0.0000	603.3358	603.3358	0.0116	0.0111	606.9211

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	1.319e+006	7.1100e-003	0.0647	0.0543	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	70.3869	70.3869	1.3500e-003	1.2900e-003	70.8051
General Light Industry	468245	2.5200e-003	0.0230	0.0193	1.4000e-004		1.7400e-003	1.7400e-003		1.7400e-003	1.7400e-003	0.0000	24.9873	24.9873	4.8000e-004	4.6000e-004	25.1358
General Light Industry	659500	3.5600e-003	0.0323	0.0272	1.9000e-004		2.4600e-003	2.4600e-003		2.4600e-003	2.4600e-003	0.0000	35.1934	35.1934	6.7000e-004	6.5000e-004	35.4026
General Light Industry	7.79529e+006	0.0420	0.3821	0.3210	2.2900e-003		0.0290	0.0290		0.0290	0.0290	0.0000	415.9864	415.9864	7.9700e-003	7.6300e-003	418.4584
General Office Building	523840	2.8200e-003	0.0257	0.0216	1.5000e-004		1.9500e-003	1.9500e-003		1.9500e-003	1.9500e-003	0.0000	27.9541	27.9541	5.4000e-004	5.1000e-004	28.1202
General Office Building	540210	2.9100e-003	0.0265	0.0222	1.6000e-004		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003	0.0000	28.8277	28.8277	5.5000e-004	5.3000e-004	28.9990
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0610	0.5542	0.4655	3.3200e-003		0.0421	0.0421		0.0421	0.0421	0.0000	603.3358	603.3358	0.0116	0.0111	606.9211

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	1.319e+006	7.1100e-003	0.0647	0.0543	3.9000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	70.3869	70.3869	1.3500e-003	1.2900e-003	70.8051
General Light Industry	468245	2.5200e-003	0.0230	0.0193	1.4000e-004		1.7400e-003	1.7400e-003		1.7400e-003	1.7400e-003	0.0000	24.9873	24.9873	4.8000e-004	4.6000e-004	25.1358
General Light Industry	659500	3.5600e-003	0.0323	0.0272	1.9000e-004		2.4600e-003	2.4600e-003		2.4600e-003	2.4600e-003	0.0000	35.1934	35.1934	6.7000e-004	6.5000e-004	35.4026
General Light Industry	7.79529e+006	0.0420	0.3821	0.3210	2.2900e-003		0.0290	0.0290		0.0290	0.0290	0.0000	415.9864	415.9864	7.9700e-003	7.6300e-003	418.4584
General Office Building	523840	2.8200e-003	0.0257	0.0216	1.5000e-004		1.9500e-003	1.9500e-003		1.9500e-003	1.9500e-003	0.0000	27.9541	27.9541	5.4000e-004	5.1000e-004	28.1202
General Office Building	540210	2.9100e-003	0.0265	0.0222	1.6000e-004		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003	0.0000	28.8277	28.8277	5.5000e-004	5.3000e-004	28.9990
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0610	0.5542	0.4655	3.3200e-003		0.0421	0.0421		0.0421	0.0421	0.0000	603.3358	603.3358	0.0116	0.0111	606.9211

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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 Light Industry	146615	14.7638	1.9300e-003	4.0000e-004	14.9309
General Light Industry	2.44083e+006	245.7855	0.0321	6.6400e-003	248.5677
General Light Industry	206500	20.7940	2.7200e-003	5.6000e-004	21.0294
General Light Industry	413000	41.5881	5.4300e-003	1.1200e-003	42.0588
General Office Building	570560	57.4540	7.5100e-003	1.5500e-003	58.1043
General Office Building	588390	59.2494	7.7400e-003	1.6000e-003	59.9201
Parking Lot	23177	2.3339	3.0000e-004	6.0000e-005	2.3603
Total		441.9686	0.0577	0.0119	446.9716

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	146615	14.7638	1.9300e-003	4.0000e-004	14.9309
General Light Industry	2.44083e+006	245.7855	0.0321	6.6400e-003	248.5677
General Light Industry	206500	20.7940	2.7200e-003	5.6000e-004	21.0294
General Light Industry	413000	41.5881	5.4300e-003	1.1200e-003	42.0588
General Office Building	570560	57.4540	7.5100e-003	1.5500e-003	58.1043
General Office Building	588390	59.2494	7.7400e-003	1.6000e-003	59.9201
Parking Lot	23177	2.3339	3.0000e-004	6.0000e-005	2.3603
Total		441.9686	0.0577	0.0119	446.9716

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0130	4.0000e-005	4.7800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3000e-003	9.3000e-003	2.0000e-005	0.0000	9.9100e-003
Unmitigated	2.0130	4.0000e-005	4.7800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3000e-003	9.3000e-003	2.0000e-005	0.0000	9.9100e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2377					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7748					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.4000e-004	4.0000e-005	4.7800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3000e-003	9.3000e-003	2.0000e-005	0.0000	9.9100e-003
Total	2.0130	4.0000e-005	4.7800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3000e-003	9.3000e-003	2.0000e-005	0.0000	9.9100e-003

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2377					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7748					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.4000e-004	4.0000e-005	4.7800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3000e-003	9.3000e-003	2.0000e-005	0.0000	9.9100e-003
Total	2.0130	4.0000e-005	4.7800e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.3000e-003	9.3000e-003	2.0000e-005	0.0000	9.9100e-003

