College of Marin
Kentfield Campus
Learning Resource Center Project

Initial Study

prepared by

Marin Community College District
1800 Ignacio Boulevard
Building 17, Gilbane
Novato, California 94949
Contact: Greg Nelson, Assistant Superintendent/Vice President for Administrative Services
(415) 883-2211 ext. 8100

prepared with the assistance of

Rincon Consultants, Inc.
449 15th Street, Suite 303
Oakland, California 94612

October 2019

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Environmental Scientists | Planners | Engineers
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Acronyms and Abbreviations

AB	Assembly Bill
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BAU	Business-as-Usual
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Code
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
CO_2e	carbon dioxide equivalent
dB	decibels
dBA	A-weighted sound pressure level
DOT	United States Department of Transportation
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
GHG	greenhouse gas
GWh	gigawatt hours
Hz	hertz
KFPD	Kentfield Fire Protection Department
LBP	lead-based paint
Ldn	Day-Night Average (noise) Level
Leq	single steady A-weighted (noise) level
Lmax	highest root mean squared sound pressure level

Lmin	lowest root mean squared sound pressure level
LRC	Learning and Resource Center
mgd	million gallons per day
MMBtu/yr	British thermal units per year
MMthm	million U.S. therms
MRP	Municipal Regional Permit
MT	metric tons
NAHC	Native American Heritage Commission
NPDES	National Pollutant Discharge Elimination System
PCB	polychlorinated biphenyls
PG&E	Pacific Gas & Electric Company
PM	particulate matter
$PM_{2.5}$	particulate matter up to 2.5 microns in size
PM_{10}	particulate matter up to 10 microns in size
PPV	peak particle velocity
PRC	Public Resources Code
RCNM	Roadway Construction Noise Model
RMS	root mean squared
ROG	reactive organic gases
RTP	Regional Transportation Plan
SB	Senate Bill
SCS	Sustainable Communities Strategy
SIP	State Implementation Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
U.S.	United States
USEPA	U.S. Environmental Protection Agency
VdB	vibration decibels
VOC	volatile organic compounds

Initial Study

As Lead Agency, the Marin Community College District has prepared this Initial Study for the Kentfield Campus Learning Resource Center (LRC) Project, in compliance with the California Environmental Quality Act (CEQA), the CEQA guidelines (California Code of Regulations Section 15000 et. seq.) and the regulations and policies of the Marin Community College District.

1. Project Title

College of Marin Kentfield Campus Learning Resource Center Project

2. Lead Agency Name and Address

Marin Community College District
1800 Ignacio Boulevard
Building 17, Gilbane
Novato, California 94949
Contact: Greg Nelson, Assistant Superintendent/Vice President for Administrative Services
(415) 883-2211 ext. 8100

3. Project Location

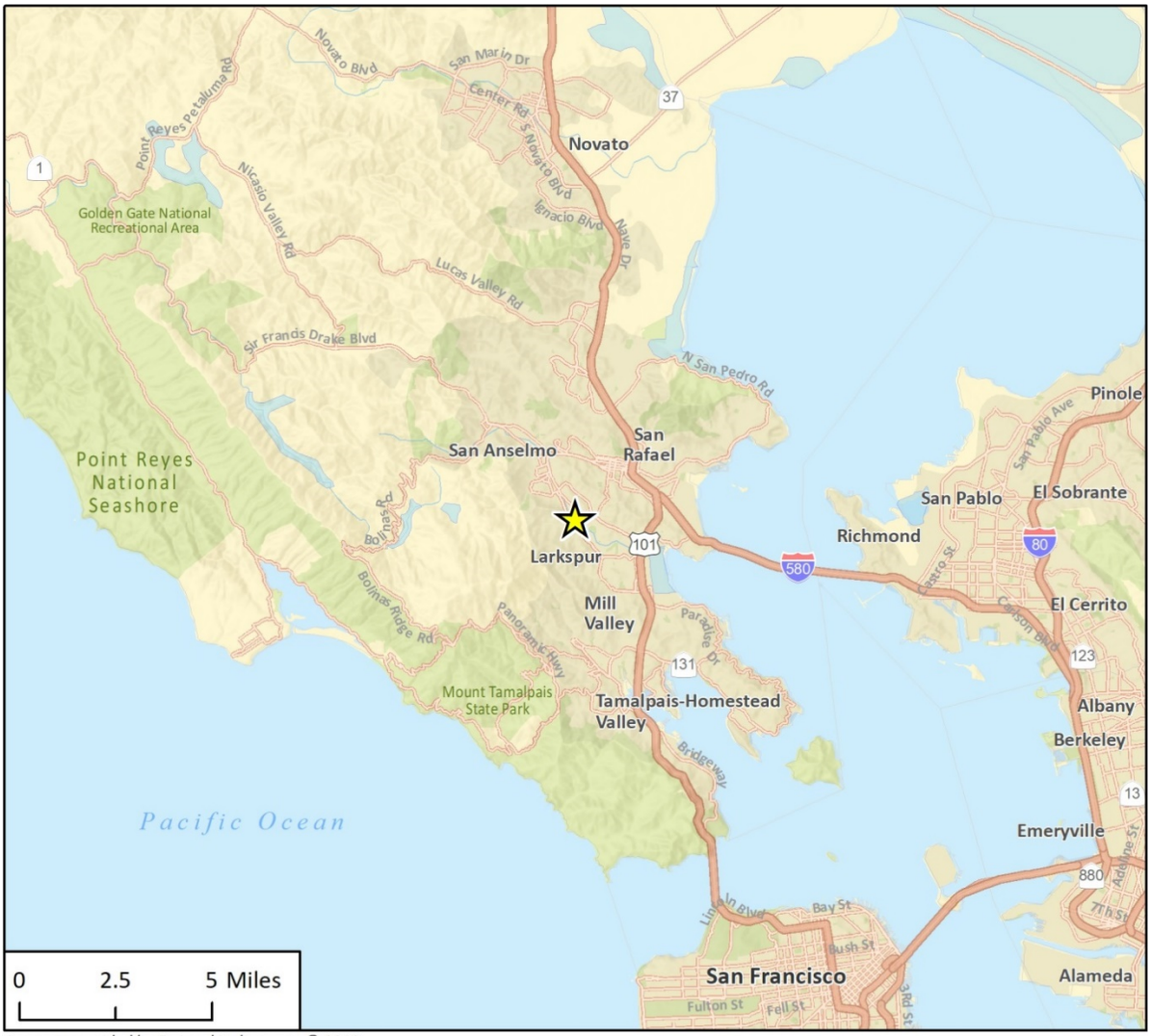
The College of Marin Kentfield Campus, also referred to in this report as the site or project site, is located at 835 College Avenue in Kentfield. Figure 1 shows the college's regional location and Figure 2 shows an aerial photograph of the project site in its neighborhood context.

The College of Marin's Kentfield Campus is bounded by Sir Francis Drake Boulevard to the north, College Avenue and Corte Madera Creek to the east, College Avenue to the southwest, and by Kent Avenue to the west. A mix of commercial, educational/ institutional, government, recreation, and residential land uses surrounds the site. To the east the Corte Madera Creek Path, a multimodal trail, provides pedestrian access between the communities of Kentfield, Larkspur, and Greenbrae. Highway 101 is located approximately two miles to the east.

The project site comprises 77 acres, bisected by College Avenue. Most of the academic buildings on campus are on the northwest side of College Avenue; the campus athletic center, pool, and playing field and track are located to the southeast, across College Avenue. The academic portion of campus is on gently sloping terrain and the athletic portion of campus is on generally level topography.

Vehicular access to the campus is available via fourteen driveways: eight on College Avenue provide access to both the academic core and the campus athletic center; four on Kent Avenue provide access to parking lots and campus academic buildings; and two on Sir Francis Drake Boulevard provide access to academic buildings. Parking is available in 17 separate lots on the campus. Lots P2 and P3 can be accessed via Sir Francis Drake Boulevard; lots P4, P16, and P17 are accessed from Laurel Avenue; lots P1, P5, P6, and P7 can be accessed via College Avenue; lots P9, and P15 can be accessed only from Kent Avenue; and lots P10, P11, P12, and P13 can be accessed via College

Figure 1 Regional Location



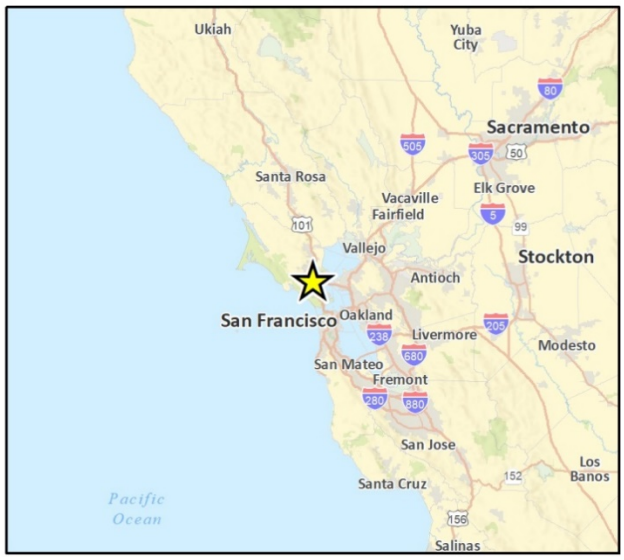


Figure 2 Project Site Location

Imagery provided by Microsoft Bing and its licensors © 2019.

Avenue. Additional passenger drop-off and loading zones are available in circular driveways leading to the school entrances on Sir Francis Drake Boulevard and College Avenue. Mature trees are dispersed around the main entrance and along Corte Madera Creek.

On the Kentfield Campus, development activities associated with the project would occur on the site of the existing LRC on College Avenue, approximately 350 feet south of the intersection of College Avenue and Sir Francis Drake Boulevard.

4. Project Description

The project would involve the demolition and reconstruction of the LRC for seismic safety and to provide upgraded facilities. The new LRC building would include a library, computer laboratory, classrooms, mailroom, student store, and offices; it would be constructed on the same building footprint as the existing building. The existing parking lot and driveway would be retained and accessible parking spaces and ramps would be installed to comply with the most recent Americans with Disabilities Act requirements. Figure 3 shows a conceptual design of the LRC building and Table 1 outlines the existing and proposed project elements. The project would not increase total square footage of the LRC building above existing conditions. No increase in student enrollment is associated with the proposed project. The project is designed to comply with comply with 2016 CALGreen Building Standards.

Construction

The project would involve the construction of a new LRC building on the site of the existing LRC building. Construction would occur over approximately 12 months. Grading would be necessary to accommodate the proposed building footprint along College Avenue. Cut and fill materials would be balanced on the site.

Table 1 Existing vs. Proposed Project Elements

Site Element	Existing	Proposed
Learning Resource Center		
Square feet	66,394	65,000
Height (stories)	2	2
Classrooms	5	13

Source: College of Marin 2018

Figure 3 Project Concept Plan (Subject to Change)

Caption: Proposed Learning and Resources Center. *Source: Hohbach-Lewin, Inc.*

5. Surrounding Land Uses and Setting

North of the Kentfield Campus along Sir Francis Drake Boulevard, land use is a mix of residential, commercial, and governmental, consisting of one- and two-story residences, one- and two-story office buildings, and a two-story fire station at the corner of Sir Francis Drake Boulevard and College Avenue. Adjacent land uses to the south of the campus include a grocery store and a mix of one-story residential and commercial buildings. Corte Madera Creek and a parallel multi-modal path run through campus, bordering the project site to the east. Corte Madera Creek is approximately 50 feet south of the existing LRC Building that would be demolished and reconstructed.

6. Required Approvals

The Marin Community College District is the lead agency for the proposed project. No discretionary land use approvals are needed from other agencies for the project.

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Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving impacts that are "Potentially Significant Unless Mitigation Incorporated" as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture and Forestry Resources	☐	Air Quality
■	Biological Resources	■	Cultural Resources	☐	Energy
■	Geology and Soils	☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials
■	Hydrology and Water Quality	☐	Land Use and Planning	☐	Mineral Resources
☐	Noise	☐	Population and Housing	☐	Public Services
☐	Recreation	☐	Transportation/Traffic	■	Tribal Cultural Resources
☐	Utilities and Service Systems	☐	Wildfire	■	Mandatory Findings of Significance

Determination

Based on this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

■ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

10/18/2019

Date

Klaus A Christiansen

Printed Name

Director Facilities Planning, Maintenance and Operations

Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	■	☐
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	■	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	■	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	■	☐

a. Would the project have a substantial adverse effect on a scenic vista?

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The proposed project would be constructed on the College of Marin Kentfield Campus in a fully urbanized area of unincorporated Marin County.

As discussed in Chapter 5 of the *College of Marin Facilities Master Plan,* scenic views in the Kentfield Campus include public views of Mount Tamalpais from and through the central quad, the pedestrian bridge over Corte Madera Creek, and from parking lots P1, P2, P6, P7, and P9 through P13. Scenic vistas of Mount Tamalpais are also afforded through the existing LRC building site from College Avenue. However, public views through the existing LRC building are partially obstructed by intervening trees along College Avenue and Corte Madera Creek.

The project would involve demolition of the existing LRC building and its replacement with a new building of similar height and massing on the same site. The project would not substantially alter

scenic vistas on the project site. Therefore, the project would have a less than significant impact on scenic vistas.

The nearest state-designated scenic highway is State Route 1, located approximately 4.5 miles from the project site. Due to distance and intervening topography, the project site is not visible from State Route 1. Therefore, the project would not damage scenic resources within a state scenic highway.

LESS THAN SIGNIFICANT IMPACT

c. In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The project is in an urbanized area of unincorporated Marin County, on the College of Marin Kentfield Campus. As the proposed project would replace an existing building with one of similar height on the same footprint, it would not substantially alter the visual character or scenic quality of the project site. Furthermore, although the Master Plan discusses scenic view corridors afforded from and through the Kentfield Campus, it does not include specific policies or regulations governing scenic quality. Although the architectural design and appearance of the LRC building would be different than under existing conditions, impacts to the existing visual character and quality would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The project site is in an urban area with moderate levels of existing lighting. These include lights from vehicles entering and exiting the project site, wall-mounted security lights, street lights along College Avenue, and pole-mounted lights throughout the surface parking lots. Lighting sources at the surrounding properties include parking lot and exterior structure lighting at the nearby commercial uses and streetlights and vehicle lights along College Avenue. The primary glare source in the area is sunlight reflected off light-colored and reflective building materials and finishes, and off the metallic and glass surfaces of vehicles parked in the lots throughout campus.

The project's exterior windows could generate glare from reflected sunlight during certain times of the day, but the level of glare would be comparable to that already occurring from the existing building and from the surrounding commercial areas and residences.

The project design would incorporate exterior lighting in the form of building-mounted, safety lights. These sources would not have a significant impact on the night sky, as they would add only incrementally to the existing background light levels already present on the site and surrounding urban development. The project would not increase student enrollment above existing conditions. Thus, light generated from headlights of vehicles entering and exiting the project site at night would be comparable to existing conditions and would not affect nearby light-sensitive receptors more than currently.

The project site is in an urban environment with existing sources of light and glare. The project would not substantially alter this condition. Therefore, impacts related to project light and glare would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	■
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	■
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	■

a. Would the project convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

e. Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

The project site is located entirely on the existing College of Marin Kentfield Campus, and the campus is adjacent to residential, commercial, educational, and government uses and existing county streets. The College of Marin Kentfield Campus is located in an urbanized area of Marin County. No agricultural or forest land uses occur on campus or adjacent to campus. The project would not convert agricultural land to a non-agricultural use, conflict with the existing zoning of forest land or timberland, result in the loss or conversion of forest land to non-forest uses, or interrupt ongoing agricultural activity. The proposed project would have no impact on agriculture or forestry resources.

NO IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	■	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	■	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	■	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	■	☐

Air Quality Standards and Attainment

The project site is located in the San Francisco Bay Area Air Basin (the Basin), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). As the local air quality management agency, the BAAQMD is required to monitor air pollutant levels to ensure federal and state air quality standards are met and, if they are not met, to develop strategies to meet the standards.

Depending on whether air quality standards are met or exceeded, the Basin is classified as being in "attainment" or "nonattainment." Under state law, air districts are required to prepare a plan for air quality improvement concerning pollutants for which the district is in non-compliance. The BAAQMD is in nonattainment for the state and federal ozone standards, the state and federal $PM_{2.5}$ (particulate matter up to 2.5 microns in size) standards, and the state PM_{10} (particulate matter up to 10 microns in size) standards and is required to prepare a plan for improvement (BAAQMD 2017a).

Table 2 presents the health effects associated with criteria pollutants for which the Basin is in non-attainment.

Table 2 Health Effects Associated with Non-Attainment Criteria Pollutants

Pollutant	Adverse Effects
Ozone	(1) Short-term exposures: (a) pulmonary function decrements and localized lung edema in humans and animals and (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (2) long-term exposures: risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (3) vegetation damage; and (4) property damage.
Suspended particulate matter (PM_{10})	(1) Excess deaths from short-term and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease (including asthma).[1]
Suspended particulate matter ($PM_{2.5}$)	(1) Excess deaths from short- and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes, including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children, such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease, including asthma.[a]

[1] More detailed discussion on the health effects associated with exposure to suspended particulate matter can be found in the following documents: United States Environmental Protection Agency (USEPA), Air Quality Criteria for Particulate Matter, October 2004.

Source: USEPA 2018

Air Quality Management

The Bay Area 2017 Clean Air Plan (2017 Plan) provides a plan to improve air quality in the Basin and protect public health as well as the climate. The legal impetus is to update the most recent ozone plan to comply with state air quality planning requirements codified in the California Health and Safety Code. Steady progress in reducing ozone levels in the Bay Area has been made, but the region continues to be designated as nonattainment for both the one-hour and eight-hour state ozone standards (BAAQMD 2017a). Emissions of ozone precursors in the Bay Area contribute to air quality problems in neighboring air basins as well. Under these circumstances, state law requires the Clean Air Plan to include all feasible measures to reduce emissions of ozone precursors and reduce transport of ozone precursors to neighboring air basins (BAAQMD 2017b).

In 2006, the USEPA tightened the national 24-hour $PM_{2.5}$ standard regarding short-term exposure to fine particulate matter from 65 µg/m^3 (micro-grams per cubic meter) to 35 µg/m^3 (USEPA 2006). Air quality monitoring data for years 2006 through 2008 show that the region was slightly above the standard, and USEPA designated the Bay Area as nonattainment for the 24-hour national standard in December 2008. This triggered the requirement for the Bay Area to prepare a State Implementation Plan (SIP) submittal to demonstrate how the region would attain the standard, but data for both the 2008-2010 and the 2009-2011 cycles showed Bay Area $PM_{2.5}$ levels meet the standard. On October 29, 2012, the USEPA issued a proposed ruling to determine the Bay Area now attains the 24-hour $PM_{2.5}$ national standard. Based on this, the Bay Area is required to prepare an abbreviated SIP submittal that includes an emission inventory for primary $PM_{2.5}$ (directly emitted), and precursor pollutants that contribute to formation of secondary PM in the atmosphere and amendments to the BAAQMD New Source Review (NSR) to address $PM_{2.5}$ (adopted December

2012).[1] However, key SIP requirements to demonstrate how a region will achieve the standard (i.e., the requirement to develop a plan to attain the standard) will be suspended as long as monitoring data continues to show the Basin attains the standard.

In addition to preparing the "abbreviated" SIP submittal, the BAAQMD prepared a report entitled *"Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area"* (BAAQMD 2012). The report will help to guide the BAAQMD's ongoing efforts to analyze and reduce PM in the Bay Area in order to better protect public health. The Basin will continue to be designated as nonattainment for the national 24-hour $PM_{2.5}$ standard until the BAAQMD elects to submit a "redesignation request" and a "maintenance plan" to the USEPA, and the USEPA approves the proposed redesignation.

Air Emission Thresholds

This analysis uses the BAAQMD's May 2017 *CEQA Air Quality Guidelines* to evaluate air quality. Therefore, the numeric thresholds in the May 2017 BAAQMD *CEQA Air Quality Guidelines* were used for this analysis to determine whether project impacts would exceed the thresholds identified in CEQA Guidelines Appendix G.

