Planning and Inspection Department

Planning Division
1500 Warburton Avenue
Santa Clara, CA 95050
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PLANNING DIVISION

Appeal Form

Instructions

Use this form to appeal a decision of the Architectural Review Committee or Planning Commission. **All appeals must be filed in the Planning Division within seven calendar days of the action being appealed.**

Appeals from the Architectural Review Committee are made to the Planning Commission and will be set for hearing on the next available Planning Commission agenda. Appeals from the Planning Commission are made to the City Council and will be placed on the subsequent City Council Agenda to set a hearing date. Please contact the Planning Division at the number listed above with any inquiries about the process.

Please print, complete, and sign this form before mailing or delivering to the City, along with the fee payment, and supporting documentation, letters, etc. (if any).

Appeal Fees

Appeal Fees are set by the Municipal Code of the City of Santa Clara and are subject to annual review. Please call the Planning Division for the current Appeal Fee. **Fee payment must be received by the City of Santa Clara before this form submittal can be certified as complete.**

Appeal fees may be paid by cash, check, or with VISA, MasterCard, or American Express, at the Permit Center at City Hall. Alternatively, checks or money orders made payable to City of Santa Clara can be mailed or delivered to Planning Division, City Hall, 1500 Warburton Avenue, Santa Clara, California 95050.

Appellant Declaration

Name: Laborers International Union of North America, Local Union 270
Street Address: c/o Lozeau Drury LLP, 410 12th Street, Ste. 250
City, State, Zip Code: Oakland, CA 94607
Phone number: (510) 836-4200
E-mail address: michael@lozeaudrury.com

In accordance with the provisions of the Municipal Code of the City of Santa Clara, I hereby appeal the following action of the:

☐ Architectural Review Committee ☑ Planning Commission

at it's meeting of June 13, 2018.
(date)

Agenda Item No.: 18-700, Item #6 on agenda
File No.(s): PLN2017-12535 and CEQ2017-01034
Address:/APN(s): 2305 Mission College Boulevard, APN: 104-13-096

Appellant Statement
(If more space is required, attach a separate sheet of paper.)

Action being appealed:

Adoption of a Mitigated Negative Declaration; Architectural Approval for the demolition of an existing two-story 358,000 square foot office/R&D and construction of a two-story 495,610 square foot data center building with equipment yards and onsite improvements; and Planning Commission's denial of appeal and upholding of adoption and approval.

Reason for Appeal:

1. MND's air quality analysis is not based on substantial evidence because of flaws in air pollution modeling; 2. An EIR must be prepared because there is substantial evidence of a fair argument that the Project will have significant direct and cumulative air quality impacts from NOx emissions; 3. An EIR must be prepared because there is substantial evidence of a fair argument that the Project will result in significant increased cancer risks to nearby residents; 4. The MND's health risk conclusion is not supported by substantial evidence because it omits relevant operational emissions from the risk assessment and relies on faulty modeling; 5. Significant changes made to the MND require recirculation. This appeal also incorporates each of the issues raised in the attached comments as well as comments submitted by Adams Broadwell dated April 12, 2018 and June 13, 2018.

Certification of Authenticity

Beware, you are subject to prosecution if you unlawfully submit this form. Under penalty of law, transmission of this form to the City of Santa Clara is your certification that you are authorized to submit it and that the information presented is authentic.

Michael R Lozeau

Signature of Appellant

Attorney for LIUNA, Local 270

June 20, 2018

Date

LOZEAU DRURY COMMENT

DATED JUNE 12, 2018

April 24, 2018, LIUNA timely filed an appeal of the Architectural Approval of the Project. LIUNA has had an opportunity to review the additional information provided by staff just prior to the meeting of the Architectural Committee, review the recent staff packet prepared for the appeal, and engaged its expert consultant to review the most recent air emission modeling and inputs identified in response to our previous comments and have the following additional comments on the Project's air quality impacts.

As explained in our initial comment letter, the City may not rely upon an IS/MND if the City is presented with substantial evidence of a fair argument that a Project may have a significant environmental impact. In order to avoid an EIR, the City must be able to say with certainty that the Project will be mitigated "to a point where clearly no significant effect on the environment would occur, and...there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." Public Resources Code §§ 21064.5 and 21080(c)(2); *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322, 331. Where the lead agency's experts and commenters' experts present conflicting evidence on the extent of a project's environmental impacts, the lead agency must treat those potential impacts as significant and prepare an EIR. CEQA Guidelines § 15064(f)(5); Pub. Res. Code § 21080(e)(1); *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 935.

The staff report prepared just prior to the Architectural Committee meeting disclosed for the first time the construction timelines applicable to the Project. We asked expert consultant Soil Water Air Protection Enterprise ("SWAPE") to conduct a follow-up review of the air pollution modeling conducted for the Project based on the newly disclosed demolition and construction worksheet. SWAPE's supplemental comments are attached hereto as Exhibit A. SWAPE's review of those construction timelines has identified a significant discrepancy between the newly disclosed timelines and construction timelines used as inputs for the CalEEMod modeling relied upon by the Initial Study/Mitigated Negative Declaration ("IS/MND") prepared for the Project. The demolition and construction timeline worksheet provided by the staff report indicates a total construction schedule extending for an additional 61 days longer than the CalEEMod modeling inputs. SWAPE Supp. Comment, pp. 1-4. That means that 61 days of pollution emissions that will occur during the Project's demolition and construction phase were not accounted for in the CalEEMod modeling relied upon by the IS/MND. As a result, the IS/MND's air pollution evaluation and the conclusion that no significant impacts will result from the project is not supported by substantial evidence.

SWAPE re-ran the CalEEMod modeling for the Project and calculated the average daily emissions of air pollutants that would result during the Project's

Santa Clara is going through CEQA review – the Coresite SV8 Data Center Project. *See* http://santaclaraca.gov/government/departments/community-development/planning-division/ceqa-documents. Presumably many more are in the planning phase. Neither the direct or indirect air pollution emissions are discussed in the IS/MND nor is any effort made to assess the cumulative emissions this concentration of data centers is and will have on additional emissions from Silicon Valley Power's plants and the region's air quality. The direct emissions from hundreds of emergency generators and other pollution sources at 37 or more data centers in Santa Clara must be quantified and assessed for cumulative air impacts. Likewise, the indirect pollution emissions that are and will occur at Silicon Valley Power's gas-fired power plants must be quantified and included in any sufficient cumulative air pollution analysis. The absence of any effort to disclose and quantify these potential cumulative air pollution impacts is a significant legal deficiency with the IS/MND and results in a fair argument of potential significant impacts requiring an EIR to be prepared and circulated.

For the foregoing reasons, the IS/MND for the Project should be withdrawn. An EIR should be prepared and the draft EIR should be circulated for public review and comment in accordance with CEQA. An EIR is necessary to analyze the Project's potential significant air pollution impacts. The EIR must propose all feasible mitigation measures and alternatives to reduce the Project's significant impacts. Thank you for considering our comments.

Sincerely,

Michael R. Lozeau

Michael R. Lozeau
Lozeau | Drury LLP
Counsel for LIUNA Local 270

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

2656 29th Street, Suite 201
Santa Monica, CA 90405

Matt Hagemann, P.G, C.Hg.
(949) 887-9013
mhagemann@swape.com

June 12, 2018

Richard Drury
Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Subject: Comments on the 2305 Mission College Boulevard Data Center Project

Dear Mr. Drury,

We reviewed the March 2018 Initial Study and Mitigated Negative Declaration (IS/MND) and associated appendices for the 2305 Mission College Boulevard Data Center Project ("Project") and submitted a March 23, 2018 letter addressing deficiencies in the IS/MND's impact analyses. Specifically, we concluded that the IS/MND failed to adequately estimate the Project's construction-related criteria air pollutant emissions, potential health-related impacts, and greenhouse gas (GHG) impacts. In response to our March 23 letter, the City prepared a Staff Report that included responses to our comments. Included in the Staff Report was a Project-specific construction schedule. Review of the CalEEMod model prepared for the 2305 Mission College Boulevard Data Center demonstrates that the Project's construction emissions relied upon a different construction schedule than the schedule provided within the Staff Report. Specifically, the construction schedule used to estimate the Project's construction-related emissions within the IS/MND's CalEEMod model has shorter phase lengths for each phase of construction when compared to the construction schedule provided in the Staff Report. The use of a shortened construction schedule results in unreliable and underestimated construction emissions. As a result, we maintain that the IS/MND falls short in estimating and mitigating the Project's air quality impacts, and the results of our updated model support this assertion. A Draft Environmental Impact Report (DEIR) should be prepared to discuss and analyze the issues discussed in our March 23 letter and this supplemental letter, and to implement appropriate mitigation measures, where necessary.

Air Quality

As discussed in our March 23 letter, the IS/MND relies on emissions calculated from the California Emissions Estimator Model Version CalEEMod.2016.3.1 ("CalEEMod").[1] CalEEMod provides recommended default values based on site specific information, such as land use type, meteorological

[1] CalEEMod website, *available at*: http://www.caleemod.com/

Description	HP	Load Factor	Hours/day	Total Work Days
Demolition	Start Date:	9/1/2017	Total phase:	100
	End Date:	2/1/2018		
Concrete/Industrial Saws	81	0.73	8	100
Crushing / Processing Equip	85	0.78	8	25
Excavators	162	0.38	8	50
Rubber-Tired Dozers	255	0.4	8	60
Tractors/Loaders/Backhoes	97	0.37	8	60
Site Preperation	Start Date:	11/15/2017	Total phase:	80
	End Date:	3/15/2018		
Graders	174	0.41	8	50
Rubber Tired Dozers	255	0.4	8	50
Tractors/Loaders/Backhoes	97	0.37	8	50
Grading / Excavation	Start Date:	1/15/2018	Total phase:	20
	End Date:	2/15/2018		
Scrapers	361	0.48	8	20
Excavators	162	0.38	8	20
Graders	174	0.41	8	20
Rubber Tired Dozers	255	0.4	8	20
Tractors/Loaders/Backhoes	97	0.37	8	20
Other Equipment?				
Trenching	Start Date:	12/15/2017	Total phase:	60
	End Date:	3/15/2018		
Tractor/Loader/Backhoe	97	0.37	8	60
Excavators	162	0.38	8	60
Other Equipment?				
Building - Exterior	Start Date:	12/15/2017	Total phase:	240
	End Date:	12/15/2018		
Cranes	226	0.29	10	100
Forklifts	89	0.2	10	240
Generator Sets	84	0.74		
Tractors/Loaders/Backhoes	97	0.37	8	180
Welders	46	0.45	10	120
Other Equipment?				
Interior/Architectural Coating	Start Date:	5/15/2018	Total phase:	140
	End Date:	12/15/2018		
Air Compressors	78	0.48		
Aerial Lift	62	0.31		
Other Equipment?				
Paving	Start Date:	7/11/2018	Total phase:	10
	Start Date:	7/25/2018		
Cement and Mortar Mixers	9	0.56		
Pavers	125	0.42	8	10
Paving Equipment	130	0.36	8	10
Rollers	80	0.38	8	10
Tractors/Loaders/Backhoes	97	0.37	8	10

Although it appears that each construction phase in the Staff Report's construction schedule is the same length as each construction phase within the CalEEMod model, when the number of days between the start date and end date for each phase is used to calculate the total number of work days, we find that the total number of work days for each phase in the Staff Report's schedule does not match the total number of work days used in the CalEEMod model. Specifically, the construction schedule provided within the Staff Report demonstrates that Project construction activity will occur over a total of 711 days. The construction schedule assumes that Demolition will occur for a total of 110 days, Site Preparation will occur for a total of 87 days, Trenching will occur for a total of 65 days, Building

Unmitigated Average Daily Construction Emissions (lbs/day)	
Model	**NOx**
IS/MND	75
SWAPE	83.8
Percent Increase	**12%**
BAAQMD Regional Threshold (lbs/day)	**54**
Exceed?	*Yes*

As you can see in the table above, when the correct construction schedule is used, the Project's construction-related criteria air pollutant emissions increase, and the Project's unmitigated NOx emissions exceed thresholds, resulting in a more severe air quality impact than what was previously identified in the IS/MND (p. 30).

Additionally, in order to demonstrate the impact that the Project's proposed mitigation would have on construction-related emissions, we modeled emissions assuming use of Tier 3 off-road construction equipment and CARB Level 2 diesel particulate filters (DPFs), as proposed in mitigation measure AIR-1 (MM AIR-1) (p. 31). The results of our analysis demonstrate that the Project's mitigated NOx emissions of 57 lbs/day would still exceed BAAQMD thresholds, even with use of Tier 3 engines and Level 2 DPFs (see table below).

Mitigated Average Daily Construction Emissions (lbs/day)	
Model	**NOx**
IS/MND	51
SWAPE	57.1
Percent Increase	**12%**
BAAQMD Regional Threshold (lbs/day)	**54**
Exceed?	*Yes*

Even with implementation of mitigation, we find that the Project's mitigated NOx emissions estimated in the SWAPE CalEEMod model still exceed BAAQMD's significance threshold of 55 lbs/day, resulting a significant air quality impact that was not previously identified in the IS/MND (p. 31). Our updated modeling demonstrates that when the Project's construction emissions are modeled correctly, the Project will result in a significant NO_x impact. An updated air quality analysis should be prepared to adequately evaluate and mitigate the Project's air quality impacts. Until such an analysis is prepared, the Project should not be approved.

Failure to Consider Impacts from Other Data Center Projects Within the Area

The IS/MND fails to account for impacts from other data center development projects within the area. As a result, the Project's incremental increase in criteria air pollutant emissions within the area, as well as its cumulative air quality impact, are misrepresented.

significant impacts of routine emergency generator testing to a less than significant level. Therefore, the project, with implementation of mitigation measures included in the project, would not result in a cumulative air quality impact" (p. 115).

This justification for failing to evaluate the Project's potential cumulative air quality impact is incorrect, however. According to Section 15064(h)(1) of the CEQA Guidelines,

> "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time".[6]

Thus, simply because a Project's individual emissions do not exceed thresholds does not mean that the Project will inherently have a less-than-significant cumulative air quality impact. The fact that the IS/MND found the Project's individual construction emissions to not exceed SCAQMD thresholds does not mean that the Project, in combination with the 13 surrounding projects, will not have a cumulatively considerable impact on both local and regional air quality. As such, the cumulative impact from the 13 identified projects, in conjunction with the proposed Project, should have been evaluated in order to determine the cumulative air quality impact that construction and operation of the Project may have on the surrounding environment.

In an effort to demonstrate the proximity of the 13 cumulative projects within the proposed Project's study area, we mapped all of the projects that are all located within an approximate 1.5-mile radius of the proposed Project site. Out of the 13 projects, 12 of them are located within 1.5-miles of the Project site, with 1 of them located just outside the 1.5-mile radius (see excerpt below, area within red circle represents a 1.5-mile radius).

[6] "CEQA Guidelines for Cumulative and Indirect Impacts." California Department of Transportation, March, 2014, *available at*: http://www.dot.ca.gov/ser/cumulative_guidance/ceqa_guidelines.htm

day (lbs/day), which is just under the BAAQMD's significance threshold of 54 lbs/day (p. 35). The proposed data center, as well as the 37 other existing data centers in the area, all require power from the City's public utility, Silicon Valley Power (SVP), which is the third largest municipal utility in California.[7] As a result of this high energy demand, the SVP gas-fired power plants are generating NOx and other criteria air pollutant emissions that are being emitted into the air basin. Although the operational criteria air pollutant emissions from the other 37 data centers are unknown, it is very likely that a cumulative air quality impact could occur as a result of this high demand. The potentially substantial and additional NOx and other criteria air pollutant emissions generated by the City's gas-fired power plants as a result of the energy demands from the hundreds of emergency generators at all 37 data centers running concurrently must be quantified and properly evaluated in order to determine the potential cumulative air quality impacts that the operation of these data centers will have. The IS/MND fails to discuss the potentially cumulative impacts resulting from criteria air pollutant emissions generated directly or indirectly by these data centers. The existing and future indirect criteria air pollutant emissions that are and will result from SVP's gas-fired power plants must be quantified and thoroughly discussed in a cumulative air quality analysis.

Furthermore, seeing as the City of Santa Clara has some of the lowest electricity rates in the area[8], it is likely that more data centers could be proposed and constructed in the area in near the future. Currently, there is at least one other known data center project being proposed in the City and undergoing CEQA review.[9] Thus, a quantified comprehensive analysis must be conducted in order to protect the health and wellbeing of the residents of the City of Santa Clara. Without the findings of such an analysis, the Project should not be approved.

Our findings demonstrate that the IS/MND fails to adequately evaluate this potentially significant cumulative impact prior to making a significance determination, and as a result, the Project's air quality impacts are not sufficiently addressed. A correct cumulative air quality assessment should be conducted in a DEIR that properly assesses the potential cumulative impacts that the combination of all these projects poses to the surrounding communities.

Sincerely,

M Hagemann

Matt Hagemann, P.G., C.Hg.