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	90.2460	3.3096	0.0795	196.6886
Unmitigated	90.2460	3.3096	0.0795	196.6886

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.09616	0.3863	5.0000e-005	1.0000e-005	0.3907
General Light Industry	89.7828 / 0	77.4043	2.9320	0.0704	171.6830
General Office Building	11.5527 / 7.08068	12.4554	0.3776	9.1300e-003	24.6149
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		90.2460	3.3096	0.0795	196.6886

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.09616	0.3863	5.0000e-005	1.0000e-005	0.3907
General Light Industry	89.7828 / 0	77.4043	2.9320	0.0704	171.6830
General Office Building	11.5527 / 7.08068	12.4554	0.3776	9.1300e-003	24.6149
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		90.2460	3.3096	0.0795	196.6886

8.0 Waste Detail

8.1 Mitigation Measures Waste

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	110.0130	6.5016	0.0000	272.5525
Unmitigated	110.0130	6.5016	0.0000	272.5525

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
General Light Industry	481.43	97.7259	5.7754	0.0000	242.1119
General Office Building	60.45	12.2708	0.7252	0.0000	30.4004
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		110.0130	6.5016	0.0000	272.5525

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8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
General Light Industry	481.43	97.7259	5.7754	0.0000	242.1119
General Office Building	60.45	12.2708	0.7252	0.0000	30.4004
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		110.0130	6.5016	0.0000	272.5525

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

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Equipment Type	Number
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11.0 Vegetation

Vantage CA3 Data Center (Ph 2 Const) Jan. 2022 Update - Santa Clara County, Annual

Vantage CA3 Data Center (Ph 2 Const) Jan. 2022 Update
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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	17.75	1000sqft	0.15	17,750.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2025
Utility Company	User Defined				
CO2 Intensity (lb/MW hr)	277	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor was adjusted from Silicon Valley Power (utility provider) for 2025.

Land Use - Lot acreage represents the proportion of the site that is developed in Phase 2.

Construction Phase - The duration of construction for Phase 2 was provided by Vantage.

Off-road Equipment - Number and types of equipment were specified by Vantage.

Trips and VMT - Number of worker trips specified by Vantage.

Energy Use -

Construction Off-road Equipment Mitigation - All construction equipment mitigated to Tier 4 final engines

Vantage CA3 Data Center (Ph 2 Const) Jan. 2022 Update - Santa Clara County, Annual

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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	153.00
tblConstructionPhase	PhaseEndDate	6/5/2024	7/31/2024
tblConstructionPhase	PhaseStartDate	1/18/2024	1/1/2024
tblLandUse	LotAcreage	0.41	0.15
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0	0.029
tblProjectCharacteristics	CO2IntensityFactor	0	277
tblProjectCharacteristics	N2OIntensityFactor	0	0.006
tblTripsAndVMT	WorkerTripNumber	7.00	100.00

2.0 Emissions Summary

Vantage CA3 Data Center (Ph 2 Const) Jan. 2022 Update - Santa Clara County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2024	3-31-2024	0.1705	0.0368
2	4-1-2024	6-30-2024	0.1688	0.0351
3	7-1-2024	9-30-2024	0.0575	0.0119
		Highest	0.1705	0.0368

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	0.0786	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Energy	2.5200e-003	0.0230	0.0193	1.4000e-004		1.7400e-003	1.7400e-003		1.7400e-003	1.7400e-003	0.0000	43.4088	43.4088	2.4100e-003	8.6000e-004	43.7244
Mobile	0.0192	0.0781	0.2458	9.8000e-004	0.1014	7.6000e-004	0.1022	0.0272	7.0000e-004	0.0279	0.0000	89.7047	89.7047	2.6400e-003	0.0000	89.7708
Waste						0.0000	0.0000		0.0000	0.0000	4.4678	0.0000	4.4678	0.2640	0.0000	11.0689
Water						0.0000	0.0000		0.0000	0.0000	1.3022	2.7906	4.0929	0.1340	3.2200e-003	8.4031
Total	0.1004	0.1010	0.2652	1.1200e-003	0.1014	2.5000e-003	0.1039	0.0272	2.4400e-003	0.0296	5.7701	135.9044	141.6745	0.4031	4.0800e-003	152.9674

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0786	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Energy	2.5200e-003	0.0230	0.0193	1.4000e-004		1.7400e-003	1.7400e-003		1.7400e-003	1.7400e-003	0.0000	43.4088	43.4088	2.4100e-003	8.6000e-004	43.7244
Mobile	0.0192	0.0781	0.2458	9.8000e-004	0.1014	7.6000e-004	0.1022	0.0272	7.0000e-004	0.0279	0.0000	89.7047	89.7047	2.6400e-003	0.0000	89.7708
Waste						0.0000	0.0000		0.0000	0.0000	4.4678	0.0000	4.4678	0.2640	0.0000	11.0689
Water						0.0000	0.0000		0.0000	0.0000	1.3022	2.7906	4.0929	0.1340	3.2200e-003	8.4031
Total	0.1004	0.1010	0.2652	1.1200e-003	0.1014	2.5000e-003	0.1039	0.0272	2.4400e-003	0.0296	5.7701	135.9044	141.6745	0.4031	4.0800e-003	152.9674