Table 3 presents the significance thresholds for construction and operational-related criteria air pollutant and precursor emissions used for the purposes of this analysis. These represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the Basin's existing air quality conditions. For the purposes of this analysis, the proposed project would result in a significant impact if construction or operational emissions would exceed any of the thresholds shown in Table 3.[2]

Table 3 Air Quality Thresholds of Significance

	Construction-Related Thresholds	Operation-Related Thresholds	
Pollutant/ Precursor	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tpy)	Average Daily Emissions (lbs/day)
ROG	54	10	54
NO_X	54	10	54
PM_{10}	82 (exhaust)	15	82
$PM_{2.5}$	54 (exhaust)	10	54

Notes: tpy = tons per year; lbs/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Source: BAAQMD 2017c, Table 2-1

[1] PM is made up of particles that are emitted directly, such as soot and fugitive dust, as well as secondary particles that are formed in the atmosphere from chemical reactions involving precursor pollutants such as oxides of nitrogen (NO_x), sulfur oxides (SO_x), volatile organic compounds (VOCs), and ammonia (NH_3).

[2] Note the thresholds for PM_{10} and $PM_{2.5}$ apply to construction exhaust emissions only.

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

Vehicle use, energy consumption, and associated air pollutant emissions are related directly to population growth. A project may be inconsistent with the applicable air quality plan if it would result in either population or employment growth that exceeds growth estimates included in the plan. Such growth would generate emissions not accounted for in the applicable air quality plan emissions budget. Therefore, projects need to be evaluated to determine whether they would generate population and employment growth and, if so, whether that growth would exceed the growth rates included in the applicable air quality plan, the 2017 Clean Air Plan.

The project would not impact overall enrollment at the College of Marin, Kentfield Campus. The project would replace the existing LRC with a new building but would not increase its overall size. Instead, it would update the LRC for seismic safety and upgraded facilities, including a library, computer laboratory, classrooms, mailroom, student store, and offices. The proposed project would not result in an increase in population or employment. Therefore, the project would not conflict with or obstruct the implementation of the 2017 Plan. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Project construction would generate temporary construction-related emissions (direct emissions) and long-term operational emissions (indirect emissions). Emissions associated with the project were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2. The project was modeled as a library land use,[3] as that land use in CalEEMod aligns most appropriately with the proposed project (see Appendix AQ).

Construction Emissions

Project construction would generate temporary air pollutant emissions. These impacts are associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction vehicles, in addition to reactive organic gases (ROG) that would be released during the drying phase upon application of architectural coatings. The proposed project would be required to comply with all BAAQMD rules and regulations regarding construction emission control measures. These include using stationary source equipment with Best Available Control Technology (BACT) and using low volatile organic compound (VOC) architectural coatings. Although required, CalEEMod was run without using equipment with BACT. The default values for VOC architectural coatings are consistent with BAAQMD rules and regulations. Thus, the modeling results provide a conservative estimate of emissions (see Table 4).

It was assumed that project construction would take approximately 12 months and be completed by May 2021. CalEEMod defaults were used for construction schedule and equipment, except for the architectural coating phase, which was assumed to begin halfway through the construction phase, consistent with typical construction schedules. Construction would include demolition, grading, construction, paving, and architectural coating. Construction activities would result in temporary air quality impacts that may vary substantially from day to day, depending on the level of activity, the

[3] Per the CalEEMod Users Guide, a library is a facility that consists of shelved books; reading rooms or areas; and sometimes meeting rooms (2017).

specific type of operation, and, for dust, the prevailing weather conditions. summarizes the estimated maximum daily emissions of pollutants during construction on the project site.

Table 4 Construction Emissions

	Emissions (lbs/day)					
Year	ROG	NO_X	CO	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)	SO_X
2020 Maximum Daily Emissions	6.8	25.4	16.3	1.2	1.1	<0.1
2021 Maximum Daily Emissions	2.2	17.2	15.6	0.8	0.8	<0.1
Maximum Daily Emissions	6.8	**25.4**	**16.3**	**1.2**	**1.1**	**<0.1**
BAAQMD Thresholds (average daily emissions)	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

[a] See Table 2.0 "Overall Construction-unmitigated" emissions. Winter emissions results are shown for all emissions except SO_2, which has higher summer emissions. CalEEMod worksheets in Appendix AQ.

N/A = not applicable; there is no BAAQMD threshold for CO or SO_X.

As shown in, project construction would not exceed BAAQMD thresholds. Therefore, construction impacts would be less than significant.

Operational Emissions

Long-term emissions associated with project operation (Table 5), would include electricity and natural gas use (energy sources) and landscape maintenance equipment, consumer products, and architectural coating associated with on-site development (area sources). Because the project would not increase trips from existing conditions, as described in Section 17, *Transportation*, no new mobile source emissions would be associated with project operation.

The project would replace similar existing uses on the site; be designed to comply with comply with 2016 CALGreen Building Standards; increase energy efficiency; and increase water use efficiency compared to the existing building. It would accomplish all of this with a smaller building envelope than the existing building. However, the air quality analysis conservatively does not account for the elimination of existing operational emissions.

Table 5 Operational Emissions

Sources	Estimated Average Daily Emissions (lbs/day)					
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Area	1.6	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	<0.1	0.4	0.4	<0.1	<0.1	<0.1
Mobile	0.0	0.0	0.0	0.0	0.0	0.0
Total Emissions	**1.6**	**0.4**	**0.4**	**<0.1**	**<0.1**	**<0.1**
BAAQMD Thresholds	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

See Appendix AQ for CalEEMod worksheets

N/A = not applicable; there is currently no BAAQMD threshold for CO or SO_X

Emissions would not exceed BAAQMD thresholds for any criteria pollutant. Operational impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

The nearest sensitive receptors to the project site include on-site academic buildings, Anne E. Kent Middle School, approximately 260 feet across College Avenue from the existing LRC building, and residences on all sides of the Kentfield Campus. The residences closest to the project site are approximately 600 feet west on Kent Avenue. As discussed in the response to question (b), the project would not generate emissions that exceed BAAQMD significance thresholds. The California Air Resources Board (CARB) has identified diesel particulate matter as a carcinogen for humans (CARB 2019). In addition, toxic air contaminants (TAC) are a defined set of air pollutants that may pose a present or potential hazard to human health. TACs can be generated by stationary sources, including gasoline stations, dry cleaners, diesel backup generators, truck distribution centers, freeways, and major roadways (BAAQMD 2017c). The project does not include construction of new gas stations, dry cleaners, highways, roadways, or other sources considered a new permitted or non-permitted source of TAC or $PM_{2.5}$ in proximity to receptors. In addition, the project does not include construction of new stationary sources that could be considered a new permitted or non-permitted source of TAC or $PM_{2.5}$ in proximity to receptors, nor would it result in particulate matter emissions greater than the BAAQMD threshold. Therefore, impacts under this criterion would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Table 3-3 in the BAAQMD's 2017 *CEQA Air Quality Guidelines* provides odor-screening distances for land uses with the potential to generate substantial odor complaints. The uses in the table include wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, and chemical plants (BAAQMD 2017c). None

of those uses would occur in conjunction with the project. The proposed project would not generate objectionable odors affecting a substantial number of people during operation.

During construction activities, heavy equipment and vehicles would emit odors associated with vehicle and engine exhaust and during idling, but these odors would be temporary and would cease upon construction completion. Overall, the proposed project would not generate objectionable odors affecting a substantial number of people. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	■	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	■
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	■	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	■	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	■
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The Kentfield Campus is almost entirely developed, and habitat for native plants and wildlife is limited. The site features educational buildings with associated hardscape, paving, and parking lots. Vegetation on site is associated primarily with landscaping, including small areas covered with turf grass and planters with ornamental trees and shrubs. Native trees are present on the project site, including several coast redwood (*Sequoia sempervirens*) and several coast live oak (*Quercus agrifolia*), but the coast redwoods and coast live oak were planted as part of the landscaping and do not occur naturally. Corte Madera Creek is the nearest wildlife corridor; it runs through the project site and is entirely channelized and lined with concrete. Naturally occurring habitat has been removed and ornamental vegetation has been planted adjacent to the creek. Project construction activities would not disturb the creek or adjacent landscaped areas. Impacts to wildlife corridors would be less than significant.

Special-status animals are not expected to occur in urban areas developed with structures and paving that do not support natural plant communities as these areas do not meet habitat requirements for nesting, foraging, or cover. Other than in riparian areas, vacant spots that support grassland, and serpentine grassland vegetation, special-status animal species are not expected to occur in most developed areas in the county (County of Marin 1987). However, the site currently contains trees that could support nesting birds protected under the Migratory Bird Treaty Act. Approximately six of these trees would be removed with project implementation, and their removal may affect protected nesting birds. Therefore, the following mitigation measure would be required to protect nesting birds.

Mitigation Measure

BIO-1 Native/Breeding Bird Protection

To avoid impacts to nesting birds, including birds protected under the Migratory Bird Treaty Act, all tree removal shall be limited to the period between September 1 and January 31 (i.e., outside the nesting season) if feasible. If tree removal cannot be conducted during this period, a qualified biologist shall be retained to conduct a pre-construction survey for active nests on the project site no more than two weeks prior to removal of the trees. If an active bird nest is located, the nest site shall be fenced at a distance commensurate with the particular species and in consultation with the California Department of Fish and Wildlife until juveniles have fledged and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest should be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the sensitivity of the area. The College shall record the results of the recommended protective measures to document compliance with applicable federal and state laws pertaining to protection of native birds.

Implementation of Mitigation Measure BIO-1 would reduce impacts to migratory birds to less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The project site is fully developed and disturbed and lacks native biological habitat that could support sensitive natural communities. The surrounding areas of the campus are developed and lack native habitat capable of supporting special-status species. Corte Madera Creek is approximately 50 feet south of the location of the proposed project activities. The creek runs through the campus and is entirely channelized and lined with concrete. Landscaped vegetation has been planted along the creek. However, this vegetation is not considered riparian habitat and would not be disturbed as a result of project implementation. Because the campus area is developed, and because naturally occurring habitat has been removed from Corte Madera Creek, riparian habitat or other sensitive natural communities do not occur at the project site. Therefore, the proposed project would have no impact on riparian habitat, and other sensitive natural communities.

NO IMPACT

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The project site is located on the existing Kentfield Campus and is developed with school buildings, support structures, and paved areas for parking and pedestrian access. The U.S. Fish and Wildlife National Wetland Inventory designates Corte Madera Creek as Riverine habitat. Additionally, as noted in under *Project Description*, and discussed in *Hydrology and Water Quality*, project-related, ground-disturbing activities would not occur in Corte Madera Creek. Therefore, impacts to jurisdictional wetlands would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The Marin Community College District does not have a tree protection and replacement ordinance or policy. Therefore, the project would not conflict with local policies or ordinances protecting biological resources related to tree removal. The proposed project would have no impact.

NO IMPACT

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

According to California Department of Fish and Wildlife, no adopted Habitat Conservation Plans or Community Conservation Plans apply to the project area. Therefore, the project would not conflict with the provisions of an adopted habitat conservation plan, natural communities plan, or other

approved local, regional, or state habitat conservation plan. The proposed project would have no impact.

NO IMPACT

5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	■	☐
b. Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	■	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	■	☐	☐

This section provides an analysis of the project's impacts on cultural resources, including historical and archaeological resources, as well as human remains.

CEQA requires a lead agency determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC], Section 21084.1) and tribal cultural resources (PRC Section 21074 [a][1][A]-[B]). A historical resource is a resource listed in, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources, or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CEQA Guidelines, Section 15064.5[a][1-3]).

A resource shall be considered historically significant if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, if it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC, Section 21083.2[a], [b]).

PRC, Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Archaeological Resources

Rincon Consultants conducted a Cultural Resources Study for the project site in June 2019, to evaluate the presence of archaeological and historic resources on the project site, a copy of this study is included as Appendix CUL to this report. The following background and analysis have been drafted based on the findings and conclusions of Appendix CUL.

Rincon conducted a search of the California Historical Resources Information System (CHRIS) at the Northwest Information Center (NWIC) located at Sonoma State University on May 10, 2019. The search was performed to identify previously recorded cultural resources, as well as previously conducted cultural resources studies within the project site and a 0.8-kilometer (0.5-mile) radius surrounding it. The CHRIS search included a review of available records at the NWIC, as well as the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the Office of Historic Preservation Historic Properties Directory, the California Inventory of Historic Resources, the Archaeological Determinations of Eligibility list, and historic maps.

The NWIC records search identified 45 cultural resources studies conducted within a 0.5-mile radius of the project site, 17 of which included the project site and one was located within the LRC building footprint.

The resource consists of six prehistoric habitation sites, one prehistoric isolate, one multicomponent site, two historic-period buildings, and one historic-period structure. Reports as early as 1928 indicate the site is sensitive for prehistoric remains and has undergone previous disturbance associated with building construction (LSA 2009). More recently, archaeological fieldwork conducted during College of Marin Kentfield campus construction projects unearthed previously disturbed shell midden containing mostly small, pulverized, and fractured, non-diagnostic shell, with small amounts of clam and mussel, and pieces of flaked stone (LSA 2009 and 2013). No bone was identified during the 2009 and 2013 fieldwork.

On May 15, 2019, Rincon contacted the Native American Heritage Commission (NAHC) and requested a search of the Sacred Lands File (SLF). The NAHC provided a response on March 28, 2019 stating that the SLF results were negative as well as one native American contact traditionally and culturally affiliated with the geographic area of the project. Rincon prepared and mailed a letter to the NAHC-listed Native American contact to request information on potential cultural resources in the project vicinity that may be impacted by project development on February 23, 2018. No responses were received.

Historic Evaluation

Development of the college occurred over several phases: early development, campus redesign in the 1960s, and a new wave of construction from the early 2000s to present. The existing LRC building was completed by notable architect Corwin Booth as part of his master plan and redesign of the College of Marin 1973 (Appendix CUL). Per the criteria of the National Register, properties that have achieved significance within the last 50 years are excluded from eligibility unless they are

of exceptional importance per Criteria Consideration G (National Park Service 1995). According to the National Register, the phrase exceptional importance may be applied to "the extraordinary importance of an event or an entire category of resources so fragile that survivors of any age are unusual" or a building "whose development or design value is quickly recognized as historically significant by the architectural or engineering profession" (National Park Service 1995). Due to the LRC's association with architect Corwin Booth, Rincon Consultants evaluated the building.

Although the LRC building features elements of the Brutalist style, it was not determined to be amongst the best examples of that style. Therefore, the building did not meet the criteria for a building whose development or design value is quickly recognized as historically significant by the architectural or engineering profession. Additionally, the building failed to meet criteria A/1 and B/2 for significance due to association with important events or persons significant in the history of the city, region, state, or nation.

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

The project includes demolition and replacement of the existing LRC building. As noted above, the existing LRC building was determined to be ineligible for listing in the National and State register of historic resources. Therefore, the project would not result in a substantial adverse change in the significance of historic resource. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

The results of the cultural resource records search identified two previously recorded prehistoric cultural resources on campus. Of these, one is within the LRC building footprint. No surface evidence of the recorded prehistoric site was visible during the pedestrian survey; however, the archaeological site as mapped by LSA (2009) includes the western portion of the LSA building. The prehistoric site is assumed to exist within the project site based on previous records. Although much of the site has been disturbed during construction of the existing building, past archaeological testing efforts have confirmed the presence of prehistoric archaeological resources (including human remains). Therefore, project ground disturbing activities would result in significant impacts to archaeological resources.

Due to the known presence of archaeological resources within the existing LRC building footprint, impacts to archaeological resources would be significant and compliance with the following mitigation measures would be required to reduce impacts to a less than significant level.

Mitigation Measures

The following mitigation measures would be required to reduce impacts to cultural resources a less than significant level.

CUL-1 Extended Phase I Testing for CA-MRN-406

Upon completion of the design of the proposed LRC building and the identification of a construction footprint, the District shall retain a qualified archaeologist to conduct an XPI study to determine the

extent of the CA-MRN-406 site on the project site and to evaluate the condition of the site for its contribution to the significance of the site as a whole. XPI testing should comprise a series of shovel test pits and/or hand augured units and mechanical trenching intended to establish the boundaries of CA-MRN-406 on the project site, extending from the known extent of the site east ward through the project site. The XPI should also assess the condition of CA-MRN-406 on the project site.

All archaeological excavation should be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the Secretary of the Interior's (SOI) Professional Qualification Standards for archaeology (NPS 1983). Rincon recommends that archaeological excavation be observed by a Native American monitor. Upon completion of the XPI study, Phase II site evaluation or Phase III data recovery excavation may be recommended.

CUL-2 Phase II Site Evaluation

If the results of the XPI indicate the presence of CA-MRN-406 within the current project site, a the District shall retain a qualified archaeologist to conduct a Phase II investigation to establish the vertical and horizontal limits of site CA-MRN-406 within the project site and to determine if intact deposits remain that may contribute to the CRHR eligibility of CA-MRN-406.

Identified prehistoric or historic archaeological remains shall be avoided and preserved in place where feasible. Where preservation is not feasible, the significance of each resource shall be evaluated for significance and eligibility for listing in the CRHR. A Phase II evaluation shall include any necessary archival research to identify significant historical associations as well as mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit to characterize the nature of the sites, define the artifact and feature contents, determine horizontal boundaries and depth below surface, and retrieve representative samples of artifacts and other remains.

Cultural materials collected from the site shall be processed and analyzed in the laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)" (http://ohp.parks.ca.gov/pages/1054/files/armr.pdf). Upon completion of the work, all artifacts, other cultural remains, records, photographs, and other documentation shall be curated at an appropriate curation facility. All fieldwork, analysis, report production, and curation shall be fully funded by the applicant.

CUL-3 Phase III Data Recovery

Should the results of the Phase II site evaluation yield resources that meet CRHR significance standards, the District shall ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and permits issued for development. Necessary Phase III data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI standards for archaeology according to a research design reviewed and approved by the College prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent

with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof.

Should a Phase III data recovery effort be recommended for CA-MRN-406, future studies should include extensive subsurface testing and a full analysis of the recovered resources to exhaust the data potential of the site. These studies should include faunal analysis of all animal bones, additional radiocarbon dating where appropriate, protein residue analysis of stone tools and groundstone, and petrographic analysis of ceramic samples to assess general age ranges and source material. Additionally, research should be conducted for the existing artifact collections from the LSA (2009 and 2013) investigations as well as new collections recovered during Phase III fieldwork. Much of the prior information (Jackson 1972) has been lost or yet to be synthesized into a complete study. Additional research with these previous collections may help to provide a comprehensive analysis of CA-MRN-406.

As applicable, the final XPI Testing, Phase II Testing and Evaluation, or Phase III Data Recovery reports shall be submitted to the Marin Community College District prior to issuance of construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities.

CUL-4 Archaeological and Native American Monitoring

If ground-disturbing activities are required within or immediately adjacent to the boundaries of CA-MRN-406, the District shall retain a qualified archaeologist and local Native American representative to monitor project-related ground-disturbing activities. Monitoring shall be conducted within 100 feet surrounding CA-MRN-406. If remnants of CA-MRN-406 are encountered during ground-disturbing activities, work in the immediate area must halt and the find evaluated for significance under CEQA.

CUL-5 Unanticipated Discovery of Archaeological Resources

If archaeological resources are encountered during ground-disturbing activities, work in the immediate area should be halted and the District shall retain an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (National Park Service 1983) immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work, such as data recovery excavation, may be warranted to mitigate any significant impacts to historical resources.

CUL-6 Unanticipated Discovery of Human Remains

The discovery of human remains is always a possibility during ground-disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site and provide recommendations for treatment to the landowner within 48 hours of being granted access.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	■	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	■	☐

Electricity and Natural Gas

In 2017, California used 292,039 gigawatt-hours (GWh) of electricity, 29 percent of which were from renewable resources (California Energy Commission [CEC] 2019). California also consumed approximately 12,500 million U.S. therms (MMthm) of natural gas in 2017. Pacific Gas and Electric (PG&E) would provide electricity and natural gas to the project site. Table 6 and Table 7 show the electricity and natural gas consumption by sector and in total for PG&E. In 2017, PG&E provided approximately 28.2 percent of the total electricity used in California, and approximately 37.7 percent of the total natural gas used in California.

