DRAFT INITIAL STUDY/

MITIGATED NEGATIVE DECLARATION FOR THE

MLK ACADEMY, NEVADA CAMPUS RECONSTRUCTION PROJECT

Prepared for:

Sausalito Marin City School District
200 Phillips Drive,
Marin City, CA 94965

Prepared by:

Grassetti Environmental Consulting
7008 Bristol Drive
Berkeley, CA 94705

May 2023

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
ADWF	average dry weather flow
APE	Area of Potential Effect
BMP	Best Management Practice
CARB	California Air Resources Board
FEMA	Federal Emergency Management Agency
CO	carbon monoxide
CO2E	carbon dioxide equivalent
GHG	greenhouse gas
gpd	gallons of wastewater per day
LOS	level of service
mgd	million gallons per day
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
OHP	State Office of Historic Preservation
O3	ozone
PM10	particulate matter less than 10 microns
PM2.5	particulate matter less than 2.5 microns
RWQCB	Regional Water Quality Control Board
SCH	State Clearinghouse
SOx	sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
TMDL	Total Maximum Daily Load
VOC	volatile organic compound

ENVIRONMENTAL DETERMINATION

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

DETERMINATION: On the basis of 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 in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	**X**
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 potentially 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.	

Itoco Garcia

Itoco Garcia, Superintendent, SMCSD

5/12/23

Date

I. INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the Sausalito Marin City School District (SMCSD or District), 200 Phillips Drive, Marin City, CA, pursuant to the California Environmental Quality Act (CEQA) statutes[1] and Guidelines[2]. It provides documentation to support the conclusion that the proposed MLK Academy Nevada Campus Reconstruction Project ("the project"), with mitigation identified herein, would not cause a potentially significant impact to the physical environment. The proposed site is located at 636 Nevada Street, in the City of Sausalito.

This IS/MND describes the location of the project site, the project sponsor's objectives, and the details of the proposed project. The Environmental Checklist Form included as Appendix G of the CEQA Guidelines serves as the basis for the environmental evaluation contained in the IS/MND. The Checklist Form examines the specific potential project-level physical environmental impacts that may result from the construction and operation of the proposed new and expanded facilities onsite. Mitigation measures have been identified to reduce any potentially significant impacts that would otherwise occur with development and operation of the new facilities to a less-than-significant level.

The District will serve as the "lead agency" (the public agency that has the principal responsibility for carrying out and/or approving a project) for the proposed project. The governing board of the District is responsible for ensuring that the environmental review and documentation meet the requirements of CEQA. The Draft IS/MND will be circulated for a 30-day public review period from April 22 through May 22, 2023.

Should the District approve the project, it would be required to file a "Notice of Determination" for posting by the County Clerk and the State Clearinghouse. The filing of the notice and its posting starts a 30-day statute of limitations on court challenges to the CEQA review of the Project.

Document Organization

This document is organized into the following sections:

SECTION I – INTRODUCTION: Provides background information about the project.

SECTION II – PROJECT DESCRIPTION: Includes project background and detailed description of the project.

SECTION III – INITIAL STUDY CHECKLIST AND DISCUSSION: Reviews the proposed project and states whether the project would have potentially significant environmental effects.

[1] Public Resources Code Sections 21000 et seq.
[2] Title 14, Section 15000 et seq. of the California Code of Regulations

SECTION IV – MANDATORY FINDINGS OF SIGNIFICANCE: States whether environmental effects associated with development of the proposed project are significant, and what, if any, added environmental documentation may be required.

SECTION V – REFERENCES: Identifies source materials that have been consulted in the preparation of the IS.

SECTION IV – REPORT PREPARERS: Identifies the firms and individuals who prepared the IS.

APPENDICES: Includes technical reports, comments and responses on the Draft IS/MND, and Mitigation Monitoring and Reporting Program.

II. PROJECT DESCRIPTION

Project Name:	Martin Luther King (MLK) Academy Nevada Campus Reconstruction Project
Project Location:	636 Nevada Street Sausalito, CA 94965
Project Applicant and Lead Agency	Itoco Garcia, Superintendent, Sausalito Marin City School District 200 Phillips Drive Marin City, CA 94965 415-332-3190
General Plan Designation:	Public/Institutional
Zoning:	Public/Institutional
Project Approvals:	SMCSD approval. Review of facilities by Division of the State Architect for structural safety, fire and life safety, and ADA accessibility.
Date Initial Study Completed:	May 11, 2023

PROJECT DESCRIPTION

Project Purpose/Objectives

The current school facilities are outdated, have inadequate safety, and substandard facilities.

Project Location

The Martin Luther King (MLK) Academy, Nevada Campus elementary (K-5) school is located at 636 Nevada Street in the City of Sausalito. (See Figures 1 and 2). The school is bordered by single-family residences along Lincoln Drive to the north, west, and south. Additional school facilities (Willow Creek Academy and Robin's Nest Preschool) and fields lie to the east of the site.

The MLK Academy Nevada Campus has an enrollment of approximately 215 students and was originally built in the 1970's and 1980's. The project site comprises approximately 6 acres of the overall 12-acre campus (see Figure 3).

The project site is located within a residential area in northern Sausalito, just east of US Highway 101. The campus is bounded by Buchanan Drive along the northeastern property line and Nevada Street along the southeastern property line. The northwestern and southwestern sides of the site are generally bounded by ascending, east-facing slopes inclined at about 3:1 (Horizontal:Vertical), the upper parts of which are developed with single-family homes along the downhill side of Lincoln Drive.

The campus is terraced and can be "separated" into three zones, an "upper-campus", "middle-campus", and "lower-campus". The upper-campus abuts the base of the ascending slopes in the western part of the site, at elevations between 100 and 85 feet above sea level. The upper-campus is separated from the middle-campus by an approximate 10 to 15-foot tall slope. The middle-campus is situated at an approximate elevation of 75 feet above sea level and is separated from the lower-campus by an approximate 10 foot tall, east facing, 3:1 (horizontal:vertical) slope. The lower campus is situated on gently sloping terrain at elevations between 65 and 55 feet above sea level.

The campus is currently developed with a variety of one-and two-story classrooms, modular classrooms and administrative structures; concrete and asphalt pedestrian areas; open lawns; and asphalt parking lots. Existing two-story structures located in the western corner of the campus property are no longer in use.

Surrounding Land Uses

The is surrounded by single-family residential uses to the north, west, and south, with other school uses to the east. The overall school campus is in a single-family residential neighborhood, with a number of schools and school fields near or adjacent to the Nevada Campus.