	ROG	NOx	CO	SO2	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	Building Construction	Building Construction	1/1/2024	7/31/2024	5	153	

Acres of Grading (Site Preparation Phase): 0

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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
Building Construction	Cranes	2	4.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	0.00	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
Building Construction	3	100.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

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3.2 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0308	0.3188	0.2011	5.3000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	46.4860	46.4860	0.0150	0.0000	46.8619
Total	0.0308	0.3188	0.2011	5.3000e-004		0.0141	0.0141		0.0130	0.0130	0.0000	46.4860	46.4860	0.0150	0.0000	46.8619

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1000e-004	0.0167	5.1300e-003	6.0000e-005	1.5100e-003	2.0000e-005	1.5300e-003	4.4000e-004	2.0000e-005	4.6000e-004	0.0000	5.6822	5.6822	2.1000e-004	0.0000	5.6874
Worker	0.0194	0.0119	0.1372	4.9000e-004	0.0607	3.6000e-004	0.0610	0.0161	3.3000e-004	0.0165	0.0000	44.7336	44.7336	8.3000e-004	0.0000	44.7543
Total	0.0199	0.0286	0.1424	5.5000e-004	0.0622	3.8000e-004	0.0626	0.0166	3.5000e-004	0.0169	0.0000	50.4158	50.4158	1.0400e-003	0.0000	50.4416

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3.2 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.5000e-003	0.0282	0.2655	5.3000e-004		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	46.4859	46.4859	0.0150	0.0000	46.8618
Total	6.5000e-003	0.0282	0.2655	5.3000e-004		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	46.4859	46.4859	0.0150	0.0000	46.8618

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1000e-004	0.0167	5.1300e-003	6.0000e-005	1.5100e-003	2.0000e-005	1.5300e-003	4.4000e-004	2.0000e-005	4.6000e-004	0.0000	5.6822	5.6822	2.1000e-004	0.0000	5.6874
Worker	0.0194	0.0119	0.1372	4.9000e-004	0.0607	3.6000e-004	0.0610	0.0161	3.3000e-004	0.0165	0.0000	44.7336	44.7336	8.3000e-004	0.0000	44.7543
Total	0.0199	0.0286	0.1424	5.5000e-004	0.0622	3.8000e-004	0.0626	0.0166	3.5000e-004	0.0169	0.0000	50.4158	50.4158	1.0400e-003	0.0000	50.4416

4.0 Operational Detail - Mobile

Vantage CA3 Data Center (Ph 2 Const) Jan. 2022 Update - Santa Clara County, Annual

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0192	0.0781	0.2458	9.8000e-004	0.1014	7.6000e-004	0.1022	0.0272	7.0000e-004	0.0279	0.0000	89.7047	89.7047	2.6400e-003	0.0000	89.7708
Unmitigated	0.0192	0.0781	0.2458	9.8000e-004	0.1014	7.6000e-004	0.1022	0.0272	7.0000e-004	0.0279	0.0000	89.7047	89.7047	2.6400e-003	0.0000	89.7708

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	123.72	23.43	12.07	272,802	272,802
Total	123.72	23.43	12.07	272,802	272,802

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 Light Industry	9.50	7.30	7.30	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 Light Industry	0.616749	0.035330	0.181430	0.103378	0.013121	0.005016	0.012828	0.021913	0.002183	0.001508	0.005219	0.000634	0.000691

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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	18.4215	18.4215	1.9300e-003	4.0000e-004	18.5886
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	18.4215	18.4215	1.9300e-003	4.0000e-004	18.5886
NaturalGas Mitigated	2.5200e-003	0.0230	0.0193	1.4000e-004		1.7400e-003	1.7400e-003		1.7400e-003	1.7400e-003	0.0000	24.9873	24.9873	4.8000e-004	4.6000e-004	25.1358
NaturalGas Unmitigated	2.5200e-003	0.0230	0.0193	1.4000e-004		1.7400e-003	1.7400e-003		1.7400e-003	1.7400e-003	0.0000	24.9873	24.9873	4.8000e-004	4.6000e-004	25.1358

5.2 Energy by Land Use - NaturalGas

Unmitigated

NaturalGas Use	Land Use	KBTU/yr	tons/yr											MT/yr						
			ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2		NBIO- CO2	Total CO2	CH4	N2O	CO2e	
468245	General Light Industry	468245	2.5200e-003	0.0230	0.0193	1.4000e-004	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	0.0000	24.9873	24.9873	4.8000e-004	4.6000e-004	25.1358
	Total		2.5200e-003	0.0230	0.0193	1.4000e-004	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	0.0000	24.9873	24.9873	4.8000e-004	4.6000e-004	25.1358	

Mitigated

NaturalGas Use	Land Use	KBTU/yr	tons/yr											MT/yr					
			ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2		NBIO- CO2	Total CO2	CH4	N2O	CO2e
468245	General Light Industry	468245	2.5200e-003	0.0230	0.0193	1.4000e-004	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	0.0000	24.9873	24.9873	4.8000e-004	4.6000e-004	25.1358
	Total		2.5200e-003	0.0230	0.0193	1.4000e-004	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	1.7400e-003	0.0000	24.9873	24.9873	4.8000e-004	4.6000e-004	25.1358