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[7] https://jointventure.org/about-us/profiles/42-about-us/profiles/1043-meet-larry-owens-silicon-valley-power

[8] http://www.siliconvalleypower.com/svp-and-community/about-svp/area-rate-comparison, https://web.archive.org/web/20140203053442/https://siliconvalleypower.com/Modules/ShowDocument.aspx?documentid=6247

[9] *See* April 2018 Coresite SV8 Data Center Project Mitigated Negative Declaration, *available at:* http://santaclaraca.gov/Home/Components/BusinessDirectory/BusinessDirectory/231/3649

2305 Mission College Data Center
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	495.61	1000sqft	11.38	495,610.00	0
Parking Lot	75.00	Space	0.68	30,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	547	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

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tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	367.00	361.00
tblOffRoadEquipment	HorsePower	158.00	162.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.4143	4.3269	3.0853	5.2600e-003	0.5401	0.2085	0.7486	0.2011	0.1966	0.3977	0.0000	484.2444	484.2444	0.0829	0.0000	486.3175
2018	3.4958	9.7617	6.1947	0.0173	1.0013	0.3453	1.3465	0.3831	0.3233	0.7063	0.0000	1,604.9617	1,604.9617	0.2056	0.0000	1,610.1008
Maximum	**3.4958**	**9.7617**	**6.1947**	**0.0173**	**1.0013**	**0.3453**	**1.3465**	**0.3831**	**0.3233**	**0.7063**	**0.0000**	**1,604.9617**	**1,604.9617**	**0.2056**	**0.0000**	**1,610.1008**

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					
2017	0.1178	2.3548	2.4435	5.2600e-003	0.5401	0.0497	0.5898	0.2011	0.0495	0.2505	0.0000	484.2440	484.2440	0.0829	0.0000	486.3171
2018	3.0166	7.2425	5.9312	0.0173	1.0013	0.1109	1.1122	0.3831	0.1099	0.4930	0.0000	1,604.9610	1,604.9610	0.2056	0.0000	1,610.1001
Maximum	**3.0166**	**7.2425**	**5.9312**	**0.0173**	**1.0013**	**0.1109**	**1.1122**	**0.3831**	**0.1099**	**0.4930**	**0.0000**	**1,604.9610**	**1,604.9610**	**0.2056**	**0.0000**	**1,610.1001**

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	2.1971	5.0000e-005	5.2900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0102	0.0102	3.0000e-005	0.0000	0.0109
Energy	0.0708	0.6433	0.5404	3.8600e-003		0.0489	0.0489		0.0489	0.0489	0.0000	1,742.2767	1,742.2767	0.0687	0.0243	1,751.2252
Mobile	0.0226	0.0992	0.2880	8.8000e-004	0.0753	1.0000e-003	0.0763	0.0202	9.4000e-004	0.0211	0.0000	80.3741	80.3741	2.9400e-003	0.0000	80.4476
Waste						0.0000	0.0000		0.0000	0.0000	124.7501	0.0000	124.7501	7.3725	0.0000	309.0632
Water						0.0000	0.0000		0.0000	0.0000	36.3604	153.8695	190.2299	3.7427	0.0899	310.5788
Total	**2.2905**	**0.7426**	**0.8337**	**4.7400e-003**	**0.0753**	**0.0499**	**0.1253**	**0.0202**	**0.0499**	**0.0700**	**161.1105**	**1,976.5304**	**2,137.6409**	**11.1869**	**0.1141**	**2,451.3257**

	ROG	NOx	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 Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	4	8.00	81	0.73
Demolition	Crushing/Proc. Equipment	1	2.00	85	0.78
Demolition	Excavators	4	4.00	162	0.38
Demolition	Rubber Tired Dozers	4	4.80	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	4.80	97	0.37
Site Preparation	Graders	2	5.00	174	0.40
Site Preparation	Rubber Tired Dozers	3	5.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	5.00	97	0.37
Trenching	Excavators	3	8.00	162	0.38
Trenching	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	3	4.20	226	0.29
Building Construction	Forklifts	2	10.00	89	0.20
Building Construction	Generator Sets	0	0.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	4	5.00	46	0.45
Grading	Excavators	3	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Interior - Architectural Coating	Aerial Lifts	1	6.00	63	0.31
Interior - Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

3.2 Demolition - 2017

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					0.1424	0.0000	0.1424	0.0216	0.0000	0.0216	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2784	2.6503	2.1361	2.6800e-003		0.1489	0.1489		0.1416	0.1416	0.0000	241.2802	241.2802	0.0524	0.0000	242.5903
Total	**0.2784**	**2.6503**	**2.1361**	**2.6800e-003**	0.1424	**0.1489**	**0.2913**	**0.0216**	**0.1416**	**0.1631**	**0.0000**	**241.2802**	**241.2802**	**0.0524**	**0.0000**	**242.5903**

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	0.0116	0.3659	0.0720	8.4000e-004	0.0211	2.0700e-003	0.0232	5.6900e-003	1.9800e-003	7.6700e-003	0.0000	80.7239	80.7239	3.9300e-003	0.0000	80.8220
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	7.3900e-003	5.8200e-003	0.0589	1.3000e-004	0.0130	9.0000e-005	0.0131	3.4500e-003	8.0000e-005	3.5300e-003	0.0000	12.1593	12.1593	4.1000e-004	0.0000	12.1695
Total	**0.0190**	**0.3717**	**0.1309**	**9.7000e-004**	**0.0341**	**2.1600e-003**	**0.0362**	**9.1400e-003**	**2.0600e-003**	**0.0112**	**0.0000**	**92.8832**	**92.8832**	**4.3400e-003**	**0.0000**	**92.9915**

3.2 Demolition - 2018

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					0.0397	0.0000	0.0397	6.0200e-003	0.0000	6.0200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0689	0.6525	0.5643	7.5000e-004		0.0357	0.0357		0.0340	0.0340	0.0000	66.7166	66.7166	0.0143	0.0000	67.0750
Total	**0.0689**	**0.6525**	**0.5643**	**7.5000e-004**	**0.0397**	**0.0357**	**0.0755**	**6.0200e-003**	**0.0340**	**0.0400**	**0.0000**	**66.7166**	**66.7166**	**0.0143**	**0.0000**	**67.0750**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7500e-003	0.0942	0.0183	2.3000e-004	0.0179	3.8000e-004	0.0183	4.5500e-003	3.6000e-004	4.9100e-003	0.0000	22.3555	22.3555	1.0600e-003	0.0000	22.3818
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	1.8400e-003	1.4100e-003	0.0144	4.0000e-005	3.6200e-003	2.0000e-005	3.6400e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	3.2996	3.2996	1.0000e-004	0.0000	3.3021
Total	**4.5900e-003**	**0.0956**	**0.0327**	**2.7000e-004**	**0.0216**	**4.0000e-004**	**0.0220**	**5.5100e-003**	**3.8000e-004**	**5.8900e-003**	**0.0000**	**25.6551**	**25.6551**	**1.1600e-003**	**0.0000**	**25.6839**

3.3 Site Preparation - 2017

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					0.2966	0.0000	0.2966	0.1532	0.0000	0.1532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0691	0.7277	0.5036	5.3000e-004		0.0393	0.0393		0.0362	0.0362	0.0000	49.0892	49.0892	0.0150	0.0000	49.4653
Total	**0.0691**	**0.7277**	**0.5036**	**5.3000e-004**	**0.2966**	**0.0393**	**0.3359**	**0.1532**	**0.0362**	**0.1893**	**0.0000**	**49.0892**	**49.0892**	**0.0150**	**0.0000**	**49.4653**

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	5.9800e-003	0.1888	0.0372	4.3000e-004	0.0200	1.0700e-003	0.0211	5.1800e-003	1.0200e-003	6.2100e-003	0.0000	41.6633	41.6633	2.0300e-003	0.0000	41.7139
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	1.7200e-003	1.3500e-003	0.0137	3.0000e-005	3.0100e-003	2.0000e-005	3.0300e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.8240	2.8240	9.0000e-005	0.0000	2.8264
Total	**7.7000e-003**	**0.1902**	**0.0509**	**4.6000e-004**	**0.0231**	**1.0900e-003**	**0.0241**	**5.9800e-003**	**1.0400e-003**	**7.0300e-003**	**0.0000**	**44.4873**	**44.4873**	**2.1200e-003**	**0.0000**	**44.5403**

3.3 Site Preparation - 2018

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					0.4710	0.0000	0.4710	0.2490	0.0000	0.2490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0998	1.0433	0.7651	8.6000e-004		0.0553	0.0553		0.0509	0.0509	0.0000	79.0064	79.0064	0.0246	0.0000	79.6213
Total	**0.0998**	**1.0433**	**0.7651**	**8.6000e-004**	**0.4710**	**0.0553**	**0.5263**	**0.2490**	**0.0509**	**0.2999**	**0.0000**	**79.0064**	**79.0064**	**0.0246**	**0.0000**	**79.6213**

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	8.3200e-003	0.2850	0.0554	7.0000e-004	0.0215	1.1400e-003	0.0226	5.7100e-003	1.0900e-003	6.8000e-003	0.0000	67.6553	67.6553	3.1900e-003	0.0000	67.7351
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	2.5000e-003	1.9200e-003	0.0196	5.0000e-005	4.9300e-003	3.0000e-005	4.9600e-003	1.3100e-003	3.0000e-005	1.3400e-003	0.0000	4.4935	4.4935	1.3000e-004	0.0000	4.4969
Total	**0.0108**	**0.2869**	**0.0750**	**7.5000e-004**	**0.0264**	**1.1700e-003**	**0.0276**	**7.0200e-003**	**1.1200e-003**	**8.1400e-003**	**0.0000**	**72.1488**	**72.1488**	**3.3200e-003**	**0.0000**	**72.2320**

3.4 Trenching - 2017

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	0.0130	0.1332	0.1091	1.6000e-004		8.3000e-003	8.3000e-003		7.6300e-003	7.6300e-003	0.0000	14.4539	14.4539	4.4300e-003	0.0000	14.5646
Total	**0.0130**	**0.1332**	**0.1091**	**1.6000e-004**		**8.3000e-003**	**8.3000e-003**		**7.6300e-003**	**7.6300e-003**	**0.0000**	**14.4539**	**14.4539**	**4.4300e-003**	**0.0000**	**14.5646**

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	4.5000e-004	3.5000e-004	3.5700e-003	1.0000e-005	7.9000e-004	1.0000e-005	7.9000e-004	2.1000e-004	1.0000e-005	2.1000e-004	0.0000	0.7367	0.7367	2.0000e-005	0.0000	0.7373
Total	**4.5000e-004**	**3.5000e-004**	**3.5700e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**7.9000e-004**	**2.1000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**0.7367**	**0.7367**	**2.0000e-005**	**0.0000**	**0.7373**

3.4 Trenching - 2018

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	0.0528	0.5411	0.5244	7.6000e-004		0.0326	0.0326		0.0300	0.0300	0.0000	69.7912	69.7912	0.0217	0.0000	70.3344
Total	**0.0528**	**0.5411**	**0.5244**	**7.6000e-004**		**0.0326**	**0.0326**		**0.0300**	**0.0300**	**0.0000**	**69.7912**	**69.7912**	**0.0217**	**0.0000**	**70.3344**

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	1.9600e-003	1.5000e-003	0.0153	4.0000e-005	3.8500e-003	3.0000e-005	3.8800e-003	1.0300e-003	2.0000e-005	1.0500e-003	0.0000	3.5167	3.5167	1.1000e-004	0.0000	3.5193
Total	**1.9600e-003**	**1.5000e-003**	**0.0153**	**4.0000e-005**	**3.8500e-003**	**3.0000e-005**	**3.8800e-003**	**1.0300e-003**	**2.0000e-005**	**1.0500e-003**	**0.0000**	**3.5167**	**3.5167**	**1.1000e-004**	**0.0000**	**3.5193**

3.5 Building Construction - 2017

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	0.0167	0.1282	0.0772	1.2000e-004		7.7400e-003	7.7400e-003		7.2700e-003	7.2700e-003	0.0000	10.2643	10.2643	2.9100e-003	0.0000	10.3371
Total	**0.0167**	**0.1282**	**0.0772**	**1.2000e-004**		**7.7400e-003**	**7.7400e-003**		**7.2700e-003**	**7.2700e-003**	**0.0000**	**10.2643**	**10.2643**	**2.9100e-003**	**0.0000**	**10.3371**

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	1.5700e-003	0.0531	0.0103	1.0000e-004	0.0306	2.2000e-004	0.0308	7.5500e-003	2.1000e-004	7.7600e-003	0.0000	9.4588	9.4588	6.6000e-004	0.0000	9.4753
Vendor	2.9800e-003	0.0678	0.0198	1.3000e-004	3.1100e-003	6.4000e-004	3.7500e-003	9.0000e-004	6.1000e-004	1.5100e-003	0.0000	12.5457	12.5457	7.0000e-004	0.0000	12.5632
Worker	5.5000e-003	4.3300e-003	0.0438	1.0000e-004	9.6400e-003	7.0000e-005	9.7100e-003	2.5600e-003	6.0000e-005	2.6300e-003	0.0000	9.0451	9.0451	3.0000e-004	0.0000	9.0526
Total	**0.0101**	**0.1252**	**0.0739**	**3.3000e-004**	**0.0433**	**9.3000e-004**	**0.0442**	**0.0110**	**8.8000e-004**	**0.0119**	**0.0000**	**31.0496**	**31.0496**	**1.6600e-003**	**0.0000**	**31.0911**

3.5 Building Construction - 2018

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	0.3286	2.5780	1.6643	2.6800e-003		0.1491	0.1491		0.1400	0.1400	0.0000	230.4696	230.4696	0.0647	0.0000	232.0876
Total	**0.3286**	**2.5780**	**1.6643**	**2.6800e-003**		**0.1491**	**0.1491**		**0.1400**	**0.1400**	**0.0000**	**230.4696**	**230.4696**	**0.0647**	**0.0000**	**232.0876**

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	0.0307	1.1354	0.2127	2.2200e-003	0.0399	3.3300e-003	0.0432	0.0109	3.1900e-003	0.0141	0.0000	214.5899	214.5899	0.0142	0.0000	214.9452
Vendor	0.0589	1.4409	0.4010	2.9700e-003	0.0707	0.0116	0.0823	0.0204	0.0111	0.0315	0.0000	284.5330	284.5330	0.0148	0.0000	284.9020
Worker	0.1112	0.0854	0.8712	2.2100e-003	0.2191	1.4700e-003	0.2206	0.0583	1.3600e-003	0.0596	0.0000	199.8932	199.8932	6.0000e-003	0.0000	200.0433
Total	**0.2008**	**2.6617**	**1.4848**	**7.4000e-003**	**0.3297**	**0.0164**	**0.3461**	**0.0896**	**0.0156**	**0.1053**	**0.0000**	**699.0161**	**699.0161**	**0.0350**	**0.0000**	**699.8905**

3.6 Grading - 2018

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					0.0304	0.0000	0.0304	3.4500e-003	0.0000	3.4500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0605	0.6753	0.4965	7.7000e-004		0.0333	0.0333		0.0306	0.0306	0.0000	70.4869	70.4869	0.0219	0.0000	71.0355
Total	0.0605	0.6753	0.4965	7.7000e-004	0.0304	0.0333	0.0637	3.4500e-003	0.0306	0.0341	0.0000	70.4869	70.4869	0.0219	0.0000	71.0355

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	0.0275	0.9425	0.1833	2.3200e-003	0.0487	3.7700e-003	0.0525	0.0134	3.6000e-003	0.0170	0.0000	223.7597	223.7597	0.0106	0.0000	224.0237
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	1.2100e-003	9.3000e-004	9.4600e-003	2.0000e-005	2.3800e-003	2.0000e-005	2.4000e-003	6.3000e-004	1.0000e-005	6.5000e-004	0.0000	2.1708	2.1708	7.0000e-005	0.0000	2.1724
Total	0.0287	0.9434	0.1927	2.3400e-003	0.0511	3.7900e-003	0.0549	0.0140	3.6100e-003	0.0177	0.0000	225.9305	225.9305	0.0106	0.0000	226.1961

3.7 Interior - Architectural Coating - 2018

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	2.5906					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0254	0.1955	0.2058	3.3000e-004		0.0127	0.0127		0.0126	0.0126	0.0000	28.5111	28.5111	4.6200e-003	0.0000	28.6266
Total	2.6160	0.1955	0.2058	3.3000e-004		0.0127	0.0127		0.0126	0.0126	0.0000	28.5111	28.5111	4.6200e-003	0.0000	28.6266

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	0.0136	0.0105	0.1068	2.7000e-004	0.0269	1.8000e-004	0.0271	7.1500e-003	1.7000e-004	7.3100e-003	0.0000	24.5154	24.5154	7.4000e-004	0.0000	24.5338
Total	0.0136	0.0105	0.1068	2.7000e-004	0.0269	1.8000e-004	0.0271	7.1500e-003	1.7000e-004	7.3100e-003	0.0000	24.5154	24.5154	7.4000e-004	0.0000	24.5338

