

APPENDIX C

Greenhouse Gas Memo

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MEMO

Date: August 24, 2018
Revised December 3, 2019

To: **Mike Campbell**
David J. Powers & Associates
1871 The Alameda, Suite 200
San José, California 95126

From: James Reyff
Illingworth & Rodkin, Inc.
1 Willowbrook Court, Suite 120
Petaluma, CA 94954

SUBJECT: Presentation High School Master Plan Greenhouse Gas Memo
I&R # 17-198

Dear Mr. Campbell,

This memo presents the results of operational-related greenhouse gas (GHG) emissions analysis for the Presentation High School Expansion Project in San José. The project proposes to expand the high school from 107,884 gross square feet (GSF) to 143,116 (GSF) over several phases. Enrollment is expected to increase from 750 students to 850 students as a result. This GHG analysis used the California Emissions Estimator Model, CalEEMod (Version 2016.3.2) to predict the operational period emissions of GHGs. This memo addresses the GHG emissions that would result from the school expansion and increased student enrollment.

Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO₂) and water vapor but there are also several others, most importantly methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO₂ and N₂O are byproducts of fossil fuel combustion.

- N₂O is associated with agricultural operations such as fertilization of crops.
- CH₄ is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO₂ being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO₂ equivalents (CO₂e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Recent Regulatory Actions

Assembly Bill 32 (AB 32), California Global Warming Solutions Act (2006)

AB 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

Senate Bill 375, California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g. Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC]) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

SB 350 Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

Executive Order EO-B-30-15 (2015) and SB 32 GHG Reduction Targets

In April 2015, Governor Brown signed Executive Order which extended the goals of AB 32, setting a greenhouse gas emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed SB 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*. While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

The new Scoping Plan establishes a strategy that will reduce GHG emissions in California to meet the 2030 target (note that the AB 32 Scoping Plan only addressed 2020 targets and a long-term goal). Key features of this plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings (note that new
- Develop fuels with an 18-percent reduction in carbon intensity;
- Develop more high-density, transit-oriented housing;
- Develop walkable and bikable communities

- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce “super pollutants” by reducing methane and hydrofluorocarbons or HFCs by 40 percent.

In the updated Scoping Plan, CARB recommends statewide targets of no more than 6 metric tons CO_{2e} per capita (statewide) by 2030 and no more than 2 metric tons CO_{2e} per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.

Significance Thresholds

The BAAQMD’s CEQA Air Quality Guidelines recommended a GHG threshold of 1,100 metric tons or 4.6 metric tons (MT) per capita. These thresholds were developed based on meeting the 2020 GHG targets set in the scoping plan that addressed AB 32. Development of the project would occur beyond 2020, so a threshold that addresses a future target is appropriate. Although BAAQMD has not published a quantified threshold for 2030 yet, this assessment uses a “Substantial Progress” efficiency metric of 2.6 MT CO_{2e}/year/service population and a bright-line threshold of 660 MT CO_{2e}/year based on the GHG reduction goals of EO B-30-15. The service population metric of 2.6 is calculated for 2030 based on the 1990 inventory and the projected 2030 statewide population and employment levels¹. The 2030 bright-line threshold is a 40 percent reduction of the 2020 1,100 MT CO_{2e}/year threshold.

GHG Analysis

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

CalEEMod Modeling

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model. CalEEMod output is included in *Attachment 1*.

¹ Association of Environmental Professionals, 2016. *Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*. April.

Land Uses

The project land uses inputted into CalEEMod included 152,425 sf and 850 students entered as “High School” on an 8.80-acre site.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest the project could possibly be constructed and begin operating would be 2026. Emissions associated with build-out later than 2021 would be lower.

Trip Generation Rates

CalEEMod allows the user to enter specific vehicle trip generation rates, which were input to the model using the daily trip generation rate provided in the project trip generation table². For each land use type, the forecasted daily trip rate with trip reductions applied was divided by the quantity of that land use to identify the weekday daily trip rate. The Saturday and Sunday trip rates were assumed to be the weekday rate adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips. The provided weekday rate of 2.48 was inputted into the model for both the existing and future GHG CalEEMod runs. The adjusted weekend rates changed the Saturday weekend rate to 0.88 and the Sunday weekend rate to 0.36.