5.3 Energy by Land Use - Electricity

Unmitigated

Total	18,4215	1,9300e-003	4,0000e-004	18,5886			
General Light Industry	146615	1,9300e-003	4,0000e-004	18,5886			
Land Use	kWh/yr			MT/yr			
Electricity Use	Total CO2	CH4	N2O	CO2e			

Mitigated

Total	18,4215	1,9300e-003	4,0000e-004	18,5886			
General Light Industry	146615	1,9300e-003	4,0000e-004	18,5886			
Land Use	kWh/yr			MT/yr			
Electricity Use	Total CO2	CH4	N2O	CO2e			

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0786	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Unmitigated	0.0786	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-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	9.2600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0693					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Total	0.0786	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004

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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	9.2600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0693					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Total	0.0786	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

Vantage CA3 Data Center (Ph 2 Const) Jan. 2022 Update - Santa Clara County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.0929	0.1340	3.2200e-003	8.4031
Unmitigated	4.0929	0.1340	3.2200e-003	8.4031

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	4.10469 / 0	4.0929	0.1340	3.2200e-003	8.4031
Total		4.0929	0.1340	3.2200e-003	8.4031

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	4.10469 / 0	4.0929	0.1340	3.2200e-003	8.4031
Total		4.0929	0.1340	3.2200e-003	8.4031

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.4678	0.2640	0.0000	11.0689
Unmitigated	4.4678	0.2640	0.0000	11.0689

8.2 Waste by Land Use
Unmitigated

Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr		
General Light Industry	22.01	4.4678	0.2640	11.0689
Total		4.4678	0.2640	11.0689

Mitigated

Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr		
General Light Industry	22.01	4.4678	0.2640	11.0689
Total		4.4678	0.2640	11.0689

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

**ATTACHMENT B
SUPPORTING DATA AND CALCULATIONS**

**Table B-1
Project Characteristics
Vantage CA3 Project
Santa Clara, California**

Characteristic	Phase 1	Phase 2
Location Scope	County	
County	Santa Clara	
Climate Zone	4	
Operational Year	2023	2025
Utility	SVP	
CO ₂ Intensity Factor (lbs CO ₂ /MWh) ¹	222	277
CH ₄ Intensity Factor (lbs CH ₄ /MWh) ²	0.029	
N ₂ O Intensity Factor (lbs N ₂ O/MWh) ²	0.00617	

Notes:

¹. CO₂ Intensity Factor for 2023 and 2025 operational years were provided by SVP and used in the last few CEC proceedings. The projected carbon intensity factors were obtained from "SVP Email to City of Santa Clara on Carbon Intensity Factor" from the Sequoia Data Center Project.

². CH₄ and N₂O Intensity Factors are the CalEEMod® default values for Pacific Gas & Electric Co.

Abbreviations:

CalEEMod - California Emissions Estimator Model	
CO ₂ - carbon dioxide	N ₂ O - nitrogen dioxide
CH ₄ - methane	SVP - Silicon Valley Power

References:

CEC. 2019. Sequoia Data Center, 19-SPPE-03, Docket #TN 233088.
Available at:
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-SPPE-03>

NO CHANGE FROM PRIOR ANALYSIS

**Table B-2
Land Use Characteristics
Vantage CA3 Project
Santa Clara, California**

Phase	Land Use Activity	CalEEMod Land Use Type ¹	Land Use Subtype ¹	Unit Amount ²	Size Metric	Lot Acreage ³
Phase 1	Data Halls and Mechanical Galleries	Industrial	General Light Industry	295.5	1000sqft	2.43
	Electricity and MMR to Support Data Modules	Industrial	General Light Industry	50.0	1000sqft	0.41
	Generator Area	Industrial	General Light Industry	17.8	1000sqft	0.15
	Office and Lobby	Commercial	General Office Building	33.0	1000sqft	0.27
	Tenant Storage	Commercial	General Office Building	32.0	1000sqft	0.26
	Parking	Parking	Parking Lot	66.2	1000sqft	1.52
	Landscaping	Recreational	City Park	0.92	Acre	0.92
Phase 2	Substation	Industrial	General Light Industry	25.0	1000sqft	0.57
	Data Halls and Mechanical Galleries	Industrial	General Light Industry	0.0	1000sqft	0.00
	Electricity and MMR to Support Data Modules	Industrial	General Light Industry	0.0	1000sqft	0.00
	Generator Area	Industrial	General Light Industry	17.8	1000sqft	0.15
	Office and Lobby	Commercial	General Office Building	0.0	1000sqft	0.00
Tenant Storage	Commercial	General Office Building	0.0	1000sqft	0.00	

Notes:

- ¹. CalEEMod land use types were assumed based on data provide by Vantage data centers.
- ². Land use square footage for land use types were provided by Vantage based on site drawings.
- ³. Lot acreage for each land use type was estimated by scaling the total lot acreage provided by Vantage based on site drawings, by the square footage of development for each land use type.