3.8 Paving - 2018

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	7.4000e-003	0.0764	0.0642	9.0000e-005		4.6000e-003	4.6000e-003		4.2300e-003	4.2300e-003	0.0000	8.6006	8.6006	2.6800e-003	0.0000	8.6675
Paving	9.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.3800e-003**	**0.0764**	**0.0642**	**9.0000e-005**		**4.6000e-003**	**4.6000e-003**		**4.2300e-003**	**4.2300e-003**	**0.0000**	**8.6006**	**8.6006**	**2.6800e-003**	**0.0000**	**8.6675**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.6000e-004	2.6000e-003	1.0000e-005	6.5000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5970	0.5970	2.0000e-005	0.0000	0.5974
Total	**3.3000e-004**	**2.6000e-004**	**2.6000e-003**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**6.6000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5970**	**0.5970**	**2.0000e-005**	**0.0000**	**0.5974**

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	0.0226	0.0992	0.2880	8.8000e-004	0.0753	1.0000e-003	0.0763	0.0202	9.4000e-004	0.0211	0.0000	80.3741	80.3741	2.9400e-003	0.0000	80.4476
Unmitigated	0.0226	0.0992	0.2880	8.8000e-004	0.0753	1.0000e-003	0.0763	0.0202	9.4000e-004	0.0211	0.0000	80.3741	80.3741	2.9400e-003	0.0000	80.4476

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	69.39	69.39	69.39	202,571	202,571
Parking Lot	0.00	0.00	0.00		
Total	69.39	69.39	69.39	202,571	202,571

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
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

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	1.31238e+007	0.0708	0.6433	0.5404	3.8600e-003		0.0489	0.0489		0.0489	0.0489	0.0000	700.3334	700.3334	0.0134	0.0128	704.4952
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		**0.0708**	**0.6433**	**0.5404**	**3.8600e-003**		**0.0489**	**0.0489**		**0.0489**	**0.0489**	**0.0000**	**700.3334**	**700.3334**	**0.0134**	**0.0128**	**704.4952**

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	1.31238e+007	0.0708	0.6433	0.5404	3.8600e-003		0.0489	0.0489		0.0489	0.0489	0.0000	700.3334	700.3334	0.0134	0.0128	704.4952
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		**0.0708**	**0.6433**	**0.5404**	**3.8600e-003**		**0.0489**	**0.0489**		**0.0489**	**0.0489**	**0.0000**	**700.3334**	**700.3334**	**0.0134**	**0.0128**	**704.4952**

	ROG	NOx	CO	SO2	Fugitive 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	2.1971	5.0000e-005	5.2900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0102	0.0102	3.0000e-005	0.0000	0.0109
Unmitigated	2.1971	5.0000e-005	5.2900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0102	0.0102	3.0000e-005	0.0000	0.0109

6.2 Area by SubCategory

<u>Unmitigated</u>

	ROG	NOx	CO	SO2	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	0.2591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9375					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-004	5.0000e-005	5.2900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0102	0.0102	3.0000e-005	0.0000	0.0109
Total	**2.1971**	**5.0000e-005**	**5.2900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0102**	**0.0102**	3.0000e-005	**0.0000**	**0.0109**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	190.2299	3.7427	0.0899	310.5788
Unmitigated	190.2299	3.7427	0.0899	310.5788

7.2 Water by Land Use

<u>Unmitigated</u>

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	114.61 / 0	190.2299	3.7427	0.0899	310.5788
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**190.2299**	**3.7427**	**0.0899**	**310.5788**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	614.56	124.7501	7.3725	0.0000	309.0632
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		124.7501	7.3725	0.0000	309.0632

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	614.56	124.7501	7.3725	0.0000	309.0632
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		124.7501	7.3725	0.0000	309.0632

9.0 Operational Offroad

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

LOZEAU DRURY COMMENT
DATED MARCH 30, 2018

2. Significant unmitigated cancer risks:
3. Significant and unmitigated greenhouse gas impacts;

LIUNA requests that the City of Santa Clara ("City") withdraw the Initial Study/Mitigated Negative Declaration ("IS/MND") and instead prepare an environmental impact report ("EIR") for the Project, as there is substantial evidence that the Project will have significant unmitigated impacts on the environment as discussed below. An EIR is required to analyze these and other impacts and to adopt feasible mitigation measures to reduce the impacts to the extent feasible.

PROJECT DESCRIPTION

The Project seeks to demolish an existing 358,000 square foot office building and paved parking lot in order to develop a 495,610 square foot data center building. The data center building would house computer servers for private clients in a secure and environmentally controlled structure, and would be designed to provide 60 megawatts (MW) of information technology (IT) power. Standby backup emergency electrical generators would be installed to provide for an uninterrupted power supply. A total of 120 625-kW diesel-fueled engine generators would be located within a generator yard west of the data center building. The generators would provide 75 MW of backup power generation capacity. Additionally, the site will also construct a 90-megavolt amp electrical substation on-site and 75 parking stalls.

STANDING

Members of LIUNA live, work, and recreate in the vicinity of the Project site. These members will suffer the impacts of a poorly executed or inadequately mitigated Project, just as would the members of any nearby homeowners association, community group or environmental group. Hundreds of LIUNA members live and work in areas that will be affected by air pollution and traffic generated by the project. Therefore, LIUNA and its members have a direct interest in ensuring that the Project is adequately analyzed and that its environmental and public health impacts are mitigated to the fullest extent feasible.

LEGAL STANDARD

As the California Supreme Court recently held, "[i]f no EIR has been prepared for a nonexempt project, but substantial evidence in the record supports a fair argument that the project may result in significant adverse impacts, the proper remedy is to order preparation of an EIR." (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 319-320 ["*CBE v. SCAQMD*"], citing, *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 75, 88; *Brentwood Assn. for No Drilling, Inc. v. City of Los Angeles* (1982) 134 Cal.App.3d

21100, 21151(a); *Pocket Protectors,* 124 Cal.App.4th at 927; *League for Protection of Oakland's etc. Historic Resources v. City of Oakland* (1997) 52 Cal.App.4th 896, 904–905.)

Under the "fair argument" standard, an EIR is required if any substantial evidence in the record indicates that a project may have an adverse environmental effect—even if contrary evidence exists to support the agency's decision. (CEQA Guidelines, § 15064(f)(1); *Pocket Protectors*, 124 Cal.App.4th at 931; *Stanislaus Audubon Society v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-15; *Quail Botanical Gardens Found., Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1602.) The "fair argument" standard creates a "low threshold" favoring environmental review through an EIR rather than through issuance of negative declarations or notices of exemption from CEQA. (*Pocket Protectors*, *supra*, 124 Cal.App.4th at 928.)

The "fair argument" standard is virtually the opposite of the typical deferential standard accorded to agencies. As a leading CEQA treatise explains:

> This 'fair argument' standard is very different from the standard normally followed by public agencies in making administrative determinations. Ordinarily, public agencies weigh the evidence in the record before them and reach a decision based on a preponderance of the evidence. [Citations]. The fair argument standard, by contrast, prevents the lead agency from weighing competing evidence to determine who has a better argument concerning the likelihood or extent of a potential environmental impact. The lead agency's decision is thus largely legal rather than factual; it does not resolve conflicts in the evidence but determines only whether substantial evidence exists in the record to support the prescribed fair argument.

(Kostka & Zishcke, *Practice Under CEQA*, §6.29, pp. 273-274.) The Courts have explained that "it is a question of law, not fact, whether a fair argument exists, and the courts owe no deference to the lead agency's determination. Review is de novo, with a ***preference for resolving doubts in favor of environmental review***." (*Pocket Protectors*, 124 Cal.App.4th at 928 [emphasis in original].)

As a matter of law, "substantial evidence includes . . . expert opinion." (Pub. Resources Code, § 21080(e)(1); CEQA Guidelines, § 15064(f)(5).) CEQA Guidelines demand that where experts have presented conflicting evidence on the extent of the environmental effects of a project, the agency must consider the environmental effects to be significant and prepare an EIR. (CEQA Guidelines § 15064(f)(5); Pub. Res. Code § 21080(e)(1); *Pocket Protectors*,124 Cal.App.4th at 935.) "Significant environmental effect" is defined very broadly as "a substantial or potentially substantial adverse change in the environment." (Pub. Resources Code, Since there is a fair argument that the Project's air quality emissions exceed CEQA significance thresholds, an EIR is required to analyze and mitigate Project impacts.

1. The Project Will Create Significant Cancer Risks in the Nearby Residential Community Due to Diesel Engine Exhaust.

SWAPE concludes that the Project will create cancer risks in the nearby residential community more than **twenty times above the BAAQMD'S CEQA significance threshold**. The IS\MND erroneously concludes that the Project's cancer risks will be less than significant, but this is because the IS\MND fails to apply the proper cancer risk calculation methodology established by the California Office of Environmental Health Hazard Assessment ("OEHHA"), the California Air Resources Board (CARB) and by BAAQMD.

SWAPE conducts detailed calculations using OEHHA methodology and concludes, "the excess cancer risk over the course of a residential lifetime (30 years) at the MEIR is approximately ***220 in one million***." (SWAPE, p. 9 (emphasis added)). The BAAQMD significance threshold for cancer risk is 10 in one million. Therefore, the Project will create a cancer risk in the adjacent residential neighborhood more than 20 times above the CEQA significance threshold. An EIR is required to analyze this risk and propose feasible mitigation measures.

SWAPE suggests numerous mitigation measures that could reduce the Project's cancer risks, including requiring the use of low-emission construction equipment, advanced particulate filters for diesel generators, idling restrictions and many other measures. (SWAPE, pp. 9-14). However, since the IS\MND erroneously concludes there is no significant risk, it fails to impose these feasible measures.

2. The Project will Have Significant Nitrogen Oxide (NOx) Impacts.

SWAPE concludes that the Project will generate significant nitrogen oxides (NOx) emissions, above the BAAQMD'S CEQA significance thresholds. NOx reacts in the atmosphere to create ground-level ozone. US EPA states that ozone has serious adverse health impacts:

> Ozone in the air we breathe can harm our health. People most at risk from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers. In addition, people with certain genetic characteristics, and people with reduced

reduce NOx impacts. None of these are analyzed since the City prepared an IS/MND rather than an EIR.

3. The Project Will Have Significant Greenhouse Gas Impacts.

SWAPE concludes that the Project will generate greenhouse gases (GHGs) emissions of 2,513 metric tons per year, more than double the BAAQMD CEQA significance threshold of 1,100 metric tons (MT/yr).per year. (SWAPE p. 19).

Estimated Annual Greenhouse Gas Emissions	
Emission Source	**Proposed Project ($MT\ CO_2E$/year)**
Construction (Amortized)	62.79
Area	0.01
Energy	1,751
Mobile	80.45
Waste	309.06
Water	310.58
Total	**2,513**
BAAQMD Significance Threshold	**1,100**
Exceed?	*Yes*

The IS/MND concludes that the Project would have less than significant GHG emissions, but conducts no calculations at all. In other words, there is no substantial evidence to support the IS/MND's conclusion of less than significant impacts. The IS/MND merely states that the Project, "would not conflict with the Santa Clara Climate Action Plan or other plans, policies or regulations adopted for the purpose of reducing the emissions of GHG" (IS/MND p. 70). However, without any calculations, there is no way to determine if the Project would exceed the 1,100 MT/yr threshold.

SWAPE conducted calculations using standard methodologies, and concluded that the Project will generate GHGs at levels more than double the BAAQMD CEQA significance threshold. As such, and EIR is required to analyze the Project's GHG impacts and to propose feasible mitigation measures.

SWAPE proposes numerous feasible mitigation measures, none of which are analyzed in the IS/MND. An EIR should be prepared to analyze and implement these and other GHG mitigation measures.

In addition, the IS/MND relies on deferred mitigation for GHG impacts. The IS/MND lists measures that "***could be included*** as part of the TDM Plan to reduce vehicle trips by 10 percent consistent with the City's CAP (Climate Action Plan)" (p.

EXHIBIT A

typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act ("CEQA") requires that such changes be justified by substantial evidence.[2] Once all of the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files, which can be found in Appendix A of the IS/MND, disclose to the reader what parameters were utilized in calculating the Project's air pollutant emissions, and make known which default values were changed as well as provide a justification for the values selected.[3]

When we reviewed the Project's CalEEMod output files, we found that several of the values inputted into the model were not consistent with information disclosed in the IS/MND. When the Project's emissions are modeled using correct input parameters, we found that the Project will have a significant impact on local and regional air quality. A project-specific DEIR should be prepared to include an updated air quality analysis that adequately evaluates the impacts that the construction and operation of the Project will have.

Failure to Include All Land Uses

As previously stated, the IS/MND relies upon CalEEMod to estimate the Project's construction and operational emissions. Review of the Project's CalEEMod output files demonstrates that not all of the land uses proposed by the IS/MND were included in the Project's CalEEMod model. As a result, the Project's construction and operational emissions are underestimated.

According to the IS/MND, the Project proposes "to construct a two-story 495,610 square foot data center building" (p. 6). Additionally, "the Project would provide approximately 75 parking spaces located along the western and southern sides of the building" (p. 7). Therefore, in order to be consistent with what is proposed in the IS/MND, Project's emissions should have been estimated assuming construction and operation of these proposed land uses. Review of the IS/MND's CalEEMod output files, however, demonstrates that the Project Applicant underestimated the size of the data center building and completely omitted the parking land use from the air model (Appendix A, pp. 23).

Aligned Data Center, Criteria Emissions

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	400.00	1000sqft	15.00	400,000.00	0

As you can see in the excerpt above, the Project Applicant modeled emissions for a 400,000 square foot General Light Industry building. Not only does the air pollution model underestimate the Project size by

[2] CalEEMod User Guide, pp. 2, 9, *available at:* http://www.caleemod.com/

[3] CalEEMod User Guide, pp. 7, 13, *available at:* http://www.caleemod.com/ (A key feature of the CalEEMod program is the "remarks" feature, where the user explains why a default setting was replaced by a "user defined" value. These remarks are included in the report.)

According to the Project's CalEEMod output files, the following equipment usage hours were used to estimate the Project's construction emissions (see excerpt below) (Appendix A, pp. 25).

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	UsageHours	7.00	4.20
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	4.80
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	5.00

As demonstrated above, the usage hours for several pieces of off-road construction equipment were manually decreased, with some usage hours being decreased by half. According to the "User Entered Comments & Non-Default Data" table in the Project's CalEEMod output files, these values were changed because the "Applicant provided Equipment List" (Appendix A, pp. 23). Review of the IS/MND and its associated appendices, however, demonstrates that a Project-specific equipment list was not provided and therefore, we are unable to verify if these altered values are accurate. As previously mentioned, according the CalEEMod User's Guide any changes to the model's defaults must be properly justified. [8] Because the Project Applicant failed to include evidence of this Project-specific equipment list, we are unable to verify these values. Therefore, unless the Project Applicant can provide substantial evidence and reasoning as to why these factors should have been altered, we find the Project's air quality model to be incorrect and should not be relied upon to determine Project significance.

Updated Analysis Indicates Significant Criteria Air Pollutant Emissions

In an effort to accurately determine the Project's construction and operational emissions, we prepared an updated CalEEMod model that includes more site-specific information and corrected input parameters. In the updated model, we inputted the Project's proposed parking lot land use and inputted a building square footage of 495,610 square feet for the proposed data center building in order to more accurately reflect what is proposed in the IS/MND. Additionally, we relied upon CalEEMod default hauling truck trip lengths and construction equipment usage hours.

When correct, site-specific input parameters are used to model emissions, we find that the Project's *mitigated* construction-related NOx emissions exceed the 54 pounds per day (lbs/day) threshold set forth by the Bay Area Air Quality Management District (BAAQMD) (see table below).

[8] CalEEMod User's Guide, p. 1, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2

emissions generated during construction-related activity. Specifically, our review of the Project's CalEEMod model and corresponding emissions estimates, as discussed in the sections above, found that the model relied upon incorrect and unsubstantiated input parameters in order to estimate the Project's emissions. Because the emissions estimates from the Project's CalEEMod model are underestimated, it is reasonable to assume that the Project's construction-related HRA also underestimates the health risk posed to sensitive receptors near the Project site. As a result, we find the IS/MND's HRA and subsequent significance determination to be incorrect and unreliable and should not be relied upon to determine the significance of the Project's construction-related health impact.

Failure to Include Evaluation of All Emission Sources in Operational Health Risk Assessment
The IS/MND conducts an operational HRA and determines that the maximum increased cancer risk posed to nearby receptors would be 2.3 in one million, which is less than the BAAQMD's significance threshold of ten in one million, thereby resulting in a less than significant impact (p. 37). According to the IS/MND,

> "Potential health impacts from operations of the project's generators for testing and maintenance purposes were evaluated using air quality dispersion modeling and applying BAAQMD recommended health impact calculation methods. DPM concentrations and potential cancer risks from operation of the generators were evaluated at existing residences in the nearby project vicinity of the proposed data center site" (p. 37).

As demonstrated above, the operational HRA only evaluated the impact posed to residential receptors from generator use on-site. Review of the Project's HRA modeling, found in Appendix A, demonstrates that the IS/MND fails to evaluate the health risk posed by emissions generated during operation of the proposed Project, including the 495,610 square foot warehouse (Appendix A, pp. 74). This greatly underestimates the Project's potential health risk, as the data center will generate DPM emissions from the 55 daily vehicle trips to and from the site throughout operation (Appendix A, p. 10). As such, the operational health risk should have included all of the Project's operational emissions sources in order to conduct the HRA.