Energy

CalEEMod defaults for energy use were used, which include the 2016 Title 24 Building Standards. GHG emissions modeling includes those indirect emissions from electricity consumption. The electricity produced emission rate was modified in CalEEMod. CalEEMod has a default emission factor of 641.3 pounds of CO₂ per megawatt of electricity produced, which is based on PG&E’s 2008 emissions rate. PG&E published 2015 emissions rates for 2009 through 2015, which showed the emission rate for delivered electricity had been reduced to 405 pounds CO₂ per megawatt of electricity delivered.³ The projected GHG intensity factor for the year 2020 is 290 pounds of CO₂ per megawatt of electricity produced, which was input to the model.⁴

Other Inputs

Default model assumptions for emissions associated with solid waste generation use were applied to the project. Water/wastewater use were changed to 100% aerobic conditions to represent

² Hexagon Transportation Consultants, Inc., “Traffic Operations Study for Presentation High School Master Plan Project”, December 2017.

³ PG&E 2017. Climate Change. See http://www.pgecorp.com/corp_responsibility/reports/2017/en02_climate_change.html accessed March 13, 2018.

⁴ PG&E. 2015. Greenhouse Gas Emission Factors: Guidance for PG&E Customers
See: https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

wastewater treatment plant conditions.

Existing Uses

A CalEEMod model run was developed to compute emissions from use of the existing building as if it was operating in 2026. Inputs for this modeling scenario included 107,884 GSF and 750 students entered as “High School” on an 8.80-acre site. These inputs were applied to the modeling in the same manner described for the proposed project.

Service Population Emissions

The project service population that defines the per capita emission rate for land use projects is based on the number of future workers and residents. Note BAAQMD does not typically include students in the service population. However, the lead agency may choose to include students in service population. The projected number of future students is 850 and the future number of faculty is 110. The total project service population would be 960.

Construction Emissions

GHG emissions associated with construction were computed to be 320 MT of CO_{2e} for the total construction periods. The construction CalEEMod data from the Presentation High School Master Plan Construction Air Quality Assessment was used in this analysis⁵. Note that construction schedule has construction occurring in four phases over a 16-year period, beginning in 2020. For this evaluation, construction was assumed to begin in 2020 and occur continuously from phase to phase with no breaks between phases. The operational year used for all four phases was 2026.

The GHG emissions calculated are from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. Best management practices assumed to be incorporated into construction of the proposed project include but are not limited to: using local building materials of at least 10 percent and recycling or reusing at least 50 percent of construction waste or demolition materials.

Operational Emissions

The CalEEMod model, along with the project vehicle trip generation rates, was used to estimate daily emissions associated with operation of the fully-developed site under the proposed project. In 2030 as shown in Table 1, annual emissions resulting from operation of the proposed project are predicted to be 1,619 MT of CO_{2e}. The annual emissions from operation of the existing buildings in 2026 are computed as 1,492 MT of CO_{2e}. The net emissions resulting from the project

⁵ Illingworth & Rodkin, Inc., “Presentation High School Master Plan Construction Air Quality Assessment”, March 2018.

would be 127 MT of CO_{2e}. The net emission increase would not exceed the 2030 “Substantial Progress” threshold of 660 MT CO_{2e}/year.

Table 1. Annual Project GHG Emissions (CO_{2e}) in Metric Tons

Source Category	Existing in 2026	Proposed Project in 2026	Proposed Project in 2030
<i>Construction</i>			
Phase 1 ~2020	-	84	
Phase 2 ~2024	-	85	
Phase 3~2025	-	88	
Phase 4~2025	-	63	
Total		320	
<i>Operation</i>			
Area	<1	<1	<1
Energy Consumption	184	260	260
Mobile	1,230	1,394	1,271
Solid Waste Generation	69	78	78
Water Usage	8	9	9
Total	1,492	1,742	1,619
Net New Emissions		250	127
2030 Substantial Progress Threshold			660 MT CO_{2e}/yr
Per Capita Emissions*		1.81	1.69

*Assuming students make up the service population.