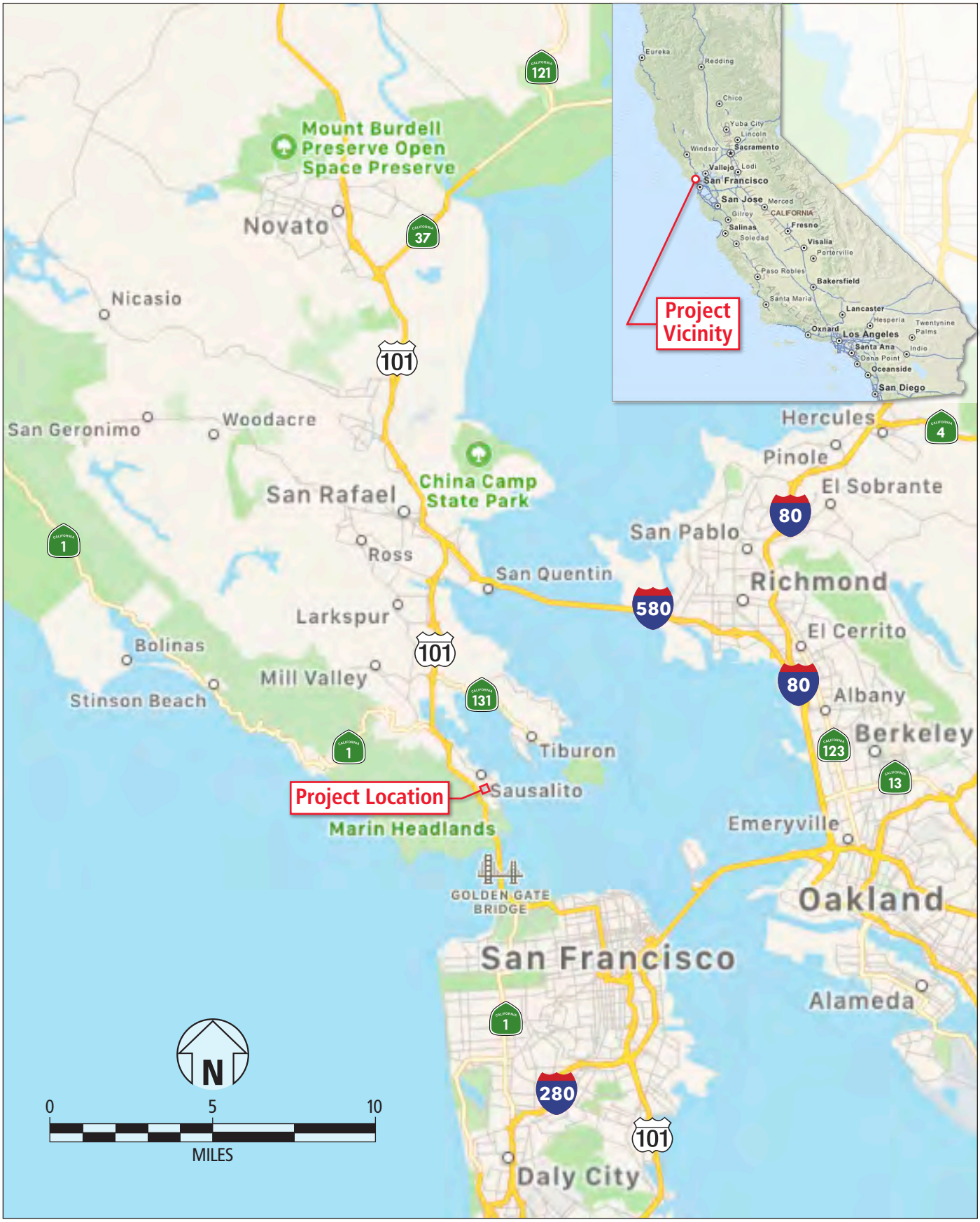

Figure 1

Project Location

Source: TomTom Maps and Grasetti Environmental

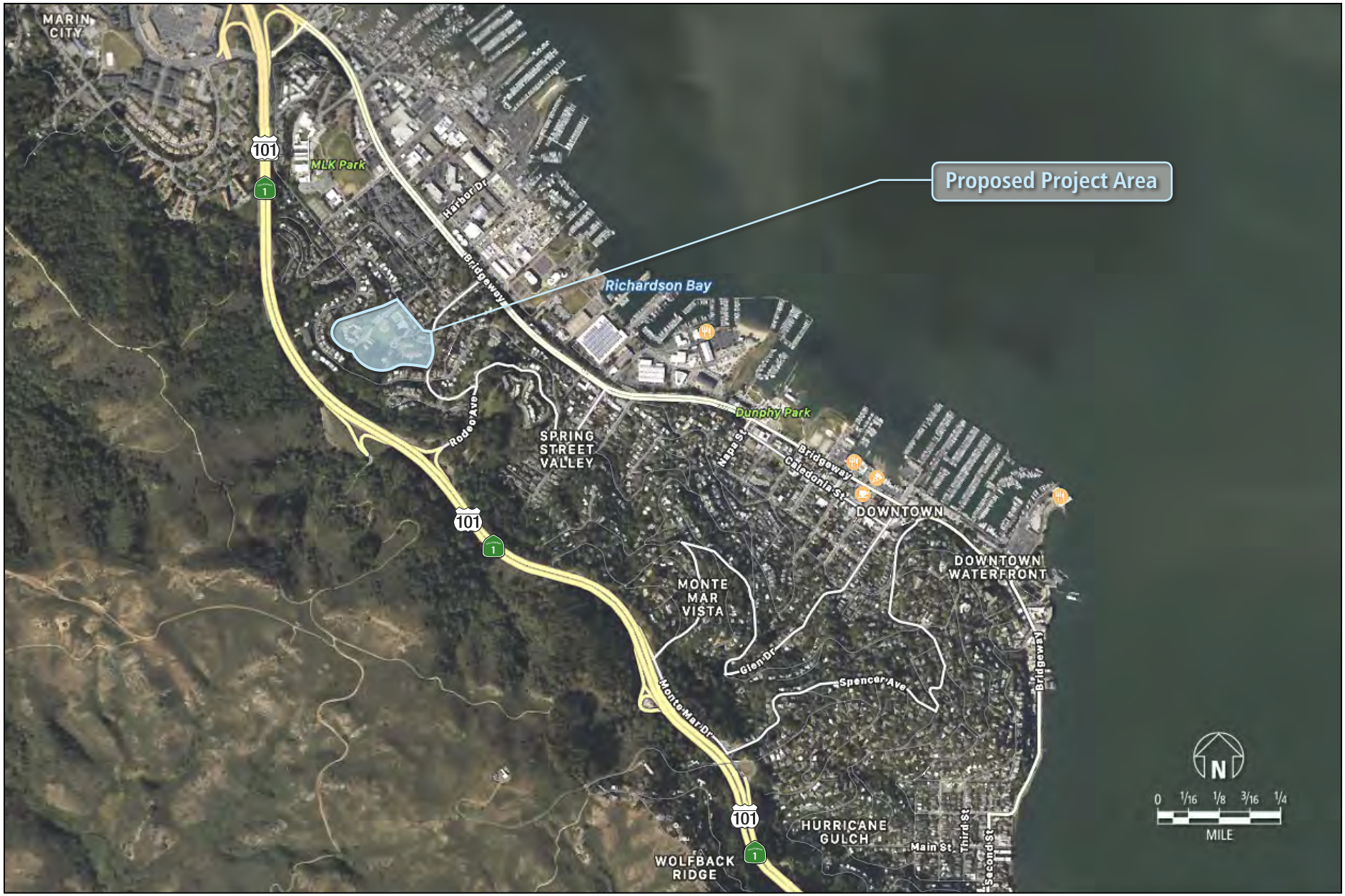

Figure 2

Proposed Project Area

Source: TomTom Maps and Grasetti Environmental

Figure 3

Proposed Project Development and Phasing Plan

Source: JK Architecture Engineering, Inc.

Existing Site Conditions and Facilities

The existing project site currently contains 29,820 square feet (sq. ft.) of elementary school buildings, recreation fields, and a 6,125 sq. ft. kindergarten pod (K-Pod).

Proposed School Reconstruction

The project proposes to demolish 30,940 sq. ft. of school buildings, modernize 14,720 sq. ft of school buildings, and construct 20,005 sq. ft of new buildings (with an additional 5630 sq. ft. of overhand and canopy) and a new recreation field. The total sq. ft of the school buildings would be reduced from 45,660 sq. ft. to about 34,725 sq. ft. (not including canopies and overhangs). The new school would include four classroom buildings, a Multi-Use Room (MUR) building, and an administration building. New parking, play areas, and baseball/softball/soccer field also are proposed. The proposed project is described below and shown in Figures 3 and 4.

The school project would include the following

- Modernize Existing Kinder Building (K-pod): Consists of 4 classrooms, 3 offices, restrooms, and mechanical room) Modernization would include Replacement of existing finishes, new HVAC and low voltage systems and a new play-yard.
- Modernize existing Buildings K (Kinder Building - 6,127 sq. ft.) and M (Multi-Use Building - 8,644 sq. ft.)
- Demolish remaining existing school buildings including portables.
- Construction of New 3765 sq. ft. administration building（Building A).
- Construction of New Classroom Buildings:
  - Building B – 4 classrooms, 2 resource classrooms, and support spaces – 5,345 SF
  - Building C – 3 classrooms, art and stem labs, and library- 6025 sq. ft.
  - Building D – 4 classrooms, and support spaces – 4,870 SF
- Construction of new parking areas with pick up/drop off lanes utilizing existing curb cuts (parking would be expanded from the current 0.455 acres to 0.728 acres).
- All associated demolition, site preparation, utilities, sitework, fields(s) and blacktop associated with improvements noted above.

The new buildings would be of modern design and low lying. The maximum heights of the proposed buildings would be 22’4” feet for the classrooms and the Multi-use Room.

During construction the existing classroom buildings and a portion of the existing field space would be used for temporary housing. Upon completion of the new campus buildings, the existing classroom buildings and administration building will be demolished.

Proposed Replacement Field

A new sports field would be constructed as part of the project, replacing the existing one, but shifted about 60 feet to the southwest of the existing field. The field would have artificial turf, and would be used mostly for baseball, softball, and soccer. It would not have lighting or sound

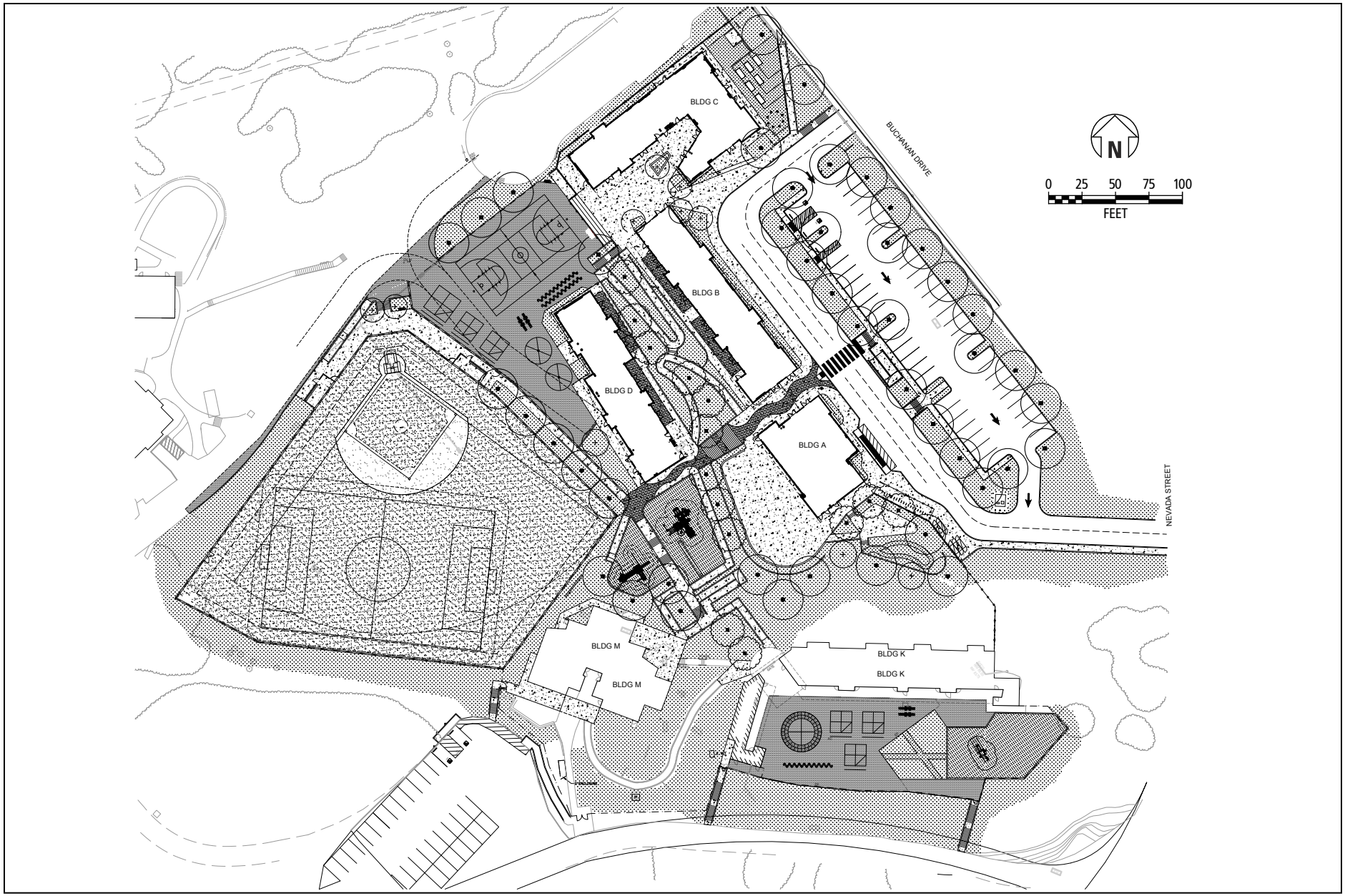

Figure 4

Proposed New School Site Plan

Source: JK Architecture Engineering, Inc.

systems. Types and intensity of uses, as well as hours of use of the field, would not change from the existing school field.