For the reasons mentioned above, we find the IS/MND's evaluation of the Project's health risk impacts resulting from construction and operation to be inadequate and unreliable. The IS/MND should have conducted their operational health risk with the emissions generated by the data center and the Project's vehicle trips. As a result, the IS/MND fails to provide a comprehensive analysis of the sensitive receptor impacts that may occur as a result of exposure to the Project's potentially substantial air pollutant emissions.

Updated Health Risk Assessment Indicates Significant Health Impact

In an effort to demonstrate the potential risk posed by construction and operation of the proposed Project to nearby sensitive receptors, we prepared a simple screening-level health risk assessment. The results of our assessment, as described in the sections below, provide substantial evidence demonstrating that potential health risk impacts associated with construction and operation of the proposed Project may result in a potentially significant health risk impact. As such, a DEIR should be

Using this equation, we estimated an operational emission rate of 0.003737 g/s. Construction and operational activity was simulated as a 15.7-acre rectangular area source in AERSCREEN, with dimensions of 340 meters by 187 meters. A release height of three meters was selected to represent the height of exhaust stacks on operational equipment and other heavy-duty vehicles, and an initial vertical dimension of one and half meters was used to simulate instantaneous plume dispersion upon release. An urban meteorological setting was selected with model-default inputs for wind speed and direction distribution.

The AERSCREEN model generates maximum reasonable estimates of single-hour DPM concentrations from the Project site. EPA guidance suggests that in screening procedures, the annualized average concentration of an air pollutant be estimated by multiplying the single-hour concentration by 10%.[13] For example, for the MEIR the single-hour concentration estimated by AERSCREEN for Project construction is approximately 6.815 $\mu g/m^3$ DPM at approximately 25 meters 0.6815 $\mu g/m^3$ for Project construction at the MEIR. For Project operation, the single-hour concentration at the MEIR estimated by AERSCREEN is approximately 2.064 $\mu g/m^3$ DPM at approximately 25 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.2064 $\mu g/m^3$ for Project operation at the MEIR.

We calculated the excess cancer risk to the residential receptors located closest to the Project site using applicable health risk assessment methodologies prescribed by OEHHA and the BAAQMD. Consistent with the construction schedule proposed by the IS/MND, the annualized average concentration for construction was used for the first 0.9 years of the infantile stage of life (0-2 years). The annualized average concentration for operation was used for the remainder of the 30-year exposure period, which makes up the remainder of the infantile stage of life (0-2 years), the child stages of life (2 to 16 years), and adult stages of life (16 to 30 years). Consistent with OEHHA guidance, we used Age Sensitivity Factors (ASFs) to account for the heightened susceptibility of young children to the carcinogenic toxicity of air pollution.[14] According to the updated guidance, quantified cancer risk should be multiplied by a factor of ten during the first two years of life (infant) and should be multiplied by a factor of three during the child stage of life (2 to 16 years). Furthermore, in accordance with guidance set forth by OEHHA, we used 95th percentile breathing rates for infants.[15] We used a cancer potency factor of 1.1 $(mg/kg\text{-}day)^{-1}$ and an averaging time of 25,550 days. The results of our calculations are shown below.

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[13] http://www.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019_OCR.pdf

[14] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

[15] "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act," June 5, 2015, *available at:* http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588-risk-assessment-guidelines.pdf?sfvrsn=6, p. 19
"Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

by on-road vehicles and by off-road construction equipment. Mitigation for criteria pollutant emissions should include consideration of the following measures in an effort to reduce construction emissions.

Limit Construction Equipment Idling Beyond Regulation Requirements
Heavy duty vehicles will idle during loading/unloading and during layovers or rest periods with the engine still on, which requires fuel use and results in emissions. The California Air Resources Board (CARB) Heavy-Duty Vehicle Idling Emissions Reduction Program limits idling of diesel-fueled commercial motor vehicles to five minutes. Reduction in idling time beyond the five minutes required under the regulation would further reduce fuel consumption and thus emissions. The Project applicant must develop an enforceable mechanism that monitors the idling time to ensure compliance with this mitigation measure.

Require Implementation of Diesel Control Measures
The Northeast Diesel Collaborative (NEDC) is a regionally coordinated initiative to reduce diesel emissions, improve public health, and promote clean diesel technology. The NEDC recommends that contracts for all construction projects require the following diesel control measures: [18]

- All diesel onroad vehicles on site for more than 10 total days must have either (1) engines that meet EPA 2007 onroad emissions standards or (2) emission control technology verified by EPA[19] or the California Air Resources Board (CARB)[20] to reduce PM emissions by a minimum of 85 percent.
- All diesel generators on site for more than 10 total days must be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85 percent.
- All diesel nonroad construction equipment on site for more than 10 total days must have either (1) engines meeting EPA Tier 4 nonroad emission standards or (2) emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 85 percent for engines 50 horse power (hp) and greater and by a minimum of 20 percent for engines less than 50 hp.
- All diesel vehicles, construction equipment, and generators on site shall be fueled with ultra-low sulfur diesel fuel (ULSD) or a biodiesel blend[21] approved by the original engine manufacturer with sulfur content of 15 parts per million (ppm) or less.

Repower or Replace Older Construction Equipment Engines
The NEDC recognizes that availability of equipment that meets the EPA's newer standards is limited.[22] Due to this limitation, the NEDC proposes actions that can be taken to reduce emissions from existing

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[18] Diesel Emission Controls in Construction Projects, *available at:*http://www2.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf
[19] For EPA's list of verified technology: http://www3.epa.gov/otaq/diesel/verification/verif-list.htm
[20] For CARB's list of verified technology: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm
[21] Biodiesel lends are only to be used in conjunction with the technologies which have been verified for use with biodiesel blends and are subject to the following requirements: http://www.arb.ca.gov/diesel/verdev/reg/biodieselcompliance.pdf
[22]http://northeastdiesel.org/pdf/BestPractices4CleanDieselConstructionAug2012.pdf

emissions and should not impact engine or vehicle operation. [28] It should be noted that actual emissions reductions and costs will depend on specific manufacturers, technologies and applications.

Use Electric and Hybrid Construction Equipment

CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*[29] report also proposes the use of electric and/or hybrid construction equipment as a way to mitigate DPM emissions. When construction equipment is powered by grid electricity rather than fossil fuel, direct emissions from fuel combustion are replaced with indirect emissions associated with the electricity used to power the equipment. Furthermore, when construction equipment is powered by hybrid-electric drives, emissions from fuel combustion are also greatly reduced. Electric construction equipment is available commercially from companies such as Peterson Pacific Corporation,[30] which specialize in the mechanical processing equipment like grinders and shredders. Construction equipment powered by hybrid-electric drives is also commercially available from companies such as Caterpillar[31]. For example, Caterpillar reports that during an 8-hour shift, its D7E hybrid dozer burns 19.5 percent fewer gallons of fuel than a conventional dozer while achieving a 10.3 percent increase in productivity. The D7E model burns 6.2 gallons per hour compared to a conventional dozer which burns 7.7 gallons per hour.[32] Fuel usage and savings are dependent on the make and model of the construction equipment used. The Project Applicant should calculate project-specific savings and provide manufacturer specifications indicating fuel burned per hour.

Implement a Construction Vehicle Inventory Tracking System

CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*[33] report recommends that the Project Applicant provide a detailed plan that discusses a construction vehicle inventory tracking system to ensure compliances with construction mitigation measures. The system should include strategies such as requiring engine run time meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment. Specifically, for each onroad construction vehicle, nonroad construction equipment, or generator, the contractor should submit to the developer's representative a report prior to bringing said equipment on site that includes:[34]

- Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, and engine serial number.
- The type of emission control technology installed, serial number, make, model, manufacturer, and EPA/CARB verification number/level.

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[28] Retrofit Technologies, EPA, *available at:*https://www.epa.gov/verified-diesel-tech/learn-about-verified-technologies-clean-diesel#retrofit

[29] http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

[30] Peterson Electric Grinders Brochure, *available at:*http://www.petersoncorp.com/wp-content/uploads/peterson_electric_grinders1.pdf

[31] Electric Power Products, *available at:*http://www.cat.com/en_US/products/new/power-systems/electric-power-generation.html

[32] http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

[33] http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

[34] Diesel Emission Controls in Construction Projects, *available at:*http://www2.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf

- Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.
- The District's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction.

3. The project representative shall ensure that emissions from all off-road diesel-powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour.
    - Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Non-compliant equipment will be documented and a summary provided to the lead agency monthly.
    - A visual survey of all in-operation equipment shall be made at least weekly.
    - A monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.
4. The District and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this mitigation shall supersede other District, state or federal rules or regulations.

When combined, the measures that we recommend in these comments offer a cost-effective, feasible way to incorporate lower-emitting equipment into the Project's construction fleet, which subsequently reduces NOx and DPM emissions released during Project construction. A project-specific DEIR must be prepared to include additional mitigation measures, as well as include an updated air quality assessment to ensure that the necessary mitigation measures are implemented to reduce construction emissions. Furthermore, the Project Applicant needs to demonstrate commitment to the implementation of these measures prior to Project approval to ensure that the Project's construction-related emissions are reduced to the maximum extent possible.

Feasible Mitigation Measures Available to Reduce Operational Emissions

Our analysis also demonstrates that the Project's operational DPM emissions may present a potentially significant impact. In an effort to reduce the Project's emissions, we identified several additional mitigation measures that are applicable to the Project. Additional, feasible mitigation measures can be also found in CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures.*[38] Therefore, to reduce the Project's operational DPM emissions, consideration of the following measures should be made.

- Incorporate Bike Lane Street Design (On-Site)
    - Incorporating bicycle lanes, routes, and shared-use paths into street systems, new subdivisions, and large developments can reduce VMTs. These improvements can help reduce peak-hour vehicle trips by making commuting by bike easier and more

[38] http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

- Implement Subsidized or Discounted Transit Program
  - This project can provide subsidized/discounted daily or monthly public transit passes to incentivize the use of public transport. The project may also provide free transfers between all shuttles and transit to participants. These passes can be partially or wholly subsidized by the employer, school, or development. Many entities use revenue from parking to offset the cost of such a project.
- Implement Commute Trip Reduction Marketing
  - The project can implement marketing strategies to reduce commute trips. Information sharing and marketing are important components to successful commute trip reduction strategies. Implementing commute trip reduction strategies without a complementary marketing strategy will result in lower VMT reductions. Marketing strategies may include:
    - New employee orientation of trip reduction and alternative mode options
    - Event promotions
    - Publications
- Implement Preferential Parking Permit Program
  - The project can provide preferential parking in convenient locations (such as near public transportation or building front doors) in terms of free or reduced parking fees, priority parking, or reserved parking for commuters who carpool, vanpool, ride-share or use alternatively fueled vehicles. The project should provide wide parking spaces to accommodate vanpool vehicles.
- Implement Car-Sharing Program
  - This project should implement a car-sharing project to allow people to have on-demand access to a shared fleet of vehicles on an as-needed basis. User costs are typically determined through mileage or hourly rates, with deposits and/or annual membership fees. The car-sharing program could be created through a local partnership or through one of many existing car-share companies. Car-sharing programs may be grouped into three general categories: residential- or citywide-based, employer-based, and transit station-based. Transit station-based programs focus on providing the "last-mile" solution and link transit with commuters' final destinations. Residential-based programs work to substitute entire household based trips. Employer-based programs provide a means for business/day trips for alternative mode commuters and provide a guaranteed ride home option.
- Provide Employer-Sponsored Vanpool/Shuttle
  - This project can implement an employer-sponsored vanpool or shuttle. A vanpool will usually service employees' commute to work while a shuttle will service nearby transit stations and surrounding commercial centers. Employer-sponsored vanpool programs entail an employer purchasing or leasing vans for employee use, and often subsidizing the cost of at least program administration, if not more. The driver usually receives personal use of the van, often for a mileage fee. Scheduling is within the employer's purview, and rider charges are normally set on the basis of vehicle and operating cost.

First, without first quantifying the Project's GHG emissions, there is no way of knowing if the Project's GHG emissions exceed thresholds, and by how much. CEQA Guidelines mandate that only after a Project's GHG emissions are determined to be significant and exceed thresholds does a lead agency need to consider potential mitigation measures to reduce a project's emissions.[40] Therefore, the Project Applicant should have quantified the proposed Project's GHG emissions and compared the emissions to applicable thresholds prior to proposing the City of Santa Clara's ("City") Climate Action Plan (CAP) as a form of mitigation.

Second, the IS/MND cannot simply state that the Project is consistent with the City's CAP and, as a result, claim that the Project's GHG emissions are less than significant. In December of 2013, the City of Santa Clara adopted the Climate Action Plan (CAP), which was developed to reduce GHG emissions from activities within the region, consistent with reduction targets set forth by Assembly Bill 32 (AB32), Senate Bill 375 (SB375), and in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15183.5.[41] The Citywide CAP meets the BAAQMD's requirements for a *Qualified Greenhouse Gas Reduction* Strategy and enables future projects in Santa Clara to qualify for a streamlined CEQA review process for GHG emissions analyses.[42] According to the IS/MND, "the CAP, which is part of the City's General Plan, identifies a series of GHG emissions reduction measures to be implemented by development project that would allow the City to achieve its GHG reduction goals" (p. 66). Therefore, in order for a project to be consistent with the reduction targets identified in the CAP, the Project must comply with the required mitigation measures set forth within the CAP. However, the IS/MND and associated appendices fail to demonstrate how the proposed Project will be consistent with all the measures set forth in the CAP.

Specifically, the IS/MND fails to demonstrate how it will be consistent with *Measure 6.1 Transportation Demand Management Program*.[43] The CAP states that this measure will "Require new development located in the city's transportation districts to implement a TDM program to reduce drive-alone trips."[44] As a result, the IS/MND lists measures that "could be included as part of the TDM Plan to reduce vehicle trips by 10 percent consistent with the City's CAP" (p. 67). However, the IS/MND fails to include these measures as mitigation or as a Project Design Feature (PDF). Thus, the IS/MND must demonstrate how it will implement the GHG-reducing measures proposed in the CAP before it can claim that the proposed Project will not have a significant GHG impact or that the Project will not conflict with any applicable plan, policy, or regulation.

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[40] "CEQA Guidelines." *The Governor's Office of Planning & Research,* 2011, *available at:* https://www.opr.ca.gov/s_ceqaandclimatechange.php

[41] "City of Santa Clara Climate Action Plan." *City of Santa Clara,* December 2013, *available at:* http://santaclaraca.gov/home/showdocument?id=10170, p. 8

[42] "City of Santa Clara Climate Action Plan." *City of Santa Clara,* December 2013, *available at:* http://santaclaraca.gov/home/showdocument?id=10170, p. viii

[43] "City of Santa Clara Climate Action Plan." *City of Santa Clara,* December 2013, *available at:* http://santaclaraca.gov/home/showdocument?id=10170, p. 52

[44] "City of Santa Clara Climate Action Plan." *City of Santa Clara,* December 2013, *available at:* http://santaclaraca.gov/home/showdocument?id=10170, p. 52

prepared that includes an updated CalEEMod model with a more accurate assessment of the Project's total GHG emissions, and additional mitigation should be identified to reduce the Project's air quality and GHG impacts to a less-than-significant level. Without a DEIR, an updated CalEEMod model, and responsive mitigation, substantial evidence exists to support a fair argument that the Project may have significant, unmitigated impacts on GHG emissions.

Additional Mitigation Measures Available to Reduce Greenhouse Gas Emissions

We identified several additional mitigation measures that the IS/MND failed to incorporate, which would further reduce the Project's operational GHG emissions. It should be noted that some of these mitigation measures would also reduce the Project's operational DPM emissions, which we found to be significant, as discussed in the sections above. Therefore, these measures should also be considered when mitigating the Project's operational DPM emissions. Additional mitigation measures that could be implemented to reduce GHG emissions include, but are not limited to, the following: [46]

- Use passive solar design, such as: [47,48]
  - Orient buildings and incorporate landscaping to maximize passive solar; heating during cool seasons, and minimize solar heat gain during hot seasons; and
  - Enhance natural ventilation by taking advantage of prevailing winds.
- Reduce unnecessary outdoor lighting by utilizing design features such as limiting the hours of operation of outdoor lighting.
- Develop and follow a "green streets guide" that requires:
  - Use of minimal amounts of concrete and asphalt;
  - Installation of permeable pavement to allow for storm water infiltration; and
  - Use of groundcovers rather than pavement to reduce heat reflection.[49]
- Implement Project design features such as:
  - Shade HVAC equipment from direct sunlight;
  - Install high-albedo white thermoplastic polyolefin roof membrane;
  - Install high-efficiency HVAC with hot-gas reheat;
  - Install formaldehyde-free insulation; and
  - Use recycled-content gypsum board.
- Provide education on energy efficiency to residents, customers, and/or tenants. Provide information on energy management services for large energy users.
- Meet "reach" goals for building energy efficiency and renewable energy use.
- Install solar, wind, and geothermal power systems and solar hot water heaters.

[46] http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf

[47] Santa Barbara Air Pollution Control District, Scope and Content of Air Quality Sections in Environmental Documents, September 1997.

[48] Butte County Air Quality Management District, Indirect Source Review Guidelines, March 1997.