Attachment 1: CalEEMod Modeling Outputs for Existing and Future GHG Emissions

17-198 Presentation High School, Future GHG - Santa Clara County, Annual

**17-198 Presentation High School, Future GHG
Santa Clara County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	850.00	Student	8.80	152,425.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2026
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	290	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 rate
 Land Use - 11-21-19 email from M. Campbell GSF = 152425
 Construction Phase - Existing Land use
 Off-road Equipment - No existing equipment
 Grading -
 Vehicle Trips - weekday trip rate 2.48, sat 0.88, sun 0.36
 Energy Use -
 Water And Wastewater - 100% Aerobic

Table Name	Column Name	Default Value	New Value
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tblLandUse	LandUseSquareFeet	112,761.83	152,425.00
tblLandUse	LotAcreage	2.59	8.80
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblVehicleTrips	ST_TR	0.61	0.88
tblVehicleTrips	SU_TR	0.25	0.36
tblVehicleTrips	WD_TR	1.71	2.48
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00

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	tons/yr										MT/yr					
Area	0.6755	7.0000e-005	7.7900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162
Energy	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	258.0615	258.0615	0.0137	4.9900e-003	259.8893
Mobile	0.3113	1.2650	3.7877	0.0152	1.6123	0.0118	1.6240	0.4315	0.0109	0.4425	0.0000	1,393.7468	1,393.7468	0.0412	0.0000	1,394.7773
Waste						0.0000	0.0000		0.0000	0.0000	31.4900	0.0000	31.4900	1.8610	0.0000	78.0151
Water						0.0000	0.0000		0.0000	0.0000	1.3247	7.0977	8.4224	5.2700e-003	3.0300e-003	9.4564
Total	1.0019	1.4028	3.9113	0.0160	1.6123	0.0223	1.6345	0.4315	0.0214	0.4530	32.8147	1,658.9211	1,691.7358	1.9212	8.0200e-003	1,742.1542

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6755	7.0000e-005	7.7900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162
Energy	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	258.0615	258.0615	0.0137	4.9900e-003	259.8893
Mobile	0.3113	1.2650	3.7877	0.0152	1.6123	0.0118	1.6240	0.4315	0.0109	0.4425	0.0000	1,393.7468	1,393.7468	0.0412	0.0000	1,394.7773
Waste						0.0000	0.0000		0.0000	0.0000	31.4900	0.0000	31.4900	1.8610	0.0000	78.0151
Water						0.0000	0.0000		0.0000	0.0000	1.3247	7.0977	8.4224	5.2700e-003	3.0300e-003	9.4564
Total	1.0019	1.4028	3.9113	0.0160	1.6123	0.0223	1.6345	0.4315	0.0214	0.4530	32.8147	1,658.9211	1,691.7358	1.9212	8.0200e-003	1,742.1542

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3113	1.2650	3.7877	0.0152	1.6123	0.0118	1.6240	0.4315	0.0109	0.4425	0.0000	1,393.7468	1,393.7468	0.0412	0.0000	1,394.7773

Unmitigated	0.3113	1.2650	3.7877	0.0152	1.6123	0.0118	1.6240	0.4315	0.0109	0.4425	0.0000	1,393.7468	1,393.7468	0.0412	0.0000	1,394.7773
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4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	2,108.00	748.00	306.00	4,336,423	4,336,423
Total	2,108.00	748.00	306.00	4,336,423	4,336,423

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.618126	0.034987	0.181060	0.102744	0.012808	0.005030	0.012887	0.022139	0.002195	0.001502	0.005204	0.000638	0.000681

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	108.0709	108.0709	0.0108	2.2400e-003	109.0074

Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	108.0709	108.0709	0.0108	2.2400e-003	109.0074
NaturalGas Mitigated	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819
NaturalGas Unmitigated	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819

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					
High School	2.81072e+006	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819
Total		0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819

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					
High School	2.81072e+006	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819
Total		0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	821571	108.0709	0.0108	2.2400e-003	109.0074
Total		108.0709	0.0108	2.2400e-003	109.0074

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	821571	108.0709	0.0108	2.2400e-003	109.0074
Total		108.0709	0.0108	2.2400e-003	109.0074

6.0 Area Detail

6.1 Mitigation Measures Area

Landscaping	7.2000e-004	7.0000e-005	7.7900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162
Total	0.6755	7.0000e-005	7.7900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.4224	5.2700e-003	3.0300e-003	9.4564
Unmitigated	8.4224	5.2700e-003	3.0300e-003	9.4564

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	3.74422 / 9.62798	8.4224	5.2700e-003	3.0300e-003	9.4564
Total		8.4224	5.2700e-003	3.0300e-003	9.4564

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	3.74422 / 9.62798	8.4224	5.2700e- 003	3.0300e- 003	9.4564
Total		8.4224	5.2700e- 003	3.0300e- 003	9.4564

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	31.4900	1.8610	0.0000	78.0151
Unmitigated	31.4900	1.8610	0.0000	78.0151