Table 6 Electricity Consumption in the PG&E Service Area in 2017

Agriculture and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Streetlight	Total Usage
5049.7	30,446.9	4,309.6	10,409.9	1,747.3	29,920.2	340.7	82,224.3

Notes: All usage expressed in GWh

Source: CEC 2017a

Table 7 Natural Gas Consumption in PG&E Service Area in 2017

Agriculture and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Total Usage
36.4	864.8	68.0	1,701.3	170.8	1,873.4	4,714.7

Notes: All usage expressed in MMthm

Source: CEC 2017b

a. Would the project result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Energy consumption accounts for energy consumed during project construction and operation, such as fuel consumed by vehicles, natural gas consumed for heating and/or power, and electricity consumed for power. The analysis of energy consumption herein involves the quantification of anticipated vehicle and equipment fuel, natural gas, and electricity consumption during project construction and operation, to the extent feasible, as well as a qualitative discussion of the efficiency, necessity, and wastefulness of that energy consumption.

Construction Energy Demand

During project construction, energy would be consumed in the form of petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, and vehicles used to deliver materials to the site. The proposed project would require site preparation and grading, including hauling material off-site; pavement and asphalt installation; building construction; architectural coating; and landscaping and hardscaping.

The total consumption of gasoline and diesel fuel during project construction was estimated using the assumptions and factors from CalEEMod (Appendix AQ). Table 8 presents the estimated energy consumption during the construction phase, indicating construction equipment, hauling/vendor trips, and worker trips would consume approximately 36,666 gallons of fuel over the project construction period. Construction equipment would consume an estimated 30,743 gallons of fuel; vendor and hauling trips would consume approximately 2,992 gallons of fuel; and worker trips would consume approximately 2,931 gallons of fuel over the combined phases of project construction.

Table 8 Estimated Fuel Consumption during Construction

Fuel Type	Gallons of Fuel	MMBtu[4]
Diesel Fuel (Construction Equipment)[1]	30,743	3,919
Diesel Fuel (Hauling and Vendor Trips)[2]	3,209	409
Other Petroleum Fuel (Worker Trips)[3]	3,129	344
Total	**37,081**	**4,672**

[1] Fuel demand rate for construction equipment is derived from the total hours of operation, the equipment's horse power, the equipment's load factor, and the equipment's fuel usage per horse power per hour of operation, which are all taken from CalEEMod outputs (see Appendix AQ), and from compression-ignition engine brake-specific fuel consumptions factors for engines between 0 to 100 horsepower and greater than 100 horsepower (USEPA 2018). Fuel consumed for all construction equipment is assumed to be diesel fuel.

[2] Fuel demand rate for hauling and vendor trips (cut material imports) is derived from hauling and vendor trip number, hauling and vendor trip length, and hauling and vendor vehicle class from "Trips and Vehicle Miles Traveled" Table contained in Section 3.0, *Construction Detail*, of the CalEEMod results (see Appendix AQ). The fuel economy for hauling and vendor trip vehicles is derived from the United States Department of Transportation (DOT 2018). Fuel consumed for all hauling trucks is assumed to be diesel fuel.

[3] The fuel economy for worker trip vehicles is derived from DOT National Transportation Statistics (24 mpg) (DOT 2018). Fuel consumed for all worker trips is assumed to be gasoline fuel.

[4] CaRFG CA-GREET 2.0 fuel specification of 109,786 Btu/gallon used to identify conversion rate for fuel energy consumption for worker trips specified above (CARB 2015). Low-sulfur Diesel CA-GREET 2.0 fuel specification of 127,464 Btu/gallon used to identify conversion rate for fuel energy consumption for construction equipment specified above. Totals may not add up due to rounding.

The construction energy estimates represent a conservative estimate as the construction equipment used in each phase of construction was assumed to be operating every day of construction. Construction equipment would be maintained to all applicable standards as required, and construction activity and associated fuel consumption and energy use would be temporary and typical for construction sites. It is also reasonable to assume contractors would avoid wasteful, inefficient, and unnecessary fuel consumption to reduce construction costs. Therefore, the proposed project would not involve the inefficient, wasteful, or unnecessary use of energy during construction; construction energy consumption would be less than significant.

Operational Energy Demand

Project operation would require energy use in the form of electricity, natural gas, and gasoline consumption. Natural gas and electricity would be used for heating and cooling systems, lighting, appliances, water use, and the overall project operation. Because the project would not increase vehicle trips from existing conditions, as described in Section 17, *Transportation*, there would be no increased energy consumption associated with fuel use from project operation.

Project operation would consume approximately 0.5 GWh of electricity per year (electricity use provided in Appendix AQ). The proposed project's electricity demand would be served by PG&E, which provided 61,397 GWh of electricity in 2017; therefore, PG&E would have sufficient supplies for the proposed project. Estimated natural gas consumption would be approximately 0.02 MMthm per year (natural gas use provided in the CalEEMod output of Appendix AQ) (PG&E 2019). The proposed project's natural gas demand would be serviced by PG&E, which provided approximately 4,715 MMthm per year in 2017; therefore, PG&E would have sufficient supplies for the proposed project (PG&E 2019).

The proposed project would be required to comply with all standards set in California Building Code (CBC) Title 24, which would minimize the wasteful, inefficient, or unnecessary consumption of energy resources during operation. California's Green Building Standards Code (CALGreen; California Code of Regulations, Title 24, Part 11) requires implementation of energy efficient light fixtures and building materials into the design of new construction projects. Furthermore, the 2019 Building Energy Efficiency Standards (CBC Title 24, Part 6) requires newly constructed buildings to meet energy performance standards set by the Energy Commission. These standards are crafted specifically for new buildings to result in energy efficient performance. The standards are updated every three years and each iteration is more energy efficient than the previous one. For example, according to the CEC, nonresidential buildings built with the 2019 standards will use about 30 percent less energy than those built under the 2016 standards due mainly to lighting upgrades (CEC 2018). The proposed project would be considerably more energy efficient than the existing building. Furthermore, the new LRC would continue to reduce its use of nonrenewable energy resources, as the electricity PG&E provides from renewable resources continues to increase to comply with state requirements of Senate Bill (SB) 100. This law requires electricity providers to increase procurement from eligible renewable resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Project operation would involve the consumption of natural gas and electricity, but PG&E has enough supplies to meet the needs of the proposed project from its existing capacity. For this analysis, energy use from the existing LRC building was not subtracted from the proposed project's energy use and therefore the numbers stated here represent a conservative estimate. As mentioned under criterion b, the project would be designed to reduce fossil fuel reliance and increase energy efficiency compared to the existing building, per the requirements of the College of Marin

Sustainability Design Standard (2017) and CalGreen, and would also have a smaller building envelope than the existing LRC. Therefore, this impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

SB 100 mandates that California acquire 100 percent of its electricity from clean, renewable sources by 2045. Because the existing electricity grid would power the proposed project, the new LRC would eventually be powered 100 percent by renewable energy and would not conflict with this statewide initiative. The College of Marin enacted a resolution to "design, deconstruct, renovate, operate, and maintain District Facilities and infrastructure that are models of energy, water, and material efficiency" (College of Marin 2012). The College of Marin has adopted the *Sustainability Design Standard* that provides guidance for achieving energy efficiency goals for campus building projects (College of Marin 2017). Specific actions that apply to new construction include:

- Take an Ecological Site Design Approach. In the formative design phase, identify sustainability priorities and key milestones in the project timeline.
- Reduce fossil fuel reliance and related energy costs by applying Title 24 Standards regarding energy and water efficiency requirements (and indoor air quality requirements) for newly constructed buildings, and alterations to existing buildings.
- Provide infrastructure for future renewable energy installations, and when possible, on-site renewable energy systems.

As discussed above under criterion a, the proposed project would be required to comply with CBC Title 24, which would minimize the wasteful, inefficient, or unnecessary consumption of energy resources during operation. Conformance with CALGreen (CBC Title 24, Part 11) would ensure incorporation of energy efficient light fixtures and building materials into the design of new construction projects, including the proposed project. This would ensure consistency with the College of Marin *Sustainability Design Standard*, to apply Title 24 Standards to all newly constructed buildings.

By implementing sustainable design practices in new construction, the proposed would be consistent with the College of Marin's *Sustainable Design Plan* and this impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potentially substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	■	☐
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
4. Landslides?	☐	☐	☐	■
b. Result in substantial soil erosion or the loss of topsoil?	☐	■	☐	☐
c. Be located on a geologic unit or soil that is made unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	■	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	■
f. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	■	☐	☐

a.1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

The project site is not located in an Alquist-Priolo earthquake fault zone for surface fault rupture (California Geologic Survey 2019). No active faults are located on the project site and the closest known active fault is the northern segment of the San Andreas fault, located approximately 7.5 miles west. Therefore, impacts related to surface rupture would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.2. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

a.3. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

c. Would the project be located on a geologic unit or soil that is made unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

d. Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Marin County is in a region of seismic activity and geotechnical instability (County of Marin 2007). According to the County's General Plan, major earthquake faults in the region are the San Andreas and the San Gregorio faults near San Francisco, and the Hayward fault system in the Diablo Range. The closest known fault to the project area is the San Andreas Fault, approximately 7.5 miles west of the project site (California Geologic Survey 2019).

According to the County's Marinmap Map Viewer for geologic hazards, lateral spreading is not anticipated to occur near the project site, and the site's near-surface soil has no expansive potential (County of Marin 2019).

The project site is in a moderate liquefaction hazard zone according to hazard maps prepared by the County of Marin and is identified as having moderate-liquefaction potential in the College's Facilities Master Plan (County of Marin 2019, College of Marin 2016). However, the Facilities Plan indicates that College Standard Construction Policy requires all buildings subject to liquefaction hazards be designed with larger foundations and other features to reduce impacts of liquefaction (College of Marin 2016). Adherence to College Standard Construction Policy and the requirements of the CBC would reduce impacts associated with strong seismic ground shaking and liquefaction to a less than significant level.

LESS THAN SIGNIFICANT IMPACT

a.4. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The project site is not located in an earthquake-induced landslide zone (County of Marin 2019). The project site and the surrounding area are relatively flat, and the project does not include grading on substantial slopes. Landslides are most likely to occur on or near a slope or hillside area, rather than

in generally level areas, such as the project site. The proposed project would have no impact related to exposing people or structures to landslides.

NO IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

The project site has been previously disturbed during construction of the existing LRC building. However, construction activities involving soil disturbance, such as excavation and grading, could result in increased erosion and sediment transport by stormwater and wind to the adjacent Corte Madera Creek. Therefore, the proposed project's erosion impacts would be potentially significant. Therefore, Mitigation Measure GEO-1 would be required to reduce impacts.

During project operation, the site would be developed with the proposed LRC building, an improved parking lot, pedestrian access paths, and landscaping. Top soil would not be exposed to erosion forces, such as precipitation and wind. Therefore, project impacts would be less than significant.

Mitigation Measure

GEO-1 Erosion Control Plan

The project contractor shall prepare and implement an Erosion Control Plan for construction activities to minimize soil erosion. The Erosion Control Plan shall contain BMPs that include the following components:

- Excavation shall be limited to the dry season of the year (i.e., April 15 to November 1).
- Exposed soils shall be watered twice daily to prevent wind erosion.
- Silt fencing, straw bales composed of rice straw (that are certified to be free of weed seed), fiber rolls, gravel bags, mulching erosion control blankets, soil stabilizers, and storm drain filters shall be used, in conjunction with other methods, to prevent erosion throughout the entire project site and siltation of stream channels and detention basins.
- Temporary berms and sediment basins shall be constructed to avoid unnecessary siltation into local waterways during construction activities.
- Erosion controls that protect and stabilize stockpiles and exposed soils shall be used to prevent movement of materials. Potential erosion control devices include plastic sheeting held down with rocks or sandbags over stockpiles, silt fences, or berms of hay bales.
- Temporary stockpiling of excavated material shall be minimized. However, excavated material shall be stockpiled in areas where it cannot enter Corte Madera Creek. Available stockpiling sites at or near the project site shall be determined prior to the start of construction.
- Frequency of sediment removal from detention basins, location of spoil disposal, locations and types of erosion and sediment control structures, and materials that would be used on-site during construction activities shall be specified.
- Upon completion of project construction, all exposed soils present in and around the project site shall be stabilized within seven days. Exposed soils shall be mulched to prevent sediment runoff and transport. All mulches, except hydro-mulch, shall be applied in a layer not less than two inches deep. Where feasible, all mulches shall be kneaded or tracked-in with track marks parallel to the contour, and tackified as necessary to prevent excessive movement. All exposed soils and fills shall be revegetated with deep-rooted, native, drought-tolerant species to

minimize slope failure and erosion potential. Geotextile binding fabrics shall be used if necessary to hold slope soils until vegetation is established.

- An adequate supply of erosion control materials (gravel, straw bales, shovels, etc.) shall be maintained on-site to facilitate a quick response to unanticipated storm events or emergencies.

With implementation of the Mitigation Measure GEO-1, impacts related to soil erosion would be reduced to a less than significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The existing municipal sanitary sewer system would serve the proposed project. Septic tanks or alternative wastewater disposal systems would not be used. Therefore, the proposed project would have no impact.

NO IMPACT

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

According to the County of Marin Countywide General Plan EIR, paleontological remains are common in Marin County, and include plants, invertebrates, and vertebrates ranging in age from approximately 140 million to less than 8,000 years before the present. However, a search of the University of California Museum of Paleontology online database did not reveal paleontological resources at the project site or vicinity (University of California Berkeley 2019). Nonetheless, due to the presence of paleontological resources elsewhere in Marin County, project ground-disturbing activities could impact previously undiscovered paleontological resources.

The project site is located in a highly urbanized area and has been disturbed previously during construction of the existing LRC building. Ground-disturbing activities anticipated with the project would not be substantially beyond that required for construction of the existing building. As noted throughout this report, the new LRC building would be constructed within the footprint of the existing LRC building. Disturbance of soils beyond that which was previously disturbed for existing development would be minor. Therefore, it is unlikely that previously undisturbed strata with a potential to contain previously undiscovered paleontological resources would be disturbed during construction. Even so, unanticipated resources could be unearthed during project construction. This impact is potentially significant and mitigation measures would be required.

Mitigation Measure

GEO-2 Protection of Undiscovered Paleontological Resources

In the event that paleontological resources are unearthed during project construction, excavations within 50 feet of the find shall be temporarily halted or delayed until the discovery is examined by a Qualified Paleontologist in accordance with Society of Vertebrate Paleontology standards. If the find is determined to be significant, then the Qualified Paleontologist shall direct any necessary additional work such as paleontological salvage and data recovery consistent with Society of

Vertebrate Paleontology standards and in coordination with College of Marin staff. After the find has been appropriately mitigated, work in the area may resume.

Significance After Mitigation

Incorporation of Mitigation Measure GEO-2 would ensure that resources are properly identified and preserved in the unlikely event they are uncovered during construction and would reduce impacts regarding disrupting intact paleontological resources to a less than significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
b. Conflict with any applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of greenhouse gases?	☐	☐	■	☐

Climate change is the observed increase in the average temperature of the earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. Climate change is the result of numerous, cumulative sources of greenhouse gases (GHG), gases that trap heat in the atmosphere, analogous to the way in which a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases, and ozone (O_3). GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills. Anthropogenic GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6) (National Aeronautics and Space Administration 2018).

Most individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15064[h][1]).

In late 2015, the California Supreme Court's Newhall Ranch decision confirmed there are multiple potential pathways for evaluating GHG emissions consistent with CEQA, depending on the circumstances of a given project (Center for Biological Diversity v. Department of Fish and Wildlife (2015) 62 Cal. 4th 204). Given the legislative attention and judicial action regarding post-2020 goals and the scientific evidence that additional GHG reductions are needed through the year 2050, the Association of Environmental Professionals Climate Change Committee published a white paper in October 2016 that provides guidance on defensible GHG thresholds for use in CEQA analyses and GHG reduction targets in climate action plans.

The Climate Change Committee white paper identified seven thresholds for operational emissions. The following four methods described are the most widely used evaluation criteria.[4]

(1) **Consistency with a Qualified GHG Reduction Plan.** For a project located within a jurisdiction that has adopted a qualified GHG reduction plan (as defined by CEQA Guidelines Section 15183.5), GHG emissions would be less than significant if the project is anticipated by the plan and fully consistent with the plan. However, projects with a horizon year beyond 2020 should not tier from a plan that is qualified up to 2020.

(2) **Bright line Thresholds.** There are two types of bright line thresholds:

   a. **Standalone Threshold.** Emissions exceeding standalone thresholds would be considered significant.

   b. **Screening Threshold.** Emissions exceeding screening thresholds would require evaluation using a second-tier threshold, such as an efficiency threshold or other threshold concept to determine whether project emissions would be considered significant.

However, projects with a horizon year beyond 2020 should take into account the type and amount of land use projects and their expected emissions out to the year 2030.

(3) **Efficiency Thresholds.** Land use sector efficiency thresholds are currently based on AB 32 targets and should not be used for projects with a horizon year beyond 2020. Efficiency metrics should be adjusted for 2030 and include applicable land uses.

(4) **Percent Below "Business as Usual" (BAU).** GHG emissions would be less than significant if the project reduces BAU emissions by the same amount as the statewide 2020 reductions. However, this method is no longer recommended following the Newhall Ranch ruling.

Operational emissions methods (1), (3), and (4) were not applicable. The Marin Community College District does not have a qualified climate action plan. Additionally, to develop an efficiency threshold, the local planning area is evaluated to determine emissions sectors that are present and will be directly affected by potential land-use changes.

Efficiency thresholds are quantitative thresholds based on a measurement of GHG efficiency for a given project, regardless of the amount of mass emissions. These thresholds identify the emission level below which new development would not interfere with attainment of statewide GHG reduction targets. A project that attains such an efficiency target, with or without mitigation, would result in less than significant GHG emissions.

With the release of the 2017 Climate Change Scoping Plan Update, CARB recognized the need to balance population growth with emissions reductions and in doing so, provided a new local plan level methodology for target setting that provides consistency with state GHG reduction goals using per capita efficiency thresholds. A project-specific efficiency threshold can be calculated by dividing statewide GHG emissions by the sum of statewide jobs and residents. However, not all statewide emission sources are present in the project area (e.g., mining). Accordingly, consistent with the concerns raised in the Golden Door (2018) and Newhall Ranch (2015) decisions regarding the correlation between state and local conditions, the 2030 statewide inventory target was modified with substantial evidence to establish a locally appropriate, evidence-based, residential, project-

[4] The three other thresholds are best management practices/best available mitigation, compliance with regulations, and a hybrid threshold concept: separate transportation and non–transportation threshold. These are not commonly used and do not specifically apply to this project.

specific threshold consistent with California's SB 32 targets. This option cannot be utilized, however, because the Marin Community College District does not have an existing baseline inventory that can be used to calculate the project-specific efficiency threshold. Furthermore, BAU emissions are no longer recommended following the Newhall Ranch ruling. Therefore, the most appropriate threshold for the project is the bright line threshold of 1,100 metric tons (MT) of CO_2e established by BAAQMD. As such, the project would result in a significant impact if project-generated emissions exceed the BAAQMD bright line threshold provided by the BAAQMD's *CEQA Air Quality Guidelines*. Project emissions were estimated using CalEEMod, version 2016.3.2 (see Appendix AQ).

Methodology

CalEEMod version 2016.3.2 was used to calculate total GHG project emissions, which include construction and operational emissions. This methodology is recommended by the CAPCOA CEQA and Climate Change white paper (CAPCOA 2008). The analysis focuses on CO_2, N_2O, and CH_4 as these are the GHG emissions that on-site development would generate in the largest quantities. Fluorinated gases, such as HFCs, PFCs, and SF_6, were also considered for the analysis. However, the proposed project is not expected to be a significant contributor of fluorinated gases since fluorinated gases are primarily associated with industrial processes. Calculations were based on the methodologies discussed in the CAPCOA white paper and included the use of the California Climate Action Registry (CCAR) General Reporting Protocol (CCAR 2013).

Construction Emissions

Project construction would generate temporary GHG emissions primarily due to construction equipment and truck trips. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling. Although construction activity is addressed in this analysis, CAPCOA does not discuss whether any of the suggested threshold approaches adequately address impacts from temporary construction activity. As stated in the CEQA and Climate Change white paper, "more study is needed to make this assessment or to develop separate thresholds for construction activity" (CAPCOA 2008). Additionally, the BAAQMD does not have specific quantitative thresholds for construction activity. Therefore, although estimated in CalEEMod and provided for informational purposes, construction activity is not included in the total emissions calculations.

