DOCKETED	
Docket Number:	21-SPPE-01
Project Title:	CA3 Backup Generating Facility-Vantage
TN #:	241160
Document Title:	Report of Conversation, Modifications to Project Construction Phasing, dated January 4-12, 2022
Description:	Between California Energy Commission and Ramboll Consulting
Filer:	Alicia Campos
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	1/13/2022 2:05:40 PM
Docketed Date:	1/13/2022

Siting, Transmission and Environmental Protection Division

FILE: n/a

PROJECT TITLE: **CA3 Backup Generating Facility**

Docket: **21-SPPE-01**

TECHNICAL AREA(s): **Air Quality, Project Description**

☐ **Telephone**	☒ **Email**	☐ **Meeting Location:** N/A	
NAME(s):	Wenjun Qian, Air Resources Engineer	**DATE:** From 01-04-22 to 01-12-22	**TIME:**
WITH:	Emily Weissinger, Senior Managing Consultant, Ramboll Consulting (consultant working for Vantage Data Services)		
SUBJECT:	Modifications to Project Construction Phasing		

COMMENTS:

CEC staff contacted Emily Weissinger with Ramboll consulting (in Scott Galati's absence) to confirm modifications to the CA3 construction schedule, primarily related to emissions calculations.

See the attached email chain and memorandum from Ramboll Consulting dated January 12, 2022 clarifying construction phasing, supported by updated emissions modeling.

cc: Joseph Hughes, Air Resources Supervisor I, CEC	**Signed:** _____|s|_____ **Name**: Wenjun Qian, Air Resources Engineer

RAMBOLL

ENVIRONMENT
& HEALTH

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**

January 12, 2022

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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.

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 Guidelines[1] 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	PM_{10}	$PM_{2.5}$
	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**	**SO_2**
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)				
		SO_2	**Exhaust PM_{10}**	**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)				
		NOx	**Exhaust PM_{10}**	**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 NO_2 CAAQS (339 µg/m^3). Previous results indicated that the maximum 1-hour NO_2 modeled impact from operations was 327 micrograms per cubic meter (µg/m^3), 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 NO_2 concentration to 305 µg/m^3. Prior modeling results for Phase 2 of construction indicated that the maximum 1-hour NO_2 modeled impact would be 86 µg/m^3, 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 NO_2 impact for Phase 2 would be approximately 9 µg/m^3. Therefore, during the small overlap of operational activities with Phase 2 construction activities, we would not expect an exceedance of the 1-hour NO_2 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

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

Project Characteristics - Carbon intensity factor from Silicon Valley Power (utility provider) for 2023 is used in the analysis.

Land Use - Lot acreage represents the amount of lot that is developed in Phase 1 only.

Grading -

Demolition -

Energy Use -

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

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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
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
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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.3471	3.4736	2.9887	8.6700e-003	0.4854	0.1186	0.6040	0.1660	0.1111	0.2771	0.0000	788.3598	788.3598	0.0983	0.0000	790.8178
2023	2.4171	0.3315	0.4038	9.6000e-004	0.0291	0.0130	0.0421	7.8700e-003	0.0122	0.0201	0.0000	86.3434	86.3434	0.0133	0.0000	86.6768
Maximum	**2.4171**	**3.4736**	**2.9887**	**8.6700e-003**	**0.4854**	**0.1186**	**0.6040**	**0.1660**	**0.1111**	**0.2771**	**0.0000**	**788.3598**	**788.3598**	**0.0983**	**0.0000**	**790.8178**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1512	1.4833	3.1614	8.6700e-003	0.3682	9.4300e-003	0.3777	0.1154	9.2300e-003	0.1247	0.0000	788.3595	788.3595	0.0983	0.0000	790.8174
2023	2.3955	0.1085	0.4433	9.6000e-004	0.0291	1.0400e-003	0.0301	7.8700e-003	1.0200e-003	8.8900e-003	0.0000	86.3434	86.3434	0.0133	0.0000	86.6768
Maximum	**2.3955**	**1.4833**	**3.1614**	**8.6700e-003**	**0.3682**	**9.4300e-003**	**0.3777**	**0.1154**	**9.2300e-003**	**0.1247**	**0.0000**	**788.3595**	**788.3595**	**0.0983**	**0.0000**	**790.8174**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**7.87**	**58.17**	**-6.25**	**0.00**	**22.78**	**92.04**	**36.88**	**29.09**	**91.68**	**55.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
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**