Infrastructure Connections

Utility service would be provided via connections to existing on-campus water, sewer, gas, and electrical lines. A new main electrical service is anticipated.

Days and Hours of Operation

The proposed project would not change or expand any uses of the school compared to existing use types and levels.

School Capacity

There would be no change in student enrollment or staffing from the proposed project.

Tree Protection, Planting and Removal. Eleven existing trees would be removed and 42 new trees would be planted, as well as shrubs and ground cover. Figure 4, Proposed New School Site Plan, also shows the proposed landscape plan.

Grading and Earthwork

The preliminary project grading scheme would result in 32,450 cubic yards of exported soils and 56,400 cubic yards of fill. Minimal topographic changes to the level site would occur as a result of the project's cut and fill.

Drainage and Runoff

The site is currently drained into the campus drainage systems which hooks into the City's storm drainage system. The proposed project would be similarly drained. The proposed project would increase impervious surfaces on the site from the existing approximately 125,000 square feet to about 212,000 square feet. Increased runoff from the increase in impervious surfaces would be offset would be offset by the proposed tree planting and landscape area soil amendments.

Construction Schedule, Equipment, Workers, and Hours

Construction Schedule. The project would consist of 4 phases beginning in June 2023 and running through September of 2025. The phases include:

Phase 1 – Demolition and sitework (2 months on the front end of the project and 6 months on the backend.

Phase 2 – Construction or new buildings (12 months)

Phase 3 - Demolition of temporary housing and construction of field and playgrounds

Phase 4 - Modernization of existing buildings. (2 months)

Equipment Use. Equipment used during construction would vary by phase, but would include excavators, backhoes, dump trucks, graders, compactors, water trucks, and similar equipment, as well as cement trucks, and various power equipment for building construction.

Construction Workers. Up to 25 construction workers would be onsite on an average day

Construction Hours. Typical construction hours would be 8:00 a.m. and 6:00 p.m. on weekdays and on Saturdays between the hours of 9:00 a.m. and 5:00 p.m, consistent with the City of Sausalito Noise Ordinance.

Staging Areas. Construction staging would be located entirely on the project site.

III. INITIAL STUDY CHECKLIST

The initial study checklist recommended by the CEQA Guidelines is used to describe the potential impacts of the proposed Project on the physical environment.

I. Aesthetics

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			**X**	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			**X**	
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			**X**	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			**X**	

Discussion

a, c) The project would have buildings of similar sizes and scale as the existing school buildings, and the structures would be placed further from the highway than the existing school buildings. The new Multi-Use Room would be taller than the existing buildings, but would not block or impede any views. Views from adjacent houses on Lincoln Drive and William Court would not be substantially altered from existing views of the school and field. The ring of school buildings nearest the houses upslope from the school would be removed, however there are currently no plans to construct any new structures on that site. The large grove of eucalyptus trees on the western side of the site would remain. While about 5 large trees and areas of shrubs are proposed for removal for construction of the new campus, the proposed landscaping includes planting of about 50 new trees, which would more than offset the existing tree loss visually. There are no rock outcroppings, historic buildings, or scenic highways on the project site. Therefore, the project would have **a less-than-significant** impact on scenic vistas or scenic resources.

b) US Highway 101 (also incorporates US 1 in the project area) is a designated State Scenic Highway. However, the proposed project would not be visible from the highway due to intervening vegetation. Therefore, the project's impact would be **less than significant**.

d) The proposed exterior safety lighting for the reconstructed school would be similar to existing exterior lighting at the school. In addition, the new school buildings would be farther from the nearby houses than the existing school, further reducing potential light and glare impacts. Exterior lighting would be shielded and directed to minimize light and glare spillage. The relocated ballfield would not include night lighting. Therefore, the project's impact would be **less than significant**.

II. Agricultural and Forestry Resources

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or 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?				**X**
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				**X**
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))?				**X**
d) Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
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?				**X**

Discussion

a-e) The project site is covered by existing school facilities, including the existing buildings and athletic fields. There are no agricultural or forested lands on or in the vicinity of the school campus. Therefore, the project would not result in the conversion of farmland or forestland to non-agricultural uses would have **no impact** on agricultural or forest resources.

III. Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

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

Background

This section describes construction and operational air quality impacts associated with the project and is consistent with the methods described in the Bay Area Air Quality Management District (BAAQMD) *CEQA Air Quality Guidelines* (May 2017).

The air quality analysis includes a review of criteria pollutant emissions such as carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOC) as reactive organic gases (ROG), particulate matter less than 10 micrometers (coarse or PM_{10}), and particulate matter less than 2.5 micrometers (fine or $PM_{2.5}$). Diesel particulate matter (DPM) is also a concern regarding health, sometimes requiring preparation of a health risk assessment (HRA).

The United States Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) under the Clean Air Act (CAA) for the criteria pollutants and California Air Resources Board (CARB) has established California Ambient Air Quality Standards (CAAQS). Air basins where NAAQS and/or CAAQS are exceeded is designated as a "nonattainment" area. If standards are met, the area is designated as an "attainment" area.

The project site is located within the San Francisco Bay Area Air Basin (Air Basin) under the jurisdiction of the BAAQMD. The BAAQMD is the local agency responsible for the administration and enforcement of air quality regulations for the area. The Bay Area is currently designated "nonattainment" for state and national (1-hour and 8-hour) ozone standards, for the state PM_{10} standards, and for state and national (annual average and 24-hour) $PM_{2.5}$ standards. The Bay Area is designated "attainment" or "unclassifiable" with respect to the other ambient air quality standards.

Discussion

a) The BAAQMD *2017 Clean Air Plan/Regional Climate Protection Strategy (CAP/RCPS)*, which provides a roadmap for BAAQMD's efforts over the next few years to reduce air pollution and protect public health and the global climate. The 2017 *CAP/RCPS* identifies potential rules, control measures, and strategies that BAAQMD can pursue to reduce GHG in the Bay Area. Determination of whether a project supports the goals in the 2017 *CAP/RPCS* is achieved by a comparison of project-estimated emissions with BAAQMD thresholds of significance. If project emissions would not exceed the thresholds of significance after the application of all feasible mitigation measures, the project is considered consistent with the goals of the 2017 *CAP/RPCS*. As discussed in b), below, the project would not exceed the BAAQMD significance thresholds; therefore, it would support the primary goals of the *2017 CAP/RCPS* and would not hinder implementation of any of the control measures. Therefore, this impact would be **less than significant**.

b) ***Construction Impacts***

Project construction would generate short-term emissions of air pollutants, including fugitive dust and equipment exhaust emissions. The BAAQMD *CEQA Air Quality Guidelines* recommend quantification of construction-related exhaust emissions and comparison of those emissions to significance thresholds. CalEEMod (California Emissions Estimator Model Version 2020.4.0) was used to quantify construction-related pollutant emissions (CAPCOA, 2021).

Table AQ-1 provides the estimated short-term construction emissions for the project. The average daily construction period emissions (i.e., total construction period emissions divided by the number of construction days) were compared to the BAAQMD significance thresholds. Construction-related emissions would be below the BAAQMD significance thresholds. See Appendix A for air quality calculations.

Table AQ-1: Estimated Daily Construction Emissions (pounds)

Condition	ROG	NOx	PM_{10}	$PM_{2.5}$	CO
Construction	1.84	19.04	0.69	0.65	19.00
Significance Threshold	54	54	82	54	---
Significant (Yes or No)?	No	No	No	No	No

Notes: PM_{10} and $PM_{2.5}$ are exhaust emissions only.
SOURCE: CalEEMod Version 2020.4.0, RCH Group, 2023.

BAAQMD's *CEQA Air Quality Guidelines* require that projects implement best management practices (BMPs) to control fugitive dust and exhaust emissions regardless of the estimated construction emissions including:

Fugitive Dust BMPs

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

- All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- A publicly visible sign shall be posted with the telephone number and person to contact at the District regarding dust complaints. This person shall respond and take corrective action with 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Basic Exhaust Emissions Reduction BMPs

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

As indicated, the estimated construction emissions would be below the BAAQMD's significance thresholds. In addition, the District would implement the required BMPs. Therefore, the project construction impacts would be **less than significant.**

Operational Impacts

The project would result in a reduction in building square footage and the new buildings would be subject to more stringent energy standards than the existing buildings. Further, the project would not increase vehicle trips because there would be no change in student enrollment or staffing with the project. Therefore, this impact would be **less than significant**.

Cumulative Impacts

The BAAQMD *CEQA Air Quality Guidelines* recommend that cumulative air quality effects from criteria air pollutants also be addressed by comparison to the mass daily and annual thresholds. These thresholds were developed to identify a cumulatively considerable contribution to a significant regional air quality impact. As shown previously, the project-related construction and operational emissions would be below the significance thresholds.