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	155.13	31.4900	1.8610	0.0000	78.0151
Total		31.4900	1.8610	0.0000	78.0151

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	155.13	31.4900	1.8610	0.0000	78.0151
Total		31.4900	1.8610	0.0000	78.0151

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

17-198 Presentation High School, Future GHG - Santa Clara County, Annual

**17-198 Presentation High School, Future GHG
Santa Clara County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	850.00	Student	8.80	152,425.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 rate
 Land Use - 11-21-19 email from M. Campbell GSF = 152425
 Construction Phase - Existing Land use
 Off-road Equipment - No existing equipment
 Grading -
 Vehicle Trips - weekday trip rate 2.48, sat 0.88, sun 0.36
 Energy Use -
 Water And Wastewater - 100% Aerobic

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	112,761.83	152,425.00
tblLandUse	LotAcreage	2.59	8.80
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblVehicleTrips	ST_TR	0.61	0.88
tblVehicleTrips	SU_TR	0.25	0.36
tblVehicleTrips	WD_TR	1.71	2.48
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

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
	tons/yr										MT/yr					

Area	0.6755	7.0000e-005	7.7700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162
Energy	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	258.0615	258.0615	0.0137	4.9900e-003	259.8893
Mobile	0.2598	1.1295	3.1418	0.0138	1.6121	9.1700e-003	1.6213	0.4314	8.5200e-003	0.4400	0.0000	1,270.4747	1,270.4747	0.0359	0.0000	1,271.3711
Waste						0.0000	0.0000		0.0000	0.0000	31.4900	0.0000	31.4900	1.8610	0.0000	78.0151
Water						0.0000	0.0000		0.0000	0.0000	1.3247	7.0977	8.4224	5.2700e-003	3.0300e-003	9.4564
Total	0.9505	1.2673	3.2653	0.0146	1.6121	0.0197	1.6318	0.4314	0.0190	0.4505	32.8147	1,535.6490	1,568.4637	1.9159	8.0200e-003	1,618.7481

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6755	7.0000e-005	7.7700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162
Energy	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	258.0615	258.0615	0.0137	4.9900e-003	259.8893
Mobile	0.2598	1.1295	3.1418	0.0138	1.6121	9.1700e-003	1.6213	0.4314	8.5200e-003	0.4400	0.0000	1,270.4747	1,270.4747	0.0359	0.0000	1,271.3711
Waste						0.0000	0.0000		0.0000	0.0000	31.4900	0.0000	31.4900	1.8610	0.0000	78.0151
Water						0.0000	0.0000		0.0000	0.0000	1.3247	7.0977	8.4224	5.2700e-003	3.0300e-003	9.4564
Total	0.9505	1.2673	3.2653	0.0146	1.6121	0.0197	1.6318	0.4314	0.0190	0.4505	32.8147	1,535.6490	1,568.4637	1.9159	8.0200e-003	1,618.7481

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2598	1.1295	3.1418	0.0138	1.6121	9.1700e-003	1.6213	0.4314	8.5200e-003	0.4400	0.0000	1,270.4747	1,270.4747	0.0359	0.0000	1,271.3711
Unmitigated	0.2598	1.1295	3.1418	0.0138	1.6121	9.1700e-003	1.6213	0.4314	8.5200e-003	0.4400	0.0000	1,270.4747	1,270.4747	0.0359	0.0000	1,271.3711

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
High School	2,108.00	748.00	306.00	4,336,423	4,336,423
Total	2,108.00	748.00	306.00	4,336,423	4,336,423

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
High School	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	108.0709	108.0709	0.0108	2.2400e-003	109.0074
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	108.0709	108.0709	0.0108	2.2400e-003	109.0074
NaturalGas Mitigated	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819
NaturalGas Unmitigated	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819

5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	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
	kBTU/yr	tons/yr										MT/yr					
High School	2.81072e+006	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819
Total		0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819

Mitigated

Land Use	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
	kBTU/yr	tons/yr										MT/yr					
High School	2.81072e+006	0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819
Total		0.0152	0.1378	0.1157	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.9906	149.9906	2.8700e-003	2.7500e-003	150.8819

5.3 Energy by Land Use - Electricity

Unmitigated

Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
High School	821571	108.0709	0.0108	2.2400e-003	109.0074
Total		108.0709	0.0108	2.2400e-003	109.0074