Abbreviations:

CalEEMod - California Emissions Estimator Model sqft - square feet

References:

CAPCOA. 2017. CALifornia Emissions Estimator MODeL. Available at: <http://www.caleemod.com>

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**Table B-3
Construction Schedule
Vantage CA3 Project
Santa Clara, California**

Phase¹	Subphase	Start	End	Days²
Phase 1	Demolition	1/1/2022	1/28/2022	20
	Site Preparation	1/29/2022	2/11/2022	10
	Grading	2/12/2022	3/11/2022	20
	Building Construction	3/12/2022	1/27/2023	230
	Paving	1/28/2023	2/24/2023	20
	Architectural Coating	2/25/2023	3/24/2023	20
Phase 2	Building Construction	1/1/2024	7/31/2024	153
	Paving	--	--	0
	Architectural Coating	--	--	0

Notes:

1. The construction schedule was estimated assuming that construction of Phase 1 begins January 1, 2022 and construction of Phase 2 begins January 1, 2024, with estimated operational years 2023 and 2025 respectively.
2. The number of days of construction for Phase 1 was determined using CalEEMod[®] default assumptions. The duration of construction for Phase 2 was provided by Vantage.

Abbreviations:

CalEEMod - California Emissions Estimator Model

References:

CAPCOA. 2017. CALifornia Emissions Estimator MODel. Available at: <http://www.caleemod.com>

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**Table B-4
Construction Equipment List
Vantage CA3 Project
Santa Clara, California**

Phase ^{1,2}	Construction Subphase	Equipment	Construction Equipment Tier ³	Number	Daily Usage (hours/day)	Horsepower	Load Factor
Phase 1	Demolition	Concrete/Industrial Saws	Tier 4 Final	1	8	81	0.73
		Excavators	Tier 4 Final	3	8	158	0.38
		Rubber Tired Dozers	Tier 4 Final	2	8	247	0.4
	Site Preparation	Tractors/Loaders/Backhoes	Tier 4 Final	4	8	97	0.37
		Rubber Tired Dozers	Tier 4 Final	3	8	247	0.4
	Grading	Excavators	Tier 4 Final	1	8	158	0.38
		Rubber Tired Dozers	Tier 4 Final	1	8	247	0.4
		Tractors/Loaders/Backhoes	Tier 4 Final	3	8	97	0.37
	Building Construction	Graders	Tier 4 Final	1	8	187	0.41
		Cranes	Tier 4 Final	1	7	231	0.29
		Forklifts	Tier 4 Final	3	8	89	0.2
		Tractors/Loaders/Backhoes	Tier 4 Final	3	7	97	0.37
		Generator Sets	Tier 4 Final	1	8	84	0.74
	Paving	Welders	Tier 4 Final	1	8	46	0.45
		Cement and Mortar Mixers	Tier 4 Final	0	0	9	0.56
		Pavers	Tier 4 Final	2	8	130	0.42
		Rollers	Tier 4 Final	2	8	80	0.38
	Architectural Coating	Tractors/Loaders/Backhoes	Tier 4 Final	0	0	97	0.37
Paving Equipment		Tier 4 Final	2	8	132	0.36	
Phase 2	Building Construction	Air Compressors	Tier 4 Final	1	6	78	0.48
		Cranes	Tier 4 Final	2	4	231	0.29
		Forklifts	Tier 4 Final	1	6	89	0.2
		Tractors/Loaders/Backhoes	Tier 4 Final	0	0	97	0.37
		Generator Sets	Tier 4 Final	0	0	84	0.74
	Paving	Welders	Tier 4 Final	0	0	46	0.45
		Cement and Mortar Mixers	Tier 4 Final	0	0	9	0.56
		Pavers	Tier 4 Final	0	0	130	0.42
		Rollers	Tier 4 Final	0	0	80	0.38
		Tractors/Loaders/Backhoes	Tier 4 Final	0	0	97	0.37
	Architectural Coating	Paving Equipment	Tier 4 Final	0	0	132	0.36
		Air Compressors	Tier 4 Final	0	0	78	0.48

Notes:

- The construction equipment assumptions, number of construction equipment and equipment horsepower for Phase 1 are based on CalEEMod® Appendix D, based on the acreage for that phase.
- The number of construction equipment for Phase 2 was provided by Vantage. The remaining equipment assumptions, including equipment horsepower for Phase 2 are based on CalEEMod® Appendix D, based on the acreage for that phase.
- All off-road equipment for construction is assumed to be Tier 4 Final engines. All the construction equipment is conservatively assumed to operate 100% of the subphase.

Abbreviations:

CalEEMod - California Emissions Estimator Model

References:

CAPCOA. 2017. CALifornia Emissions Estimator MODel. Available at: <http://www.caleemod.com>

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**Table B-5
Construction Trips
Vantage CA3 Project
Santa Clara, California**

Phase	Subphase	Offroad Equipment Count	One Way Trips ¹		
			Worker Trips (trips/day)	Vendor Trips (trips/day)	Hauling Trips (trips/phase)
Phase 1	Demolition	6	15	0	523
	Site Preparation	7	18	0	1250
	Grading	6	15	0	0
	Building Construction	9	229	92	0
	Paving	6	15	0	0
	Architectural Coating	1	46	0	0
Phase 2	Architectural Coating	0	0	0	0
	Building Construction	3	100	3	0
	Paving	0	0	0	0

Notes:

¹ Trip rates for worker, vendor and haul trips are based on CalEEMod® Appendix A, except for the worker trips for Phase 2, which were specified by Vantage.