Operational Emissions

Project operational emissions were modeled using CalEEMod and compared to BAAQMD thresholds. CalEEMod provides operational emissions of CO_2, N_2O, and CH_4. Emissions from energy use include electricity and natural gas use. The emissions factors for natural gas combustion are based on EPA's AP-42 (Compilation of Air Pollutant Emissions Factors) and CCAR. Electricity emissions are calculated by multiplying the energy use times the carbon intensity of the utility district per kilowatt hour. The default electricity consumption values in CalEEMod include the California Energy Commission-sponsored California Commercial End Use Survey and Residential Appliance Saturation Survey studies. CalEEMod incorporates 2016 Title 24 CALGreen Building Standards, which are the most recent and thus apply to the proposed project.

Emissions associated with area sources, including consumer products, landscape maintenance, and architectural coating were calculated in CalEEMod and utilize standard emission rates from CARB, USEPA, and emission factor values provided by the local air district (CAPCOA 2017).

Emissions from waste generation were also calculated in CalEEMod and are based on the IPCC's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste (CAPCOA 2017). Waste disposal rates by land use and overall composition of municipal solid waste in California was based primarily on data provided by the California Department of Resources Recycling and Recovery (CalRecycle).

Emissions from water and wastewater usage calculated in CalEEMod were based on the default electricity intensity from the California Energy Commission's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for Northern and Southern California.

Because the project would not increase trips from existing conditions, as described in Section 17, *Transportation*, there would be no new mobile source emissions during project operation.

The project would comply with 2016 CALGreen Building Standards. The project would also reduce fossil fuel reliance, increase energy efficiency, and increase water use efficiency compared to the existing building; and have a smaller building envelope than the existing building. However, the specific sustainability features that would be applied to the project are not known to the level of detail required for applying reductions in CalEEMod. Thus, the analysis excludes these sustainability features and is thus a conservative analysis of operational emissions.

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

The project's proposed construction activities, energy use, daily operational activities, and mobile sources (traffic) would generate GHG emissions. CalEEMod was used to calculate emissions resulting from project construction and long-term operation (see Appendix AQ).

Construction Emissions

Emissions generated by project construction would be approximately 347 MT of CO_2e. The BAAQMD does not have a recommended threshold for construction-related GHG emissions, and therefore emissions associated with construction would not result in a significant impact.

Operational Indirect and Stationary Direct Emissions

Long-term emissions relate to area sources, energy use, solid waste, and water use. CalEEMod was used to calculate direct sources of air emissions associated with the proposed project. These include consumer product use and landscape maintenance equipment. Area emissions are estimated at less than 0.1 MT of CO_2e per year.

Project operation would consume electricity, primarily for lighting and powering appliances (including computers and other electronic educational equipment). The generation of electricity through combustion of fossil fuels emits CO_2, and to a smaller extent, N_2O and CH_4. The project would generate approximately 229.9 MT of CO_2e per year associated with overall energy use.

Based on the estimate of GHG emissions from project-generated solid waste as it decomposes, solid waste would generate approximately 30.1 MT of CO_2e per year.

Based on the amount of electricity generated to supply and convey water, the proposed project would generate an estimated 9.2 MT of CO_2e per year.

Because the project would not increase trips from existing conditions, there would be no new mobile source emissions during project operation. The proposed project would not increase emissions of CO_2e per year from mobile sources.

Combined Stationary and Mobile Source Emissions

Table 9 shows the project's operational and mobile GHG emissions. The annual emissions would total approximately 374.4 MT of CO_2e per year. These emissions would not exceed the 1,100 MT of CO_2e per year threshold for compliance with BAAQMD thresholds. This impact would be less than significant.

Table 9 Operational GHG Emissions

Emissions Source	Annual Emissions (MT of CO_2e/year)
Operational	
Area	<0.1
Energy	229.9
Waste	30.1
Water	9.2
Mobile	
CO_2 and CH_4	0.0
N_2O	0.0
Total	**269.2**
BAAQMD Threshold	1,100
Exceeds Threshold?	No

See Table 2.2 "Overall Operational" emissions. CalEEMod worksheets in Appendix AQ.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

SB 375, signed in August 2008, requires the inclusion of Sustainable Communities' Strategies (SCS) in Regional Transportation Plans (RTP) for the purpose of reducing GHG emissions. The Metropolitan Transportation Commission and the Association of Bay Area Governments adopted an SCS that meets GHG reduction targets. Plan Bay Area 2040 is a state-mandated, integrated long-range transportation, land-use, and housing plan that would support a growing economy, provide more housing and transportation choices, and reduce transportation-related pollution in the nine-county San Francisco Bay Area (Association of Bay Area Governments 2017a). The SCS builds on earlier efforts to develop an efficient transportation network and grow in a financially and environmentally responsible way. Plan Bay Area 2040 will be updated every four years to reflect new priorities. A goal of the SCS is to reduce vehicles miles traveled per capita by 10 percent (Association of Bay Area Governments 2017b).

As described in Section 6, *Energy*, the College of Marin enacted a resolution to "design, deconstruct, renovate, operate, and maintain District Facilities and infrastructure that are models of energy, water, and material efficiency" (College of Marin 2012). The College of Marin has adopted the *Sustainability Design Standard* that provides guidance for achieving energy efficiency goals for campus building projects (College of Marin 2017). Specific actions that apply to new construction include:

- Take an Ecological Site Design Approach. In the formative design phase, identify sustainability priorities and key milestones in the project timeline.
- Reduce fossil fuel reliance and related energy costs by applying Title 24 Standards regarding energy and water efficiency requirements (and indoor air quality requirements) for newly constructed buildings, and alterations to existing buildings.
- Provide infrastructure for future renewable energy installations, and when possible, on-site renewable energy systems.

The project site is located west of a multimodal trail that provides access to local communities and is within walking distance of a bus stop along Sir Francis Drake Boulevard. Both Marin Transit and Golden Gate Transit Bus Lines 22, 24, 25, 122, and 228 serve the bus stop. Pedestrian sidewalks are located along both College Avenue and Sir Francis Drake Boulevard near the project site. Furthermore, the campus itself features numerous pedestrian pathways between buildings. Since the project site can be accessed by bicyclists, pedestrians, and public transit users, increased alternative transportation could reduce vehicle trips, thereby reducing mobile-related GHG emissions and contributing to the achievement of SB 32 goals.

Based on this analysis, the proposed project would not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions and would be consistent with the objectives of the RTP/SCS, AB 32, and SB 32. Therefore, impacts related to GHG emissions would be less than significant.

LESS THAN SIGNIFICANT IMPACT

9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	■	☐
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	■	☐
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for excessive noise for people residing or working in the project area?	☐	☐	☐	■
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires, including where wildlands?	☐	☐	■	☐

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Construction

Project construction may include the temporary transport, storage, and use of potentially hazardous materials including fuels, lubricating fluids, cleaners, or solvents. Demolition of the existing building could result in upset and release of hazardous materials into the environment.

The existing LRC building was constructed in 1971, and due to its age, may contain asbestos, Polychlorinated biphenyls (PCB), and/or lead-based paint (LBP). Because the building was constructed before the federal ban on PCBs, it is possible that they are present in light ballasts. Demolition could result in health hazard impacts to workers if not remediated prior to construction activities. However, demolition and construction activities would be carried out in compliance with BAAQMD Regulation 11, Rule 2, which governs the proper handling and disposal of hazardous contaminated aluminum composite material for demolition, renovation, and manufacturing activities in the Bay Area. These activities would also need to comply with California Occupational Safety and Health Administration (Cal/OSHA) regulations regarding lead-based materials. The California Code of Regulations, Section 1532.1, requires testing, monitoring, containment, and disposal of lead-based materials in a manner such that exposure levels do not exceed Cal/OSHA standards. The Department of Toxic Substance Control (DTSC) classifies PCBs as a hazardous waste when concentrations exceed 50 parts per million in non-liquids. Consequently, the DTSC requires materials containing those concentrations of PCBs be transported and disposed of as hazardous waste. Any light ballast removed would be evaluated for the presence of PCBs and managed appropriately. Compliance with BAAQMD, Cal/OSHA, and DTSC policies regarding asbestos-containing materials, LBP, and PCBs, would reduce impacts to a less than significant level.

Furthermore, project construction would require heavy construction equipment, the operation of which could result in a spill or accidental release of hazardous materials, including fuel, engine oil, engine coolant, and lubricants. The transport of any hazardous materials would be subject to federal, state, and local regulations, which would minimize risk associated with the transport hazardous materials. Construction activities that involve hazardous materials would be required to transport such materials along roadways designated for that purpose in the County, thereby limiting risk of upset during transportation.

Operation

Project operation could involve the use of hazardous materials in the form of routine cleaning products. These materials would not be substantially different from commercial and industrial chemicals already in general and wide use throughout the region and project area. As with any institutional activities that involve the storage and use of hazardous materials, on-site activity involving hazardous substances (such as the cleaning products as described above), and the transport, storage, handling of these substances, must adhere to applicable local, state, and federal safety standards, ordinances, or regulations. Cal/OSHA is responsible for developing and enforcing workplace safety regulations. Both federal and state laws include special provisions/training in safe methods for handling any type of hazardous substance. These regulations ensure that potential hazards associated with operational activities do not create a significant hazard to the public. Future

uses would be required to store hazardous materials in designated areas designed to prevent accidental release into the environment. Potentially hazardous waste produced during operation would also be collected, stored and disposed of in accordance with applicable laws and regulations.

Compliance with existing laws and regulations governing the transport, use, release, and storage of hazardous materials would reduce impacts related to exposure of the public or environment to hazardous materials to less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

The proposed project would be located on the College of Marin Kentfield Campus, which is developed with a combination of academic, administrative, and athletic facilities. Anne E. Kent Middle School is across College Avenue within 0.25 mile of the project site. However, as discussed under criteria a and b, project operation would not produce hazardous emissions or require the handling of hazardous materials, substances, or wastes. Therefore, the proposed project would have less than significant impact.

LESS THAN SIGNIFICANT IMPACT

d. Would the project be located on a site included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

The following databases and listings compiled pursuant to Government Code Section 65962.5 were queried on May 17, 2019, for known hazardous materials contamination at the project site:

- **State Water Resources Control Board (SWRCB)**
  - GeoTracker search for leaking underground storage tanks and other cleanup sites
- **DTSC**
  - EnviroStor database (2018a) for hazardous waste facilities or known contamination sites

The College of Marin Kentfield Campus, including the project site, does not appear on the EnviroStor database. However, the GeoTracker database revealed two leaking underground storage tanks on the Kentfield Campus near the LRC building site: one is at the corner of College Avenue and Sir Francis Drake Boulevard and the second is at the corner of College Avenue and Kent Avenue. Both tank sites have been cleaned and the cases have been closed (SWRCB 2014, SWRCB 2015). Contamination from these sites is not expected to have migrated such that the project site is affected by nearby contamination. Therefore, the proposed project would not create a significant hazard to the public or environment and there would be a less than significant impact.

LESS THAN SIGNIFICANT IMPACT

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The project site is not located within two miles of an airport and is not in an airport land use plan area. Therefore, the proposed project would have no impact related to safety hazards or excessive noise from a nearby airport.

NO IMPACT

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The project would not involve the development of structures that could potentially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The project would not result in closure, rerouting or substantial alteration of streets or property access points during or after construction. There would be no impact.

NO IMPACT

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

As noted in Section 20, *Wildfire*, below, the project site is in an urbanized area surrounded by a mixture of commercial, educational/ institutional, government, recreation, and residential land uses. No wildlands or densely vegetated areas are adjacent to the project site that would represent a significant fire hazard. The project site is not located in a Fire Hazard Severity Zone or Very High Hazard Severity Zone for wildland fires (California Department of Forestry and Fire Protection [CALFIRE] 2007, CALFIRE 2008). Therefore, the project would not expose people or structures to significant risk of loss, injury, or death involving wildland fires, and there would be no impact.

LESS THAN SIGNIFICANT IMPACT

10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	■	☐	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	■	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	■	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	■	☐
e. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	■	☐	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would impede or redirect flood flows?	☐	☐	☐	■
g. In a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	■
h. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	■	☐

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

e. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Project excavation, grading, and construction activities would result in soil disturbance that could cause water quality violations through potential erosion and subsequent sedimentation of streams that intersect the project area. Because the proposed project would disturb less than one acre, the project would not be subject to the NPDES Construction General Permit. However, as discussed in Section 7, *Geology and Soils*, the project site has been graded for previous development but contains a slope that would increase the potential for soil erosion in Corte Madera Creek. Implementation of Mitigation Measure GEO-1 would reduce erosion-related impacts to water quality.

Construction activities could also cause water quality violations in the event of an accidental fuel or hazardous materials leak or spill. If precautions are not taken to contain contaminants, construction activities could result in contaminated stormwater runoff that could enter nearby streams. Therefore, the proposed project would result in potentially significant impacts to water quality, and implementation of Mitigation Measure HWQ-1 would be required to reduce impacts to a less than significant level.

During project operation, the site would be developed with the proposed LRC building, an improved parking lot, pedestrian access paths, and landscaping. Stormwater runoff would be collected and transported through existing County stormdrain systems and would be required to comply with applicable state and federal regulations pertaining to water quality. No impacts to water quality associated with operation would occur.

Mitigation Measure

HWQ-1 Stormwater Pollution Prevention

- Stormwater runoff and nuisance flow drainage shall be directed away from Corte Madera Creek and into a temporary stormwater filter constructed to remove pollutants before being allowed to discharge into riparian areas.
- The collection and disposal of any and all pollutants originating from construction equipment shall be identified by the construction manager. During construction activities, washing of concrete, paint, or equipment shall occur only in designated areas greater than 100 feet from riparian areas where polluted water and materials can be contained for subsequent removal from the site. Washing shall not be allowed within 100 feet of Corte Madera Creek. Plastic shall be placed over any ground surface where fueling or equipment maintenance is to occur. Drip pans shall be placed under equipment parked on-site.
- Temporary storage of construction equipment shall be limited to a minimum of 100 feet away from Corte Madera Creek.

With implementation of the Mitigation Measure HWQ-1, impacts to water quality would be reduced to a less than significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

h. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

There are no sustainable groundwater management plans applicable to the proposed project site; water service would be provided via College of Marin's existing water supply sources, and on-site water uses would be comparable to existing water uses. As discussed under criteria a and e, the project would not obstruct implementation of existing plans and regulations to protect water quality.

The proposed project would not adversely affect groundwater supplies or impede sustainable groundwater management. Because the project would replace the existing LRC building with a similar size building on the existing footprint, the project would not substantially increase the on-site impervious surface and much of the Kentfield Campus is and would remain pervious. Therefore, the project would not substantially interfere with groundwater recharge. Potable water would be required for the project restrooms, drinking fountains, and the breakroom kitchenette, but water use associated with these facilities would be minimal and similar to existing uses at the project site. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on- or off-site?

d. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?

Corte Madera creek runs through the Kentfield Campus and is adjacent to the existing LRC building. Project construction would not occur in Corte Madera creek, nor would the project alter the course of a stream or river.

The project would not substantially increase impervious surfaces at the project site and, therefore, would not affect drainage patterns by decreasing the amount of precipitation able to infiltrate into the ground. Stormwater runoff would be conveyed to the County of Marin's existing storm sewer system: thus, substantial siltation would be prevented. The MRP requires storm drain system be maintained such that inlets and outlets are not blocked or clogged, so they do not contribute to flooding. Therefore, project-related impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

f. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would impede or redirect flood flows?

The project would not result in the addition of impervious surfaces or substantially alter the course of a river or stream such that it would impede or redirect flood flows. Additionally, although portions of the Kentfield Campus are located within a 100-year flood hazard area, as designated by the Federal Emergency Management Agency (FEMA), the existing LRC building is not located in a 100-year flood zone (FEMA 2009). Therefore, the project site would not be subject to a 1 percent annual chance of flooding, impacts would be less than significant.

NO IMPACT

g. In a flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

The project site is approximately 2 miles west of San Francisco Bay and 6.5 miles from the Pacific Ocean. The project site is not in a tsunami inundation zone (County of Marin 2019). San Francisco Bay is the closest body of water that could experience a seiche event. The distance from the Bay and intervening development would prevent a seiche in the San Francisco Bay from having potential to affect the project site. The Project site is not located in a 100-year flood hazard zone (FEMA 2009). Therefore, the risk of release of pollutants from the project due to tsunami, seiche, and flood would be less than significant.

NO IMPACT

11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	■
b. Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	■	☐

a. Would the project physically divide an established community?

The proposed project would be located on the existing College of Marin Kentfield Campus in an area that is developed with academic and administrative buildings. The proposed project would replace the existing LRC building; it would not include new roads or other linear features or development that could potentially divide established communities. Therefore, the proposed project would have no impact.

NO IMPACT

b. Would the project cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

The proposed project would be internal to the College of Marin Kentfield Campus. The Marin Community College District oversees land use planning on the three College of Marin campuses. The College of Marin Facilities Master Plan is the only applicable land use plan, policy, or regulation with jurisdiction over the project site (College of Marin 2016). The Facilities Master Plan identifies goals for future development across all three campuses including the Kentfield Campus, including to "build facilities that support the academic needs of students today and tomorrow [and develop] community space between Learning and Resource Center and Student Services Center" (College of Marin 2016).

The proposed project would provide updated facilities for student services and would serve the existing student population. Thus, the project aligns with goals of the College of Marin Facilities Master Plan to build facilities that support the academic needs of students and develop community space in the LRC building. The project would not conflict with land use plans or policies and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	■

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

The project site is located on the existing College of Marin Kentfield Campus and is developed with an academic building, and paved areas used for parking and campus access. The project site is not used or otherwise identified for mineral resource extraction. Therefore, the proposed project would have no impact on mineral resources.

NO IMPACT

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13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	■	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■

The decibel (dB) is the unit of measurement used to describe a noise level. However, the human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, a method called "A-weighting" is used to filter noise frequencies not audible to the human ear. A-weighting approximates the frequency response of the average young ear when listening to most everyday sounds. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the "A-weighted" levels of those sounds. Therefore, the A-weighted noise scale is used for measurements and standards involving the human perception of noise. In this analysis, all noise levels are A-weighted, and the abbreviation "dBA" is understood to identify the A weighted decibel.

Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. A 10 dB increase represents a 10-fold increase in sound intensity, a 20 dB increase is a 100-fold intensity increase, a 30 dB increase is a 1,000-fold intensity increase, etc. Similarly, a doubling of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the noise source would result in a 3 dB decrease.

Human perception of noise has no simple correlation with acoustical energy. The perception of noise is not linear in terms of dBA or in terms of acoustical energy. Two equivalent noise sources combined do not sound twice as loud as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA (increase or decrease); that a change of 5 dBA is readily perceptible; and that an increase or decrease of 10 dBA sounds twice (half) as loud (California Department of Transportation [Caltrans] 2013a).

Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this analysis are the one-hour equivalent noise level (L_{eq}) and the community noise equivalent level (CNEL).

The L_{eq} is the level of a steady sound that, in a specific time period and at a specific location, has the same A-weighted sound energy as the time-varying sound. For example, $L_{eq(1h)}$ is the equivalent noise level over a 1-hour period and $L_{eq(8h)}$ is the equivalent noise level over an 8-hour period. $L_{eq(1h)}$ is a common metric for limiting nuisance noise, whereas $L_{eq(8h)}$ is a common metric for evaluating construction noise.

The CNEL is a 24-hour equivalent sound level. The CNEL calculation applies an additional 5 dBA penalty to noise occurring during evening hours (between 7:00 p.m. and 10:00 p.m.) and an additional 10 dBA penalty to noise occurring during the night (between 10:00 p.m. and 7:00 a.m.). These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and night.

Propagation

Sound from a small, localized source (approximating a “point” source) radiates uniformly outward as it travels away from the source in a spherical pattern, known as geometric spreading. The sound level decreases or drops off at a rate of 6 dBA for each doubling of distance.

Traffic noise is not a single, stationary point source of sound. Over some time interval, the movement of vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point. The drop-off rate for a line source is 3 dBA for each doubling of distance.

Existing Noise Setting

The primary off-site noise sources in the project site vicinity are motor vehicles (e.g., automobiles, buses, and trucks) along Sir Francis Drake Boulevard, College Avenue, and Kent Avenue. Motor vehicle noise is of concern because it is characterized by a high number of individual events that often create sustained noise levels. Ambient noise levels are generally highest during the day and rush hour unless congestion slows traffic speeds substantially. Other sources of noise in the project vicinity include general conversations from passersby activities associated with adjacent residential and commercial development. Existing noise sources on the project site include noise associated with motor vehicles entering/exiting the surface parking lots throughout the project site.

Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of hertz (Hz). The frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body is from a low of less than 1 Hz up to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction

activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise may result in adverse effects, such as building damage, when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz). Vibration may also damage infrastructure when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (Federal Transit Authority [FTA] 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Descriptors

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. Particle velocity is that at which the ground moves. The PPV and RMS velocity are normally described in inches per second. PPV is defined as the greatest magnitude of particle velocity associated with a vibration event. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2013b).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2018). Vibration significance ranges from approximately 50 VdB (the typical background vibration-velocity level) to 100 VdB, the general threshold where minor damage can occur in fragile buildings. The general human response to different levels of groundborne vibration velocity levels is described in Table 10.

Table 10 Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many people
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable
85 VdB	Vibration acceptable only if there are an infrequent number of events per day

Source: FTA 2018

Propagation

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. Variability in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances (Caltrans 2013b). When a building is impacted by vibration, a ground-to-foundation coupling loss (the loss that occurs when energy is transferred from one medium to another) will usually reduce the overall vibration level. However, under rare circumstances, the ground-to-foundation coupling may actually amplify the vibration level due to structural resonances of the floors and walls.

Regulatory Setting

The Marin Community College District does not have standards or guidance documents pertaining to noise generated by campus development projects.

Sensitive Receptors

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include residences, hospitals, schools, guest lodging, libraries, churches and certain types of recreational uses. The nearest sensitive receptors to the LRC building site are the classrooms in the adjacent Academic Center building on the Kentfield Campus (approximately 30 feet away[5]). Additional offsite sensitive receptors include the Anne E. Kent Middle School (approximately 260 feet across College Avenue from the existing LRC building[5]), and residences on Kent Avenue on the west side of campus, approximately 600 feet[5] west of the existing LRC building.

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

Project construction would generate temporary increases in ambient noise levels, but these would cease upon the completion of construction activity. Noise impacts associated with construction activity are generated by construction equipment, the location and sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. Neither the Marin Community College District nor the County of Marin provide quantitative noise thresholds or standards for construction-associated noise. Therefore, the following quantified construction noise analysis is for informational purposes only.

Due to the distance between project construction and off-site sensitive receptors, project generated noise impacts to off-site sensitive receptors are anticipated to be significantly less than impacts to users of the Academic Center building. Therefore, this analysis focuses on project impacts to the nearest sensitive receptor, the Academic Center building to the north. Table 11 provides estimates of construction noise at the nearest sensitive receptor, for each phase of project construction. Construction noise was estimated using the Federal Highway Administration's Roadway Construction Noise Model (RCNM). Noise was modeled based on the project's construction equipment list for each phase and distance to nearby receptors. As a project-specific list is not available, an equipment list for the project was generated using CalEEMod, which takes into consideration the project's proposed land uses, construction schedule, building and lot area, volume of export, and square footage of demolition. Distance between the project site and the Academic Center building were calculated from the center of the existing LRC building to the nearest point of the receptor, according to the Construction Noise Handbook (Federal Highway Administration 2006). The CalEEMod-generated equipment list and RCNM outputs are provided in Appendix NOI.

[5] Distance measured from nearest point of LRC building to nearest point of receptor.

Table 11 Estimated Maximum Construction Noise – dBA Leq

Construction Phase	Equipment	Estimated Noise at 130 feet (dBA Leq)
Demolition	Concrete saw, dozer, tractor/backhoe/loader (3)	76
Site preparation	Grader, tractor/backhoe/loader, scraper	76
Grading	Tractor/backhoe/loader (2), grader, scraper	77
Building construction	Generator, crane, forklift (2), tractor/backhoe/loader, welder (3)	74.5
Paving	Concrete mixer, paver, roller (2), tractor/loader/backhoe	66
Architectural coating	Air compressor	65

See Appendix NOI for RCNM modeling results.

As shown in Table 11, noise levels from construction would temporarily reach an estimated 77 dBA Leq at the nearest sensitive receptor located approximately 130 feet away (the approximate distance between the center of construction activity and the nearest classrooms in the Academic Center building). However, temporary construction activities would occur during daytime hours and the project would not expose receivers to construction noise during noise sensitive hours (such as evening and early morning hours, when people normally sleep). Furthermore, construction noise would be intermittent and limited to the 12-month construction period, much of which would occur during summer and winter breaks when classrooms are not in use. Given that construction noise associated with the project would be temporary and intermittent, and would not conflict with adopted noise policies or standards, increases in ambient noise due to project construction would be less than significant.

Operation

The site is used for student services and academic uses. Existing noise associated with these uses include noise from mechanical heating, ventilation and air conditioning equipment, as well as noise associated with vehicle parking, such as engines cranking, car alarms, opening and closing of car doors, and people's voices. As the project would continue these uses, project operation would not introduce new noise sources to the site. Noise associated with the existing mechanical equipment and parking lot operation would continue, consistent with existing conditions.

The project is not anticipated to generate additional daily trips above existing conditions. Therefore, the project would not increase noise for receptors at the Academic Center building or off site such as Anne E. Kent Middle school and nearby residences on Kent Avenue. Therefore, project traffic noise would not be perceptible at sensitive receptors on or near the project site. The project would not result in generation of a substantial permanent increase in ambient noise levels near the project. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Table 12 identifies vibration velocity levels for the project's potential construction equipment.

Table 12 Vibration Levels from Vibration-Generating Construction Equipment

Equipment	Approximate L_v at 25 feet (reference distance)	Approximate Vdb at 130 feet
Air Compressor	81	66
Backhoe	80	65
Dozer	85	70
Saw	70	55
Vibratory Roller	94	79
Loaded Truck	86	71

Source: Table 7-4, FTA 2018, assuming vibration attenuation of 6 VdB per doubling of distance. Noise calculations provided in Appendix NOI

As illustrated in Table 12, vibration levels could reach approximately 79 vibration decibels (VdB) at the Academic Center building. These levels would not exceed the groundborne velocity threshold level of 100 VdB general threshold established by the FTA for minor damage to fragile buildings (CITATION). Therefore, impacts resulting from temporary construction vibration would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. For a project located in the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The project site is not located within two miles of an airport or private airstrip. Therefore, the proposed project would have no impact related to airports and airstrips.

NO IMPACT

14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	■
b. Displace substantial amounts of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b. Would the project displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?

The proposed project would not induce population growth in the area nor would it increase student enrollment for College of Marin. The project would serve the existing campus community and would not impact housing availability or demand. The project would not include or require new roads and other infrastructure that could facilitate growth, because it is located on the existing College of Marin Kentfield Campus. Therefore, the proposed project would not induce population growth.

There are no housing units or resident population in this area of campus. Therefore, the proposed project would not displace people or housing. The proposed project would have no impact related to population and housing.

NO IMPACT

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15 Public Services

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1	Fire protection?	☐	☐	■	☐
2	Police protection?	☐	☐	■	☐
3	Schools?	☐	☐	☐	■
4	Parks?	☐	☐	☐	■
5	Other public facilities?	☐	☐	☐	■

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The Kentfield Fire Protection Department (KFPD) provides emergency response and public safety services on the College of Marin Kentfield Campus. Kentfield Fire Protection District Station 17 is located across Sir Francis Drake Boulevard from the College of Marin Kentfield Campus, approximately 150 feet north of the existing LRC building. The campus design incorporates fire lanes and access to fire hydrants to facilitate emergency access throughout the campus. The new LRC building replaces an existing similar building, and would be required to comply with applicable building and fire codes and therefore could be served by KFPD in the event of an emergency. The project would not require KFPD to physically alter or construct new facilities that could result in an environmental impact. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The College of Marin Kentfield Campus has an on-campus police department. College of Marin Police Department Kentfield main office is located approximately 200 feet south of the existing LRC building. The project would not result in increased student enrollment, thus it would not increase demand for police protection services. Furthermore, design features such as blue-light emergency phones and security cameras would be installed to increase safety throughout the project site. The project would not result in the need for physical alteration or construction of additional public safety facilities. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

The project would not involve the construction of housing or other facilities, and would not induce population growth. Therefore it would not result in the need for new schools or parks or the physical deterioration of existing schools or parks. No impact would occur.

NO IMPACT

a.5. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?

The project would replace the existing campus library with a new one. The environmental impacts associated with this project are discussed throughout the document. Project construction would not involve the construction of housing or other facilities. No population growth would be induced by the project, and therefore it would not result in the need for new government facilities or the physical deterioration of existing government facilities. No impact would occur.

NO IMPACT

16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	■
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	■

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The project would not involve the construction of new housing, nor would it involve new businesses. Therefore, the proposed project would not lead directly or indirectly to an increase in population that would generate greater demand for regional parks or other recreational facilities. There would be no impacts to recreation from the proposed project.

NO IMPACT

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17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	■	☐
b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)??	☐	☐	■	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	☐	☐	■	☐
d. Result in inadequate emergency access?	☐	☐	☐	■

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Project construction would generate temporary traffic from deliveries of equipment and materials to the project site and construction worker traffic. However, this would be temporary and limited to construction duration. Project operation would not result in increased student enrollment; therefore, no permanent increase in vehicular traffic on nearby roads would occur and no additional vehicle trips would be generated.

As no permanent increase in vehicular traffic is anticipated, the proposed project would not impact the performance and facilities for area circulation, nor would it increase congestion. Therefore, the proposed project would not conflict with applicable plans or programs to manage circulation and congestion and there would be a less than significant impact on transit, congestion, or transit facilities.

LESS THAN SIGNIFICANT IMPACT

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

The project would not include hazardous design features, such as sharp curves or dangerous intersections, nor would it create hazardous conditions by introducing incompatible uses. Project implementation would occur on a previously developed parcel, and would not alter or effect

existing street and intersection networks. Since the project would not result in increased hazards from design features, there would be no impact.

LESS THAN SIGNIFICANT IMPACT

d. Would the project result in inadequate emergency access?

The proposed project would not conflict with emergency access. No impacts would occur.

NO IMPACT

18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	■	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Cod Section 2024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American tribe.	☐	■	☐	☐

California Assembly Bill 52 of 2014 (AB 52) establishes that "A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

1. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB

52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?*

b. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 2024.1?*

On August 29, 2019, the Federated Indians of Graton Rancheria requested AB 52 tribal consultation. On September 18, 2019, the College commenced the AB 52 tribal consultation process, and followed up with the tribe on October 4, 2019 and October 18, 2019. As of October 18, 2019, the Federated Indians of Graton Rancheria has failed to provide comments to the College and has otherwise failed to engage in the AB 52 consultation process.

As noted in Section 5, *Cultural Resources* above, archaeological resources are present on the project site. The results of an SLF search, discussed in the Cultural Resources section, were negative. However, excavation of the project site could potentially result in impacts on previously unidentified tribal cultural resources. Impacts from the unanticipated discovery of tribal cultural resources during construction would be less than significant with Mitigation Measures CUL-1, 2, 3, 4, 5, and 6 in Section 5, *Cultural Resources*, and with Mitigation Measure TCR-1 below.

Mitigation Measure

TCR-1 Unanticipated Discovery of Tribal Cultural Resources

In the event that cultural resources of Native American origin that may be considered tribal cultural resources are identified during construction, all earth disturbing work within 50 feet of the find must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find and in consultation with the on-site Native American monitor. If the archaeologist and Native American monitor determine that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with Native American groups. The plan would include avoidance of the resource or, if avoidance of the resource is infeasible, the plan would outline the appropriate treatment of the resource in coordination with the appropriate Native American tribal representative(s).

Mitigation Measure TCR-1, along with Mitigation Measures CUL-1, 2, 3, 4, 5, and 6 in the cultural resources section, would reduce impacts to unanticipated tribal cultural resources to a less than significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	■
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	■
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	■	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	■
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	■

a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

As described under Section 10, *Hydrology and Water Quality*, the proposed project would not require new or expanded water supply entitlements or facilities, and existing drainage patterns would be maintained to the maximum extent feasible, such that no adverse impacts related to water supply requirements and stormwater drainage would occur.

The San Francisco Bay Regional Water Quality Control Board regulates wastewater treatment for the County of Marin. Wastewater generated at the College of Marin Kentfield Campus is discharged into a campus sewer line and delivered to the Central Marin Sanitary Agency Wastewater Facility

through County wastewater mains. The Central Marin Sanitary Agency Wastewater Facility is currently treating an average of 11 million gallons per day (mgd), with the capacity to treat 30 mgd for secondary treatment (Central Marin Sanitation Agency 2019; County of Marin 2007). Therefore, the Central Marin Wastewater Facility has excess capacity of 19 mgd. The project would include restrooms and drinking fountains, and breakroom with kitchenette. However, this would be similar to existing conditions and is not expected to increase on-site wastewater generation. Therefore, wastewater generated by the proposed project would not exceed the treatment requirements of the Regional Water Quality Control Board, result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities, or exceed the capacity of any existing wastewater treatment provider.

As discussed under Section 6, *Energy*, the proposed project would be served by existing electric power facilities and would not require new or substantially revised electrical power facilities. In addition, neither project construction nor operation would require new or revised natural gas or telecommunications facilities.

NO IMPACT

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

The project would utilize the existing water treatment and distribution system in place at the College of Marin Kentfield Campus. As noted under *Project Description*, the project would replace the existing LRC building with one designed to accommodate the same uses. Therefore, the anticipated amount of water necessary to service the proposed project would be comparable to existing uses.

The College's Sustainability Design Standard calls for all new and renovated facilities to incorporate sustainable design criteria including water efficiency. Specifically, it calls for college-wide reduction in potable water consumption of 30 percent below CALGreen baselines (College of Marin 2007, 2019). With adherence to Sustainability Design Standards, there would be sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years. No impact would occur.

NO IMPACT

c. Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

As discussed under Section 9, *Hydrology and Water Quality*, stormwater drainage facilities on the Kentfield Campus would not be substantially altered as a result of the proposed project. College of Marin would be required to comply with all applicable storm water quality policies and regulations set forth by the SWRCB and the San Francisco Bay Area Regional Water Quality Control Board. Although there would be ground disturbance during construction, the proposed project would not substantially increase impervious surface area and would be engineered to address storm water drainage and flooding standards by conveying storm water runoff to the County of Marin's existing storm sewer system. The project's runoff would not exceed the capacity of the existing storm sewer system. Therefore, the project would not cause significant environmental effects by adding or expanding storm water drainage facilities. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Solid waste collection service is provided to the Kentfield Campus through contract with Marin Sanitary Services. Once collected, solid waste is transported to and disposed of at Redwood Landfill, which has a permitted throughput of 2,300 tons/day. Redwood Landfill has a remaining capacity of 26 million cubic yards as of December 18, 2008 (California Department of Resources Recycling and Recovery 2019).

The project would generate solid waste during construction; however, project construction would be required to comply with state waste diversion rates of 75 percent. Waste generated during project construction would be substantially less than the existing remaining permitted capacity for Redwood Landfill. Therefore, project generated increases in solid waste would be incremental and limited to project construction.

The project's operational waste would be similar to existing conditions: solid waste typical of a college library, classrooms, and associated facilities. College's Sustainability Design Standard promotes a recycling program with a goal of diverting 75 percent or more of solid waste from landfills (College of Marin 2017). Furthermore, the proposed project would be required to comply with all applicable federal and state statutes and regulations related to solid waste. Therefore, the project would not result in impacts related to solid waste.

NO IMPACT

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20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	■	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	■
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	■	☐

a. Would the project, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, substantially impair an adopted emergency response plan or emergency evacuation plan?

The project site is located on the existing College of Marin Kentfield Campus in urbanized, unincorporated Marin County. Undeveloped wildland areas are not located in proximity to the project site. Additionally, the CALFIRE has mapped the project site as not within a "Very High Fire Hazard Severity Zone" (CALFIRE 2008). Therefore, the project site is not located near a state responsibility area or classified as having a high fire hazard.

As discussed in Section 15, *Public Services*, the KFPD provides emergency response and public safety services for the project site and College of Marin Kentfield Campus. The project would maintain emergency access and would not interfere with an emergency response plan or evacuation route. No impact would occur.

NO IMPACT

b. Would the project, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The Kentfield Campus is located on a site designated as having moderate to high fire risk according to the County of Marin (County of Marin 2019). Hillside areas surrounding the Kentfield Campus to the north, west, and south are designated as having high and very high fire risk due to slope and prevailing winds (County of Marin 2019). The project site is not located within a 100-year flood hazard zone.

As noted under criteria a, the project would replace an existing building with a new structure of similar size and intended use in an urbanized area of unincorporated Marin County. Therefore, the project would not substantially exacerbate wildfire risks or thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. The project would not expose people or structures to significant risks including downslope or downstream flooding. Therefore, wildfire risks would not be exacerbated and risks to people or structures due to runoff, post-fire slope instability, or drainage changes would not occur. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

The project site is located in an urbanized area and is not located in or near a state responsibility area or land classified as a very high fire hazard severity zone (CAL FIRE 2008). The project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk. The project site would be served adequately by existing facilities and utilities. No temporary or ongoing impacts to the environment due to facilities that may exacerbate fire risk would occur.

NO IMPACT

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Does the project:				
a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	■	☐	☐
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	■
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	■	☐

a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

The project is located in an existing developed area that does not contain wildlife habitat. Therefore, the project would not impact fish or wildlife populations, eliminate or reduce the number or restrict the range of a plant or animal community or eliminate examples of major periods of California history or prehistory. No impacts would occur.

As discussed in this Initial Study, the project has the potential to degrade the quality of the environment in several issue areas without the incorporation of the identified mitigation measures. As discussed in Section 4, *Biological Resources*, Mitigation Measure BIO-1 would be required to reduce impacts to nesting birds to a less than significant level. As discussed in Section 5, *Cultural*

Resources, and Section 17, *Tribal Cultural Resources*, the project has the potential to uncover and disturb previously unidentified resources during ground-disturbing activities, and Mitigation Measures CUL-1 through CUL-6 and TCR-1 would reduce impacts to a less than significant level.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

As discussed in this Initial Study, the project would have no impact, a less than significant impact, or a less than significant impact after mitigation with respect to all environmental issues. As discussed in Section 3, *Air Quality*, and Section 7, *Greenhouse Gas Emissions,* the project would not exceed BAAQMD thresholds. The project would not result in substantial long-term environmental impacts and, therefore, would not contribute to cumulative environmental changes that may occur due to planned and pending development. Potential impacts of the project would not be cumulatively considerable.

NO IMPACT

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Effects on human beings are generally associated with impacts related to issue areas such as air quality, geology and soils, noise, traffic safety, and hazards. As discussed in this Initial Study, with mitigation incorporated, the project would result in a less than significant impact in each of these resource areas. As discussed in Section 3, *Air Quality,* the project would not generate air quality pollutants above BAAQMD thresholds, and impacts would be less than significant. As discussed in Section 6, *Geology and Soils,* the project would not expose people or structures to potential adverse effects including risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. As discussed in Section 16, *Transportation,* the project would not alter existing transportation infrastructure or have adverse impacts on traffic safety. The project would not cause substantial adverse effects on human beings, either directly or indirectly. Impacts would be less than significant with mitigation.