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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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

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**

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**

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**

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**

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**

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**

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**

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**

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**

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**

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**

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**

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**

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**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2,563.7544	2,563.7544	0.0791	0.0000	2,565.7326
Unmitigated	0.5922	2.3032	7.5260	0.0280	2.7080	0.0215	2.7295	0.7249	0.0200	0.7449	0.0000	2,563.7544	2,563.7544	0.0791	0.0000	2,565.7326

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	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

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

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

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**

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**

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**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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**

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

	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**

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

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**

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Vantage CA3 Data Center (Ph 2 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 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/MWhr)	277	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0507	0.3474	0.3435	1.0800e-003	0.0622	0.0145	0.0766	0.0166	0.0133	0.0299	0.0000	96.9018	96.9018	0.0161	0.0000	97.3035
Maximum	**0.0507**	**0.3474**	**0.3435**	**1.0800e-003**	**0.0622**	**0.0145**	**0.0766**	**0.0166**	**0.0133**	**0.0299**	**0.0000**	**96.9018**	**96.9018**	**0.0161**	**0.0000**	**97.3035**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0264	0.0568	0.4078	1.0800e-003	0.0622	1.2500e-003	0.0634	0.0166	1.2200e-003	0.0178	0.0000	96.9017	96.9017	0.0161	0.0000	97.3034
Maximum	**0.0264**	**0.0568**	**0.4078**	**1.0800e-003**	**0.0622**	**1.2500e-003**	**0.0634**	**0.0166**	**1.2200e-003**	**0.0178**	**0.0000**	**96.9017**	**96.9017**	**0.0161**	**0.0000**	**97.3034**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**47.91**	**83.66**	**-18.73**	**0.00**	**0.00**	**91.36**	**17.24**	**0.00**	**90.83**	**40.46**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
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**

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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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

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

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**

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

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

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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

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	ROG	NOx	CO	SO2	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					
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
Total		**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**

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					
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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	146615	18.4215	1.9300e-003	4.0000e-004	18.5886
Total		**18.4215**	**1.9300e-003**	**4.0000e-004**	**18.5886**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	146615	18.4215	1.9300e-003	4.0000e-004	18.5886
Total		**18.4215**	**1.9300e-003**	**4.0000e-004**	**18.5886**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0786	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**

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

	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**

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	0.0000	11.0689
Total		**4.4678**	**0.2640**	**0.0000**	**11.0689**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	22.01	4.4678	0.2640	0.0000	11.0689
Total		**4.4678**	**0.2640**	**0.0000**	**11.0689**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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_2O Intensity Factor (lbs N_2O/MWh)[2]	0.00617	

Notes:

1. CO_2 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. CH_4 and N_2O Intensity Factors are the CalEEMod® default values for Pacific Gas & Electric Co.

Abbreviations:

CalEEMod - California Emissions Estimator Model

CO_2 - carbon dioxide

CH_4 - methane

N_2O - nitrogen dioxide

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
	Substation	Industrial	General Light Industry	25.0	1000sqft	0.57
Phase 2	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

= UPDATED 01/2022

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

Phase[1]	Subphase	Start	End	Days[2]
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
		Graders	Tier 4 Final	1	8	187	0.41
	Building Construction	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
		Welders	Tier 4 Final	1	8	46	0.45
	Paving	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
		Tractors/Loaders/Backhoes	Tier 4 Final	0	0	97	0.37
		Paving Equipment	Tier 4 Final	2	8	132	0.36
	Architectural Coating	Air Compressors	Tier 4 Final	1	6	78	0.48
Phase 2	Building Construction	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
		Welders	Tier 4 Final	0	0	46	0.45
	Paving	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
		Paving Equipment	Tier 4 Final	0	0	132	0.36
	Architectural Coating	Air Compressors	Tier 4 Final	0	0	78	0.48

Notes:

1. 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.
2. 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.
3. 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_2e
				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_2e/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:

1. Construction emissions were estimated using CalEEMod® 2016.3.2.
2. Greenhouse gas emissions are estimated assuming global warming potentials consistent with CARB MRR guidance.
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.
4. Daily emissions are conservatively averaged over the actual number of days during which construction takes place for each phase.
5. 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
CalEEMod® - California Emissions Estimator Model
CAP - Criteria Air Pollutants
CEQA - California Environmental Quality Act
GHG - Greenhouse Gases
MRR - Mandatory GHG Reporting Regulation
ROG - reactive organic gases
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 microns
$PM_{2.5}$ - 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