Mitigated

Land Use	Electricity Use kWh/yr	Total CO2	CH4	N2O	CO2e
High School	821571	108.0709	0.0108	2.2400e-003	109.0074
Total		108.0709	0.0108	2.2400e-003	109.0074

6.0 Area Detail

6.1 Mitigation Measures Area

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
Mitigated	0.6755	7.0000e-005	7.7700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162
Unmitigated	0.6755	7.0000e-005	7.7700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162

6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating	0.0795					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5953					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.1000e-004	7.0000e-005	7.7700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162
Total	0.6755	7.0000e-005	7.7700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162

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										M1/yr					
Architectural Coating	0.0795					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5953					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.1000e-004	7.0000e-005	7.7700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162
Total	0.6755	7.0000e-005	7.7700e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0152	0.0152	4.0000e-005	0.0000	0.0162

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	M1/yr			
Mitigated	8.4224	5.2700e-003	3.0300e-003	9.4564
Unmitigated	8.4224	5.2700e-003	3.0300e-003	9.4564

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	3.74422 / 9.62798	8.4224	5.2700e-003	3.0300e-003	9.4564
Total		8.4224	5.2700e-003	3.0300e-003	9.4564

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	3.74422 / 9.62798	8.4224	5.2700e-003	3.0300e-003	9.4564
Total		8.4224	5.2700e-003	3.0300e-003	9.4564

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	31.4900	1.8610	0.0000	78.0151
Unmitigated	31.4900	1.8610	0.0000	78.0151

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	155.13	31.4900	1.8610	0.0000	78.0151
Total		31.4900	1.8610	0.0000	78.0151

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	155.13	31.4900	1.8610	0.0000	78.0151
Total		31.4900	1.8610	0.0000	78.0151

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

17-198 Presentation High School, Existing - Santa Clara County, Annual

**17-198 Presentation High School, Existing
Santa Clara County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	750.00	Student	8.80	107,884.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2026
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	290	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 rate
 Land Use - Client provided info from Master Plan and project description. GSF 107,884
 Construction Phase - Existing Land use
 Off-road Equipment - No existing equipment
 Grading -
 Vehicle Trips - weekday trip rate 2.48, sat 0.88, sun 0.36
 Water And Wastewater - 100% Aerobic
 Energy Use -

Table Name	Column Name	Default Value	New Value
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tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	PhaseEndDate	1/14/2019	1/1/2019
tblLandUse	LandUseSquareFeet	99,495.73	107,884.00
tblLandUse	LotAcreage	2.28	8.80
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	0.61	0.88
tblVehicleTrips	SU_TR	0.25	0.36
tblVehicleTrips	WD_TR	1.71	2.48
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00

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					
2019	3.0000e-005	2.0000e-005	2.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632
Maximum	3.0000e-005	2.0000e-005	2.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632

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					
2019	3.0000e-005	2.0000e-005	2.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632
Maximum	3.0000e-005	2.0000e-005	2.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2019	3-31-2019	0.0000	0.0000
		Highest	0.0000	0.0000

2.2 Overall Operational Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4782	6.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	3.0000e-005	0.0000	0.0143
Energy	0.0107	0.0975	0.0819	5.9000e-004		7.4100e-003	7.4100e-003		7.4100e-003	7.4100e-003	0.0000	182.6518	182.6518	9.6800e-003	3.5300e-003	183.9455
Mobile	0.2747	1.1162	3.3421	0.0134	1.4226	0.0104	1.4330	0.3807	9.6600e-003	0.3904	0.0000	1,229.7766	1,229.7766	0.0364	0.0000	1,230.6858
Waste						0.0000	0.0000		0.0000	0.0000	27.7854	0.0000	27.7854	1.6421	0.0000	68.8372
Water						0.0000	0.0000		0.0000	0.0000	1.1689	6.2627	7.4316	4.6500e-003	2.6700e-003	8.3439