LESS THAN SIGNIFICANT IMPACT

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Appendix AQ

Air Quality Modeling Files

Appendix AQ

Air Quality Modeling Files

Kentfield Campus Library Project

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	65.00	1000sqft	2.07	65,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage per Google Earth

Construction Phase - Arch coating starts halfway through building construction

Grading - Assume cut and fill balanced on site

Demolition -

Vehicle Trips - No change in trips from existing

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	104.00
tblConstructionPhase	PhaseEndDate	8/31/2020	5/28/2020
tblConstructionPhase	PhaseEndDate	8/3/2020	5/13/2021
tblConstructionPhase	PhaseEndDate	9/17/2019	6/26/2020
tblConstructionPhase	PhaseEndDate	9/30/2019	7/9/2020
tblConstructionPhase	PhaseEndDate	8/17/2020	5/27/2021
tblConstructionPhase	PhaseEndDate	9/20/2019	7/1/2020
tblConstructionPhase	PhaseStartDate	8/18/2020	1/4/2020
tblConstructionPhase	PhaseStartDate	10/1/2019	7/10/2020
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tblConstructionPhase	PhaseStartDate	9/21/2019	7/2/2020
tblConstructionPhase	PhaseStartDate	8/4/2020	5/14/2021
tblConstructionPhase	PhaseStartDate	9/18/2019	6/29/2020
tblLandUse	LotAcreage	1.49	2.07
tblVehicleTrips	ST_TR	46.55	0.00
tblVehicleTrips	SU_TR	25.49	0.00
tblVehicleTrips	WD_TR	56.24	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					
2020	0.5357	1.6058	1.3106	2.5200e-003	0.0787	0.0813	0.1600	0.0218	0.0778	0.0996	0.0000	216.9341	216.9341	0.0375	0.0000	217.8717
2021	0.1087	0.8696	0.7987	1.5200e-003	0.0141	0.0419	0.0560	3.8300e-003	0.0401	0.0439	0.0000	128.8836	128.8836	0.0227	0.0000	129.4512
Maximum	**0.5357**	**1.6058**	**1.3106**	**2.5200e-003**	**0.0787**	**0.0813**	**0.1600**	**0.0218**	**0.0778**	**0.0996**	**0.0000**	**216.9341**	**216.9341**	**0.0375**	**0.0000**	**217.8717**

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					
2020	0.5357	1.6058	1.3106	2.5200e-003	0.0787	0.0813	0.1600	0.0218	0.0778	0.0996	0.0000	216.9339	216.9339	0.0375	0.0000	217.8714
2021	0.1087	0.8696	0.7987	1.5200e-003	0.0141	0.0419	0.0560	3.8300e-003	0.0401	0.0439	0.0000	128.8835	128.8835	0.0227	0.0000	129.4510
Maximum	**0.5357**	**1.6058**	**1.3106**	**2.5200e-003**	**0.0787**	**0.0813**	**0.1600**	**0.0218**	**0.0778**	**0.0996**	**0.0000**	**216.9339**	**216.9339**	**0.0375**	**0.0000**	**217.8714**

	ROG	NOx	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	11-21-2019	2-20-2020	0.1453	0.1453
3	2-21-2020	5-20-2020	0.2724	0.2724
4	5-21-2020	8-20-2020	0.6871	0.6871
5	8-21-2020	11-20-2020	0.6946	0.6946
6	11-21-2020	2-20-2021	0.6626	0.6626
7	2-21-2021	5-20-2021	0.5962	0.5962
8	5-21-2021	8-20-2021	0.0295	0.0295
		Highest	0.6946	0.6946

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	0.2878	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1600e-003	1.1600e-003	0.0000	0.0000	1.2400e-003
Energy	8.6700e-003	0.0789	0.0662	4.7000e-004		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	228.8029	228.8029	8.1100e-003	2.9100e-003	229.8732
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	12.1510	0.0000	12.1510	0.7181	0.0000	30.1037
Water						0.0000	0.0000		0.0000	0.0000	0.6452	6.4403	7.0855	0.0666	1.6300e-003	9.2339
Total	**0.2965**	**0.0789**	**0.0668**	**4.7000e-004**	**0.0000**	**5.9900e-003**	**5.9900e-003**	**0.0000**	**5.9900e-003**	**5.9900e-003**	**12.7963**	**235.2444**	**248.0407**	**0.7928**	**4.5400e-003**	**269.2120**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2878	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1600e-003	1.1600e-003	0.0000	0.0000	1.2400e-003
Energy	8.6700e-003	0.0789	0.0662	4.7000e-004		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	228.8029	228.8029	8.1100e-003	2.9100e-003	229.8732
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	12.1510	0.0000	12.1510	0.7181	0.0000	30.1037
Water						0.0000	0.0000		0.0000	0.0000	0.6452	6.4403	7.0855	0.0666	1.6300e-003	9.2339
Total	**0.2965**	**0.0789**	**0.0668**	**4.7000e-004**	**0.0000**	**5.9900e-003**	**5.9900e-003**	**0.0000**	**5.9900e-003**	**5.9900e-003**	**12.7963**	**235.2444**	**248.0407**	**0.7928**	**4.5400e-003**	**269.2120**

	ROG	NOx	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	6/1/2020	6/26/2020	5	20	
2	Site Preparation	Site Preparation	6/29/2020	7/1/2020	5	3	
3	Grading	Grading	7/2/2020	7/9/2020	5	6	
4	Building Construction	Building Construction	7/10/2020	5/13/2021	5	220	
5	Paving	Paving	5/14/2021	5/27/2021	5	10	
6	Architectural Coating	Architectural Coating	1/4/2020	5/28/2020	5	104	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 97,500; Non-Residential Outdoor: 32,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	304.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	27.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

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					0.0329	0.0000	0.0329	4.9800e-003	0.0000	4.9800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0677	21.0677	5.4200e-003	0.0000	21.2031
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**	**0.0329**	**0.0115**	**0.0444**	**4.9800e-003**	**0.0108**	**0.0157**	**0.0000**	**21.0677**	**21.0677**	**5.4200e-003**	**0.0000**	**21.2031**

3.2 Demolition - 2020

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	1.3100e-003	0.0444	0.0129	1.2000e-004	2.5600e-003	1.5000e-004	2.7000e-003	7.0000e-004	1.4000e-004	8.4000e-004	0.0000	11.6139	11.6139	6.8000e-004	0.0000	11.6308
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	3.1000e-004	3.0700e-003	1.0000e-005	1.0200e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9133	0.9133	2.0000e-005	0.0000	0.9139
Total	**1.7600e-003**	**0.0447**	**0.0159**	**1.3000e-004**	**3.5800e-003**	**1.6000e-004**	**3.7300e-003**	**9.7000e-004**	**1.5000e-004**	**1.1200e-003**	**0.0000**	**12.5272**	**12.5272**	**7.0000e-004**	**0.0000**	**12.5447**

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					0.0329	0.0000	0.0329	4.9800e-003	0.0000	4.9800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0676	21.0676	5.4200e-003	0.0000	21.2030
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**	**0.0329**	**0.0115**	**0.0444**	**4.9800e-003**	**0.0108**	**0.0157**	**0.0000**	**21.0676**	**21.0676**	**5.4200e-003**	**0.0000**	**21.2030**

3.2 Demolition - 2020

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	1.3100e-003	0.0444	0.0129	1.2000e-004	2.5600e-003	1.5000e-004	2.7000e-003	7.0000e-004	1.4000e-004	8.4000e-004	0.0000	11.6139	11.6139	6.8000e-004	0.0000	11.6308
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	3.1000e-004	3.0700e-003	1.0000e-005	1.0200e-003	1.0000e-005	1.0300e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9133	0.9133	2.0000e-005	0.0000	0.9139
Total	**1.7600e-003**	**0.0447**	**0.0159**	**1.3000e-004**	**3.5800e-003**	**1.6000e-004**	**3.7300e-003**	**9.7000e-004**	**1.5000e-004**	**1.1200e-003**	**0.0000**	**12.5272**	**12.5272**	**7.0000e-004**	**0.0000**	**12.5447**

3.3 Site Preparation - 2020

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4800e-003	0.0299	0.0169	4.0000e-005		1.1700e-003	1.1700e-003		1.0700e-003	1.0700e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551
Total	**2.4800e-003**	**0.0299**	**0.0169**	**4.0000e-005**	**2.3900e-003**	**1.1700e-003**	**3.5600e-003**	**2.6000e-004**	**1.0700e-003**	**1.3300e-003**	**0.0000**	**3.2290**	**3.2290**	**1.0400e-003**	**0.0000**	**3.2551**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0843	0.0843	0.0000	0.0000	0.0844
Total	**4.0000e-005**	**3.0000e-005**	**2.8000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0843**	**0.0843**	**0.0000**	**0.0000**	**0.0844**

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4800e-003	0.0299	0.0169	4.0000e-005		1.1700e-003	1.1700e-003		1.0700e-003	1.0700e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551
Total	**2.4800e-003**	**0.0299**	**0.0169**	**4.0000e-005**	**2.3900e-003**	**1.1700e-003**	**3.5600e-003**	**2.6000e-004**	**1.0700e-003**	**1.3300e-003**	**0.0000**	**3.2290**	**3.2290**	**1.0400e-003**	**0.0000**	**3.2551**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0843	0.0843	0.0000	0.0000	0.0844
Total	**4.0000e-005**	**3.0000e-005**	**2.8000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0843**	**0.0843**	**0.0000**	**0.0000**	**0.0844**

3.4 Grading - 2020

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					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	**5.7700e-003**	**0.0640**	**0.0298**	**6.0000e-005**	**0.0197**	**2.9700e-003**	**0.0226**	**0.0101**	**2.7300e-003**	**0.0128**	**0.0000**	**5.4333**	**5.4333**	**1.7600e-003**	**0.0000**	**5.4773**

3.4 Grading - 2020

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	1.0000e-004	7.0000e-005	7.1000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2108	0.2108	0.0000	0.0000	0.2109
Total	**1.0000e-004**	**7.0000e-005**	**7.1000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2108**	**0.2108**	**0.0000**	**0.0000**	**0.2109**

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					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	**5.7700e-003**	**0.0640**	**0.0298**	**6.0000e-005**	**0.0197**	**2.9700e-003**	**0.0226**	**0.0101**	**2.7300e-003**	**0.0128**	**0.0000**	**5.4333**	**5.4333**	**1.7600e-003**	**0.0000**	**5.4773**

3.4 Grading - 2020

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	1.0000e-004	7.0000e-005	7.1000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2108	0.2108	0.0000	0.0000	0.2109
Total	**1.0000e-004**	**7.0000e-005**	**7.1000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2108**	**0.2108**	**0.0000**	**0.0000**	**0.2109**

3.5 Building Construction - 2020

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	0.1430	1.0896	0.9311	1.5600e-003		0.0593	0.0593		0.0568	0.0568	0.0000	129.7778	129.7778	0.0263	0.0000	130.4362
Total	**0.1430**	**1.0896**	**0.9311**	**1.5600e-003**		**0.0593**	**0.0593**		**0.0568**	**0.0568**	**0.0000**	**129.7778**	**129.7778**	**0.0263**	**0.0000**	**130.4362**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9900e-003	0.0758	0.0281	1.8000e-004	4.4900e-003	3.9000e-004	4.8800e-003	1.3000e-003	3.7000e-004	1.6700e-003	0.0000	17.6449	17.6449	8.9000e-004	0.0000	17.6671
Worker	5.8900e-003	4.0300e-003	0.0399	1.3000e-004	0.0133	9.0000e-005	0.0134	3.5400e-003	8.0000e-005	3.6200e-003	0.0000	11.8556	11.8556	2.8000e-004	0.0000	11.8627
Total	**8.8800e-003**	**0.0798**	**0.0680**	**3.1000e-004**	**0.0178**	**4.8000e-004**	**0.0183**	**4.8400e-003**	**4.5000e-004**	**5.2900e-003**	**0.0000**	**29.5005**	**29.5005**	**1.1700e-003**	**0.0000**	**29.5297**

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	0.1430	1.0896	0.9311	1.5600e-003		0.0593	0.0593		0.0568	0.0568	0.0000	129.7776	129.7776	0.0263	0.0000	130.4361
Total	**0.1430**	**1.0896**	**0.9311**	**1.5600e-003**		**0.0593**	**0.0593**		**0.0568**	**0.0568**	**0.0000**	**129.7776**	**129.7776**	**0.0263**	**0.0000**	**130.4361**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9900e-003	0.0758	0.0281	1.8000e-004	4.4900e-003	3.9000e-004	4.8800e-003	1.3000e-003	3.7000e-004	1.6700e-003	0.0000	17.6449	17.6449	8.9000e-004	0.0000	17.6671
Worker	5.8900e-003	4.0300e-003	0.0399	1.3000e-004	0.0133	9.0000e-005	0.0134	3.5400e-003	8.0000e-005	3.6200e-003	0.0000	11.8556	11.8556	2.8000e-004	0.0000	11.8627
Total	**8.8800e-003**	**0.0798**	**0.0680**	**3.1000e-004**	**0.0178**	**4.8000e-004**	**0.0183**	**4.8400e-003**	**4.5000e-004**	**5.2900e-003**	**0.0000**	**29.5005**	**29.5005**	**1.1700e-003**	**0.0000**	**29.5297**

3.5 Building Construction - 2021

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	0.0971	0.7613	0.6917	1.1900e-003		0.0388	0.0388		0.0372	0.0372	0.0000	98.6332	98.6332	0.0194	0.0000	99.1183
Total	**0.0971**	**0.7613**	**0.6917**	**1.1900e-003**		**0.0388**	**0.0388**		**0.0372**	**0.0372**	**0.0000**	**98.6332**	**98.6332**	**0.0194**	**0.0000**	**99.1183**

3.5 Building Construction - 2021

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	1.8600e-003	0.0521	0.0188	1.4000e-004	3.4200e-003	1.2000e-004	3.5400e-003	9.9000e-004	1.2000e-004	1.1100e-003	0.0000	13.2941	13.2941	6.4000e-004	0.0000	13.3100
Worker	4.1700e-003	2.7400e-003	0.0277	1.0000e-004	0.0101	7.0000e-005	0.0102	2.6900e-003	6.0000e-005	2.7500e-003	0.0000	8.6955	8.6955	1.9000e-004	0.0000	8.7003
Total	**6.0300e-003**	**0.0549**	**0.0465**	**2.4000e-004**	**0.0135**	**1.9000e-004**	**0.0137**	**3.6800e-003**	**1.8000e-004**	**3.8600e-003**	**0.0000**	**21.9896**	**21.9896**	**8.3000e-004**	**0.0000**	**22.0103**

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	0.0971	0.7613	0.6917	1.1900e-003		0.0388	0.0388		0.0372	0.0372	0.0000	98.6330	98.6330	0.0194	0.0000	99.1182
Total	**0.0971**	**0.7613**	**0.6917**	**1.1900e-003**		**0.0388**	**0.0388**		**0.0372**	**0.0372**	**0.0000**	**98.6330**	**98.6330**	**0.0194**	**0.0000**	**99.1182**

3.5 Building Construction - 2021

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	1.8600e-003	0.0521	0.0188	1.4000e-004	3.4200e-003	1.2000e-004	3.5400e-003	9.9000e-004	1.2000e-004	1.1100e-003	0.0000	13.2941	13.2941	6.4000e-004	0.0000	13.3100
Worker	4.1700e-003	2.7400e-003	0.0277	1.0000e-004	0.0101	7.0000e-005	0.0102	2.6900e-003	6.0000e-005	2.7500e-003	0.0000	8.6955	8.6955	1.9000e-004	0.0000	8.7003
Total	**6.0300e-003**	**0.0549**	**0.0465**	**2.4000e-004**	**0.0135**	**1.9000e-004**	**0.0137**	**3.6800e-003**	**1.8000e-004**	**3.8600e-003**	**0.0000**	**21.9896**	**21.9896**	**8.3000e-004**	**0.0000**	**22.0103**

3.6 Paving - 2021

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	5.3200e-003	0.0532	0.0589	9.0000e-005		2.9100e-003	2.9100e-003		2.6900e-003	2.6900e-003	0.0000	7.7524	7.7524	2.4600e-003	0.0000	7.8138
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.3200e-003**	**0.0532**	**0.0589**	**9.0000e-005**		**2.9100e-003**	**2.9100e-003**		**2.6900e-003**	**2.6900e-003**	**0.0000**	**7.7524**	**7.7524**	**2.4600e-003**	**0.0000**	**7.8138**

3.6 Paving - 2021

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	2.4000e-004	1.6000e-004	1.6200e-003	1.0000e-005	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5085	0.5085	1.0000e-005	0.0000	0.5088
Total	**2.4000e-004**	**1.6000e-004**	**1.6200e-003**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**5.9000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5085**	**0.5085**	**1.0000e-005**	**0.0000**	**0.5088**

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	5.3200e-003	0.0532	0.0589	9.0000e-005		2.9100e-003	2.9100e-003		2.6900e-003	2.6900e-003	0.0000	7.7524	7.7524	2.4600e-003	0.0000	7.8138
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.3200e-003**	**0.0532**	**0.0589**	**9.0000e-005**		**2.9100e-003**	**2.9100e-003**		**2.6900e-003**	**2.6900e-003**	**0.0000**	**7.7524**	**7.7524**	**2.4600e-003**	**0.0000**	**7.8138**

3.6 Paving - 2021

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	2.4000e-004	1.6000e-004	1.6200e-003	1.0000e-005	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5085	0.5085	1.0000e-005	0.0000	0.5088
Total	**2.4000e-004**	**1.6000e-004**	**1.6200e-003**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**5.9000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5085**	**0.5085**	**1.0000e-005**	**0.0000**	**0.5088**

3.7 Architectural Coating - 2020

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	0.3389					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0126	0.0876	0.0952	1.5000e-004		5.7700e-003	5.7700e-003		5.7700e-003	5.7700e-003	0.0000	13.2769	13.2769	1.0300e-003	0.0000	13.3026
Total	**0.3515**	**0.0876**	**0.0952**	**1.5000e-004**		**5.7700e-003**	**5.7700e-003**		**5.7700e-003**	**5.7700e-003**	**0.0000**	**13.2769**	**13.2769**	**1.0300e-003**	**0.0000**	**13.3026**

3.7 Architectural Coating - 2020

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	9.1000e-004	6.2000e-004	6.1500e-003	2.0000e-005	2.0500e-003	1.0000e-005	2.0600e-003	5.4000e-004	1.0000e-005	5.6000e-004	0.0000	1.8266	1.8266	4.0000e-005	0.0000	1.8277
Total	**9.1000e-004**	**6.2000e-004**	**6.1500e-003**	**2.0000e-005**	**2.0500e-003**	**1.0000e-005**	**2.0600e-003**	**5.4000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.8266**	**1.8266**	**4.0000e-005**	**0.0000**	**1.8277**

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	0.3389					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0126	0.0876	0.0952	1.5000e-004		5.7700e-003	5.7700e-003		5.7700e-003	5.7700e-003	0.0000	13.2769	13.2769	1.0300e-003	0.0000	13.3026
Total	**0.3515**	**0.0876**	**0.0952**	**1.5000e-004**		**5.7700e-003**	**5.7700e-003**		**5.7700e-003**	**5.7700e-003**	**0.0000**	**13.2769**	**13.2769**	**1.0300e-003**	**0.0000**	**13.3026**

3.7 Architectural Coating - 2020

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	9.1000e-004	6.2000e-004	6.1500e-003	2.0000e-005	2.0500e-003	1.0000e-005	2.0600e-003	5.4000e-004	1.0000e-005	5.6000e-004	0.0000	1.8266	1.8266	4.0000e-005	0.0000	1.8277
Total	**9.1000e-004**	**6.2000e-004**	**6.1500e-003**	**2.0000e-005**	**2.0500e-003**	**1.0000e-005**	**2.0600e-003**	**5.4000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.8266**	**1.8266**	**4.0000e-005**	**0.0000**	**1.8277**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.592917	0.040807	0.199317	0.111088	0.016573	0.005170	0.010431	0.011175	0.002033	0.003262	0.005795	0.000692	0.000740

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	142.9539	142.9539	6.4600e-003	1.3400e-003	143.5140
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	142.9539	142.9539	6.4600e-003	1.3400e-003	143.5140
NaturalGas Mitigated	8.6700e-003	0.0789	0.0662	4.7000e-004		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	85.8490	85.8490	1.6500e-003	1.5700e-003	86.3592
NaturalGas Unmitigated	8.6700e-003	0.0789	0.0662	4.7000e-004		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	85.8490	85.8490	1.6500e-003	1.5700e-003	86.3592

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					
Library	1.60875e+006	8.6700e-003	0.0789	0.0662	4.7000e-004		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	85.8490	85.8490	1.6500e-003	1.5700e-003	86.3592
Total		**8.6700e-003**	**0.0789**	**0.0662**	**4.7000e-004**		**5.9900e-003**	**5.9900e-003**		**5.9900e-003**	**5.9900e-003**	**0.0000**	**85.8490**	**85.8490**	**1.6500e-003**	**1.5700e-003**	**86.3592**

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					
Library	1.60875e+006	8.6700e-003	0.0789	0.0662	4.7000e-004		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	85.8490	85.8490	1.6500e-003	1.5700e-003	86.3592
Total		**8.6700e-003**	**0.0789**	**0.0662**	**4.7000e-004**		**5.9900e-003**	**5.9900e-003**		**5.9900e-003**	**5.9900e-003**	**0.0000**	**85.8490**	**85.8490**	**1.6500e-003**	**1.5700e-003**	**86.3592**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Library	491400	142.9539	6.4600e-003	1.3400e-003	143.5140
Total		**142.9539**	**6.4600e-003**	**1.3400e-003**	**143.5140**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Library	491400	142.9539	6.4600e-003	1.3400e-003	143.5140
Total		**142.9539**	**6.4600e-003**	**1.3400e-003**	**143.5140**