= Updated 01/2022

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
CalEEMod® - California Emissions Estimator Model
CO - carbon monoxide
ROG - reactive organic gases
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 microns
$PM_{2.5}$ - particulate matter less than 2.5 microns
SO_2 - sulfur dioxide

Reference:

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

= UPDATED 01/2022

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 NO_2 runs were conducted with actual emissions which require units of $g/s/m^2$. 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
m^2 - meter squared
NO_x - nitrogen oxides
SO_2 - sulfur dioxide
s - second

= Updated 01/2022

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
PM_{10} - particulate matter less than 10 microns
$PM_{2.5}$ - particulate matter less than 2.5 microns
SO_2 - sulfur dioxide
s - second

= Updated 01/2022

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 NO_2 runs were conducted with actual emissions which require units of $g/s/m^2$. 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
m^2 - meter squared
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 micr
$PM_{2.5}$ - particulate matter less than 2.5 mic
s - second

= UPDATED 01/2022

From:	Emily A Weissinger
To:	Qian, Wenjun@Energy; Veerkamp, Eric@Energy
Cc:	Hughes, Joseph@Energy; Scott Galati; Shari Beth Libicki; Michael Stoner; Brewster Birdsall; Chu, Ann@Energy; Simon Casey (scasey@vantage-dc.com)
Subject:	Re: CA3 construction phase follow up question
Date:	Wednesday, January 12, 2022 4:38:49 PM
Attachments:	image001.png image002.png

Hi Wenjun,

Yes, that is correct.

Thank you,
Emily

From: Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>
Sent: Wednesday, January 12, 2022 6:20:43 PM
To: Emily A Weissinger <EWeissinger@ramboll.com>; Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>
Cc: Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Scott Galati <sgalati@dayzenllc.com>; Shari Beth Libicki <SLibicki@ramboll.com>; Michael Stoner <michael@lakestreetventures.com>; Brewster Birdsall <bbirdsall@aspeneg.com>; Chu, Ann@Energy <Ann.Chu@energy.ca.gov>; Simon Casey (scasey@vantage-dc.com) <scasey@vantage-dc.com>
Subject: RE: CA3 construction phase follow up question

Emily,

Thank you for the memo. We would like to confirm that Phase 1 would last for about 15 months and Phase 2 would last about 7 months with the updated schedule in Table B-3. So construction would last for a total of 22 months, instead of originally estimated 25 months?

Thanks.

Wenjun

From: Emily A Weissinger <EWeissinger@ramboll.com>
Sent: Wednesday, January 12, 2022 3:23 PM
To: Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>
Cc: Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Scott Galati <sgalati@dayzenllc.com>; Shari Beth Libicki <SLibicki@ramboll.com>; Michael Stoner <michael@lakestreetventures.com>; Brewster Birdsall <bbirdsall@aspeneg.com>; Chu, Ann@Energy <Ann.Chu@energy.ca.gov>; Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>; Simon Casey (scasey@vantage-dc.com) <scasey@vantage-dc.com>
Subject: RE: CA3 construction phase follow up question

Hi Eric,

On behalf of Vantage, I am transmitting the attached memorandum summarizing an updated construction analysis for the CA3 Project. If you have any questions on the updated analysis, please don't hesitate to reach out to myself or the Vantage team.

Best regards,

Emily Weissinger, PE
Senior Managing Consultant

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eweissinger@ramboll.com

From: Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>

Sent: Monday, January 10, 2022 7:15 PM
To: Emily A Weissinger <EWeissinger@ramboll.com>
Cc: Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Scott Galati <sgalati@dayzenllc.com>; Shari Beth Libicki <SLibicki@ramboll.com>; Michael Stoner <michael@lakestreetventures.com>; Brewster Birdsall <bbirdsall@aspeneg.com>; Chu, Ann@Energy <Ann.Chu@energy.ca.gov>; Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>; Simon Casey (scasey@vantage-dc.com) <scasey@vantage-dc.com>
Subject: RE: CA3 construction phase follow up question

Emily,
Thank you for your response, I do appreciate it. I meant to send this earlier in the day, but got sidetracked. Will look for your update and memo by Wednesday.