[49] *See* Irvine Sustainable Travelways "Green Street" Guidelines; www.ci.irvine.ca.us/civica/filebank/blobdload.asp?BlobID=8934; and Cool Houston Plan; www.harc.edu/Projects/CoolHouston.

ATTACHMENT 1

No Building Downwash Parameters

** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation: 0.0 meters 0.0 feet

Probe distance: 5000. meters 16404. feet

No flagpole receptors

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

Min/Max Temperature: 250.0 / 310.0 K -9.7 / 98.3 Deg F

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

Season	Albedo	Bo	zo
Winter	0.35	1.50	1.000
Spring	0.14	1.00	1.000
Summer	0.16	2.00	1.000
Autumn	0.18	2.00	1.000

Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl

Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl

Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl

Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl

Buildings and/or terrain present or rectangular area source, skipping probe

FLOWSECTOR started 03/16/18 16:36:30

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AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 10

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 15

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 20

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 6

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 5

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 10

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 15

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******** WARNING MESSAGES ********

*** NONE ***

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 Running AERMOD

Processing Summer


Processing surface roughness sector 1


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Processing wind flow sector 1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 0


 ******** WARNING MESSAGES ********

 *** NONE ***


**************************************************

Processing wind flow sector 2


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 5


 ******** WARNING MESSAGES ********

 *** NONE ***
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Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 25

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 30

******** WARNING MESSAGES ********

*** NONE ***

****

Running AERMOD

Processing Autumn

Processing surface roughness sector 1

****

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 15

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 20

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 25

******** WARNING MESSAGES ********

*** NONE ***

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Ending date and time 03/16/18 16:37:08

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  0.31675E+01       350.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.29278E+01       375.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.27179E+01       400.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.25313E+01       425.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.23666E+01       450.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.22185E+01       475.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.20850E+01       500.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19655E+01       525.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.18569E+01       550.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.17579E+01       575.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16676E+01       600.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15847E+01       625.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15094E+01       650.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.14399E+01       675.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.13748E+01       700.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.13151E+01       725.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
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   0.72523E+00      1150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.70508E+00      1175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.68591E+00      1200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.66768E+00      1225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.65031E+00      1250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.63365E+00      1275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.61756E+00      1300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.60219E+00      1325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.58750E+00      1350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.57345E+00      1375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.55999E+00      1400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.54705E+00      1425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.53455E+00      1450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.52256E+00      1475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.51104E+00      1500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.49997E+00      1525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
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   0.36043E+00      1950.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.35438E+00      1975.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.34848E+00      2000.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.34273E+00      2025.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.33714E+00      2050.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.33171E+00      2075.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.32644E+00      2100.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.32131E+00      2125.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.31633E+00      2150.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.31148E+00      2175.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.30671E+00      2200.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.30206E+00      2225.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.29754E+00      2250.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.29313E+00      2275.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.28883E+00      2300.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.28464E+00      2325.00      0.00    0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
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  0.22700E+00      2750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.22425E+00      2775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.22156E+00      2800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.21893E+00      2825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.21635E+00      2850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.21383E+00      2875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.21135E+00      2900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.20893E+00      2925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.20656E+00      2950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.20423E+00      2975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.20195E+00      3000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19971E+00      3025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19751E+00      3050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19534E+00      3075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19322E+00      3100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19114E+00      3125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
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   0.16277E+00      3550.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.16121E+00      3575.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15968E+00      3600.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15818E+00      3625.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15670E+00      3650.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15524E+00      3675.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15381E+00      3700.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15240E+00      3725.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.15101E+00      3750.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14964E+00      3775.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14830E+00      3800.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14697E+00      3825.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14567E+00      3850.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14438E+00      3875.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14312E+00      3900.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.14187E+00      3925.00      0.00    0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
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   0.12326E+00      4350.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12229E+00      4375.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12134E+00      4400.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.12041E+00      4425.00      0.00  10.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11948E+00      4450.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11857E+00      4475.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11767E+00      4500.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11678E+00      4525.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11591E+00      4550.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11504E+00      4575.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11419E+00      4600.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11334E+00      4625.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11251E+00      4650.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11169E+00      4675.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11088E+00      4700.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.11007E+00      4725.00      0.00   0.0        Winter       0-360    10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
```

2305missioncollegeoperation

Start date and time 03/16/18 16:38:24

AERSCREEN 16216

2305 Mission College Operation

----------------- DATA ENTRY VALIDATION -----------------

	METRIC	ENGLISH
** AREADATA **	---------------	----------------
Emission Rate:	0.374E-02 g/s	0.297E-01 lb/hr
Area Height:	3.00 meters	9.84 feet
Area Source Length:	340.00 meters	1115.49 feet
Area Source Width:	187.00 meters	613.52 feet
Vertical Dimension:	1.50 meters	4.92 feet
Model Mode:	URBAN	
Population:	125948	
Dist to Ambient Air:	1.0 meters	3. feet

** BUILDING DATA **

No Building Downwash Parameters

Anemometer Height: 10.000 meters

Dominant Surface Profile: Urban

Dominant Climate Type: Average Moisture

Surface friction velocity (u*): not adjusted

DEBUG OPTION OFF

AERSCREEN output file:

2305missioncollegeoperation.out

*** AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run

****

SURFACE CHARACTERISTICS & MAKEMET

Processing surface roughness sector 1

****

Processing wind flow sector   1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector   2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector   3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 10

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 30

******** WARNING MESSAGES ********

*** NONE ***

****

Running AERMOD

Processing Spring

Processing surface roughness sector 1

****

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 0

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector   5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 20

********   WARNING MESSAGES   ********

*** NONE ***

****

Processing wind flow sector   6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 25

********   WARNING MESSAGES   ********

*** NONE ***

****

Processing wind flow sector   7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 30

********   WARNING MESSAGES   ********

*** NONE ***

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 10

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 15

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 20

******** WARNING MESSAGES ********

*** NONE ***

****

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 0

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 5

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 10

******** WARNING MESSAGES ********

*** NONE ***

****

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 30

******** WARNING MESSAGES ********

*** NONE ***

FLOWSECTOR ended 03/16/18 16:39:35

REFINE started 03/16/18 16:39:35

AERMOD Finishes Successfully for REFINE stage 3 Winter sector 0

******** WARNING MESSAGES ********

*** NONE ***

REFINE ended 03/16/18 16:39:39

****

AERSCREEN Finished Successfully

With no errors or warnings

Check log file for details

****

Ending date and time 03/16/18 16:39:39

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  0.95907E+00       350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.88648E+00       375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.82292E+00       400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.76644E+00       425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.71656E+00       450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.67172E+00       475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.63131E+00       500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.59510E+00       525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.56222E+00       550.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.53227E+00       575.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.50493E+00       600.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.47980E+00       625.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.45703E+00       650.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.43598E+00       675.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.41627E+00       700.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.39818E+00       725.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
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  0.21959E+00      1150.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.21348E+00      1175.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.20768E+00      1200.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.20216E+00      1225.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19690E+00      1250.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.19186E+00      1275.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.18699E+00      1300.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.18233E+00      1325.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.17789E+00      1350.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.17363E+00      1375.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16955E+00      1400.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16564E+00      1425.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.16185E+00      1450.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15822E+00      1475.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15473E+00      1500.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.15138E+00      1525.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
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   0.10913E+00      1950.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.10730E+00      1975.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.10551E+00      2000.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.10377E+00      2025.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.10208E+00      2050.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.10044E+00      2075.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.98840E-01      2100.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.97288E-01      2125.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.95778E-01      2150.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.94309E-01      2175.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.92867E-01      2200.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.91459E-01      2225.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.90088E-01      2250.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.88753E-01      2275.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.87452E-01      2300.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
   0.86185E-01      2325.00      0.00   0.0        Winter       0-360   10011001
 -1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
  310.0    2.0
```