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	0.2878	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1600e-003	1.1600e-003	0.0000	0.0000	1.2400e-003
Unmitigated	0.2878	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1600e-003	1.1600e-003	0.0000	0.0000	1.2400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0339					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2539					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1600e-003	1.1600e-003	0.0000	0.0000	1.2400e-003
Total	**0.2878**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.1600e-003**	**1.1600e-003**	**0.0000**	**0.0000**	**1.2400e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0339					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2539					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1600e-003	1.1600e-003	0.0000	0.0000	1.2400e-003
Total	**0.2878**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.1600e-003**	**1.1600e-003**	**0.0000**	**0.0000**	**1.2400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.0855	0.0666	1.6300e-003	9.2339
Unmitigated	7.0855	0.0666	1.6300e-003	9.2339

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Library	2.03378 / 3.18104	7.0855	0.0666	1.6300e-003	9.2339
Total		**7.0855**	**0.0666**	**1.6300e-003**	**9.2339**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Library	2.03378 / 3.18104	7.0855	0.0666	1.6300e-003	9.2339
Total		**7.0855**	**0.0666**	**1.6300e-003**	**9.2339**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.1510	0.7181	0.0000	30.1037
Unmitigated	12.1510	0.7181	0.0000	30.1037

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Library	59.86	12.1510	0.7181	0.0000	30.1037
Total		**12.1510**	**0.7181**	**0.0000**	**30.1037**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Library	59.86	12.1510	0.7181	0.0000	30.1037
Total		**12.1510**	**0.7181**	**0.0000**	**30.1037**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Kentfield Campus Library Project

Marin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	65.00	1000sqft	2.07	65,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage per Google Earth

Construction Phase - Arch coating starts halfway through building construction

Grading - Assume cut and fill balanced on site

Demolition -

Vehicle Trips - No change in trips from existing

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	104.00
tblConstructionPhase	PhaseEndDate	8/31/2020	5/28/2020
tblConstructionPhase	PhaseEndDate	8/3/2020	5/13/2021
tblConstructionPhase	PhaseEndDate	9/17/2019	6/26/2020
tblConstructionPhase	PhaseEndDate	9/30/2019	7/9/2020
tblConstructionPhase	PhaseEndDate	8/17/2020	5/27/2021
tblConstructionPhase	PhaseEndDate	9/20/2019	7/1/2020
tblConstructionPhase	PhaseStartDate	8/18/2020	1/4/2020
tblConstructionPhase	PhaseStartDate	10/1/2019	7/10/2020
tblConstructionPhase	PhaseStartDate	8/21/2019	6/1/2020
tblConstructionPhase	PhaseStartDate	9/21/2019	7/2/2020
tblConstructionPhase	PhaseStartDate	8/4/2020	5/14/2021
tblConstructionPhase	PhaseStartDate	9/18/2019	6/29/2020
tblLandUse	LotAcreage	1.49	2.07
tblVehicleTrips	ST_TR	46.55	0.00
tblVehicleTrips	SU_TR	25.49	0.00
tblVehicleTrips	WD_TR	56.24	0.00

2.0 Emissions Summary

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					
2020	6.7796	25.4364	16.2993	0.0369	6.6345	1.1682	7.6252	3.3893	1.0911	4.3007	0.0000	3,692.3311	3,692.3311	0.7689	0.0000	3,709.2063
2021	2.1838	17.1861	15.5797	0.0299	0.2962	0.8213	1.1175	0.0803	0.7869	0.8672	0.0000	2,794.3699	2,794.3699	0.5441	0.0000	2,806.1186
Maximum	**6.7796**	**25.4364**	**16.2993**	**0.0369**	**6.6345**	**1.1682**	**7.6252**	**3.3893**	**1.0911**	**4.3007**	**0.0000**	**3,692.3311**	**3,692.3311**	**0.7689**	**0.0000**	**3,709.2063**

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					
2020	6.7796	25.4364	16.2993	0.0369	6.6345	1.1682	7.6252	3.3893	1.0911	4.3007	0.0000	3,692.3311	3,692.3311	0.7689	0.0000	3,709.2063
2021	2.1838	17.1861	15.5797	0.0299	0.2962	0.8213	1.1175	0.0803	0.7869	0.8672	0.0000	2,794.3699	2,794.3699	0.5441	0.0000	2,806.1186
Maximum	**6.7796**	**25.4364**	**16.2993**	**0.0369**	**6.6345**	**1.1682**	**7.6252**	**3.3893**	**1.0911**	**4.3007**	**0.0000**	**3,692.3311**	**3,692.3311**	**0.7689**	**0.0000**	**3,709.2063**

	ROG	NOx	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**

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	1.5773	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Energy	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.6249**	**0.4322**	**0.3696**	**2.5900e-003**	**0.0000**	**0.0329**	**0.0329**	**0.0000**	**0.0329**	**0.0329**		**518.5477**	**518.5477**	**9.9800e-003**	**9.5100e-003**	**521.6300**

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	1.5773	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Energy	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.6249**	**0.4322**	**0.3696**	**2.5900e-003**	**0.0000**	**0.0329**	**0.0329**	**0.0000**	**0.0329**	**0.0329**		**518.5477**	**518.5477**	**9.9800e-003**	**9.5100e-003**	**521.6300**

	ROG	NOx	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	6/1/2020	6/26/2020	5	20	
2	Site Preparation	Site Preparation	6/29/2020	7/1/2020	5	3	
3	Grading	Grading	7/2/2020	7/9/2020	5	6	
4	Building Construction	Building Construction	7/10/2020	5/13/2021	5	220	
5	Paving	Paving	5/14/2021	5/27/2021	5	10	
6	Architectural Coating	Architectural Coating	1/4/2020	5/28/2020	5	104	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 97,500; Non-Residential Outdoor: 32,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	304.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	27.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

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					3.2905	0.0000	3.2905	0.4982	0.0000	0.4982			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761		2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**3.2905**	**1.1525**	**4.4429**	**0.4982**	**1.0761**	**1.5743**		**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

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	0.1328	4.4564	1.3259	0.0118	0.2652	0.0150	0.2801	0.0726	0.0143	0.0870		1,269.8387	1,269.8387	0.0757		1,271.7304
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	0.0507	0.0337	0.3162	1.0000e-003	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.1797	100.1797	2.4000e-003		100.2396
Total	**0.1835**	**4.4901**	**1.6420**	**0.0128**	**0.3719**	**0.0157**	**0.3876**	**0.1010**	**0.0150**	**0.1159**		**1,370.0185**	**1,370.0185**	**0.0781**		**1,371.9700**

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					3.2905	0.0000	3.2905	0.4982	0.0000	0.4982			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761	0.0000	2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**3.2905**	**1.1525**	**4.4429**	**0.4982**	**1.0761**	**1.5743**	**0.0000**	**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

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	0.1328	4.4564	1.3259	0.0118	0.2652	0.0150	0.2801	0.0726	0.0143	0.0870		1,269.8387	1,269.8387	0.0757		1,271.7304
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	0.0507	0.0337	0.3162	1.0000e-003	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.1797	100.1797	2.4000e-003		100.2396
Total	**0.1835**	**4.4901**	**1.6420**	**0.0128**	**0.3719**	**0.0157**	**0.3876**	**0.1010**	**0.0150**	**0.1159**		**1,370.0185**	**1,370.0185**	**0.0781**		**1,371.9700**

3.3 Site Preparation - 2020

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					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.6521	19.9196	11.2678	0.0245		0.7771	0.7771		0.7149	0.7149		2,372.9062	2,372.9062	0.7675		2,392.0924
Total	**1.6521**	**19.9196**	**11.2678**	**0.0245**	**1.5908**	**0.7771**	**2.3678**	**0.1718**	**0.7149**	**0.8867**		**2,372.9062**	**2,372.9062**	**0.7675**		**2,392.0924**

3.3 Site Preparation - 2020

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	0.0312	0.0208	0.1946	6.2000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		61.6491	61.6491	1.4700e-003		61.6859
Total	**0.0312**	**0.0208**	**0.1946**	**6.2000e-004**	**0.0657**	**4.3000e-004**	**0.0662**	**0.0174**	**4.0000e-004**	**0.0178**		**61.6491**	**61.6491**	**1.4700e-003**		**61.6859**

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					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.6521	19.9196	11.2678	0.0245		0.7771	0.7771		0.7149	0.7149	0.0000	2,372.9062	2,372.9062	0.7675		2,392.0924
Total	**1.6521**	**19.9196**	**11.2678**	**0.0245**	**1.5908**	**0.7771**	**2.3678**	**0.1718**	**0.7149**	**0.8867**	**0.0000**	**2,372.9062**	**2,372.9062**	**0.7675**		**2,392.0924**

3.3 Site Preparation - 2020

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	0.0312	0.0208	0.1946	6.2000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		61.6491	61.6491	1.4700e-003		61.6859
Total	**0.0312**	**0.0208**	**0.1946**	**6.2000e-004**	**0.0657**	**4.3000e-004**	**0.0662**	**0.0174**	**4.0000e-004**	**0.0178**		**61.6491**	**61.6491**	**1.4700e-003**		**61.6859**

3.4 Grading - 2020

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110		1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.5523**	**0.9902**	**7.5425**	**3.3675**	**0.9110**	**4.2784**		**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

3.4 Grading - 2020

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	0.0390	0.0259	0.2432	7.7000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		77.0613	77.0613	1.8400e-003		77.1074
Total	**0.0390**	**0.0259**	**0.2432**	**7.7000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**77.0613**	**77.0613**	**1.8400e-003**		**77.1074**

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110	0.0000	1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.5523**	**0.9902**	**7.5425**	**3.3675**	**0.9110**	**4.2784**	**0.0000**	**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

3.4 Grading - 2020

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	0.0390	0.0259	0.2432	7.7000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		77.0613	77.0613	1.8400e-003		77.1074
Total	**0.0390**	**0.0259**	**0.2432**	**7.7000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**77.0613**	**77.0613**	**1.8400e-003**		**77.1074**

3.5 Building Construction - 2020

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	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089		2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**		**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.0495	1.2124	0.4741	2.8900e-003	0.0744	6.2700e-003	0.0807	0.0214	6.0000e-003	0.0274		307.3346	307.3346	0.0160		307.7356
Worker	0.1053	0.0700	0.6567	2.0900e-003	0.2218	1.4600e-003	0.2233	0.0588	1.3400e-003	0.0602		208.0656	208.0656	4.9800e-003		208.1900
Total	**0.1548**	**1.2824**	**1.1308**	**4.9800e-003**	**0.2962**	**7.7300e-003**	**0.3039**	**0.0803**	**7.3400e-003**	**0.0876**		**515.4002**	**515.4002**	**0.0210**		**515.9256**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089	0.0000	2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**	**0.0000**	**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.0495	1.2124	0.4741	2.8900e-003	0.0744	6.2700e-003	0.0807	0.0214	6.0000e-003	0.0274		307.3346	307.3346	0.0160		307.7356
Worker	0.1053	0.0700	0.6567	2.0900e-003	0.2218	1.4600e-003	0.2233	0.0588	1.3400e-003	0.0602		208.0656	208.0656	4.9800e-003		208.1900
Total	**0.1548**	**1.2824**	**1.1308**	**4.9800e-003**	**0.2962**	**7.7300e-003**	**0.3039**	**0.0803**	**7.3400e-003**	**0.0876**		**515.4002**	**515.4002**	**0.0210**		**515.9256**

3.5 Building Construction - 2021

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	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831		2,288.9355	2,288.9355	0.4503		2,300.1935
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**		**2,288.9355**	**2,288.9355**	**0.4503**		**2,300.1935**

3.5 Building Construction - 2021

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	0.0405	1.0959	0.4180	2.8700e-003	0.0744	2.6700e-003	0.0771	0.0214	2.5500e-003	0.0240		304.6379	304.6379	0.0152		305.0175
Worker	0.0982	0.0626	0.5987	2.0100e-003	0.2218	1.4100e-003	0.2232	0.0588	1.3000e-003	0.0601		200.7964	200.7964	4.4400e-003		200.9075
Total	**0.1387**	**1.1585**	**1.0167**	**4.8800e-003**	**0.2962**	**4.0800e-003**	**0.3003**	**0.0803**	**3.8500e-003**	**0.0841**		**505.4343**	**505.4343**	**0.0196**		**505.9250**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831	0.0000	2,288.9355	2,288.9355	0.4503		2,300.1935
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**	**0.0000**	**2,288.9355**	**2,288.9355**	**0.4503**		**2,300.1935**

3.5 Building Construction - 2021

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	0.0405	1.0959	0.4180	2.8700e-003	0.0744	2.6700e-003	0.0771	0.0214	2.5500e-003	0.0240		304.6379	304.6379	0.0152		305.0175
Worker	0.0982	0.0626	0.5987	2.0100e-003	0.2218	1.4100e-003	0.2232	0.0588	1.3000e-003	0.0601		200.7964	200.7964	4.4400e-003		200.9075
Total	**0.1387**	**1.1585**	**1.0167**	**4.8800e-003**	**0.2962**	**4.0800e-003**	**0.3003**	**0.0803**	**3.8500e-003**	**0.0841**		**505.4343**	**505.4343**	**0.0196**		**505.9250**

3.6 Paving - 2021

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	1.0633	10.6478	11.7756	0.0178		0.5826	0.5826		0.5371	0.5371		1,709.1107	1,709.1107	0.5417		1,722.6524
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0633**	**10.6478**	**11.7756**	**0.0178**		**0.5826**	**0.5826**		**0.5371**	**0.5371**		**1,709.1107**	**1,709.1107**	**0.5417**		**1,722.6524**

3.6 Paving - 2021

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	0.0545	0.0348	0.3326	1.1200e-003	0.1232	7.9000e-004	0.1240	0.0327	7.2000e-004	0.0334		111.5536	111.5536	2.4700e-003		111.6153
Total	**0.0545**	**0.0348**	**0.3326**	**1.1200e-003**	**0.1232**	**7.9000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**111.5536**	**111.5536**	**2.4700e-003**		**111.6153**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0633	10.6478	11.7756	0.0178		0.5826	0.5826		0.5371	0.5371	0.0000	1,709.1107	1,709.1107	0.5417		1,722.6524
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0633**	**10.6478**	**11.7756**	**0.0178**		**0.5826**	**0.5826**		**0.5371**	**0.5371**	**0.0000**	**1,709.1107**	**1,709.1107**	**0.5417**		**1,722.6524**

3.6 Paving - 2021

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	0.0545	0.0348	0.3326	1.1200e-003	0.1232	7.9000e-004	0.1240	0.0327	7.2000e-004	0.0334		111.5536	111.5536	2.4700e-003		111.6153
Total	**0.0545**	**0.0348**	**0.3326**	**1.1200e-003**	**0.1232**	**7.9000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**111.5536**	**111.5536**	**2.4700e-003**		**111.6153**

3.7 Architectural Coating - 2020

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	6.5180					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**6.7602**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.0195	0.0130	0.1216	3.9000e-004	0.0411	2.7000e-004	0.0413	0.0109	2.5000e-004	0.0111		38.5307	38.5307	9.2000e-004		38.5537
Total	**0.0195**	**0.0130**	**0.1216**	**3.9000e-004**	**0.0411**	**2.7000e-004**	**0.0413**	**0.0109**	**2.5000e-004**	**0.0111**		**38.5307**	**38.5307**	**9.2000e-004**		**38.5537**

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					
Archit. Coating	6.5180					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**6.7602**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.0195	0.0130	0.1216	3.9000e-004	0.0411	2.7000e-004	0.0413	0.0109	2.5000e-004	0.0111		38.5307	38.5307	9.2000e-004		38.5537
Total	**0.0195**	**0.0130**	**0.1216**	**3.9000e-004**	**0.0411**	**2.7000e-004**	**0.0413**	**0.0109**	**2.5000e-004**	**0.0111**		**38.5307**	**38.5307**	**9.2000e-004**		**38.5537**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.592917	0.040807	0.199317	0.111088	0.016573	0.005170	0.010431	0.011175	0.002033	0.003262	0.005795	0.000692	0.000740

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	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148
NaturalGas Unmitigated	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148

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					
Library	4407.53	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148
Total		**0.0475**	**0.4321**	**0.3630**	**2.5900e-003**		**0.0328**	**0.0328**		**0.0328**	**0.0328**		**518.5334**	**518.5334**	**9.9400e-003**	**9.5100e-003**	**521.6148**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	4.40753	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148
Total		**0.0475**	**0.4321**	**0.3630**	**2.5900e-003**		**0.0328**	**0.0328**		**0.0328**	**0.0328**		**518.5334**	**518.5334**	**9.9400e-003**	**9.5100e-003**	**521.6148**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5773	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Unmitigated	1.5773	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152

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	0.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3910					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.2000e-004	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Total	**1.5773**	**6.0000e-005**	**6.6500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0142**	**0.0142**	**4.0000e-005**		**0.0152**

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	0.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3910					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.2000e-004	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Total	**1.5773**	**6.0000e-005**	**6.6500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0142**	**0.0142**	**4.0000e-005**		**0.0152**

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

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

Kentfield Campus Library Project

Marin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	65.00	1000sqft	2.07	65,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage per Google Earth

Construction Phase - Arch coating starts halfway through building construction

Grading - Assume cut and fill balanced on site

Demolition -

Vehicle Trips - No change in trips from existing

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	104.00
tblConstructionPhase	PhaseEndDate	8/31/2020	5/28/2020
tblConstructionPhase	PhaseEndDate	8/3/2020	5/13/2021
tblConstructionPhase	PhaseEndDate	9/17/2019	6/26/2020
tblConstructionPhase	PhaseEndDate	9/30/2019	7/9/2020
tblConstructionPhase	PhaseEndDate	8/17/2020	5/27/2021
tblConstructionPhase	PhaseEndDate	9/20/2019	7/1/2020
tblConstructionPhase	PhaseStartDate	8/18/2020	1/4/2020
tblConstructionPhase	PhaseStartDate	10/1/2019	7/10/2020
tblConstructionPhase	PhaseStartDate	8/21/2019	6/1/2020
tblConstructionPhase	PhaseStartDate	9/21/2019	7/2/2020
tblConstructionPhase	PhaseStartDate	8/4/2020	5/14/2021
tblConstructionPhase	PhaseStartDate	9/18/2019	6/29/2020
tblLandUse	LotAcreage	1.49	2.07
tblVehicleTrips	ST_TR	46.55	0.00
tblVehicleTrips	SU_TR	25.49	0.00
tblVehicleTrips	WD_TR	56.24	0.00

2.0 Emissions Summary

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					
2020	6.7782	25.3067	16.2463	0.0371	6.6345	1.1678	7.6252	3.3893	1.0908	4.3007	0.0000	3,718.3467	3,718.3467	0.7690	0.0000	3,735.1792
2021	2.1740	17.1601	15.5679	0.0301	0.2962	0.8212	1.1174	0.0803	0.7868	0.8671	0.0000	2,817.3396	2,817.3396	0.5443	0.0000	2,829.0776
Maximum	**6.7782**	**25.3067**	**16.2463**	**0.0371**	**6.6345**	**1.1678**	**7.6252**	**3.3893**	**1.0908**	**4.3007**	**0.0000**	**3,718.3467**	**3,718.3467**	**0.7690**	**0.0000**	**3,735.1792**

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					
2020	6.7782	25.3067	16.2463	0.0371	6.6345	1.1678	7.6252	3.3893	1.0908	4.3007	0.0000	3,718.3467	3,718.3467	0.7690	0.0000	3,735.1792
2021	2.1740	17.1601	15.5679	0.0301	0.2962	0.8212	1.1174	0.0803	0.7868	0.8671	0.0000	2,817.3396	2,817.3396	0.5443	0.0000	2,829.0776
Maximum	**6.7782**	**25.3067**	**16.2463**	**0.0371**	**6.6345**	**1.1678**	**7.6252**	**3.3893**	**1.0908**	**4.3007**	**0.0000**	**3,718.3467**	**3,718.3467**	**0.7690**	**0.0000**	**3,735.1792**