Total	0.7636	1.2138	3.4309	0.0140	1.4226	0.0178	1.4404	0.3807	0.0171	0.3978	28.9543	1,418.7044	1,447.6587	1.6928	6.2000e-003	1,491.8266
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Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4782	6.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	3.0000e-005	0.0000	0.0143
Energy	0.0107	0.0975	0.0819	5.9000e-004		7.4100e-003	7.4100e-003		7.4100e-003	7.4100e-003	0.0000	182.6518	182.6518	9.6800e-003	3.5300e-003	183.9455
Mobile	0.2747	1.1162	3.3421	0.0134	1.4226	0.0104	1.4330	0.3807	9.6600e-003	0.3904	0.0000	1,229.7766	1,229.7766	0.0364	0.0000	1,230.6858
Waste						0.0000	0.0000		0.0000	0.0000	27.7854	0.0000	27.7854	1.6421	0.0000	68.8372
Water						0.0000	0.0000		0.0000	0.0000	1.1689	6.2627	7.4316	4.6500e-003	2.6700e-003	8.3439
Total	0.7636	1.2138	3.4309	0.0140	1.4226	0.0178	1.4404	0.3807	0.0171	0.3978	28.9543	1,418.7044	1,447.6587	1.6928	6.2000e-003	1,491.8266

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	1/1/2019	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Unmitigated 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-005	2.0000e-005	2.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632
Total	3.0000e-005	2.0000e-005	2.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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-005	2.0000e-005	2.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632
Total	3.0000e-005	2.0000e-005	2.5000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0632	0.0632	0.0000	0.0000	0.0632

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2747	1.1162	3.3421	0.0134	1.4226	0.0104	1.4330	0.3807	9.6600e-003	0.3904	0.0000	1,229.7766	1,229.7766	0.0364	0.0000	1,230.6858
Unmitigated	0.2747	1.1162	3.3421	0.0134	1.4226	0.0104	1.4330	0.3807	9.6600e-003	0.3904	0.0000	1,229.7766	1,229.7766	0.0364	0.0000	1,230.6858

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	1,860.00	660.00	270.00	3,826,256	3,826,256
Total	1,860.00	660.00	270.00	3,826,256	3,826,256

4.3 Trip Type Information

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

High School	1.98938e+006	0.0107	0.0975	0.0819	5.9000e-004	7.4100e-003	7.4100e-003	7.4100e-003	7.4100e-003	0.0000	106.1609	106.1609	2.0300e-003	1.9500e-003	106.7918
Total		0.0107	0.0975	0.0819	5.9000e-004	7.4100e-003	7.4100e-003	7.4100e-003	7.4100e-003	0.0000	106.1609	106.1609	2.0300e-003	1.9500e-003	106.7918

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
High School	1.98938e+006	0.0107	0.0975	0.0819	5.9000e-004	7.4100e-003	7.4100e-003	7.4100e-003	7.4100e-003	7.4100e-003	7.4100e-003	0.0000	106.1609	106.1609	2.0300e-003	1.9500e-003	106.7918
Total		0.0107	0.0975	0.0819	5.9000e-004	7.4100e-003	7.4100e-003	7.4100e-003	7.4100e-003	7.4100e-003	7.4100e-003	0.0000	106.1609	106.1609	2.0300e-003	1.9500e-003	106.7918

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	581495	76.4909	7.6500e-003	1.5800e-003	77.1537
Total		76.4909	7.6500e-003	1.5800e-003	77.1537

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	581495	76.4909	7.6500e-003	1.5800e-003	77.1537
Total		76.4909	7.6500e-003	1.5800e-003	77.1537

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4782	6.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	3.0000e-005	0.0000	0.0143
Unmitigated	0.4782	6.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	3.0000e-005	0.0000	0.0143

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0563					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4213					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.3000e-004	6.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	3.0000e-005	0.0000	0.0143
Total	0.4782	6.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	3.0000e-005	0.0000	0.0143

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	0.0563					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4213					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.3000e-004	6.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	3.0000e-005	0.0000	0.0143
Total	0.4782	6.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	3.0000e-005	0.0000	0.0143

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e

Category	MT/yr			
Mitigated	7.4316	4.6500e-003	2.6700e-003	8.3439
Unmitigated	7.4316	4.6500e-003	2.6700e-003	8.3439

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	3.30372 / 8.49528	7.4316	4.6500e-003	2.6700e-003	8.3439
Total		7.4316	4.6500e-003	2.6700e-003	8.3439

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	3.30372 / 8.49528	7.4316	4.6500e-003	2.6700e-003	8.3439
Total		7.4316	4.6500e-003	2.6700e-003	8.3439

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	27.7854	1.6421	0.0000	68.8372
Unmitigated	27.7854	1.6421	0.0000	68.8372

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	136.88	27.7854	1.6421	0.0000	68.8372
Total		27.7854	1.6421	0.0000	68.8372

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	136.88	27.7854	1.6421	0.0000	68.8372
Total		27.7854	1.6421	0.0000	68.8372

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation