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   0.68731E-01      2750.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.67900E-01      2775.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.67085E-01      2800.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.66288E-01      2825.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.65508E-01      2850.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.64743E-01      2875.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.63994E-01      2900.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.63261E-01      2925.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.62541E-01      2950.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.61836E-01      2975.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.61145E-01      3000.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.60468E-01      3025.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.59802E-01      3050.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.59147E-01      3075.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.58504E-01      3100.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
   0.57873E-01      3125.00      0.00   0.0        Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
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  0.49283E-01     3550.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.48812E-01     3575.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.48349E-01     3600.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.47893E-01     3625.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.47445E-01     3650.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.47004E-01     3675.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.46570E-01     3700.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.46143E-01     3725.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.45722E-01     3750.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.45309E-01     3775.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.44901E-01     3800.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.44500E-01     3825.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.44105E-01     3850.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.43716E-01     3875.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.43333E-01     3900.00      0.00   0.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
  0.42956E-01     3925.00      0.00   5.0         Winter       0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.       6.0 1.000   1.50   0.35    0.50   10.0
 310.0    2.0
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  0.37320E-01      4350.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.37029E-01      4375.00      0.00   5.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.36741E-01      4400.00      0.00  10.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.36458E-01      4425.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.36178E-01      4449.99      0.00  10.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.35902E-01      4475.00      0.00  10.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.35629E-01      4500.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.35360E-01      4525.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.35094E-01      4550.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.34832E-01      4575.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.34574E-01      4600.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.34318E-01      4625.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.34066E-01      4650.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.33817E-01      4675.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.33571E-01      4700.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
  0.33329E-01      4725.00      0.00   0.0        Winter      0-360   10011001
-1.30  0.043 -9.000  0.020 -999.   21.      6.0 1.000   1.50   0.35   0.50   10.0
 310.0    2.0
```

ATTACHMENT 2

Project Characteristics - changed to reflect IS/MND's CalEEMod inputs

Land Use - land use sizes per the IS/MND's project description

Construction Phase - construction schedule reflect IS/MND's CalEEMod inputs

Off-road Equipment -

Off-road Equipment - default equipment for demolition has the default usage hour per SWAPE's comment and added equipment has the IS/MND's CalEEMod input's usage hours
number of equipment reflects the IS/MND's CalEEMod inputs

Off-road Equipment - additional equipment reflects the IS/MND's CalEEMod inputs

Off-road Equipment - changes reflect the IS/MND's CalEEMod inputs

Off-road Equipment - default usage hours per SWAPE's comment
changes to amount reflect the IS/MND's CalEEMod inputs

Off-road Equipment - amount changed to reflect the IS/MND's CalEEMod inputs

Off-road Equipment - equipment changes reflect the IS/MND's CalEEMod inputs

Off-road Equipment - equipment changes reflect the IS/MND's CalEEMod inputs

Grading -

Demolition -

Trips and VMT - hauling trip totals changed to reflect the IS/MND's CalEEMod inputs

Architectural Coating -

Vehicle Trips - changes reflect the IS/MND's CalEEMod inputs

Construction Off-road Equipment Mitigation - mitigation reflects the IS/MND's CalEEMod inputs

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	140.00
tblConstructionPhase	NumDays	300.00	240.00
tblConstructionPhase	NumDays	20.00	100.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	10.00	80.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	3/14/2019	11/26/2018
tblConstructionPhase	PhaseEndDate	1/17/2019	11/15/2018
tblConstructionPhase	PhaseEndDate	9/28/2017	1/18/2018
tblConstructionPhase	PhaseEndDate	11/23/2017	3/8/2018
tblConstructionPhase	PhaseEndDate	2/14/2019	2/9/2018
tblConstructionPhase	PhaseEndDate	10/12/2017	3/6/2018
tblConstructionPhase	PhaseStartDate	2/15/2019	5/15/2018
tblConstructionPhase	PhaseStartDate	11/24/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	10/13/2017	12/15/2017

tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	HaulingTripNumber	0.00	13,000.00
tblTripsAndVMT	HaulingTripNumber	1,683.00	2,633.00
tblVehicleTrips	ST_TR	1.32	0.14
tblVehicleTrips	SU_TR	0.68	0.14
tblVehicleTrips	WD_TR	6.97	0.14

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.0417	5.5000e-004	0.0588	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		0.1249	0.1249	3.4000e-004		0.1333
Energy	0.3878	3.5251	2.9610	0.0212		0.2679	0.2679		0.2679	0.2679		4,230.0573	4,230.0573	0.0811	0.0776	4,255.1944
Mobile	0.1406	0.5236	1.6760	5.1400e-003	0.4286	5.4800e-003	0.4340	0.1144	5.1500e-003	0.1196		516.9114	516.9114	0.0182		517.3664
Total	**12.5701**	**4.0492**	**4.6959**	**0.0263**	**0.4286**	**0.2736**	**0.7022**	**0.1144**	**0.2733**	**0.3877**		**4,747.0936**	**4,747.0936**	**0.0996**	**0.0776**	**4,772.6941**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.0417	5.5000e-004	0.0588	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		0.1249	0.1249	3.4000e-004		0.1333
Energy	0.3878	3.5251	2.9610	0.0212		0.2679	0.2679		0.2679	0.2679		4,230.0573	4,230.0573	0.0811	0.0776	4,255.1944
Mobile	0.1406	0.5236	1.6760	5.1400e-003	0.4286	5.4800e-003	0.4340	0.1144	5.1500e-003	0.1196		516.9114	516.9114	0.0182		517.3664
Total	**12.5701**	**4.0492**	**4.6959**	**0.0263**	**0.4286**	**0.2736**	**0.7022**	**0.1144**	**0.2733**	**0.3877**		**4,747.0936**	**4,747.0936**	**0.0996**	**0.0776**	**4,772.6941**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Interior - Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	4	8.00	158	0.38
Demolition	Concrete/Industrial Saws	4	8.00	81	0.73
Trenching	Excavators	3	8.00	158	0.38
Building Construction	Cranes	3	7.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Interior - Architectural Coating	Aerial Lifts	1	6.00	63	0.31
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition	Rubber Tired Dozers	4	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Trenching	Tractors/Loaders/Backhoes	4	8.00	97	0.37
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	4	8.00	46	0.45
Grading	Excavators	3	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Demolition	Crushing/Proc. Equipment	1	2.00	85	0.78
Demolition	Tractors/Loaders/Backhoes	2	4.80	97	0.37
Site Preparation	Graders	2	4.00	247	0.40

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.6421	0.0000	3.6421	0.5515	0.0000	0.5515			0.0000			0.0000
Off-Road	9.2292	91.0605	50.8187	0.0853		4.9847	4.9847		4.6917	4.6917		8,524.603 5	8,524.603 5	2.0602		8,576.108 1
Total	**9.2292**	**91.0605**	**50.8187**	**0.0853**	**3.6421**	**4.9847**	**8.6268**	**0.5515**	**4.6917**	**5.2432**		**8,524.603 5**	**8,524.603 5**	**2.0602**		**8,576.108 1**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2929	9.1553	1.7819	0.0216	0.5167	0.0526	0.5693	0.1400	0.0504	0.1903		2,291.303 1	2,291.303 1	0.1082		2,294.007 0
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
Worker	0.1795	0.1210	1.4873	3.3700e-003	0.3122	2.0900e-003	0.3143	0.0828	1.9300e-003	0.0847		335.0295	335.0295	0.0111		335.3064
Total	**0.4724**	**9.2763**	**3.2693**	**0.0249**	**0.8289**	**0.0547**	**0.8836**	**0.2228**	**0.0523**	**0.2751**		**2,626.332 6**	**2,626.332 6**	**0.1192**		**2,629.313 4**

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.6421	0.0000	3.6421	0.5515	0.0000	0.5515			0.0000			0.0000
Off-Road	8.3860	82.5606	49.3977	0.0853		4.4164	4.4164		4.1552	4.1552		8,429.634 2	8,429.634 2	2.0333		8,480.466 0
Total	**8.3860**	**82.5606**	**49.3977**	**0.0853**	**3.6421**	**4.4164**	**8.0586**	**0.5515**	**4.1552**	**4.7067**		**8,429.634 2**	**8,429.634 2**	**2.0333**		**8,480.466 0**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2491	8.4510	1.6219	0.0214	2.5985	0.0342	2.6327	0.6510	0.0327	0.6837		2,274.456 0	2,274.456 0	0.1042		2,277.061 7
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
Worker	0.1601	0.1050	1.3073	3.2700e-003	0.3122	2.0300e-003	0.3142	0.0828	1.8700e-003	0.0847		325.8164	325.8164	9.7000e-003		326.0588
Total	**0.4091**	**8.5560**	**2.9292**	**0.0246**	**2.9106**	**0.0362**	**2.9469**	**0.7338**	**0.0346**	**0.7684**		**2,600.272 3**	**2,600.272 3**	**0.1139**		**2,603.120 5**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.6282	0.0000	18.6282	9.9927	0.0000	9.9927			0.0000			0.0000
Off-Road	5.6510	61.9027	25.9804	0.0466		3.1925	3.1925		2.9371	2.9371		4,772.8424	4,772.8424	1.4624		4,809.4022
Total	**5.6510**	**61.9027**	**25.9804**	**0.0466**	**18.6282**	**3.1925**	**21.8207**	**9.9927**	**2.9371**	**12.9299**		**4,772.8424**	**4,772.8424**	**1.4624**		**4,809.4022**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3895	12.1743	2.3695	0.0287	1.2710	0.0700	1.3410	0.3295	0.0670	0.3964		3,046.8761	3,046.8761	0.1438		3,050.4717
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
Worker	0.1086	0.0732	0.9002	2.0400e-003	0.1889	1.2700e-003	0.1902	0.0501	1.1700e-003	0.0513		202.7810	202.7810	6.7000e-003		202.9486
Total	**0.4981**	**12.2476**	**3.2698**	**0.0307**	**1.4600**	**0.0713**	**1.5312**	**0.3796**	**0.0681**	**0.4477**		**3,249.6572**	**3,249.6572**	**0.1505**		**3,253.4203**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.6282	0.0000	18.6282	9.9927	0.0000	9.9927			0.0000			0.0000
Off-Road	5.2324	57.3836	24.9437	0.0466		2.8755	2.8755		2.6455	2.6455		4,694.9291	4,694.9291	1.4616		4,731.4690
Total	**5.2324**	**57.3836**	**24.9437**	**0.0466**	**18.6282**	**2.8755**	**21.5037**	**9.9927**	**2.6455**	**12.6382**		**4,694.9291**	**4,694.9291**	**1.4616**		**4,731.4690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3312	11.2378	2.1568	0.0284	0.9368	0.0455	0.9823	0.2474	0.0435	0.2910		3,024.4736	3,024.4736	0.1386		3,027.9386
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
Worker	0.0969	0.0636	0.7912	1.9800e-003	0.1889	1.2300e-003	0.1902	0.0501	1.1300e-003	0.0513		197.2046	197.2046	5.8700e-003		197.3514
Total	**0.4281**	**11.3013**	**2.9480**	**0.0304**	**1.1258**	**0.0467**	**1.1725**	**0.2976**	**0.0447**	**0.3422**		**3,221.6782**	**3,221.6782**	**0.1445**		**3,225.2900**

3.4 Trenching - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3270	23.9285	19.5851	0.0279		1.4939	1.4939		1.3744	1.3744		2,856.751 6	2,856.751 6	0.8753		2,878.634 2
Total	**2.3270**	**23.9285**	**19.5851**	**0.0279**		**1.4939**	**1.4939**		**1.3744**	**1.3744**		**2,856.751 6**	**2,856.751 6**	**0.8753**		**2,878.634 2**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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
Worker	0.0850	0.0573	0.7045	1.6000e-003	0.1479	9.9000e-004	0.1489	0.0392	9.1000e-004	0.0401		158.6982	158.6982	5.2500e-003		158.8293
Total	**0.0850**	**0.0573**	**0.7045**	**1.6000e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.1000e-004**	**0.0401**		**158.6982**	**158.6982**	**5.2500e-003**		**158.8293**

3.4 Trenching - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9319	19.8065	19.1738	0.0279		1.1956	1.1956		1.1000	1.1000		2,809.859 0	2,809.859 0	0.8748		2,831.727 7
Total	**1.9319**	**19.8065**	**19.1738**	**0.0279**		**1.1956**	**1.1956**		**1.1000**	**1.1000**		**2,809.859 0**	**2,809.859 0**	**0.8748**		**2,831.727 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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
Worker	0.0758	0.0497	0.6192	1.5500e-003	0.1479	9.6000e-004	0.1488	0.0392	8.9000e-004	0.0401		154.3341	154.3341	4.5900e-003		154.4489
Total	**0.0758**	**0.0497**	**0.6192**	**1.5500e-003**	**0.1479**	**9.6000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**154.3341**	**154.3341**	**4.5900e-003**		**154.4489**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.4413	33.9200	19.6390	0.0311		1.9330	1.9330		1.8192	1.8192		2,969.675 3	2,969.675 3	0.8352		2,990.556 3
Total	**4.4413**	**33.9200**	**19.6390**	**0.0311**		**1.9330**	**1.9330**		**1.8192**	**1.8192**		**2,969.675 3**	**2,969.675 3**	**0.8352**		**2,990.556 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6026	18.8345	3.6658	0.0443	15.8552	0.1083	15.9635	3.9188	0.1036	4.0224		4,713.720 1	4,713.720 1	0.2225		4,719.282 7
Vendor	0.5325	12.1226	3.4044	0.0241	0.5822	0.1157	0.6979	0.1676	0.1107	0.2783		2,539.737 5	2,539.737 5	0.1348		2,543.108 3
Worker	1.0439	0.7035	8.6500	0.0196	1.8155	0.0122	1.8276	0.4816	0.0112	0.4928		1,948.461 2	1,948.461 2	0.0644		1,950.071 3
Total	**2.1790**	**31.6606**	**15.7202**	**0.0880**	**18.2528**	**0.2361**	**18.4890**	**4.5679**	**0.2255**	**4.7934**		**9,201.918 8**	**9,201.918 8**	**0.4217**		**9,212.462 3**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8543	30.0824	18.5230	0.0311		1.6434	1.6434		1.5483	1.5483		2,935.2346	2,935.2346	0.8146		2,955.5994
Total	**3.8543**	**30.0824**	**18.5230**	**0.0311**		**1.6434**	**1.6434**		**1.5483**	**1.5483**		**2,935.2346**	**2,935.2346**	**0.8146**		**2,955.5994**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5124	17.3856	3.3367	0.0440	0.9809	0.0704	1.0513	0.2678	0.0673	0.3352		4,679.0618	4,679.0618	0.2144		4,684.4224
Vendor	0.4630	11.3560	3.0261	0.0240	0.5822	0.0920	0.6742	0.1676	0.0880	0.2556		2,535.3615	2,535.3615	0.1258		2,538.5060
Worker	0.9310	0.6107	7.6027	0.0190	1.8155	0.0118	1.8273	0.4816	0.0109	0.4924		1,894.8794	1,894.8794	0.0564		1,896.2894
Total	**1.9063**	**29.3523**	**13.9655**	**0.0870**	**3.3785**	**0.1742**	**3.5527**	**0.9170**	**0.1662**	**1.0832**		**9,109.3027**	**9,109.3027**	**0.3966**		**9,119.2178**

3.6 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0381	0.0000	3.0381	0.3449	0.0000	0.3449			0.0000			0.0000
Off-Road	4.7454	55.3172	38.6620	0.0649		2.5459	2.5459		2.3423	2.3423		6,529.392 0	6,529.392 0	2.0327		6,580.209 3
Total	**4.7454**	**55.3172**	**38.6620**	**0.0649**	**3.0381**	**2.5459**	**5.5840**	**0.3449**	**2.3423**	**2.6871**		**6,529.392 0**	**6,529.392 0**	**2.0327**		**6,580.209 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.7194	92.2772	17.7101	0.2333	5.0236	0.3735	5.3972	1.3768	0.3574	1.7341		24,835.02 04	24,835.02 04	1.1381		24,863.47 29
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
Worker	0.1053	0.0691	0.8600	2.1500e-003	0.2054	1.3300e-003	0.2067	0.0545	1.2300e-003	0.0557		214.3529	214.3529	6.3800e-003		214.5124
Total	**2.8247**	**92.3463**	**18.5701**	**0.2354**	**5.2290**	**0.3749**	**5.6039**	**1.4312**	**0.3586**	**1.7898**		**25,049.37 33**	**25,049.37 33**	**1.1445**		**25,077.98 53**

3.7 Interior - Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	37.0079					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3300	2.5358	2.6676	4.2200e-003		0.1652	0.1652		0.1640	0.1640		407.4208	407.4208	0.0660		409.0698
Total	**37.3379**	**2.5358**	**2.6676**	**4.2200e-003**		**0.1652**	**0.1652**		**0.1640**	**0.1640**		**407.4208**	**407.4208**	**0.0660**		**409.0698**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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
Worker	0.1854	0.1216	1.5137	3.7900e-003	0.3615	2.3500e-003	0.3638	0.0959	2.1700e-003	0.0980		377.2611	377.2611	0.0112		377.5418
Total	**0.1854**	**0.1216**	**1.5137**	**3.7900e-003**	**0.3615**	**2.3500e-003**	**0.3638**	**0.0959**	**2.1700e-003**	**0.0980**		**377.2611**	**377.2611**	**0.0112**		**377.5418**

3.8 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5836	16.5422	14.2065	0.0212		0.9661	0.9661		0.8888	0.8888		2,133.731 8	2,133.731 8	0.6643		2,150.338 3
Paving	0.1782					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7618**	**16.5422**	**14.2065**	**0.0212**		**0.9661**	**0.9661**		**0.8888**	**0.8888**		**2,133.731 8**	**2,133.731 8**	**0.6643**		**2,150.338 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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
Worker	0.0632	0.0415	0.5160	1.2900e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		128.6117	128.6117	3.8300e-003		128.7074
Total	**0.0632**	**0.0415**	**0.5160**	**1.2900e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**128.6117**	**128.6117**	**3.8300e-003**		**128.7074**

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1406	0.5236	1.6760	5.1400e-003	0.4286	5.4800e-003	0.4340	0.1144	5.1500e-003	0.1196		516.9114	516.9114	0.0182		517.3664
Unmitigated	0.1406	0.5236	1.6760	5.1400e-003	0.4286	5.4800e-003	0.4340	0.1144	5.1500e-003	0.1196		516.9114	516.9114	0.0182		517.3664

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	69.39	69.39	69.39	202,571	202,571
Parking Lot	0.00	0.00	0.00		
Total	69.39	69.39	69.39	202,571	202,571

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
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	35955.5	0.3878	3.5251	2.9610	0.0212		0.2679	0.2679		0.2679	0.2679		4,230.0573	4,230.0573	0.0811	0.0776	4,255.1944
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