	ROG	NOx	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**

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	1.5773	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Energy	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.6249**	**0.4322**	**0.3696**	**2.5900e-003**	**0.0000**	**0.0329**	**0.0329**	**0.0000**	**0.0329**	**0.0329**		**518.5477**	**518.5477**	**9.9800e-003**	**9.5100e-003**	**521.6300**

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	1.5773	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Energy	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.6249**	**0.4322**	**0.3696**	**2.5900e-003**	**0.0000**	**0.0329**	**0.0329**	**0.0000**	**0.0329**	**0.0329**		**518.5477**	**518.5477**	**9.9800e-003**	**9.5100e-003**	**521.6300**

	ROG	NOx	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	6/1/2020	6/26/2020	5	20	
2	Site Preparation	Site Preparation	6/29/2020	7/1/2020	5	3	
3	Grading	Grading	7/2/2020	7/9/2020	5	6	
4	Building Construction	Building Construction	7/10/2020	5/13/2021	5	220	
5	Paving	Paving	5/14/2021	5/27/2021	5	10	
6	Architectural Coating	Architectural Coating	1/4/2020	5/28/2020	5	104	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 97,500; Non-Residential Outdoor: 32,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	304.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	27.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

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					3.2905	0.0000	3.2905	0.4982	0.0000	0.4982			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761		2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**3.2905**	**1.1525**	**4.4429**	**0.4982**	**1.0761**	**1.5743**		**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

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	0.1290	4.3331	1.2569	0.0119	0.2652	0.0147	0.2798	0.0726	0.0140	0.0867		1,287.7255	1,287.7255	0.0738		1,289.5708
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	0.0470	0.0273	0.3322	1.0900e-003	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		108.3085	108.3085	2.5400e-003		108.3721
Total	**0.1760**	**4.3604**	**1.5891**	**0.0130**	**0.3719**	**0.0154**	**0.3873**	**0.1010**	**0.0147**	**0.1156**		**1,396.0340**	**1,396.0340**	**0.0764**		**1,397.9428**

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					3.2905	0.0000	3.2905	0.4982	0.0000	0.4982			0.0000			0.0000
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761	0.0000	2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**	**3.2905**	**1.1525**	**4.4429**	**0.4982**	**1.0761**	**1.5743**	**0.0000**	**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

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	0.1290	4.3331	1.2569	0.0119	0.2652	0.0147	0.2798	0.0726	0.0140	0.0867		1,287.7255	1,287.7255	0.0738		1,289.5708
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	0.0470	0.0273	0.3322	1.0900e-003	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		108.3085	108.3085	2.5400e-003		108.3721
Total	**0.1760**	**4.3604**	**1.5891**	**0.0130**	**0.3719**	**0.0154**	**0.3873**	**0.1010**	**0.0147**	**0.1156**		**1,396.0340**	**1,396.0340**	**0.0764**		**1,397.9428**

3.3 Site Preparation - 2020

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					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.6521	19.9196	11.2678	0.0245		0.7771	0.7771		0.7149	0.7149		2,372.9062	2,372.9062	0.7675		2,392.0924
Total	**1.6521**	**19.9196**	**11.2678**	**0.0245**	**1.5908**	**0.7771**	**2.3678**	**0.1718**	**0.7149**	**0.8867**		**2,372.9062**	**2,372.9062**	**0.7675**		**2,392.0924**

3.3 Site Preparation - 2020

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	0.0289	0.0168	0.2044	6.7000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		66.6514	66.6514	1.5700e-003		66.6905
Total	**0.0289**	**0.0168**	**0.2044**	**6.7000e-004**	**0.0657**	**4.3000e-004**	**0.0662**	**0.0174**	**4.0000e-004**	**0.0178**		**66.6514**	**66.6514**	**1.5700e-003**		**66.6905**

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					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.6521	19.9196	11.2678	0.0245		0.7771	0.7771		0.7149	0.7149	0.0000	2,372.9062	2,372.9062	0.7675		2,392.0924
Total	**1.6521**	**19.9196**	**11.2678**	**0.0245**	**1.5908**	**0.7771**	**2.3678**	**0.1718**	**0.7149**	**0.8867**	**0.0000**	**2,372.9062**	**2,372.9062**	**0.7675**		**2,392.0924**

3.3 Site Preparation - 2020

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	0.0289	0.0168	0.2044	6.7000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		66.6514	66.6514	1.5700e-003		66.6905
Total	**0.0289**	**0.0168**	**0.2044**	**6.7000e-004**	**0.0657**	**4.3000e-004**	**0.0662**	**0.0174**	**4.0000e-004**	**0.0178**		**66.6514**	**66.6514**	**1.5700e-003**		**66.6905**

3.4 Grading - 2020

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110		1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.5523**	**0.9902**	**7.5425**	**3.3675**	**0.9110**	**4.2784**		**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

3.4 Grading - 2020

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	0.0362	0.0210	0.2555	8.4000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		83.3142	83.3142	1.9600e-003		83.3631
Total	**0.0362**	**0.0210**	**0.2555**	**8.4000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**83.3142**	**83.3142**	**1.9600e-003**		**83.3631**

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110	0.0000	1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.5523**	**0.9902**	**7.5425**	**3.3675**	**0.9110**	**4.2784**	**0.0000**	**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

3.4 Grading - 2020

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	0.0362	0.0210	0.2555	8.4000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		83.3142	83.3142	1.9600e-003		83.3631
Total	**0.0362**	**0.0210**	**0.2555**	**8.4000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**83.3142**	**83.3142**	**1.9600e-003**		**83.3631**

3.5 Building Construction - 2020

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	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089		2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**		**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.0468	1.1935	0.4250	2.9600e-003	0.0744	6.1500e-003	0.0806	0.0214	5.8800e-003	0.0273		314.0079	314.0079	0.0153		314.3895
Worker	0.0976	0.0567	0.6899	2.2600e-003	0.2218	1.4600e-003	0.2233	0.0588	1.3400e-003	0.0602		224.9484	224.9484	5.2800e-003		225.0805
Total	**0.1444**	**1.2502**	**1.1149**	**5.2200e-003**	**0.2962**	**7.6100e-003**	**0.3038**	**0.0803**	**7.2200e-003**	**0.0875**		**538.9563**	**538.9563**	**0.0206**		**539.4700**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089	0.0000	2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**	**0.0000**	**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.0468	1.1935	0.4250	2.9600e-003	0.0744	6.1500e-003	0.0806	0.0214	5.8800e-003	0.0273		314.0079	314.0079	0.0153		314.3895
Worker	0.0976	0.0567	0.6899	2.2600e-003	0.2218	1.4600e-003	0.2233	0.0588	1.3400e-003	0.0602		224.9484	224.9484	5.2800e-003		225.0805
Total	**0.1444**	**1.2502**	**1.1149**	**5.2200e-003**	**0.2962**	**7.6100e-003**	**0.3038**	**0.0803**	**7.2200e-003**	**0.0875**		**538.9563**	**538.9563**	**0.0206**		**539.4700**

3.5 Building Construction - 2021

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	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831		2,288.9355	2,288.9355	0.4503		2,300.1935
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**		**2,288.9355**	**2,288.9355**	**0.4503**		**2,300.1935**

3.5 Building Construction - 2021

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	0.0381	1.0819	0.3735	2.9300e-003	0.0744	2.5600e-003	0.0770	0.0214	2.4500e-003	0.0239		311.3179	311.3179	0.0145		311.6795
Worker	0.0909	0.0507	0.6315	2.1800e-003	0.2218	1.4100e-003	0.2232	0.0588	1.3000e-003	0.0601		217.0862	217.0862	4.7300e-003		217.2045
Total	**0.1290**	**1.1326**	**1.0050**	**5.1100e-003**	**0.2962**	**3.9700e-003**	**0.3002**	**0.0803**	**3.7500e-003**	**0.0840**		**528.4041**	**528.4041**	**0.0192**		**528.8840**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831	0.0000	2,288.9355	2,288.9355	0.4503		2,300.1935
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**	**0.0000**	**2,288.9355**	**2,288.9355**	**0.4503**		**2,300.1935**

3.5 Building Construction - 2021

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	0.0381	1.0819	0.3735	2.9300e-003	0.0744	2.5600e-003	0.0770	0.0214	2.4500e-003	0.0239		311.3179	311.3179	0.0145		311.6795
Worker	0.0909	0.0507	0.6315	2.1800e-003	0.2218	1.4100e-003	0.2232	0.0588	1.3000e-003	0.0601		217.0862	217.0862	4.7300e-003		217.2045
Total	**0.1290**	**1.1326**	**1.0050**	**5.1100e-003**	**0.2962**	**3.9700e-003**	**0.3002**	**0.0803**	**3.7500e-003**	**0.0840**		**528.4041**	**528.4041**	**0.0192**		**528.8840**

3.6 Paving - 2021

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	1.0633	10.6478	11.7756	0.0178		0.5826	0.5826		0.5371	0.5371		1,709.1107	1,709.1107	0.5417		1,722.6524
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0633**	**10.6478**	**11.7756**	**0.0178**		**0.5826**	**0.5826**		**0.5371**	**0.5371**		**1,709.1107**	**1,709.1107**	**0.5417**		**1,722.6524**

3.6 Paving - 2021

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	0.0505	0.0282	0.3509	1.2100e-003	0.1232	7.9000e-004	0.1240	0.0327	7.2000e-004	0.0334		120.6034	120.6034	2.6300e-003		120.6692
Total	**0.0505**	**0.0282**	**0.3509**	**1.2100e-003**	**0.1232**	**7.9000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**120.6034**	**120.6034**	**2.6300e-003**		**120.6692**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0633	10.6478	11.7756	0.0178		0.5826	0.5826		0.5371	0.5371	0.0000	1,709.1107	1,709.1107	0.5417		1,722.6524
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0633**	**10.6478**	**11.7756**	**0.0178**		**0.5826**	**0.5826**		**0.5371**	**0.5371**	**0.0000**	**1,709.1107**	**1,709.1107**	**0.5417**		**1,722.6524**

3.6 Paving - 2021

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	0.0505	0.0282	0.3509	1.2100e-003	0.1232	7.9000e-004	0.1240	0.0327	7.2000e-004	0.0334		120.6034	120.6034	2.6300e-003		120.6692
Total	**0.0505**	**0.0282**	**0.3509**	**1.2100e-003**	**0.1232**	**7.9000e-004**	**0.1240**	**0.0327**	**7.2000e-004**	**0.0334**		**120.6034**	**120.6034**	**2.6300e-003**		**120.6692**

3.7 Architectural Coating - 2020

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	6.5180					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**6.7602**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.0181	0.0105	0.1278	4.2000e-004	0.0411	2.7000e-004	0.0413	0.0109	2.5000e-004	0.0111		41.6571	41.6571	9.8000e-004		41.6816
Total	**0.0181**	**0.0105**	**0.1278**	**4.2000e-004**	**0.0411**	**2.7000e-004**	**0.0413**	**0.0109**	**2.5000e-004**	**0.0111**		**41.6571**	**41.6571**	**9.8000e-004**		**41.6816**

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					
Archit. Coating	6.5180					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**6.7602**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.0181	0.0105	0.1278	4.2000e-004	0.0411	2.7000e-004	0.0413	0.0109	2.5000e-004	0.0111		41.6571	41.6571	9.8000e-004		41.6816
Total	**0.0181**	**0.0105**	**0.1278**	**4.2000e-004**	**0.0411**	**2.7000e-004**	**0.0413**	**0.0109**	**2.5000e-004**	**0.0111**		**41.6571**	**41.6571**	**9.8000e-004**		**41.6816**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.592917	0.040807	0.199317	0.111088	0.016573	0.005170	0.010431	0.011175	0.002033	0.003262	0.005795	0.000692	0.000740

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	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148
NaturalGas Unmitigated	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148

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					
Library	4407.53	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148
Total		**0.0475**	**0.4321**	**0.3630**	**2.5900e-003**		**0.0328**	**0.0328**		**0.0328**	**0.0328**		**518.5334**	**518.5334**	**9.9400e-003**	**9.5100e-003**	**521.6148**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	4.40753	0.0475	0.4321	0.3630	2.5900e-003		0.0328	0.0328		0.0328	0.0328		518.5334	518.5334	9.9400e-003	9.5100e-003	521.6148
Total		**0.0475**	**0.4321**	**0.3630**	**2.5900e-003**		**0.0328**	**0.0328**		**0.0328**	**0.0328**		**518.5334**	**518.5334**	**9.9400e-003**	**9.5100e-003**	**521.6148**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5773	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Unmitigated	1.5773	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152

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	0.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3910					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.2000e-004	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Total	**1.5773**	**6.0000e-005**	**6.6500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0142**	**0.0142**	**4.0000e-005**		**0.0152**

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	0.1857					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3910					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.2000e-004	6.0000e-005	6.6500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0142	0.0142	4.0000e-005		0.0152
Total	**1.5773**	**6.0000e-005**	**6.6500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0142**	**0.0142**	**4.0000e-005**		**0.0152**

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

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

Appendix CUL

Cultural Resources Study (confidential)

CONFIDENTIAL APPENDIX

**To protect sensitive information about the location and nature of cultural resources, this appendix is not included in the public draft of this document.

Appendix NOI

Noise Level Estimate Calculations

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Demo

Academic Center

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Academic Center	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Saw	No	20	89.6	130.0		0.0
Dozer	No	40	81.7	130.0		0.0
Backhoe	No	40	77.6	130.0		0.0
Backhoe	No	40	77.6	130.0		0.0
Backhoe	No	40	77.6	130.0		0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Noise Limits (dBA) Day Leq	Noise Limits (dBA) Evening Lmax	Noise Limits (dBA) Evening Leq	Noise Limits (dBA) Night Lmax	Noise Limits (dBA) Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Noise Limit Exceedance (dBA) Day Leq	Noise Limit Exceedance (dBA) Evening Lmax	Noise Limit Exceedance (dBA) Evening Leq	Noise Limit Exceedance (dBA) Night Lmax	Noise Limit Exceedance (dBA) Night Leq
Concrete Saw	81.3	74.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	73.4	69.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	69.3	65.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	69.3	65.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	69.3	65.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	81.3	76.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Site Prep

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Academic Center	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Grader	No	40	85.0		130.0	0.0
Tractor	No	40	84.0		130.0	0.0
Scraper	No	40		83.6	130.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	76.7	72.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	75.7	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	75.3	71.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	76.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Grading

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Academic Center	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	130.0	0.0
Tractor	No	40	84.0		130.0	0.0
Grader	No	40	85.0		130.0	0.0
Tractor	No	40	84.0		130.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Noise Limits (dBA) Day Leq	Noise Limits (dBA) Evening Lmax	Noise Limits (dBA) Evening Leq	Noise Limits (dBA) Night Lmax	Noise Limits (dBA) Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Noise Limit Exceedance (dBA) Day Leq	Noise Limit Exceedance (dBA) Evening Lmax	Noise Limit Exceedance (dBA) Evening Leq	Noise Limit Exceedance (dBA) Night Lmax	Noise Limit Exceedance (dBA) Night Leq
Dozer	73.4	69.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	75.7	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	76.7	72.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	75.7	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	76.7	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: Building Construction

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Academic Center	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Generator	No	50		80.6	130.0	0.0
Crane	No	16		80.6	130.0	0.0
Man Lift	No	20		74.7	130.0	0.0
Tractor	No	40	84.0		130.0	0.0
Welder / Torch	No	40		74.0	130.0	0.0

Results

	Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Generator	72.3	69.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	72.3	64.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	66.4	59.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	75.7	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	65.7	61.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.7	74.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Paving

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Academic Center	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	130.0	0.0
Paver	No	50		77.2	130.0	0.0
Roller	No	20		80.0	130.0	0.0
Roller	No	20		80.0	130.0	0.0
Tractor	No	40	84.0		130.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck	70.5	66.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	68.9	65.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	71.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	71.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	75.7	71.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.7	74.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Arch Coating

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Academic Center	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	130.0	0.0

Results

	Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	69.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Demo

Anne E Kent Middle

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Anne E Kent	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	460.0	0.0
Dozer	No	40		81.7	460.0	0.0
Backhoe	No	40		77.6	460.0	0.0
Backhoe	No	40		77.6	460.0	0.0
Backhoe	No	40		77.6	460.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Concrete Saw	70.3	63.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	62.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	58.3	54.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	58.3	54.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	58.3	54.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.3	65.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Site Prep

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Anne E Kent Middle	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		460.0	0.0
Tractor	No	40	84.0		460.0	0.0
Scraper	No	40		83.6	460.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	65.7	61.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	64.7	60.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	64.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.7	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Grading

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Anne E Kent Middle	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	460.0	0.0
Tractor	No	40	84.0		460.0	0.0
Grader	No	40	85.0		460.0	0.0
Tractor	No	40	84.0		460.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Noise Limits (dBA) Day Leq	Noise Limits (dBA) Evening Lmax	Noise Limits (dBA) Evening Leq	Noise Limits (dBA) Night Lmax	Noise Limits (dBA) Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Noise Limit Exceedance (dBA) Day Leq	Noise Limit Exceedance (dBA) Evening Lmax	Noise Limit Exceedance (dBA) Evening Leq	Noise Limit Exceedance (dBA) Night Lmax	Noise Limit Exceedance (dBA) Night Leq
Dozer	62.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	64.7	60.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	65.7	61.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	64.7	60.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.7	66.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Building Construction

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Anne E Kent	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Generator	No	50	80.6	460.0	0.0	
Crane	No	16	80.6	460.0	0.0	
Man Lift	No	20	74.7	460.0	0.0	
Tractor	No	40	84.0	460.0	0.0	
Welder / Torch	No	40	74.0	460.0	0.0	

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Generator	61.4	58.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	61.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	55.4	48.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	64.7	60.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	54.7	50.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	64.7	63.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Paving

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Anne E Kent	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	460.0	0.0
Paver	No	50		77.2	460.0	0.0
Roller	No	20		80.0	460.0	0.0
Tractor	No	40	84.0		460.0	0.0
Roller	No	20		80.0	460.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Concrete Mixer Truck	59.5	55.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	57.9	54.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	60.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	64.7	60.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	60.7	53.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	64.7	63.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Arch Coating

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Anne E Kent	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	460.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	58.4	54.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58.4	54.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Demo

Residences

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	720.0	0.0
Dozer	No	40		81.7	720.0	0.0
Backhoe	No	40		77.6	720.0	0.0
Backhoe	No	40		77.6	720.0	0.0
Backhoe	No	40		77.6	720.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10	Lmax	L10
Concrete Saw	66.4	62.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	58.5	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	54.4	53.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	54.4	53.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	54.4	53.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	66.4	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Site Prep

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences	Residential	654.0	45.0	45.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		720.0	0.0
Tractor	No	40	84.0		720.0	0.0
Scraper	No	40		83.6	720.0	0.0

Results

	Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	61.8	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	60.8	56.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	60.4	56.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	61.8	61.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Grading

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	720.0	0.0
Tractor	No	40	84.0		720.0	0.0
Grader	No	40	85.0		720.0	0.0
Tractor	No	40	84.0		720.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Noise Limits (dBA) Day Leq	Noise Limits (dBA) Evening Lmax	Noise Limits (dBA) Evening Leq	Noise Limits (dBA) Night Lmax	Noise Limits (dBA) Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Noise Limit Exceedance (dBA) Day Leq	Noise Limit Exceedance (dBA) Evening Lmax	Noise Limit Exceedance (dBA) Evening Leq	Noise Limit Exceedance (dBA) Night Lmax	Noise Limit Exceedance (dBA) Night Leq
Dozer	58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	60.8	56.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	61.8	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	60.8	56.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	61.8	62.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Building Construct

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Generator	No	50	80.6	720.0	0.0	
Crane	No	16	80.6	720.0	0.0	
Man Lift	No	20	74.7	720.0	0.0	
Tractor	No	40	84.0	720.0	0.0	
Welder / Torch	No	40	74.0	720.0	0.0	

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Generator	57.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	57.4	49.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	51.5	44.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	60.8	56.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	50.8	46.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	60.8	59.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Paving

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	720.0	0.0
Paver	No	50		77.2	720.0	0.0
Roller	No	20		80.0	720.0	0.0
Roller	No	20		80.0	720.0	0.0
Tractor	No	40	84.0		720.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck	55.6	51.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	54.1	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	56.8	49.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	56.8	49.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	60.8	56.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	60.8	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/11/2019
Case Description: COM LRC - Arch Coating

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residences	Residential	65.0	45.0	45.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	720.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	54.5	50.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	54.5	50.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A