Therefore, the project would not be cumulatively considerable and cumulative impacts would be **less than significant**.

Conclusion

As shown, the project construction and operational emissions would be below the BAAQMD significance thresholds per BAAQMD's *CEQA Air Quality Guidelines,* and the impact would be **less than significant**.

c) A construction HRA was prepared to analyze health impacts on existing residences from diesel equipment and haul truck emissions (DPM) associated with the project construction activities. The HRA was conducted to determine the health impacts, in terms of excess cancer risk and non-cancer hazards, using the significance levels identified by the BAAQMD's *CEQA Air Quality Guidelines*. In accordance with the BAAQMD guidelines, the HRA also evaluated concentrations of $PM_{2.5}$. The HRA was prepared in accordance with the California Office of Environmental Health Hazard Assessment (OEHHA)'s *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Project operation would not result in potential health risk impacts. See Appendix B for the HRA.

The maximum cancer risk from unmitigated project construction emissions for a residential-receptor and worker-receptor would be 22.5 and 0.02 per million, respectively. Thus, the cancer risk due to unmitigated construction activities would be above the BAAQMD threshold of 10 per million for a residential-receptor and would be potentially significant. With the implementation of Mitigation Measure AQ-1, mitigated project construction emissions for a residential-receptor and worker-receptor would be 2.21 and 0.002 per million, respectively. Thus, the cancer risk due to mitigated construction activities would be below the BAAQMD threshold of 10 per million and would be less than significant. Unmitigated chronic hazard and $PM_{2.5}$ health impacts were found to be less than significant; however, Mitigation Measure AQ-1 would further reduce the risk levels. Therefore, project construction health impacts would be **less than significant with mitigation**.

d) The BAAQMD's significance criteria for odors are subjective and are based on the number of odor complaints generated by a project. Generally, the BAAQMD considers any project with the potential to frequently expose members of the public to objectionable odors to cause a significant impact. With respect to the project, diesel-fueled construction equipment exhaust would generate some odors. However, these emissions typically dissipate quickly and would be unlikely to affect a substantial number of people. The project would not involve operational activities that generate odors. Therefore, odor impacts would be **less than significant**.

Mitigation Measures

Mitigation Measure AQ-1. *Prior to the certificated of construction-related permits, the District shall demonstrate to the satisfaction of the Sausalito Marin City School*

District's project construction manager that the following measure would be implemented during project construction:

- *All offroad equipment greater than 50 horsepower used in project construction shall be CARB Tier 4 Certified, as set forth in Seciton 2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 of the Code of Federal Regualtions, or a lower DPM emission alternative, such as electric or propane.*

IV. Biological Resources

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?				**X**
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?				**X**
c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				**X**
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?				**X**
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				**X**
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?				**X**

Background

The project site is developed with school buildings and facilities, and the large ballfield. A large eucalyptus grove is located to the west of the buildings to be reconstructed as part of this project. Landscape trees also are present on various areas of the site. nesting habitat for special status songbirds and raptors, Trees surrounding the school fields may provide nesting and/or roosting

habitat for a number of special-status bird species. No potential jurisdictional wetlands or Waters of the United States occur on the project site[3].

Discussion

a) While the large eucalyptus grove on the school property would not be affected by the project, planned tree removal (5-10 larger trees and several areas of shrubs that may provide nesting habitat) and construction activities would have the potential to affect migratory and nesting protected bird species, either directly from tree removal, and/or from construction noise impacts on active nests in remaining trees on or near the site. This potentially significant impact would be reduced to a **less-than-significant** level by implementation of Mitigation Measure BIO-1, below.

b) The project would not affect any riparian habitat or sensitive natural communities, as none of those are present on the site. **No impact** would occur.

c) The project would not affect any wetlands habitats, as none of those are present on the site. **No impact** would occur.

d) The project has no potential to impede any migration corridors. The proposed project is not expected to "interfere substantially with the movement of any native resident or migratory fish or wildlife species" because there is minimal habitat on the site and the proposed project would not substantially change the uses of the project site and area. With respect to native wildlife nursery sites, see tree discussion, above. **No impact** would occur.

e) According to the project demolition plan, about 6 larger trees and several areas of shrubs would be removed as a result of the project. The SMCUSD is not subject to the City of Sausalito tree protection ordinance so no tree removal permits would be required. However, the project landscaping plan includes planting of approximately 50 new trees, which would more than offset trees lost to demolition. Therefore the project's impacts to trees would be ***less than significant***.

f) The project site is not covered by any federal, state, or local conservation plan. Therefore, the project would have **no impact** with respect to habitat conservation plan compliance.

Mitigation Measures

Measure BIO-1: Prevent Loss of or Substantial Disturbance of Active Bird Nests. A pre-construction survey for nesting birds shall be conducted in trees to be removed and trees within 200 feet of construction activities by a qualified biologist within two weeks of construction activities, if construction activities are to occur within nesting/breeding season of native bird species (February- August). If active nests are identified within 300 feet of construction and would be exposed to either. Proposed tree removal or prolonged

[3] https://www.fws.gov/wetlands/data/mapper.html

construction-related noise above normal levels, a buffer shall be implemented around nests during the breeding season, or until a biologist determines the young have fledged. The size of the buffer shall be determined by the project biologist, and would depend on multiple factors including relative change in noise and disturbance during construction activity, amount of vegetative screening between activity and nest, and sensitivity of species.

V. Cultural Resources

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?				X
c) Disturb any human remains, including those interred outside of dedicated cemeteries?		X		

Background

A Cultural Resources Evaluation was conducted for the site by Solano Archaeological Services (SAS 2023). On March 2nd, 2023, SAS archaeologists Karena Skinner, and Mark Pense conducted an intensive pedestrian survey of the project area utilizing pedestrian transects spaced no greater than 10 meters apart. The project area consists largely of asphalt (parking lots), standing in-use buildings, and areas exhibiting landscaping (e.g., grass). Ground surface visibility was only available in small, landscaped areas or minor undeveloped patches in between buildings, some of which exhibited minor erosional areas. No prehistoric or historic-era cultural sites, features, or artifacts or potentially sensitive soil types (i.e., prehistoric midden) were encountered.

Archival research and an intensive field survey did not identify any prehistoric or historic-period cultural resources within the project area. Map and aerial photography reviews show that the land on which the project area is situated is comprised entirely of fill brought in sometime prior to the 1940s. Consequently, the project area retains a very low level of sensitivity for containing prehistoric materials. Concerning historic period resources, historic mapping, aerial photographs, archival research, and the field survey indicate that the original 1940s housing constructed within and adjacent to the project area has been completely demolished and the entire area was redeveloped in the mid-late 20th century. Consequently, there is very little chance that any intact and potentially significant historic-era resources could be present within the project area. The current school facilities were constructed in the 1970's or later.

Discussion

a) As discussed above, the existing buildings on the site were constructed in the 1970's or later. Consequently, the project site contains no historical resources as defined in CEQA Guidelines Section 15064.5. The structures on the site to be removed are standard school

buildings of modern construction, and have no historic value. Due to a lack of identified cultural resources and sensitive landforms, SAS found that the proposed project would have no impact on historical resources. The project would not have the potential to affect any off-site historic resources due to its location internal to the school campus. Therefore, the project would have ***no impact*** on historical resources.

b) The project would involve grading for foundations, the relocated sports field, and infrastructure. However, the site has been previously disturbed for construction of the existing school and field. SAS determined that the project would have ***no impact*** to archaeological resources (SAS 2023).

c) Although no prehistoric or historic-era human remains are known to exist on the project site, it is possible that presently undocumented human interments may be uncovered during grading. Implementation of Mitigation Measure CULT-1 would reduce this ***potentially significant impact*** to a ***less-than-significant*** level.

Mitigation Measures

Mitigation Measure CULT-1: Human Remains. California law recognizes the need to protect interred human remains, particularly Native American burials and associated items of patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are contained in California Health and Safety Code Section 7050.5 and Section 7052 and California Public Resources Code Section 5097.

In accordance with the California Health and Safety Code, if human remains are uncovered during ground disturbing activities all such activities in the vicinity of the find shall be halted immediately and the District or the District's designated representative shall be notified. The District shall immediately notify the county coroner and a qualified professional archaeologist. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). The responsibilities of the District for acting upon notification of a discovery of Native American human remains are identified in detail in the California Public Resources Code Section 5097.9. The District or their appointed representative and the professional archaeologist would consult with a Most Likely Descendent determined by the NAHC regarding the removal or preservation and avoidance of the remains and determine if additional burials could be present in the vicinity.

VI. Energy

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			**X**	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			**X**	

Discussion

a) The project would require short-term energy consumption of petroleum fuels (primarily gasoline and diesel fuel) by construction workers traveling to and from the project site, transportation of site and building materials, and equipment for on-site construction activities. Gasoline and diesel fuel would be the primary sources of energy for these activities except where electricity is available and feasible, thus electricity use during construction is considered to be minor.

Based on the CalEEMod modeling described in the air quality and GHG emissions sections of this Initial Study and standard fuel conversion factors, project construction activities would require approximately 117,000 gallons of diesel fuel and approximately 13,300 gallons of gasoline[4]. This increase in gasoline and diesel fuel consumption would be temporary, of relatively short duration, and would cease once project construction is completed. The project would replace the existing school facilities, which are outdated, have inadequate safety, and substandard facilities. Therefore, project construction would not result in wasteful, inefficient, or unnecessary consumption of energy.

The project would not result in wasteful, inefficient, or unnecessary consumption of energy during operation, given that the school facilities would be constructed to more stringent energy standards, in compliance with current State of California building energy efficiency standards and green building standards. Furthermore, the project would result in a reduction in building square footage and would not increase vehicle trips since there would be no change in student enrollment or staffing with the project. Therefore, this impact would be **less than significant**.