Total		**0.3878**	**3.5251**	**2.9610**	**0.0212**		**0.2679**	**0.2679**		**0.2679**	**0.2679**		**4,230.0573**	**4,230.0573**	**0.0811**	**0.0776**	**4,255.1944**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	35.9555	0.3878	3.5251	2.9610	0.0212		0.2679	0.2679		0.2679	0.2679		4,230.0573	4,230.0573	0.0811	0.0776	4,255.1944
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
Total		**0.3878**	**3.5251**	**2.9610**	**0.0212**		**0.2679**	**0.2679**		**0.2679**	**0.2679**		**4,230.0573**	**4,230.0573**	**0.0811**	**0.0776**	**4,255.1944**

6.0 Area Detail

6.1 Mitigation Measures Area

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.4195					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.6167					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.5800e-003	5.5000e-004	0.0588	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		0.1249	0.1249	3.4000e-004		0.1333
Total	**12.0417**	**5.5000e-004**	**0.0588**	**0.0000**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**		**0.1249**	**0.1249**	**3.4000e-004**		**0.1333**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

2305 Mission College Data Center
Santa Clara County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	495.61	1000sqft	11.38	495,610.00	0
Parking Lot	75.00	Space	0.68	30,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	547	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	16.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstructionPhase	PhaseStartDate	1/18/2019	1/15/2018
tblConstructionPhase	PhaseStartDate	9/29/2017	11/15/2017
tblGrading	MaterialExported	0.00	22,410.00
tblGrading	MaterialExported	0.00	22,410.00
tblGrading	MaterialImported	0.00	46,000.00
tblOffRoadEquipment	HorsePower	187.00	247.00
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.41	0.40
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Crushing/Proc. Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	547

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2017	25.0366	265.5769	139.4449	0.3320	42.9599	11.9724	54.9323	15.7537	11.1743	26.9280	0.0000	33,929.1071	33,929.1071	5.9618	0.0000	34,078.1518
2018	45.2201	390.4698	191.5534	0.6267	38.1002	13.3215	51.4216	14.3078	12.4072	26.7150	0.0000	64,678.8158	64,678.8158	9.1099	0.0000	64,906.5633
Maximum	45.2201	390.4698	191.5534	0.6267	42.9599	13.3215	54.9323	15.7537	12.4072	26.9280	0.0000	64,678.8158	64,678.8158	9.1099	0.0000	64,906.5633

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	lb/day										lb/day					
2017	8.1221	149.6772	143.5679	0.3320	42.9599	2.8384	45.7983	15.7537	2.8219	18.5756	0.0000	33,929.1071	33,929.1071	5.9618	0.0000	34,078.1517
2018	41.0012	272.0927	201.7936	0.6267	38.1002	3.8686	41.9687	14.3078	3.8401	18.1478	0.0000	64,678.8158	64,678.8158	9.1099	0.0000	64,906.5632
Maximum	41.0012	272.0927	201.7936	0.6267	42.9599	3.8686	45.7983	15.7537	3.8401	18.5756	0.0000	64,678.8158	64,678.8158	9.1099	0.0000	64,906.5632

	ROG	NOx	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	30.08	35.71	-4.34	0.00	0.00	73.48	17.48	0.00	71.75	31.54	0.00	0.00	0.00	0.00	0.00	0.00

	ROG	NOx	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	Demolition	Demolition	9/1/2017	1/18/2018	5	100	
2	Site Preparation	Site Preparation	11/15/2017	3/6/2018	5	80	
3	Trenching	Trenching	12/15/2017	3/8/2018	5	60	
4	Building Construction	Building Construction	12/15/2017	11/15/2018	5	240	
5	Grading	Grading	1/15/2018	2/9/2018	5	20	
6	Interior - Architectural Coating	Architectural Coating	5/15/2018	11/26/2018	5	140	
7	Paving	Paving	7/11/2018	7/24/2018	5	10	

Acres of Grading (Site Preparation Phase): 40

Acres of Grading (Grading Phase): 50

Acres of Paving: 0.68

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 743,415; Non-Residential Outdoor: 247,805; Striped Parking Area: 1,800 (Architectural Coating – sqft)

OffRoad Equipment

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
Interior - Architectural Coating	2	44.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	221.00	86.00	13,000.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	15	38.00	0.00	2,633.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	10	25.00	0.00	5,750.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	9	23.00	0.00	2,801.00	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

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.6421	0.0000	3.6421	0.5515	0.0000	0.5515			0.0000			0.0000
Off-Road	1.9711	40.3013	53.1097	0.0853		1.0450	1.0450		1.0450	1.0450	0.0000	8,524.603 5	8,524.603 5	2.0602		8,576.108 1
Total	**1.9711**	**40.3013**	**53.1097**	**0.0853**	**3.6421**	**1.0450**	**4.6872**	**0.5515**	**1.0450**	**1.5965**	**0.0000**	**8,524.603 5**	**8,524.603 5**	**2.0602**		**8,576.108 1**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3013	9.4063	1.9334	0.0212	0.5167	0.0535	0.5702	0.1400	0.0511	0.1911		2,255.594 4	2,255.594 4	0.1141		2,258.445 6
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
Worker	0.1912	0.1478	1.4060	3.1000e-003	0.3122	2.0900e-003	0.3143	0.0828	1.9300e-003	0.0847		307.8625	307.8625	0.0105		308.1248
Total	**0.4925**	**9.5541**	**3.3393**	**0.0243**	**0.8289**	**0.0555**	**0.8844**	**0.2228**	**0.0531**	**0.2759**		**2,563.456 9**	**2,563.456 9**	**0.1245**		**2,566.570 4**

3.2 Demolition - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.6421	0.0000	3.6421	0.5515	0.0000	0.5515			0.0000			0.0000
Off-Road	1.9711	40.3013	53.1097	0.0853		1.0450	1.0450		1.0450	1.0450	0.0000	8,429.634 2	8,429.634 2	2.0333		8,480.466 0
Total	**1.9711**	**40.3013**	**53.1097**	**0.0853**	**3.6421**	**1.0450**	**4.6872**	**0.5515**	**1.0450**	**1.5965**	**0.0000**	**8,429.634 2**	**8,429.634 2**	**2.0333**		**8,480.466 0**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2565	8.6691	1.7600	0.0210	2.5985	0.0349	2.6334	0.6510	0.0334	0.6843		2,237.443 5	2,237.443 5	0.1097		2,240.186 2
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
Worker	0.1702	0.1283	1.2262	3.0100e-003	0.3122	2.0300e-003	0.3142	0.0828	1.8700e-003	0.0847		299.3557	299.3557	9.1300e-003		299.5840
Total	**0.4266**	**8.7974**	**2.9862**	**0.0240**	**2.9106**	**0.0369**	**2.9476**	**0.7338**	**0.0352**	**0.7690**		**2,536.799 2**	**2,536.799 2**	**0.1188**		**2,539.770 2**

3.3 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.6282	0.0000	18.6282	9.9927	0.0000	9.9927			0.0000			0.0000
Off-Road	1.1403	23.1083	27.4906	0.0466		0.5498	0.5498		0.5498	0.5498	0.0000	4,772.842 4	4,772.842 4	1.4624		4,809.402 2
Total	**1.1403**	**23.1083**	**27.4906**	**0.0466**	**18.6282**	**0.5498**	**19.1779**	**9.9927**	**0.5498**	**10.5425**	**0.0000**	**4,772.842 4**	**4,772.842 4**	**1.4624**		**4,809.402 2**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4006	12.5081	2.5709	0.0282	1.2710	0.0711	1.3421	0.3295	0.0680	0.3975		2,999.392 3	2,999.392 3	0.1517		3,003.183 7
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
Worker	0.1157	0.0895	0.8510	1.8700e-003	0.1889	1.2700e-003	0.1902	0.0501	1.1700e-003	0.0513		186.3379	186.3379	6.3500e-003		186.4966
Total	**0.5163**	**12.5975**	**3.4219**	**0.0301**	**1.4600**	**0.0723**	**1.5323**	**0.3796**	**0.0692**	**0.4488**		**3,185.730 1**	**3,185.730 1**	**0.1580**		**3,189.680 3**

3.3 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.6282	0.0000	18.6282	9.9927	0.0000	9.9927			0.0000			0.0000
Off-Road	1.1403	23.1083	27.4906	0.0466		0.5498	0.5498		0.5498	0.5498	0.0000	4,694.929 1	4,694.929 1	1.4616		4,731.469 0
Total	**1.1403**	**23.1083**	**27.4906**	**0.0466**	**18.6282**	**0.5498**	**19.1779**	**9.9927**	**0.5498**	**10.5425**	**0.0000**	**4,694.929 1**	**4,694.929 1**	**1.4616**		**4,731.469 0**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3411	11.5278	2.3404	0.0280	0.9368	0.0464	0.9832	0.2474	0.0444	0.2918		2,975.255 9	2,975.255 9	0.1459		2,978.903 1
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
Worker	0.1030	0.0777	0.7422	1.8200e-003	0.1889	1.2300e-003	0.1902	0.0501	1.1300e-003	0.0513		181.1890	181.1890	5.5300e-003		181.3272
Total	**0.4440**	**11.6055**	**3.0826**	**0.0298**	**1.1258**	**0.0476**	**1.1734**	**0.2976**	**0.0455**	**0.3431**		**3,156.444 9**	**3,156.444 9**	**0.1514**		**3,160.230 3**

3.4 Trenching - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6851	14.3077	21.1223	0.0279		0.4210	0.4210		0.4210	0.4210	0.0000	2,856.7516	2,856.7516	0.8753		2,878.6342
Total	**0.6851**	**14.3077**	**21.1223**	**0.0279**		**0.4210**	**0.4210**		**0.4210**	**0.4210**	**0.0000**	**2,856.7516**	**2,856.7516**	**0.8753**		**2,878.6342**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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
Worker	0.0906	0.0700	0.6660	1.4700e-003	0.1479	9.9000e-004	0.1489	0.0392	9.1000e-004	0.0401		145.8296	145.8296	4.9700e-003		145.9538
Total	**0.0906**	**0.0700**	**0.6660**	**1.4700e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.1000e-004**	**0.0401**		**145.8296**	**145.8296**	**4.9700e-003**		**145.9538**

3.4 Trenching - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6851	14.3077	21.1223	0.0279		0.4210	0.4210		0.4210	0.4210	0.0000	2,809.859 0	2,809.859 0	0.8748		2,831.727 7
Total	**0.6851**	**14.3077**	**21.1223**	**0.0279**		**0.4210**	**0.4210**		**0.4210**	**0.4210**	**0.0000**	**2,809.859 0**	**2,809.859 0**	**0.8748**		**2,831.727 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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
Worker	0.0806	0.0608	0.5808	1.4200e-003	0.1479	9.6000e-004	0.1488	0.0392	8.9000e-004	0.0401		141.8001	141.8001	4.3300e-003		141.9082
Total	**0.0806**	**0.0608**	**0.5808**	**1.4200e-003**	**0.1479**	**9.6000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**141.8001**	**141.8001**	**4.3300e-003**		**141.9082**

3.5 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9375	17.1947	18.4236	0.0311		0.4544	0.4544		0.4544	0.4544	0.0000	2,969.675 3	2,969.675 3	0.8352		2,990.556 3
Total	**0.9375**	**17.1947**	**18.4236**	**0.0311**		**0.4544**	**0.4544**		**0.4544**	**0.4544**	**0.0000**	**2,969.675 3**	**2,969.675 3**	**0.8352**		**2,990.556 3**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6197	19.3508	3.9774	0.0436	15.8552	0.1100	15.9652	3.9188	0.1052	4.0240		4,640.259 3	4,640.259 3	0.2346		4,646.124 9
Vendor	0.5571	12.3334	3.8403	0.0235	0.5822	0.1173	0.6995	0.1676	0.1122	0.2798		2,479.494 7	2,479.494 7	0.1455		2,483.132 7
Worker	1.1120	0.8595	8.1768	0.0180	1.8155	0.0122	1.8276	0.4816	0.0112	0.4928		1,790.463 7	1,790.463 7	0.0610		1,791.988 8
Total	**2.2888**	**32.5437**	**15.9944**	**0.0852**	**18.2528**	**0.2394**	**18.4923**	**4.5679**	**0.2286**	**4.7966**		**8,910.217 7**	**8,910.217 7**	**0.4412**		**8,921.246 5**

3.5 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9375	17.1947	18.4236	0.0311		0.4544	0.4544		0.4544	0.4544	0.0000	2,935.234 6	2,935.234 6	0.8146		2,955.599 4
Total	**0.9375**	**17.1947**	**18.4236**	**0.0311**		**0.4544**	**0.4544**		**0.4544**	**0.4544**	**0.0000**	**2,935.234 6**	**2,935.234 6**	**0.8146**		**2,955.599 4**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5276	17.8343	3.6207	0.0432	0.9809	0.0718	1.0527	0.2678	0.0687	0.3365		4,602.918 9	4,602.918 9	0.2257		4,608.561 3
Vendor	0.4846	11.5322	3.4272	0.0234	0.5822	0.0933	0.6755	0.1676	0.0892	0.2568		2,472.992 5	2,472.992 5	0.1357		2,476.384 6
Worker	0.9896	0.7463	7.1313	0.0175	1.8155	0.0118	1.8273	0.4816	0.0109	0.4924		1,740.989 8	1,740.989 8	0.0531		1,742.317 4
Total	**2.0019**	**30.1127**	**14.1793**	**0.0842**	**3.3785**	**0.1768**	**3.5554**	**0.9170**	**0.1688**	**1.0857**		**8,816.901 2**	**8,816.901 2**	**0.4145**		**8,827.263 3**

3.6 Grading - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0381	0.0000	3.0381	0.3449	0.0000	0.3449			0.0000			0.0000
Off-Road	1.5930	31.8610	40.7942	0.0649		0.7539	0.7539		0.7539	0.7539	0.0000	6,529.392 0	6,529.392 0	2.0327		6,580.209 2
Total	**1.5930**	**31.8610**	**40.7942**	**0.0649**	**3.0381**	**0.7539**	**3.7920**	**0.3449**	**0.7539**	**1.0987**	**0.0000**	**6,529.392 0**	**6,529.392 0**	**2.0327**		**6,580.209 2**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.8005	94.6588	19.2177	0.2295	5.0236	0.3809	5.4045	1.3768	0.3644	1.7412		24,430.87 71	24,430.87 71	1.1979		24,460.82 53
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
Worker	0.1120	0.0844	0.8067	1.9800e-003	0.2054	1.3300e-003	0.2067	0.0545	1.2300e-003	0.0557		196.9446	196.9446	6.0100e-003		197.0947
Total	**2.9124**	**94.7433**	**20.0244**	**0.2315**	**5.2290**	**0.3822**	**5.6112**	**1.4312**	**0.3657**	**1.7969**		**24,627.82 16**	**24,627.82 16**	**1.2039**		**24,657.92 00**

3.7 Interior - Architectural Coating - 2018

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	37.0079					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0903	2.0607	2.7827	4.2200e-003		0.0722	0.0722		0.0722	0.0722	0.0000	407.4208	407.4208	0.0660		409.0698
Total	**37.0982**	**2.0607**	**2.7827**	**4.2200e-003**		**0.0722**	**0.0722**		**0.0722**	**0.0722**	**0.0000**	**407.4208**	**407.4208**	**0.0660**		**409.0698**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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
Worker	0.1970	0.1486	1.4198	3.4800e-003	0.3615	2.3500e-003	0.3638	0.0959	2.1700e-003	0.0980		346.6224	346.6224	0.0106		346.8867
Total	**0.1970**	**0.1486**	**1.4198**	**3.4800e-003**	**0.3615**	**2.3500e-003**	**0.3638**	**0.0959**	**2.1700e-003**	**0.0980**		**346.6224**	**346.6224**	**0.0106**		**346.8867**

3.8 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5213	10.7955	16.0747	0.0212		0.3115	0.3115		0.3115	0.3115	0.0000	2,133.7318	2,133.7318	0.6643		2,150.3383
Paving	0.1782					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6995**	**10.7955**	**16.0747**	**0.0212**		**0.3115**	**0.3115**		**0.3115**	**0.3115**	**0.0000**	**2,133.7318**	**2,133.7318**	**0.6643**		**2,150.3383**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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
Worker	0.0672	0.0507	0.4840	1.1900e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		118.1667	118.1667	3.6000e-003		118.2568
Total	**0.0672**	**0.0507**	**0.4840**	**1.1900e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**118.1667**	**118.1667**	**3.6000e-003**		**118.2568**

4.0 Operational Detail - Mobile

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.601004	0.039123	0.186461	0.109772	0.016124	0.004965	0.012251	0.019838	0.002045	0.001602	0.005388	0.000616	0.000812
Parking Lot	0.601004	0.039123	0.186461	0.109772	0.016124	0.004965	0.012251	0.019838	0.002045	0.001602	0.005388	0.000616	0.000812

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3878	3.5251	2.9610	0.0212		0.2679	0.2679		0.2679	0.2679		4,230.057 3	4,230.057 3	0.0811	0.0776	4,255.194 4
NaturalGas Unmitigated	0.3878	3.5251	2.9610	0.0212		0.2679	0.2679		0.2679	0.2679		4,230.057 3	4,230.057 3	0.0811	0.0776	4,255.194 4

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.0417	5.5000e-004	0.0588	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		0.1249	0.1249	3.4000e-004		0.1333
Unmitigated	12.0417	5.5000e-004	0.0588	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		0.1249	0.1249	3.4000e-004		0.1333

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.4195					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.6167					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.5800e-003	5.5000e-004	0.0588	0.0000		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		0.1249	0.1249	3.4000e-004		0.1333
Total	**12.0417**	**5.5000e-004**	**0.0588**	**0.0000**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**		**0.1249**	**0.1249**	**3.4000e-004**		**0.1333**

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

Project Characteristics - changed to reflect IS/MND's CalEEMod inputs

Land Use - land use sizes per the IS/MND's project description

Construction Phase - construction schedule reflect IS/MND's CalEEMod inputs

Off-road Equipment -

Off-road Equipment - default equipment for demolition has the default usage hour per SWAPE's comment and added equipment has the IS/MND's CalEEMod input's usage hours
number of equipment reflects the IS/MND's CalEEMod inputs

Off-road Equipment - additional equipment reflects the IS/MND's CalEEMod inputs

Off-road Equipment - changes reflect the IS/MND's CalEEMod inputs

Off-road Equipment - default usage hours per SWAPE's comment
changes to amount reflect the IS/MND's CalEEMod inputs

Off-road Equipment - amount changed to reflect the IS/MND's CalEEMod inputs

Off-road Equipment - equipment changes reflect the IS/MND's CalEEMod inputs

Off-road Equipment - equipment changes reflect the IS/MND's CalEEMod inputs

Grading -

Demolition -

Trips and VMT - hauling trip totals changed to reflect the IS/MND's CalEEMod inputs

Architectural Coating -

Vehicle Trips - changes reflect the IS/MND's CalEEMod inputs

Construction Off-road Equipment Mitigation - mitigation reflects the IS/MND's CalEEMod inputs

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	140.00
tblConstructionPhase	NumDays	300.00	240.00
tblConstructionPhase	NumDays	20.00	100.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	10.00	80.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	3/14/2019	11/26/2018
tblConstructionPhase	PhaseEndDate	1/17/2019	11/15/2018
tblConstructionPhase	PhaseEndDate	9/28/2017	1/18/2018
tblConstructionPhase	PhaseEndDate	11/23/2017	3/8/2018
tblConstructionPhase	PhaseEndDate	2/14/2019	2/9/2018
tblConstructionPhase	PhaseEndDate	10/12/2017	3/6/2018
tblConstructionPhase	PhaseStartDate	2/15/2019	5/15/2018
tblConstructionPhase	PhaseStartDate	11/24/2017	12/15/2017
tblConstructionPhase	PhaseStartDate	10/13/2017	12/15/2017

tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	HaulingTripNumber	0.00	13,000.00
tblTripsAndVMT	HaulingTripNumber	1,683.00	2,633.00
tblVehicleTrips	ST_TR	1.32	0.14
tblVehicleTrips	SU_TR	0.68	0.14
tblVehicleTrips	WD_TR	6.97	0.14

2.0 Emissions Summary

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2017	11-30-2017	4.0437	1.9107
2	12-1-2017	2-28-2018	8.2541	5.0975
3	3-1-2018	5-31-2018	2.6181	1.9930
4	6-1-2018	8-31-2018	3.5544	2.9776
5	9-1-2018	9-30-2018	1.1290	0.9520
		Highest	8.2541	5.0975

2.2 Overall Operational

<u>Unmitigated Operational</u>

	ROG	NOx	CO	SO2	Fugitive 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	2.1971	5.0000e-005	5.2900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0102	0.0102	3.0000e-005	0.0000	0.0109
Energy	0.0708	0.6433	0.5404	3.8600e-003		0.0489	0.0489		0.0489	0.0489	0.0000	1,742.2767	1,742.2767	0.0687	0.0243	1,751.2252
Mobile	0.0226	0.0992	0.2880	8.8000e-004	0.0753	1.0000e-003	0.0763	0.0202	9.4000e-004	0.0211	0.0000	80.3741	80.3741	2.9400e-003	0.0000	80.4476
Waste						0.0000	0.0000		0.0000	0.0000	124.7501	0.0000	124.7501	7.3725	0.0000	309.0632