From: Emily A Weissinger <EWeissinger@ramboll.com>
Sent: Monday, January 10, 2022 10:36 AM
To: Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>
Cc: Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Scott Galati <sgalati@dayzenllc.com>; Shari Beth Libicki <SLibicki@ramboll.com>; Michael Stoner <michael@lakestreetventures.com>; Brewster Birdsall <bbirdsall@aspeneg.com>; Chu, Ann@Energy <Ann.Chu@energy.ca.gov>; Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>; Simon Casey (scasey@vantage-dc.com) <scasey@vantage-dc.com>
Subject: RE: CA3 construction phase follow up question

Hi Eric,

To facilitate the review by your team, we are proceeding in updating our construction analysis to reflect this minor change in the phasing activities. We anticipate having those updated results and a memo to docket no later than this Wednesday (1/12/22).

Thank you,

Emily Weissinger, PE
Senior Managing Consultant

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From: Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>
Sent: Monday, January 10, 2022 10:32 AM
To: Emily A Weissinger <EWeissinger@ramboll.com>
Cc: Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Scott Galati <sgalati@dayzenllc.com>; Shari Beth Libicki <SLibicki@ramboll.com>; Michael Stoner <michael@lakestreetventures.com>; Brewster Birdsall <bbirdsall@aspeneg.com>; Chu, Ann@Energy <Ann.Chu@energy.ca.gov>; Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>
Subject: RE: CA3 construction phase follow up question

Good Morning Emily,
I hope you had a refreshing weekend.

Would you please let us know your status on this request by this morning. Time is our enemy unfortunately.

TY.

From: Emily A Weissinger <EWeissinger@ramboll.com>
Sent: Thursday, January 6, 2022 12:15 PM
To: Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>
Cc: Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Scott Galati <sgalati@dayzenllc.com>; Shari Beth Libicki <SLibicki@ramboll.com>; Michael Stoner <michael@lakestreetventures.com>; Brewster Birdsall <bbirdsall@aspeneg.com>; Chu, Ann@Energy <Ann.Chu@energy.ca.gov>; Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>
Subject: RE: CA3 construction phase follow up question

content is safe.

Hi Eric,

I'm confirming receipt of Wenjun's requests. We are discussing them internally and hope to get back to you soon. Thank you!

Emily Weissinger, PE
Senior Managing Consultant

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From: Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>
Sent: Thursday, January 6, 2022 12:06 PM
To: Emily A Weissinger <EWeissinger@ramboll.com>
Cc: Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Scott Galati <sgalati@dayzenllc.com>; Shari Beth Libicki <SLibicki@ramboll.com>; Michael Stoner <michael@lakestreetventures.com>; Brewster Birdsall <bbirdsall@aspeneg.com>; Chu, Ann@Energy <Ann.Chu@energy.ca.gov>; Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>
Subject: RE: CA3 construction phase follow up question

Good Morning Emily,
I wanted to check in with you. Would you be able to provide a quick status update. TY.

From: Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>
Sent: Wednesday, January 5, 2022 12:04 PM
To: Emily A Weissinger <EWeissinger@ramboll.com>
Cc: Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Scott Galati <sgalati@dayzenllc.com>; Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>; Shari Beth Libicki <SLibicki@ramboll.com>; Michael Stoner <michael@lakestreetventures.com>; Brewster Birdsall <bbirdsall@aspeneg.com>; Chu, Ann@Energy <Ann.Chu@energy.ca.gov>
Subject: RE: CA3 construction phase follow up question

Emily,

Thanks for the responses. We have some follow-up questions.

1. Could you provide a revised construction schedule (e.g. x months for Phase 1 and x months for Phase 2), so that we can update our analysis?

2. Do you expect any overlap in Phase 2 construction emissions and Phase 1 engine operation? If there would be overlap, do you expect the impacts during the overlap period to be greater than those originally analyzed for construction and operation separately?

3. Could you docket a memo to explain the change of schedule and include all your responses to our questions?

Thanks. We can set up a call if needed.

Wenjun

From: Emily A Weissinger <EWeissinger@ramboll.com>
Sent: Wednesday, January 5, 2022 11:10 AM
To: Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>
Cc: Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>; Scott Galati <sgalati@dayzenllc.com>; Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>; Shari Beth Libicki <SLibicki@ramboll.com>; Michael Stoner <michael@lakestreetventures.com>
Subject: RE: CA3 construction phase follow up question

Hi Wenjun,

Thank you for your comments. We've put together the following answers to your questions and would be happy to set up a call to

discuss.