[4] Fuel usage is estimated using the CalEEMod output for CO_2, and a $kgCO_2$/gallon conversion factor, as cited in the *U.S. Energy Information Administration Carbon Dioxide Emissions Coefficients*, https://www.eia.gov/environment/emissions/co2_vol_mass.php

b) The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The project would comply with the current State of California building energy efficiency standards[5] and green building standards[6]. Therefore, this impact would be **less than significant**.

[5] The California Energy Commission (CEC) updates the Energy Code every three years. On August 11, 2021, the CEC adopted the 2022 Energy Code. In December, it was approved by the California Building Standards Commission for inclusion into the California Building Standards Code. The 2022 Energy Code encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code.

[6] The California Green Building Standards Code—Part 11, Title 24, California Code of Regulations—known as CALGreen, is the first-in-the-nation mandatory green building standards code developed to meet the state's GHG reduction goals. CALGreen includes regulations for energy efficiency, water efficiency and conservation, material conservation and resource efficiency, environmental quality, and more, and also includes mandators provisions for commercial, residential, and public-school buildings.

VII. Geology and Soils

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) 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? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?		X		
iii) Seismic-related ground failure, including liquefaction?		X		
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?		X		
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		X		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial director indirect risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?				X
f) Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?			X	

Background

Miller Pacific Engineering Group (MPEG) prepared a Geotechnical Investigation for the project (MPEG 2022).[7] That study included a literature review and exploratory soil borings. Relevant portions of the Geotechnical Investigation report are summarized below.

Soil and Geologic Conditions

The geotechnical exploration found that the project site is underlain by interbedded colluvial deposits variously composed silty to sandy clay and silty to clayey sands and fine gravels overlying weathered Franciscan Mélange bedrock. Groundwater was measured at depths between 25 and 40-feet below the ground surface in the geologic borings. Groundwater levels were also measured in cone penetration tests at depths between 11.0 and 16.5 feet below the ground surface. Typically, groundwater levels fluctuate seasonally with higher levels expected during the wet winter months. MPEG anticipates, based on their subsurface exploration, a historic high groundwater level of approximately 10-feet below the ground surface.

Seismic Conditions

The project site is located within a seismically active region that includes the Central and Northern Coast Mountain Ranges. Several active faults are present in the area including the San Andreas, San Gregorio, Hayward/Rodgers Creek, among others. An “active” fault is defined as one that shows displacement within the last 11,000 years and, therefore, is considered more likely to generate a future earthquake than a fault that shows no evidence of recent rupture. The California Department of Conservation, California Geologic Survey, formerly the Division of Mines and Geology, has mapped various active and inactive faults throughout California. The San Andreas Fault is the nearest known active fault and is located approximately 9.8-kilometers (6.1-miles) southwest of the site (MPEG 2022).

Numerous earthquakes have occurred in the region within historic times. The three most significant earthquakes to have occurred in recent history that have impacted the greater Marin County area, including Sausalito, are outlined below:

- *1906 San Francisco Earth*quake – The April 18, 1906, magnitude 8.3 earthquake occurred on the northern segment of the San Andreas Fault. The earthquake resulted in catastrophic damage throughout the greater Bay Area. Significant damage, including complete structural collapses, and 498 deaths were reported in San Francisco.

- *1969 Rodgers Creek/Healdsburg Fault Earthquake* – Two earthquakes of magnitudes 5.6 and 5.7 originated on the Rodgers Creek and Healdsburg Faults. The resulting

[7] Miller Pacific Engineering Group, Geotechnical Investigation, SMCSD - MLK K-5 Academy, New Campus Structures, 636 Nevada Street, Sausalito, California, December 8, 2022

damage was concentrated in Santa Rosa with partial and near structural collapses. No loss of life was reported.

- *1989 Loma Prieta Earthquake* – The magnitude 6.9 earthquake was a result of a rupture along the San Andreas Fault in the Santa Cruz Mountains. Significant damage was reported throughout the Bay Area, with a majority occurring in San Francisco, Oakland, and Santa Cruz in the form of structural collapses and loss of life. Significant damage was not reported in the Sausalito area.

Conclusions from the most recent Uniform California Earthquake Rupture Forecast indicate the highest probability of an M>6.7 earthquake on any of the active faults in the San Francisco Bay region by 2045 is assigned to the Hayward/Rodgers Creek Fault, located approximately 18.8 kilometers northeast of the site, at 33%. The San Andreas Fault, located approximately 9.8 kilometers southwest of the project site, assigned a probability of 27% for a M>6.7 earthquake by 2045. Additional studies by the USGS regarding the probability of large earthquakes in the Bay Area are ongoing. These current evaluations include data from additional active faults and updated geological data.

Discussion

a) i. Under the Alquist-Priolo Earthquake Fault Zoning Act, the California Geological Survey (CDMG)/California Geologic Survey produced 1:24,000 scale maps showing all known active faults and defining zones within which special fault studies are required. Based on currently available published geologic information, the project site is not located within an Alquist-Priolo Earthquake Fault Zone nor is within the City's General Plan Fault Rupture Hazard Zone. MPEG did not observe evidence during our reconnaissance indicative of active or historic faulting. Therefore, MPEG concluded that the potential for fault surface rupture on the campus is low.

ii. Sausalito is subject to ground shaking caused by a number of regional faults, most prominently the San Andreas Fault. Because it affects a broad area, ground shaking rather than surface fault rupture is the cause of most damage during earthquake. Three major factors affect the severity (intensity) of ground shaking at a site in an earthquake; the size (magnitude) of the earthquake; the distance to the fault that generated the earthquake; and the geological materials that underlie the site. According to the Association of Bay Area Government's Seismic Hazard maps, the project area is subject to severe seismic shaking in the event of a major earthquake on the faults in the region[8].

The proposed school buildings would be designed to current seismic safety codes, and the design would be reviewed for structural safety by the State Architect. Large earthquakes could generate strong to violent ground shaking at the Project site and could cause damage to buildings and infrastructure and threaten public safety. This is considered to be a **potentially significant** impact that would be reduced to a **less-than-**

[8] https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8

significant level with implementation of the recommendations contained in the MPEG geotechnical report, per Mitigation GEO-2.

iii. Seismic ground shaking can induce settlement of unsaturated, loose, granular soils. Settlement occurs as the loose soil particles rearrange into a denser configuration when subjected to seismic ground shaking. Varying degrees of settlement can occur throughout a deposit, resulting in differential settlement of structures founded on such deposits. MPEG did not observe loose granular deposits above the highest historic groundwater level. MPEG concluded that the risk of seismically induced ground settlement occurring under the proposed structures is low. Therefore, this impact would be **less than significant.**

On the basis of seismically induced settlement calculations made by MPEG for this project, they determined the earthquake-induced liquefaction potential at the site to be "low". (MPEG 2022) Therefore this impact would be **less than significant**.

Lurching and associated ground cracking can occur during strong ground shaking, typically occurring along the tops of slopes or channel banks. MPEG concluded that because the level campus areas are separated by a series of northeast-facing slopes inclined as steeply as about 2:1 and ranging to 10-15 feet high, these conditions may occur associated with the slope breaks. Therefore, this impact is **potentially significant** but would be reduced to **less-than-significant** with implementation of Mitigation Measure GEO-2, below. (MPEG 2022.)

iv. Slope instability (i.e. landslides and similar slope failures) generally occurs on relatively steep slopes and/or on slopes underlain by weak materials. Slopes within the campus are inclined no steeper than about 2:1 and appear to have historically performed well, with no significant evidence of instability observed during MPEG's reconnaissance. Similarly, ascending slope surrounding the site are typically developed with single-family homes and although local instability likely occurs in these areas, MPEG's geologists did not observe any evidence to indicate significant risk of impact to the site as a result of instability originating in offsite areas. Therefore, MPEG concluded that the risk of slope instability impacting the project is generally low and this impact would be **less than significant.**

b) Sandy soils on moderate slopes or clayey soils on steep slopes are susceptible to erosion when exposed to concentrated water runoff. The campus abuts the base of slopes along the northwestern, southwestern, and southeastern property lines. Additionally, a relatively short slope separates the upper and lower campus as the property "steps" down in elevation. These slopes appear to be well vegetated. Improvements that would be located near the base of these slopes should be protected from potential erosion and runoff from these slopes with v-ditches or other drainage systems. However, if grading were to occur during the rainy season, erosion could result from the site. Mitigation Measure GEO-1, below, would reduce this potential impact to **less than significant**.

MPEG evaluated the potential for liquefaction based on testing of site soils and concluded that the potential for substantive liquefaction onsite is low. Therefore, this impact would be **less than significant.**

c) See Item a,iv, above.

d) Expansive soils will shrink and swell with fluctuations in moisture content and are capable of exerting significant expansion pressures on building foundations, interior floor slabs, and exterior flatwork. Distress from expansive soil movement can include cracking of brittle wall coverings (stucco, plaster, drywall, etc.), racked door and/or window frames, and uneven floors and cracked slabs. Flatwork, pavements, and concrete slabs-on-grade are particularly vulnerable to distress. Based on their subsurface exploration and laboratory testing, MPEG concluded that the risk of expansive soil affecting the proposed improvements is low. (MPEG 2022) Therefore, this impact would be **less-than-significant**.

e) The proposed project would be served by the public sewer system and would not include any septic systems. Therefore, **no impact** would occur with respect to adequacy of site soils for septic systems.

f) The project would involve limited grading to a heavily disturbed site. Therefore potential impacts to paleontological resources would be considered **less than significant**.

Mitigation Measures

Mitigation Measure GEO-1. The project shall include designing a site drainage system to collect surface water and discharging it into an established storm drainage system. The project Civil Engineer of Architect is responsible for designing the site drainage system and, an erosion control plan shall be developed prior to construction per the current guidelines of the California Stormwater Quality Association's Best Management Practice Handbook (2015).