Abbreviations:

CalEEMod - California Emissions Estimator Model

References:

CAPCOA. 2017. CALifornia Emissions Estimator MODEL. Available at: <http://www.caleemod.com>

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**Table B-6
Project Construction Emissions
Vantage CA3 Project
Santa Clara, California**

Construction and Emissions by Year and Phase

Phase	Subphase	Emissions Year	Source	Total Construction Emissions ¹				GHG Emissions ²
				ROG	NO _x	PM ₁₀	PM _{2.5}	CO ₂ e
				lb/yr				MT/yr
Phase 1	Demolition	2022	On-Site Exhaust	9.2	40	1.2	1.2	34
			Off-Site Mobile Exhaust	4.7	129	0.40	0.38	20
			Fugitive Dust ³	--	--	62	11	--
	Site Preparation	2022	On-Site Exhaust	4.7	20	0.62	0.62	16.9
			Off-Site Mobile Exhaust	10	307	0.90	0.86	47
			Fugitive Dust	--	--	104	51	--
	Grading	2022	On-Site Exhaust	7.3	31	0.96	0.96	26
			Off-Site Mobile Exhaust	0.86	0.58	0	0	0.95
			Fugitive Dust	--	--	61	31	--
	Building Construction	2022	On-Site Exhaust	69	469	8.6	8.6	245
			Off-Site Mobile Exhaust	197	1,969	6.2	5.8	400
			Fugitive Dust	--	--	509	138	--
		2023	On-Site Exhaust	6.6	44.8	0.82	0.82	23.3
			Off-Site Mobile Exhaust	16.6	143	0.380	0.360	36.9
			Fugitive Dust	--	--	48.4	13.2	--
	Paving	2023	On-Site Exhaust	5.6	24	0.74	0.74	20
			Off-Site Mobile Exhaust	0.8	0.52	0.020	0.020	0.9
			Fugitive Dust	--	--	2.4	0.64	--
Paving Emissions			4.0	--	--	--	--	
Architectural Coating	2023	On-Site Exhaust	0.60	2.6	0.080	0.080	2.6	
		Off-Site Mobile Exhaust	2.5	1.58	0.040	0.040	2.8	
		Fugitive Dust	--	--	7.3	1.9	--	
		Architectural Coating	4,754	--	--	--	--	
Phase 2	Building Construction	2024	On-Site Exhaust	13	56	1.7	1.7	47
			Off-Site Mobile Exhaust	40	57	0.8	0.7	50
			Fugitive Dust	--	--	124	33	--
	Paving	2024	On-Site Exhaust	0.0	0.0	0.0	0.0	0.0
			Off-Site Mobile Exhaust	0.0	0.0	0.0	0.0	0.0
			Fugitive Dust	--	--	0.0	0.0	--
			Paving Emissions	--	--	--	--	--
	Architectural Coating	2024	On-Site Exhaust	0.0	0.0	0.0	0.0	0.0
			Off-Site Mobile Exhaust	0.0	0.0	0.0	0.0	0.0
			Fugitive Dust	--	--	0.0	0.0	--
Architectural Coating	0.0	--	--	--	--			

**Table B-6
Project Construction Emissions
Vantage CA3 Project
Santa Clara, California**

Summary of Construction Emissions

Phase	Average Daily CAP Emissions ⁴				Total GHG Emissions
	ROG	NO _x	PM ₁₀	PM _{2.5}	
	lb/day				MT CO ₂ e/yr
Phase 1	15.9	9.9	2.5	0.8	877
Phase 2	0.3	0.7	0.8	0.2	97
BAAQMD CEQA Threshold ⁵	54	54	82	54	--

Notes:

- Construction emissions were estimated using CalEEMod® 2016.3.2.
- Greenhouse gas emissions are estimated assuming global warming potentials consistent with CARB MRR guidance.
- Fugitive dust from demolition are based on CalEEMod® 2016.3.2 default emissions which include emissions from site removal of debris and onsite truck traffic on paved/unpaved roads. Consistent with BAAQMD guidelines, sources of fugitive dust emissions include construction related activities such as soil disturbance, grading, and material hauling emissions.
- Daily emissions are conservatively averaged over the actual number of days during which construction takes place for each phase.
- Thresholds are from BAAQMD California Environmental Quality Act (CEQA) Guidelines. Fugitive emissions sources are excluded from comparison to this threshold. The BAAQMD does not have an adopted Threshold of Significance for construction-related GHG emissions.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District	MRR - Mandatory GHG Reporting Regulation
CalEEMod® - California Emissions Estimator Model	ROG - reactive organic gases
CAP - Criteria Air Pollutants	NO _x - nitrogen oxides
CEQA - California Environmental Quality Act	PM ₁₀ - particulate matter less than 10 microns
GHG - Greenhouse Gases	PM _{2.5} - particulate matter less than 2.5 microns

Reference:

CAPCOA. 2017. CALifornia Emissions Estimator MODel. Available at: <http://www.caleemod.com>

California Environmental Quality Act (CEQA) Guidelines. 2017. Bay Area Air Quality Management District (BAAQMD). May. Available online at: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

CARB. 2018. Mandatory Greenhouse Gas Reporting Regulation (MRR). Available online at: <https://ww2.arb.ca.gov/mrr-regulation>

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**Table B-7
Project Construction Emissions - CAAQS/NAAQS Modeling
Vantage CA3 Project
Santa Clara, California**