Water						0.0000	0.0000		0.0000	0.0000	36.3604	153.8695	190.2299	3.7427	0.0899	310.5788
Total	**2.2905**	**0.7426**	**0.8337**	**4.7400e-003**	**0.0753**	**0.0499**	**0.1253**	**0.0202**	**0.0499**	**0.0700**	**161.1105**	**1,976.5304**	**2,137.6409**	**11.1869**	**0.1141**	**2,451.3257**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2017	1/18/2018	5	100	
2	Site Preparation	Site Preparation	11/15/2017	3/6/2018	5	80	
3	Trenching	Trenching	12/15/2017	3/8/2018	5	60	
4	Building Construction	Building Construction	12/15/2017	11/15/2018	5	240	
5	Grading	Grading	1/15/2018	2/9/2018	5	20	
6	Interior - Architectural Coating	Architectural Coating	5/15/2018	11/26/2018	5	140	
7	Paving	Paving	7/11/2018	7/24/2018	5	10	

Acres of Grading (Site Preparation Phase): 40

Acres of Grading (Grading Phase): 50

Acres of Paving: 0.68

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 743,415; Non-Residential Outdoor: 247,805; Striped Parking Area: 1,800 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

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
Interior - Architectural Coating	2	44.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	221.00	86.00	13,000.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	15	38.00	0.00	2,633.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	10	25.00	0.00	5,750.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	9	23.00	0.00	2,801.00	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

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2017

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					0.1566	0.0000	0.1566	0.0237	0.0000	0.0237	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0848	1.7330	2.2837	3.6700e-003		0.0449	0.0449		0.0449	0.0449	0.0000	332.5354	332.5354	0.0804	0.0000	334.5445
Total	**0.0848**	**1.7330**	**2.2837**	**3.6700e-003**	**0.1566**	**0.0449**	**0.2016**	**0.0237**	**0.0449**	**0.0687**	**0.0000**	**332.5354**	**332.5354**	**0.0804**	**0.0000**	**334.5445**

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	0.0127	0.4025	0.0792	9.2000e-004	0.0215	2.2800e-003	0.0238	5.8500e-003	2.1800e-003	8.0300e-003	0.0000	88.7963	88.7963	4.3200e-003	0.0000	88.9042
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	7.3900e-003	5.8200e-003	0.0589	1.3000e-004	0.0130	9.0000e-005	0.0131	3.4500e-003	8.0000e-005	3.5300e-003	0.0000	12.1593	12.1593	4.1000e-004	0.0000	12.1695
Total	**0.0201**	**0.4083**	**0.1381**	**1.0500e-003**	**0.0345**	**2.3700e-003**	**0.0369**	**9.3000e-003**	**2.2600e-003**	**0.0116**	**0.0000**	**100.9556**	**100.9556**	**4.7300e-003**	**0.0000**	**101.0737**

3.2 Demolition - 2018

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	0.0138	0.2821	0.3718	6.0000e-004		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003	0.0000	53.5306	53.5306	0.0129	0.0000	53.8534
Total	**0.0138**	**0.2821**	**0.3718**	**6.0000e-004**	**0.0255**	**7.3200e-003**	**0.0328**	**3.8600e-003**	**7.3200e-003**	**0.0112**	**0.0000**	**53.5306**	**53.5306**	**0.0129**	**0.0000**	**53.8534**

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	1.7600e-003	0.0604	0.0118	1.5000e-004	0.0175	2.4000e-004	0.0177	4.3900e-003	2.3000e-004	4.6200e-003	0.0000	14.3448	14.3448	6.8000e-004	0.0000	14.3617
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	1.0700e-003	8.2000e-004	8.3900e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1200e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.9248	1.9248	6.0000e-005	0.0000	1.9262
Total	**2.8300e-003**	**0.0612**	**0.0201**	**1.7000e-004**	**0.0196**	**2.5000e-004**	**0.0199**	**4.9500e-003**	**2.4000e-004**	**5.1900e-003**	**0.0000**	**16.2695**	**16.2695**	**7.4000e-004**	**0.0000**	**16.2879**

3.3 Site Preparation - 2017

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					0.7451	0.0000	0.7451	0.3997	0.0000	0.3997	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0188	0.3813	0.4536	7.7000e-004		9.0700e-003	9.0700e-003		9.0700e-003	9.0700e-003	0.0000	71.4424	71.4424	0.0219	0.0000	71.9897
Total	**0.0188**	**0.3813**	**0.4536**	**7.7000e-004**	**0.7451**	**9.0700e-003**	**0.7542**	**0.3997**	**9.0700e-003**	**0.4088**	**0.0000**	**71.4424**	**71.4424**	**0.0219**	**0.0000**	**71.9897**

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	6.5000e-003	0.2054	0.0404	4.7000e-004	0.0202	1.1600e-003	0.0214	5.2600e-003	1.1100e-003	6.3700e-003	0.0000	45.3088	45.3088	2.2000e-003	0.0000	45.3639
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	1.7200e-003	1.3500e-003	0.0137	3.0000e-005	3.0100e-003	2.0000e-005	3.0300e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.8240	2.8240	9.0000e-005	0.0000	2.8264
Total	**8.2200e-003**	**0.2067**	**0.0541**	**5.0000e-004**	**0.0233**	**1.1800e-003**	**0.0244**	**6.0600e-003**	**1.1300e-003**	**7.1900e-003**	**0.0000**	**48.1328**	**48.1328**	**2.2900e-003**	**0.0000**	**48.1903**

3.3 Site Preparation - 2018

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					0.7451	0.0000	0.7451	0.3997	0.0000	0.3997	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0268	0.5430	0.6460	1.1000e-003		0.0129	0.0129		0.0129	0.0129	0.0000	100.0903	100.0903	0.0312	0.0000	100.8693
Total	**0.0268**	**0.5430**	**0.6460**	**1.1000e-003**	**0.7451**	**0.0129**	**0.7581**	**0.3997**	**0.0129**	**0.4126**	**0.0000**	**100.0903**	**100.0903**	**0.0312**	**0.0000**	**100.8693**

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	7.8800e-003	0.2697	0.0525	6.6000e-004	0.0213	1.0800e-003	0.0224	5.6300e-003	1.0300e-003	6.6700e-003	0.0000	64.0376	64.0376	3.0200e-003	0.0000	64.1131
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	2.1800e-003	1.6700e-003	0.0171	4.0000e-005	4.2900e-003	3.0000e-005	4.3200e-003	1.1400e-003	3.0000e-005	1.1700e-003	0.0000	3.9110	3.9110	1.2000e-004	0.0000	3.9140
Total	**0.0101**	**0.2714**	**0.0695**	**7.0000e-004**	**0.0256**	**1.1100e-003**	**0.0267**	**6.7700e-003**	**1.0600e-003**	**7.8400e-003**	**0.0000**	**67.9486**	**67.9486**	**3.1400e-003**	**0.0000**	**68.0271**

3.4 Trenching - 2017

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	3.7700e-003	0.0787	0.1162	1.5000e-004		2.3200e-003	2.3200e-003		2.3200e-003	2.3200e-003	0.0000	14.2538	14.2538	4.3700e-003	0.0000	14.3630
Total	**3.7700e-003**	**0.0787**	**0.1162**	**1.5000e-004**		**2.3200e-003**	**2.3200e-003**		**2.3200e-003**	**2.3200e-003**	**0.0000**	**14.2538**	**14.2538**	**4.3700e-003**	**0.0000**	**14.3630**

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	4.5000e-004	3.5000e-004	3.5700e-003	1.0000e-005	7.9000e-004	1.0000e-005	7.9000e-004	2.1000e-004	1.0000e-005	2.1000e-004	0.0000	0.7367	0.7367	2.0000e-005	0.0000	0.7373
Total	**4.5000e-004**	**3.5000e-004**	**3.5700e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**7.9000e-004**	**2.1000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**0.7367**	**0.7367**	**2.0000e-005**	**0.0000**	**0.7373**

3.4 Trenching - 2018

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	0.0168	0.3505	0.5175	6.8000e-004		0.0103	0.0103		0.0103	0.0103	0.0000	62.4519	62.4519	0.0194	0.0000	62.9380
Total	**0.0168**	**0.3505**	**0.5175**	**6.8000e-004**		**0.0103**	**0.0103**		**0.0103**	**0.0103**	**0.0000**	**62.4519**	**62.4519**	**0.0194**	**0.0000**	**62.9380**

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	1.7800e-003	1.3600e-003	0.0139	4.0000e-005	3.5000e-003	2.0000e-005	3.5200e-003	9.3000e-004	2.0000e-005	9.5000e-004	0.0000	3.1911	3.1911	1.0000e-004	0.0000	3.1935
Total	**1.7800e-003**	**1.3600e-003**	**0.0139**	**4.0000e-005**	**3.5000e-003**	**2.0000e-005**	**3.5200e-003**	**9.3000e-004**	**2.0000e-005**	**9.5000e-004**	**0.0000**	**3.1911**	**3.1911**	**1.0000e-004**	**0.0000**	3.1935

3.5 Building Construction - 2017

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	5.1600e-003	0.0946	0.1013	1.7000e-004		2.5000e-003	2.5000e-003		2.5000e-003	2.5000e-003	0.0000	14.8172	14.8172	4.1700e-003	0.0000	14.9214
Total	**5.1600e-003**	**0.0946**	**0.1013**	**1.7000e-004**		**2.5000e-003**	**2.5000e-003**		**2.5000e-003**	**2.5000e-003**	**0.0000**	**14.8172**	**14.8172**	**4.1700e-003**	**0.0000**	**14.9214**

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	3.3500e-003	0.1059	0.0209	2.4000e-004	0.0838	6.0000e-004	0.0844	0.0207	5.7000e-004	0.0213	0.0000	23.3652	23.3652	1.1400e-003	0.0000	23.3937
Vendor	2.9800e-003	0.0678	0.0198	1.3000e-004	3.1100e-003	6.4000e-004	3.7500e-003	9.0000e-004	6.1000e-004	1.5100e-003	0.0000	12.5457	12.5457	7.0000e-004	0.0000	12.5632
Worker	5.5000e-003	4.3300e-003	0.0438	1.0000e-004	9.6400e-003	7.0000e-005	9.7100e-003	2.5600e-003	6.0000e-005	2.6300e-003	0.0000	9.0451	9.0451	3.0000e-004	0.0000	9.0526
Total	**0.0118**	**0.1780**	**0.0844**	**4.7000e-004**	**0.0965**	**1.3100e-003**	**0.0979**	**0.0242**	**1.2400e-003**	**0.0254**	**0.0000**	**44.9560**	**44.9560**	**2.1400e-003**	**0.0000**	**45.0094**

3.5 Building Construction - 2018

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	0.1073	1.9688	2.1095	3.5600e-003		0.0520	0.0520		0.0520	0.0520	0.0000	304.8902	304.8902	0.0846	0.0000	307.0056
Total	**0.1073**	**1.9688**	**2.1095**	**3.5600e-003**		**0.0520**	**0.0520**		**0.0520**	**0.0520**	**0.0000**	**304.8902**	**304.8902**	**0.0846**	**0.0000**	**307.0056**

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	0.0594	2.0332	0.3954	5.0000e-003	0.1089	8.1200e-003	0.1170	0.0298	7.7700e-003	0.0376	0.0000	482.7047	482.7047	0.0228	0.0000	483.2743
Vendor	0.0539	1.3199	0.3673	2.7200e-003	0.0648	0.0106	0.0754	0.0187	0.0101	0.0289	0.0000	260.6322	260.6322	0.0135	0.0000	260.9702
Worker	0.1019	0.0783	0.7980	2.0300e-003	0.2007	1.3500e-003	0.2020	0.0534	1.2500e-003	0.0546	0.0000	183.1022	183.1022	5.5000e-003	0.0000	183.2397
Total	**0.2152**	**3.4313**	**1.5607**	**9.7500e-003**	**0.3744**	**0.0201**	**0.3944**	**0.1019**	**0.0192**	**0.1211**	**0.0000**	**926.4391**	**926.4391**	**0.0418**	**0.0000**	**927.4841**

3.6 Grading - 2018

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					0.0304	0.0000	0.0304	3.4500e-003	0.0000	3.4500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.3186	0.4079	6.5000e-004		7.5400e-003	7.5400e-003		7.5400e-003	7.5400e-003	0.0000	59.2336	59.2336	0.0184	0.0000	59.6946
Total	**0.0159**	**0.3186**	**0.4079**	**6.5000e-004**	**0.0304**	**7.5400e-003**	**0.0379**	**3.4500e-003**	**7.5400e-003**	**0.0110**	**0.0000**	**59.2336**	**59.2336**	**0.0184**	**0.0000**	**59.6946**

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	0.0275	0.9425	0.1833	2.3200e-003	0.0487	3.7700e-003	0.0525	0.0134	3.6000e-003	0.0170	0.0000	223.7597	223.7597	0.0106	0.0000	224.0237
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	1.0100e-003	7.7000e-004	7.8800e-003	2.0000e-005	1.9800e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.8090	1.8090	5.0000e-005	0.0000	1.8104
Total	**0.0285**	**0.9433**	**0.1912**	**2.3400e-003**	**0.0507**	**3.7800e-003**	**0.0545**	**0.0139**	**3.6100e-003**	**0.0175**	**0.0000**	**225.5687**	**225.5687**	**0.0106**	**0.0000**	**225.8340**

3.7 Interior - Architectural Coating - 2018

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	2.5906					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3200e-003	0.1443	0.1948	3.0000e-004		5.0500e-003	5.0500e-003		5.0500e-003	5.0500e-003	0.0000	25.8724	25.8724	4.1900e-003	0.0000	25.9771
Total	**2.5969**	**0.1443**	**0.1948**	**3.0000e-004**		**5.0500e-003**	**5.0500e-003**		**5.0500e-003**	**5.0500e-003**	**0.0000**	**25.8724**	**25.8724**	**4.1900e-003**	**0.0000**	**25.9771**

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	0.0124	9.5200e-003	0.0971	2.5000e-004	0.0244	1.6000e-004	0.0246	6.5000e-003	1.5000e-004	6.6500e-003	0.0000	22.2867	22.2867	6.7000e-004	0.0000	22.3035
Total	**0.0124**	**9.5200e-003**	**0.0971**	**2.5000e-004**	**0.0244**	**1.6000e-004**	**0.0246**	**6.5000e-003**	**1.5000e-004**	**6.6500e-003**	**0.0000**	**22.2867**	**22.2867**	**6.7000e-004**	**0.0000**	**22.3035**

3.8 Paving - 2018

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	2.6100e-003	0.0540	0.0804	1.1000e-004		1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003	0.0000	9.6784	9.6784	3.0100e-003	0.0000	9.7538
Paving	8.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.5000e-003**	**0.0540**	**0.0804**	**1.1000e-004**		**1.5600e-003**	**1.5600e-003**		**1.5600e-003**	**1.5600e-003**	**0.0000**	**9.6784**	**9.6784**	**3.0100e-003**	**0.0000**	**9.7538**

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	3.0000e-004	2.3000e-004	2.3700e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5427	0.5427	2.0000e-005	0.0000	0.5431
Total	**3.0000e-004**	**2.3000e-004**	**2.3700e-003**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5427**	**0.5427**	**2.0000e-005**	**0.0000**	**0.5431**

4.0 Operational Detail - Mobile

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.601004	0.039123	0.186461	0.109772	0.016124	0.004965	0.012251	0.019838	0.002045	0.001602	0.005388	0.000616	0.000812
Parking Lot	0.601004	0.039123	0.186461	0.109772	0.016124	0.004965	0.012251	0.019838	0.002045	0.001602	0.005388	0.000616	0.000812

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	1,041.943 2	1,041.943 2	0.0552	0.0114	1,046.730 1
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,041.943 2	1,041.943 2	0.0552	0.0114	1,046.730 1
NaturalGas Mitigated	0.0708	0.6433	0.5404	3.8600e-003		0.0489	0.0489		0.0489	0.0489	0.0000	700.3334	700.3334	0.0134	0.0128	704.4952
NaturalGas Unmitigated	0.0708	0.6433	0.5404	3.8600e-003		0.0489	0.0489		0.0489	0.0489	0.0000	700.3334	700.3334	0.0134	0.0128	704.4952

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	4.17304e +006	1,035.393 0	0.0549	0.0114	1,040.149 7
Parking Lot	26400	6.5502	3.5000e-004	7.0000e-005	6.5803
Total		**1,041.943 2**	**0.0552**	**0.0114**	**1,046.730 1**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	4.17304e +006	1,035.393 0	0.0549	0.0114	1,040.149 7
Parking Lot	26400	6.5502	3.5000e-004	7.0000e-005	6.5803
Total		**1,041.943 2**	**0.0552**	**0.0114**	**1,046.730 1**

6.0 Area Detail

6.1 Mitigation Measures Area

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	0.2591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9375					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-004	5.0000e-005	5.2900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0102	0.0102	3.0000e-005	0.0000	0.0109
Total	**2.1971**	**5.0000e-005**	**5.2900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0102**	**0.0102**	**3.0000e-005**	**0.0000**	**0.0109**

7.0 Water Detail

7.1 Mitigation Measures Water

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	114.61 / 0	190.2299	3.7427	0.0899	310.5788
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**190.2299**	3.7427	**0.0899**	**310.5788**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	124.7501	7.3725	0.0000	309.0632
Unmitigated	124.7501	7.3725	0.0000	309.0632

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

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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Geologic and Hydrogeologic Characterization
Industrial Stormwater Compliance
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
CEQA Review

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.

B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certifications:

California Professional Geologist

California Certified Hydrogeologist

Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.

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EDUCATION

UNIVERSITY OF CALIFORNIA, LOS ANGELES **B.S. ENVIRONMENTAL SCIENCES & ENVIRONMENTAL SYSTEMS AND SOCIETY** *JUNE 2016*

PROJECT EXPERIENCE

SOIL WATER AIR PROTECTION ENTERPRISE ***SANTA MONICA, CA***

AIR QUALITY SPECIALIST

SENIOR PROJECT ANALYST: CEQA ANALYSIS & MODELING

- Modeled construction and operational activities for proposed land use projects using CalEEMod to quantify criteria air pollutant and greenhouse gas (GHG) emissions.
- Organized presentations containing figures and tables that compare results of criteria air pollutant analyses to thresholds.
- Quantified ambient air concentrations at sensitive receptor locations using AERSCREEN, a U.S. EPA recommended screening level dispersion model.
- Conducted construction and operational health risk assessments for residential, worker, and school children sensitive receptors.
- Prepared reports that discuss adequacy of air quality and health risk analyses conducted for proposed land use developments subject to CEQA review by verifying compliance with local, state, and regional regulations.

SENIOR PROJECT ANALYST: GREENHOUSE GAS MODELING AND DETERMINATION OF SIGNIFICANCE

- Evaluated environmental impact reports for proposed projects to identify discrepancies with the methods used to quantify and assess GHG impacts.
- Quantified GHG emissions for proposed projects using CalEEMod to produce reports, tables, and figures that compare emissions to applicable CEQA thresholds and reduction targets.
- Determined compliance of proposed land use developments with AB 32 GHG reduction targets, with GHG significance thresholds recommended by Air Quality Management Districts in California, and with guidelines set forth by CEQA.

PROJECT ANALYST: ASSESSMENT OF AIR QUALITY IMPACTS FROM PROPOSED DIRECT TRANSFER FACILITY

- Assessed air quality impacts resulting from implementation of a proposed Collection Service Agreement for Exclusive Residential and Commercial Garbage, Recyclable Materials, and Organic Waste Collection Services for a community.
- Organized tables and maps to demonstrate potential air quality impacts resulting from proposed hauling trip routes.
- Conducted air quality analyses that compared quantified criteria air pollutant emissions released during construction of direct transfer facility to the Bay Area Air Quality Management District's (BAAQMD) significance thresholds.
- Prepared final analytical report to demonstrate local and regional air quality impacts, as well as GHG impacts.

PROJECT ANALYST: EXPOSURE ASSESSMENT OF LEAD PRODUCTS FOR PROPOSITION 65 COMPLIANCE DETERMINATION

- Calculated human exposure and lifetime health risk for over 300 lead products undergoing Proposition 65 compliance review.
- Compiled and analyzed laboratory testing data and produced tables, charts, and graphs to exhibit emission levels.
- Compared finalized testing data to Proposition 65 Maximum Allowable Dose Levels (MADLs) to determine level of compliance.
- Prepared final analytical lead exposure Certificate of Merit (COM) reports and organized supporting data for use in environmental enforcement statute Proposition 65 cases.

ACCOMPLISHMENTS

- **Academic Honoree,** Dean's List, University of California, Los Angeles *MAR 2013, MAR 2014, JAN 2015, JAN 2016*