Mitigation Measure GEO-2. The project shall implement all site preparation, structural, drainage, and foundation design recommendations included in the MPEG Geotechnical Investigation (MPEG 2022.) With respect to potential seismically induced slope failures, new structures constructed near downward trending slopes shall be set back to allow at least 7 feet from the crest. Alternatively, foundations may be deepened to maintain at least 7 feet of horizontal confinement between the foundation and slope face, as detailed in the Geotechnical Investigation.

VIII. Greenhouse Gas

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			**X**	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			**X**	

Background

This section describes construction and operational greenhouse gas (GHG) emissions impacts associated with the proposed project and is consistent with the methods described in the BAAQMD *CEQA Air Quality Guidelines* (May 2017). The BAAQMD adopted new GHG significance thresholds in April 2022, however, they do not apply to the proposed project since they were only developed for typical residential or commercial projects and general plan updates (BAAQMD 2022).

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal, with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Gases that trap heat in the atmosphere are referred to as GHG because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHG has been implicated as the driving force for global climate change. The primary GHG are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), ozone, and water vapor.

While the presence of the primary GHG in the atmosphere are naturally occurring, CO_2, CH_4, and N_2O are also emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices, coal mines, and landfills. Other GHG include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes.

CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-

for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent GHG than CO_2, with GWP of 28 and 265 times that of CO_2, respectively. (IPCC 2014).

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of CO_2 equivalents (CO_2e). CO_2e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWP than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO_2e.

Discussion

a) CalEEMod was used to quantify GHG emissions associated with project construction activities. The project's estimated 30-year amortized annual construction related GHG emissions would be approximately 44 metric tons of CO_2e. There is no BAAQMD CEQA significance threshold for construction related GHG emissions. BAAQMD states that GHG emissions from construction represent a very small portion of a project's lifetime GHG emissions. GHG emissions from construction are a one-time release and would not pose a significant impact to the environment (BAAQMD 2022).

Project operational GHG emissions were not quantified because the project would not increase GHG emissions. The project would result in a reduction in building square footage and the new buildings would be subject to more stringent energy standards than the existing buildings. Furthermore, the project would not increase vehicle trips because there would be no change in student enrollment or staffing with the project. Therefore, this impact would be **less than significant**.

b) California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020.

In 2017, CARB adopted the 2017 Scoping Plan, which identifies how the state can reach the 2030 climate target to reduce GHG emissions by 40 percent from 1990 levels, and substantially advance toward the state's 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels. On December 19, 2022, CARB approved third update to the Scoping Plan (the 2022 Scoping Plan), which lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279.

The project has been reviewed relative to the climate change policies and measures in CARB's scoping plans and it has been determined that the project would not conflict with State GHG reduction goals. The project has also been reviewed relative to the GHG emission reduction measures in City of Sausalito Climate Action Plan (CAP) update (City of Sausalito 2015) and it has been determined that the project would not conflict with the CAP. Therefore, impacts would be **less than significant**.

IX. Hazards and Hazardous Materials

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials 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?			X	
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?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X

Discussion

a, b) Project construction activities may involve the use and transport of hazardous materials. These materials may include fuels, oils, mechanical fluids, and other chemicals used during construction. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, state, and local statutes and regulations. Compliance would ensure that human health and the

environment are not exposed to hazardous materials. In addition, the construction contractor would be required to implement a Stormwater Pollution Prevention Plan during construction activities to prevent contaminated runoff from leaving the project site. Therefore, no significant impacts would occur during construction activities.

Project operations would not involve the routine transport, use, or disposal of hazardous materials. Therefore, it would not create a significant hazard to the public or the environment from such activities and impacts would be **less than significant**.

c) As described under response to question IX a, above, the project operations would not involve the use of hazardous materials on campus, and construction use of such materials would be carefully implemented in compliance with all applicable regulations. The construction and demolition sites would be fenced and no student access would be permitted. Therefore, the project would have a **less-than-significant** potential to significantly affect children or adults at the school.

NorBay Consulting conducted an evaluation of asbestos and lead-based paints that may be associated with the existing buildings to be demolished on the campus. (NorBay 2021.) A total of fourteen samples of suspect asbestos containing building materials were collected during the inspection. Upon analysis, no materials at the school were found to contain asbestos minerals or are materials known to contain asbestos.

NorBay collected a total of 181 readings of interior/exterior painted/coated surfaces during the inspection. In addition, six calibration readings also were collected. Lead based paint/glazing was located on the following components:

- White porcelain sink base in the janitor closet in the 10-12 Wing,
- Maroon ceramic restroom wall in classroom 2 in the Kindergarten Wing.

These would be removed intact such as not to generate any lead-based pain hazard to the public. Therefore, this impact would be **less than significant**.

d) A review of the Envirostor database (Cortese List) indicated that there are no known hazardous waste sites within 1000 feet of the school[9].

e) The project site is not within two miles of an airport or within an airport land use plan area. Therefore it would not present a hazard to air safety, and **no impact** would occur.

f) Construction and operation of the project are not expected to interfere with City of Sausalito's emergency response because it is the replacement of an existing school on the existing school campus. Construction, including staging, would be limited to the

[9]https://www.envirostor.dtsc.ca.gov/public/search?CMD=search&city=Sausalito&zip=&county=Marin&case_number=&business_name=&FEDERAL_SUPERFUND=True&STATE_RESPONSE=True&VOLUNTARY_CLEANUP=True&SCHOOL_CLEANUP=True&CORRECTIVE_ACTION=True&tiered_permit=True&evaluation=True&operating=True&post_closure=True&non_operating=True&inspections=True&inspectionsother=True

existing high school, and traffic would not be substantially affected by the project. **No impact** would occur.

g) The project is in a developed urban area, surrounded by other urban uses, but is mapped as being in "high" and "very high" wildfire hazard areas[10]. The site itself is generally developed with urban uses with the exception of two groves of large trees on the western side of the campus. These trees would remain. The proposed facility would replace an existing facility, and would be reviewed by both the Stat Architect and the Southern Marin Fire Protection District prior to approval. Additionally, the reconstructed school facilities would include fire protection facilities (alarms, sprinklers, etc.) as required by current codes. Smoking would not be permitted during construction, and all equipment would be required to be muffled and, have spark arrestors, as applicable. Therefore, the project would have a **less-than-significant** impact with respect to wildfire hazards.

[10]https://gisopendata.marincounty.org/datasets/MarinCounty::fire-hazard-severity-zone-1/explore?location=37.864395%2C-122.502329%2C16.00

X. Hydrology and Water Quality

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?		X		
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X
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 which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site; iii) 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; or iv) impede or redirect flood flows?		X		
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				X

Discussion

a, c, e) The City of Sausalito's stormwater runoff is controlled by the Marin Countywide Stormwater Pollution Prevention Program (MCSTOPPP), which was established in 1993 to reduce the pollution carried by stormwater into local creeks, the San Francisco Bay, and the Pacific Ocean. Each MCSTOPPP member agency implements a local stormwater pollution

prevention program and funds the countywide MCSTOPPP, which provides for the coordination and consistency of approaches between the local stormwater programs.

The Federal Clean Water Act and the California Porter-Cologne Water Quality Control Act require that large urban areas discharging stormwater into the San Francisco Bay or the Pacific Ocean have an NPDES permit to prevent harmful pollutants from being dumped or washed by stormwater runoff, into the stormwater system, then discharged into local waterbodies.

In 2003, smaller (less than 100,000 population) municipalities and unincorporated counties were required to obtain coverage under a statewide NPDES Municipal General Stormwater Permit (Phase II Permit) issued by the State Water Resources Control Board. In Marin, the County and all Marin's municipalities are subject to the conditions of the regulations described in the current 2013 Phase II Permit. The permit encompasses:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Controls
- Post Construction Stormwater Management for Development Projects
- Pollution Prevention and Good Housekeeping for Municipal Operations
- Water Quality Monitoring
- Program Effectiveness Assessment and Improvement
- Total Maximum Daily Load (TMDL) Compliance
- Annual Reporting

The City of Sausalito Municipal Code includes the City of Sausalito Urban Runoff Prevention Ordinance, the intent of which is to protect and enhance the water quality of the State's and the United States' watercourses, water bodies and wetlands in a manner pursuant to and consistent with the Clean Water Act (33 USC Section 1251 et seq.), the Porter-Cologne Water Quality Control Act (Water Code Section 13000 et seq.), and the Phase II Small Municipal Separate Storm Sewer System ("MS4") National Pollutant Discharge Elimination System ("NPDES") Permit, Water Quality Order No. 2013-0001 – DWQ, General Permit No. CAS000004 ("Phase II Stormwater Permit") or subsequent revisions and amendments thereto.

This Ordinance includes both construction and operational Best Management Practices to reduce stormwater runoff contaminants. It requires each construction project to have an erosion and sediment control plan (ESCP) which addresses erosion and sediment control and pollution prevention during the construction phase as well as final stabilization control measures. The ESCP and the specific control measures to be utilized shall be subject to the review and approval of the agency. The agency shall require modifications of an approved ESCP if during the course of construction at a site unanticipated conditions occur or the plans

prove inadequate for the intended purpose. Revisions of the approved ESCP shall be submitted to the MCCSTOPPP for review and approval.

During construction activities, there would be a potential for surface water to carry sediment from on-site erosion and small quantities of pollutants into the City's stormwater system, which ultimately discharges to San Francisco Bay. Small quantities of pollutants may enter the storm drainage system, potentially degrading water quality.

Construction of the proposed project also would require the use of gasoline and diesel-powered heavy equipment. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues, and other substances would be used during construction. An accidental release of any of these substances could degrade the water quality of the surface water runoff and add additional sources of pollution into the drainage system.