Construction and Emissions by Year and Phase

Phase	Subphase	Emissions Year	Source	Total Construction Emissions ¹					
				ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
				lb/yr					
Phase 1	Demolition	2022	On-Site Exhaust	9.2	40	466	0.78	1.2	1.2
			Off-Site Mobile Exhaust ²	0.10	2.45	0.79	0.0083	0.0079	0.0075
			Fugitive Dust ^{2,3}	--	--	--	--	51	7.8
	Site Preparation	2022	On-Site Exhaust	4.7	20	209	0.38	0.62	0.62
			Off-Site Mobile Exhaust ²	0.19	5.8	1.5	0.019	0.017	0.016
			Fugitive Dust ²	--	--	--	--	82	45
	Grading	2022	On-Site Exhaust	7.3	31	355	0.60	0.96	0.96
			Off-Site Mobile Exhaust ²	0.030	0.0203	0.221	0.00070	0.00070	0.00070
			Fugitive Dust ²	--	--	--	--	59	30
	Building Construction	2022	On-Site Exhaust	69	469	3,667	5.7	8.6	8.6
			Off-Site Mobile Exhaust ²	8	101	61	0.4	0.3	0.3
			Fugitive Dust ²	--	--	--	--	20	5
		2023	On-Site Exhaust	6.6	44.8	349	0.540	0.82	0.82
			Off-Site Mobile Exhaust ²	0.652	7.30	5.32	0.035	0.016	0.015
			Fugitive Dust ²	--	--	--	--	1.90	0.520
	Paving	2023	On-Site Exhaust	5.6	24	346	0.46	0.74	0.74
			Off-Site Mobile Exhaust ²	0.028	0.018	0.20	0.00070	0.00070	0.00070
			Fugitive Dust ²	--	--	--	--	0.08	0.022
Paving Emissions			4.0	--	--	--	--	--	
Architectural Coating	2023	On-Site Exhaust	0.60	2.6	37	0.060	0.080	0.080	
		Off-Site Mobile Exhaust ²	0.087	0.055	0.62	0.0021	0.0014	0.0014	
		Fugitive Dust ²	--	--	--	--	0.26	0.068	
		Architectural Coating	4,754	--	--	--	--	--	
Phase 2	Building Construction	2024	On-Site Exhaust	13	56	531	1.1	1.7	1.7
			Off-Site Mobile Exhaust ²	1.41	2.6	10.2	0.04	0.0273	0.0252
			Fugitive Dust ²	--	--	--	--	4.4	1.2
	Paving	2024	On-Site Exhaust	0	0	0	0	0	0
			Off-Site Mobile Exhaust ²	0	0	0	0	0	0
			Fugitive Dust ²	--	--	--	--	0	0
			Paving Emissions	--	--	--	--	--	--
	Architectural Coating	2024	On-Site Exhaust	0	0	0	0	0	0
			Off-Site Mobile Exhaust ²	0	0	0	0	0	0
			Fugitive Dust ²	--	--	--	--	0	0
Architectural Coating	0	--	--	--	--	--			

Notes:

1. Construction emissions were estimated using CalEEMod® 2016.3.2.
2. Off-site on-road mobile exhaust and fugitive dust emissions have been limited to those within 2,000 feet of the project boundary.
3. Fugitive dust from demolition are based on CalEEMod® 2016.3.2 default emissions which include emissions from site removal of debris and onsite truck traffic on paved/unpaved roads. Consistent with BAAQMD guidelines, sources of fugitive dust emissions include construction related activities such as soil disturbance, grading, and material hauling emissions.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District	NO _x - nitrogen oxides
CalEEMod® - California Emissions Estimator Model	PM ₁₀ - particulate matter less than 10 microns
CO - carbon monoxide	PM _{2.5} - particulate matter less than 2.5 microns
ROG - reactive organic gases	SO ₂ - sulfur dioxide

Reference:

CAPCOA. 2017. California Emissions Estimator Model. Available at: <http://www.caleemod.com>.

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**Table B-8
Construction 1-hr, 3-hr, and 8-hr CAAQS/NAAQs Model Emission Rates
Vantage CA3 Project
Santa Clara, California**

Phase	Subphase	Emission Rate ¹ [lb/hr]			Emission Rate ¹ [g/s]		
		NO _x	CO	SO ₂	NO _x	CO	SO ₂
Phase 1	Demolition	2.65E-01	2.91E+00	4.93E-03	3.34E-02	3.67E-01	6.21E-04
	Site Preparation	3.25E-01	2.63E+00	4.99E-03	4.10E-02	3.31E-01	6.28E-04
	Grading	1.96E-01	2.22E+00	3.75E-03	2.47E-02	2.80E-01	4.73E-04
	Building Construction (2022)	3.39E-01	2.22E+00	3.60E-03	4.27E-02	2.80E-01	4.53E-04
	Building Construction (2023)	3.26E-01	2.22E+00	3.60E-03	4.10E-02	2.79E-01	4.53E-04
	Paving	1.53E-01	2.16E+00	2.88E-03	1.92E-02	2.73E-01	3.63E-04
	Architectural Coating	1.65E-02	2.33E-01	3.88E-04	2.08E-03	2.93E-02	4.89E-05
Phase 2	Building Construction	4.82E-02	4.42E-01	8.99E-04	6.07E-03	5.57E-02	1.13E-04
	Paving	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phase 1 Maximum		0.34	2.91	0.0050	0.043	0.37	0.00063
Phase 2 Maximum		0.05	0.44	0.0009	0.006	0.06	0.00011
Phase 1 Modeled Emission Rate ² (g/s/m ²)					1.58E-06		
Phase 2 Modeled Emission Rate ² (g/s/m ²)					5.23E-07		

Notes:

¹ Emission rates calculated using CalEEMod[®] emission outputs in pounds/year, divided by the number of construction working days per year per phase, and 8 hours of assumed construction operation per day.