1. Construction at the site is currently planned to occur in two phases, with the first phase involving the site work, construction of building shell and substation, and interior buildout and placement of generators for the first half of the building. The second phase of construction would involve the interior buildout and placement of generators for the second half of the building. This construction approach would be more efficient and result in no greater emissions than if the building were constructed as two structures as originally contemplated.
2. The current construction analysis accurately presents construction of the building as occurring in two phases, with the majority of construction activity (including demolition, site preparation, grading, and paving) solely or predominantly occurring in Phase 1, as is currently planned. We believe that these estimates conservatively represent the upper bound of emissions for the current construction plan.
3. Under this approach, we do not anticipate that the construction intensity in Phase 1 would change, but that the Phase 1 schedule may be elongated at the expense of Phase 2. As a result, we do not believe that the maximum daily emissions would increase and given the length of the phases, we do not anticipate that the annual emissions would be greater than those contained in the calculations. In no case would we anticipate that the total construction emissions would be greater than the sum of both phases.

Emily Weissinger, PE
Senior Managing Consultant

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From: Scott Galati <sgalati@dayzenllc.com>
Sent: Tuesday, January 4, 2022 1:34 PM
To: Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>; Shari Beth Libicki <SLibicki@ramboll.com>; Emily A Weissinger <EWeissinger@ramboll.com>
Cc: Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>; Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>
Subject: Re: CA3 construction phase follow up question

I am traveling out of the country. Please coordinate directly with Emily and Shari who I have copied on this chain.

Get Outlook for Android

From: Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>
Sent: Tuesday, January 4, 2022 10:37:29 AM
To: Scott Galati <sgalati@dayzenllc.com>
Cc: Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>; Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>
Subject: CA3 construction phase follow up question

Good Morning Scott,
Would you please see the additional questions from Wenjun about the CA3 construction phasing. She and Joey and I met this morning and we are looking for some clarification from you. TY.

From: Qian, Wenjun@Energy <Wenjun.Qian@energy.ca.gov>
Sent: Tuesday, January 4, 2022 9:14 AM
To: Veerkamp, Eric@Energy <Eric.Veerkamp@energy.ca.gov>; Hughes, Joseph@Energy <Joseph.Hughes@energy.ca.gov>
Subject: Draft email to Scott

Scott,

We would like to get some further clarification regarding the construction emissions in two phases. You said the site and the building shell will be built in the first phase and the second phase involves only interior improvements. This doesn't seem to be consistent with what the consultant assumed in the construction emissions estimation. As can be seen in the following table (Table 3 in TN237381), it looks like the consultant assumed half of the building would be built in first phase and the remainder in the second phase, which is what was stated in the application.

Table 3
Construction Schedule
Vantage CA3 Project
Santa Clara, California

Phase[1]	Subphase	Start	End	Days[2]
Phase 1	Demolition	1/1/2022	1/28/2022	20
	Site Preparation	1/29/2022	2/4/2022	5
	Grading	2/5/2022	2/16/2022	8
	Building Construction	2/17/2022	1/4/2023	230
	Paving	1/5/2023	1/30/2023	18
	Architectural Coating	1/31/2023	2/23/2023	18
Phase 2	Building Construction	1/1/2024	10/4/2024	200
	Paving	10/5/2024	10/18/2024	10
	Architectural Coating	10/19/2024	11/1/2024	10

Therefore, we have some follow-up questions and hope you could address them quickly since our deadline is approaching.

1. Can you docket a document clarifying the construction activities for Phase 1 and Phase 2?

2. If the construction activities and emissions are mostly going to occur in Phase 1, instead of spreading into 2 phases, would the worst-case (annual and daily) emissions in Phase 1 change? The following table (Table 6 in TN237381) shows the consultant's construction emissions estimates in 2 phases. Will the numbers change in this table so that staff needs to update the AQ analysis as well?

Table 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_2e/yr
Phase 1	9.6	8.0	1.8	0.6	686
Phase 2	11.1	6.0	0.9	0.3	335
BAAQMD CEQA Threshold[5]	54	54	82	54	--

3. Would the assumptions used in the construction impacts modeling change if most construction activities and emissions are going to occur in Phase 1?

Please let us know if we need to have a group meeting to discuss.