The proposed project would be required to comply with the Countywide NPDS permit as well as the City's ESCP requirements. The District would be required to develop and implement and ESCP that identifies appropriate construction BMPs in order to minimize potential sedimentation or contamination of storm water runoff generated from the project site. The ESCP would identify the risk level for erosion and sedimentation and how much monitoring of potential pollutants is required. Implementation of the ESCP, as required would ensure that the construction of the proposed project would not violate any water quality standards or waste discharge requirements and reduce potential impacts to a less-than-significant level, as described in Mitigation Measure HYD-1.

The ESCP must identify a practical sequence for BMP implementation and maintenance, site restoration, contingency measures, responsible parties, and agency contacts. The SWPPP would include but not be limited to the following elements:

- Temporary erosion control measures would be employed for disturbed areas.
- No disturbed surfaces would be left without erosion control measures in place during the winter and spring months. Cover disturbed areas with soil stabilizers, mulch, fiber rolls, or temporary vegetation.
- Sediment would be retained on site by a system of sediment basins, traps, or other appropriate measures. Drop inlets shall be lined with filter fabric/geotextile.
- The construction contractor would prepare Standard Operating Procedures for the handling of hazardous materials on the construction site to eliminate or reduce discharge of materials to storm drains. This may include locating construction-related equipment and processes that contain or generate pollutants in a secure area, away from storm drains and gutters, and wetlands; parking, fueling, and cleaning all vehicles and equipment in the secure area; designating concrete washout areas; and preventing or containing potential leakage or spilling from sanitary facilities.

- BMP performance and effectiveness would be determined either by visual means where applicable (e.g., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination (such as inadvertent petroleum release) is required by the RWQCB to determine adequacy of the measure.
- In the event of significant construction delays or delays in final landscape installation, native grasses or other appropriate vegetative cover would be established on the construction site as soon as possible after disturbance, as an interim erosion-control measure throughout the wet season.

The project site is already developed with school and field facilities. However, the project would increase impervious surfaces on the site from the current from the existing approximately 125,000 square feet to about 212,000 square feet. The increased runoff from increased impervious surfaces would be offset by the proposed tree planting and landscape area soil amendments. This would assure that post-project peak runoff would not exceed current levels. Therefore, impacts to peak runoff would be **less than significant**.

Implementation of the requirements described above, as well as Mitigation Measures HYD-1 and HYD-2, below, would reduce water quality impacts to a **less-than-significan**t level.

b) The City of Sausalito purchases all of its water from the Marin Municipal Water District (MMWD). About 75% of the District's water supply originates from rainfall on the Mt. Tamalpais watershed and in the grassy hills of west Marin, flowing into the District's seven reservoirs. The District also supplements its supply with water from the Sonoma County Water Agency (SCWA), which comes from the Russian River system in Sonoma County. The Russian River water supply originates from rainfall that flows into Lake Sonoma and Lake Mendocino. The MMWD does not rely substantially on groundwater.

The project would replace the existing school and would convert a natural turf field to artificial turf, and therefore not increase water demand. As such, it would not conflict with any groundwater management plan, and **no impact** would result.

d) The project site is on a slope well above the Bay and not adjacent to any creeks or streams. The project site is not mapped within a FEMA 100-year or 500-year flood zone (FEMA, 2008, in MPEG 2022); therefore, large scale flooding does not present a significant risk to the project. Therefore, flooding impacts to the new facilities would be **less than significant**.

The project site is not mapped within a zone at risk of flooding due to the failure of local dams (MarinMap Map Viewer, 2022, in MPEG 2022). Therefore, the risk of inundation of the site from dam failure is judged low. Therefore, the project would not be subject to flood hazards from that source. **No impact** would occur.

Seiche and tsunamis are short duration, earthquake-generated water waves in large, enclosed bodies of water and the open ocean, respectively. The extent and severity of a

seiche or tsunami would be dependent upon ground motions and fault offset from nearby active faults. The project site is not located in a tsunami hazard zone (CGS, 2022, in MPEG 2022). Therefore, seiche and tsunami events are not likely to impose significant risk of inundation at the site. Therefore, the proposed project would have no impact to future occupants of the project from these hazards, and **no impact** would occur. Mudflows and other slope instability impacts are addressed in the Geology section of this document.

Mitigation Measures

Mitigation Measure HYD-1: Prior to the issuance of grading permits for the proposed Project, the project engineers shall prepare an ESCP, which shall identify pollution prevention measures and practices to prevent polluted runoff from leaving the project site.

Mitigation Measure HYD-2: The District shall maintain in perpetuity the post-construction BMPs listed in the Low Impact Design (LID) plans developed for the project. The District shall make changes or modifications to the LID measures to ensure peak performance. The District shall be responsible for costs incurred in operating, maintaining, repairing, and replacing any stormwater quality improvements and features. The owner shall conduct inspection and maintenance activities and complete annual reports.

XI. Land Use and Planning

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?				**X**
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				**X**
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				**X**

Discussion

a) The replacement school and field are proposed on an existing school campus containing similar existing facilities. Because the project would not change the existing land use but would instead upgrade the existing school facilities onsite, the project would not create conflicts between uses or divide an established community, there would be **no impact**.

b) The project would not change the existing land use on site and would therefore have **no impact** on plan conformance.

c) The project site is not located within the boundaries of a habitat conservation plan or a natural community conservation plan; therefore, the project would not conflict with any habitat plans and there would be **no impact**.

XII. Mineral Resources

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?				**X**
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?				**X**

Discussion

a, b) The project site a developed school campus in an urban area and is not identified in the City of Sausalito's 2021 General Plan as a site containing mineral resources that would be of local, regional, or statewide importance. Therefore, the project would not have any impacts on mineral resources. The project site does not contain any known mineral deposits or active mineral extraction operations. Therefore, the project would have **no impact** on mineral resources.

XIII. Noise

Would the Project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a Project 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?				X

Background

RCH Group, Inc. (RCH) performed noise monitoring at the project site on February 7, 2023. The following analysis details the results of the noise monitoring and potential noise impacts from the project.

Noise Descriptors

Noise can be defined as unwanted sound. It is commonly measured with an instrument called a sound level meter. The sound level meter captures the sound with a microphone and converts it into a number called a decibel. To correlate the microphone signal to a level that corresponds to the way humans perceive noise, the A-weighting filter is used. A-weighting de-emphasizes low-frequency and very high-frequency sound in a manner similar to how humans hear sound. The abbreviation dBA is sometimes used when the A-weighted sound level is reported.

Different time-averaged scales are used to represent noise environments and consequences of human activities. The most commonly used noise descriptors are: the A–weighted sound level over a given time period (Leq)[11]; average day–night 24-hour average sound level (Ldn)[12] with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community

[11]The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time–varying sound energy in the measurement period.
[12]Ldn is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

noise equivalent level (CNEL)[13], , which also is a 24-hour average that includes both an evening and a nighttime sensitivity weighting.

Table NOISE-1 identifies decibel levels for common sounds heard in the environment. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans, 1998a):

- Under controlled conditions in an acoustics laboratory, the trained healthy human ear is able to discern changes in sound levels of 1 dB;
- Outside of such controlled conditions, the trained ear can detect changes of 2 dB in normal environmental noise;
- It is widely accepted that the average healthy ear, however, can barely perceive noise levels changes of 3 dB;
- A change in level of 5 dB is a readily perceptible increase in noise level; and
- A 10-dB change is recognized as twice as loud as the original source, although different people may perceive sound increases of from 6-10 dB as twice as loud.

Table NOISE-1. Typical Noise Levels

Noise Level (dB)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock Band
80-90	Diesel truck at 50 feet	Loud television at 3 feet
70-80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60-70	Commercial area	
40-60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20-40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10-20		Broadcast / recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing
SOURCE: Modified from Caltrans Technical Noise Supplement, 1998		

Noise Attenuation

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Soft sites, such as soft dirt, grass, or unpaved sites with scattered bushes and trees, attenuate at 7.5

[13]CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10–decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

dB per doubling. Hard sites have reflective surfaces (e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dB per doubling). A street or roadway with moving vehicles (known as a “line” source), would typically attenuate at a lower rate, approximately 3 to 4.5 dB each time the distance doubles from the source (Caltrans, 1998b). Physical barriers located between a noise source and the noise receptor, such as buildings, berms, or sound walls, would increase the attenuation. Noise from large construction sites would have characteristics of both “point” and “line” sources, so attenuation would lilely range between 4.5 and 7.5 dB per doubling of distance.

City of Sausalito Municipal Code

Chapter 12.6 (Noise Control) of the City of Sausalito Municipal Code prohibits unnecessary, excessive, and annoying noises from all sources of noise in the city. The following are relevant to the project:

Per §12.16.140(A), the operation of construction, demolition, excavation, alteration or repair of devices and equipment shall only take place during the following hours:

1. Weekdays: Between 8:00 a.m. and 6:00 p.m.
2. Saturdays: Between 9:00 a.m. and 5:00 p.m.
3. Sundays: Prohibited.
4. Holidays officially recognized by the City of Sausalito not including Sundays: Prohibited.

Vibration

Vibration is an oscillatory motion which can be described in terms of the displacement, velocity, or acceleration. The peak particle velocity (PPV) is the descriptor used in monitoring of construction vibration.

Sensitive Receptors

The Sausalito General Plan and Noise Ordinance do not specify the type of land uses considered to be noise-sensitive in the City. However, noise sensitive receptors typically include residential dwellings, hotels, motels, hospitals, nursing homes, educational facilities, and libraries. The project site is surrounded by single-family homes along Buchanan Drive (to the north), Nevada Street (to the east) and Lincoln Drive (to the west and south).

Existing Noise Environment

To quantify existing ambient noise levels, this noise study included five short-term (10- to 20-minute) noise measurements in and around the Project site. Table NOISE-2 summarizes the locations and results of the noise measurements. Based on observations from the short-term measurements, the main sources of noise in and around the project site included noise from students playing during recess, parking lot noise, traffic noise from Buchanan Drive, overhead aircraft, traffic noise from Highway 101 and birds.