² The 1-hour NO₂ runs were conducted with actual emissions which require units of g/s/m². The other pollutants were evaluated using X/Q runs, where the emission rate in g/s is applied outside of the model.

Abbreviations:

CO - carbon monoxide

g - gram

hr - hour

lb - pound

m² - meter squared

NO_x - nitrogen oxides

SO₂ - sulfur dioxide

s - second

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**Table B-9
Construction 24-hr CAAQS/NAAQS Model Emission Rates
Vantage CA3 Project
Santa Clara, California**

Phase	Subphase	Emission Rate ¹ [lb/hr]			Emission Rate ¹ [g/s]		
		SO ₂	Exhaust PM ₁₀	Exhaust PM _{2.5}	SO ₂	Exhaust PM ₁₀	Exhaust PM _{2.5}
Phase 1	Demolition	3.58E-03	5.67E-03	5.67E-03	4.51E-04	7.15E-04	7.14E-04
	Site Preparation	3.63E-03	5.79E-03	5.78E-03	4.57E-04	7.30E-04	7.29E-04
	Grading	2.73E-03	4.37E-03	4.37E-03	3.44E-04	5.50E-04	5.50E-04
	Building Construction (2022)	2.62E-03	3.83E-03	3.82E-03	3.30E-04	4.82E-04	4.81E-04
	Building Construction (2023)	2.62E-03	3.80E-03	3.80E-03	3.30E-04	4.79E-04	4.78E-04
	Paving	2.09E-03	3.37E-03	3.37E-03	2.64E-04	4.24E-04	4.24E-04
	Architectural Coating	2.82E-04	3.70E-04	3.70E-04	3.56E-05	4.66E-05	4.66E-05
Phase 2	Building Construction	6.54E-04	1.05E-03	1.05E-03	8.24E-05	1.32E-04	1.32E-04
	Paving	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Architectural Coating	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phase 1 Maximum		0.0036	0.0058	0.0058	0.00046	0.00073	0.00073
Phase 2 Maximum		0.0007	0.0011	0.0010	0.00008	0.00013	0.00013

Notes:

¹ Emission rates calculated using CalEEMod[®] emission outputs in pounds/year, divided by the number of construction working days per year per phase, and 11 hours of assumed construction operation per day.

Abbreviations:

g - gram

hr - hour

lb - pound

PM₁₀ - particulate matter less than 10 microns

PM_{2.5} - particulate matter less than 2.5 microns

SO₂ - sulfur dioxide

s - second

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Table B-10
Construction Annual CAAQS/NAAQS Model Emission Rates
Vantage CA3 Project
Santa Clara, California

Phase	Subphase	Emissions ¹ [lb/yr]		
		NO _x	Exhaust PM ₁₀	Exhaust PM _{2.5}
Phase 1	Demolition	4.25E+01	1.25E+00	1.25E+00
	Site Preparation	2.60E+01	6.37E-01	6.36E-01
	Grading	3.14E+01	9.61E-01	9.61E-01
	Building Construction (2022)	5.70E+02	8.84E+00	8.83E+00
	Building Construction (2023)	5.21E+01	8.36E-01	8.35E-01
	Paving	2.44E+01	7.41E-01	7.41E-01
	Architectural Coating	2.64E+00	8.14E-02	8.14E-02
Phase 2	Building Construction	5.90E+01	1.77E+00	1.77E+00
	Paving	0.00E+00	0.00E+00	0.00E+00
	Architectural Coating	0.00E+00	0.00E+00	0.00E+00
Phase 1 2022 Emissions		670	12	12
Phase 1 2023 Emissions		79	1.7	1.7
Phase 1 Max Annual Emissions		670	12	12
Phase 2 Max Annual Emissions		59	1.8	1.8
Phase 1 Average Daily Emissions (lb/hour)		0.17	0.0029	0.0029
Phase 1 Average Daily Emissions (g/s)		0.021	0.00037	0.00037
Phase 2 Average Daily Emissions (lb/hour)		0.015	0.00044	0.00044
Phase 2 Average Daily Emissions (g/s)		0.0019	0.000055	0.000055
Phase 1 Modeled Emission Rate ² (g/s/m ²)		7.79E-07		
Phase 2 Modeled Emission Rate ² (g/s/m ²)		1.59E-07		

Notes:

¹ Emission rates calculated using CalEEMod® emission outputs in pounds/year, divided by 365 days of construction per year, and 11 hours of assumed construction operation per day.

² The annual NO₂ runs were conducted with actual emissions which require units of g/s/m². The other pollutants were evaluated using X/Q runs, where the emission rate in g/s is applied outside of the model.

Abbreviations:

g - gram
 hr - hour
 lb - pound
 m² - meter squared

NO_x - nitrogen oxides
 PM₁₀ - particulate matter less than 10 micr
 PM_{2.5} - particulate matter less than 2.5 mic
 s - second

[Redacted] = UPDATED 01/2022