Table NOISE-2. Existing Noise Levels

Location	Time Period	Noise Levels (dB)	Noise Sources
Site 1: Parking lot south of main office	Tuesday February 7, 2023 10:39 a.m. to 10:49 a.m.	5-minute Leq's: 53, 54	Doors slamming in parking lot nearby meter 63 dB. Overhead aircraft 58 dB. No school activities audible.
Site 2: Nearby existing baseball field	Tuesday February 7, 2023 10:52 a.m. to 11:02 a.m.	5-minute Leq's: 66, 62	Students playing nearby meter during recess up to 74 dB.
Site 3: Directly south of Buchanan Road	Tuesday February 7, 2023 11:03 a.m. to 11:13 a.m.	5-minute Leq's: 49, 50	Cars passing on Buchanan Drive up to 57 dB. Birds 45 dB.
Site 4: 50 feet east of Robin's Pre-School Campus	Tuesday February 7, 2023 11:15 a.m. to 11:25 a.m.	5-minute Leq's: 47, 47	Cars passing on Buchanan Drive up to 54 dB. Birds 50 dB.
Site 5: 50 feet south of K-Pod building	Tuesday February 7, 2023 11:27 a.m. to 11:32 a.m.	5-minute Leq: 48	Students talking nearby meter 59 dB. Birds 50 dB.
Site 6: Group of buildings on west side of site	Tuesday February 7, 2023 11:35 a.m. to 11:45 a.m.	5-minute Leq's: 53, 54	Students playing during recess up to 66 dB.
Site 7: Directly north of Lincoln Road	Tuesday February 7, 2023 11:48 a.m. to 11:58 a.m.	5-minute Leq's: 53, 53	Traffic on Highway 101 was a constant 54 dB. No school activities audible.
Source: RCH Group, 2023			

Discussion

a) ***Construction Noise Impacts***.

The proposed project has a tentative construction start date of June 2023, with completion anticipated by September 2025. Construction would occur within the allowable hours of the City of Sausalito Municipal Code §12.16.140(A), described above. Construction would result in a temporary increase in ambient noise levels in the vicinity of the project. Noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction.

Construction activities would occur approximately 50 feet away from the nearest residence on Buchanan Drive and approximately 140 feet away from the nearest residence on Lincoln Drive. The maximum noise levels at 50 feet and 140 feet for various types of construction equipment that could be used during construction are provided in Table NOISE-3. Table NOISE-4 provides typical construction noise levels for different phases of construction.

Table NOISE-3. Typical Noise Levels from Construction Equipment (Lmax)

Construction Equipment	Noise Level (dB, Lmax at 50 feet)	Noise Level (dB, Lmax at 140 feet)
Dump Truck	76	65
Air Compressor	78	67
Backhoe	78	67
Dozer	82	71
Excavator	81	70
Flat Bed Truck	74	63
Grader	85	74
Generator	81	70
Roller	80	69
Vibratory Concrete Mixer	80	69
Concrete Mixer Truck	79	68
Jackhammer	89	78
Front End Loader	79	68

Notes:
1. An attenuation rate of 7.5 per doubling of distance was used to convert the FHWA construction equipment noise levels at 50 feet to the noise levels at 140 feet.
L_{max} = maximum sound level
SOURCE: Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide, 2006.

Table NOISE-4. Typical Construction Activities Noise Levels

Construction Equipment	Noise Level (dB, Leq at 50 feet)
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

Notes:
Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.
Leq= equivalent sound level
SOURCE: U.S. Environmental Protection Agency, Legal Compilation, 1973.

Construction equipment would not all operate at the same time or location. However, several types of construction equipment would typically be in operation at the same time. As shown in Table NOISE-3, construction noise levels at the nearest homes on Buchanan Drive and Lincoln Drive could reach up to 89 dB, Lmax and 78 dB, Lmax, respectively.

The standards for construction noise in the Sausalito Noise Ordinance are for the hours of construction and not the decibel noise level. The project would comply with the City's Noise Ordinance hours of 8:00 a.m. and 6:00 p.m. on weekdays and on Saturdays between the hours of 9:00 a.m. and 5:00 p.m. Construction would not occur on Sundays or holidays. With implementation of Mitigation Measure NOI-1, construction noise would be a **less-than-significant impact**.

XOperational Noise Impacts

The project would not change or expand any uses of the school and there would be no change in student enrollment or staffing. Once operational, the project noise would not exceed what is currently generated by the existing school (See Table NOISE-2 for ambient noise levels at existing school and nearby areas). Furthermore, the existing baseball field uses a Public Address (PA) system to announce little league baseball games. The project's new baseball field would not include a PA system for any field activities. Noise from project operations would not be louder than noise currently generated by Highway 101 at nearby residences to the south (See Table Noise-2, Site 7). Therefore, operational noise would be a **less-than-significant impact.**

b) Construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. In most cases, vibration induced by typical construction equipment does not result in

adverse effects on people or structures (Caltrans, 2013). Vibrational effects from typical construction activities are only a concern within 25 feet of existing structures (Caltrans, 2002). There are no structures within 25 feet of the proposed construction site. Therefore, vibration would be a **less-than-significant** impact.

c) The Project site is not within the vicinity of a private airstrip or an airport land use plan, or within 2 miles of a public use airport. The nearest airport is San Francisco International Airport (the nearest runway of which is approximately 2.5 miles northwest of the Project site). Therefore, the Project would have **no impact** from airport noise**.**

Mitigation Measures

Mitigation Measure NOISE-1: In order to minimize disruption and potential annoyance during construction, the applicant shall implement the following construction noise reduction measures:

- All construction equipment shall be properly maintained and in good order.

- Prior to construction activities, the Project shall designate a "Construction Noise Coordinator" who would be responsible for responding to any local complaints about construction noise and vibration. The Construction Noise Coordinator shall determine the cause of the complaint and shall require implementation of reasonable measures to correct the problem. The telephone number for the Construction Noise Coordinator shall be conspicuously posted at the construction site.

- At least three weeks prior to the start of construction activities, the Project shall provide written notification to all nearby residential units within 500 feet of the construction site informing them of the estimated start date and duration of construction activities, the role of the Construction Noise Coordinator, and how to contact the Construction Noise Coordinator.

XIV. Population and Housing

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial 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)?				**X**
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				**X**

Discussion

a) The proposed school reconstruction project would not directly or indirectly increase population growth because no new housing or permanent jobs are proposed as part of the project. The project site and surrounding areas are developed with urban land uses and no extensions of roads or other infrastructure would be required that would indirectly induce growth. Therefore, the project would not induce new development on nearby lands, and **no impact** would occur.

b) The project site contains an existing school campus and ballfield, with no housing.The proposed project would not displace existing housing or people, so there would be **no impact**.

XV. Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 following public services:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Fire protection?				**X**
b) Police protection?				**X**
c) Schools?				**X**
d) Parks?				**X**
e) Other public facilities?				**X**

Discussion

a) The Southern Marin Fire Protection District (SMFPD) provides fire protection and emergency medical services for the project site. The fire station nearest the project site is Station #1, Sausalito, located at 333 Johnson Street, approximately a mile southeast of the site. reconstruction of the existing school would not materially alter uses of the site, and therefore would not result in a substantive increase in demand for fire protection services. The project would not require the provision of or need for new or physically altered facilities to continue to serve the project site, as the new school buildings would include fire protection components as required under current codes. Therefore the project would have **no impact** to fire protection services.

b) The school site is served by the City of Sausalito Police Department, located at 29 Caledonia Street, about a mile southeast of the school site. As discussed for fire, above, the project would be a replacement of an existing school and ballfield, and therefore would not increase the need for police services. No new police facilities would be required. Therefore, **no impact** would occur to police services.

c) The proposed project is reconstruction of a school. It would not increase the population or otherwise increase demands for school services. It would not alter the capacity of students at school. Therefore, the project would have **no impact** on schools.

d) As described above, the proposed project would not result in an increase in residents and therefore, would not increase demand for any parks facilities. The replacement ballfield would remain available for public use during after-school hours and weekends. For this reason, the project would be expected to have **no impact** on recreational facilities

e) No other public facilities would be required by the proposed project. Therefore, there would be **no impact** on other facilities.

XVI. Recreation

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	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 physical deterioration of the facility would occur or be accelerated?				**X**
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?				**X**

Discussion

a) As described in response to question d) under Public Services, above, the project would have no adverse effects on parks and other recreational facilities. Therefore, the project would not cause physical deterioration of any recreational facility to occur or be accelerated, and **no impact** would occur.

b) The project includes replacement of the ballfield at the site, which are evaluated by topic in this document. The new school also would include upgraded play areas for children. The project would not require the construction or expansion of other recreational facilities. **No impacts** would occur that are not already addressed elsewhere in this IS.

XVII. Transportation/Traffic

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit roadways, pedestrian and bicycle facilities?				**X**
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) (vehicle Miles traveled)?			**X**	
c) Substantially increase hazards due to design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				**X**
d) Result in inadequate emergency access?				**X**

Discussion

a) The project would not alter uses or any traffic routes compared to existing conditions at the school. Minor construction traffic would not conflict with program, plan, ordinance or policy addressing the circulation system, including transit roadways, pedestrian and bicycle facilities. Therefore the project would have **no impact** with respect to any such plan or policy, or underlying circulation systems.

b) With the passage of Senate Bill SB 743 in 2013 and full implementation on July 1, 2020, Vehicle Miles Traveled (VMT) became the main metric to evaluate transportation impacts of proposed development projects. Traffic LOS and parking deficiencies are no longer considered significant impacts in CEQA analysis. With SB 743, most development projects need to provide a VMT analysis to determine traffic impacts. However, there are several exceptions. These include small projects that generate fewer than 110 daily trips; locally serving retail and similar land uses; and locally serving public facilities such as public schools and parks.

As discussed above, the project is a reconstruction of the existing school and ballfield, and would not result in additional or more intensive school or athletic activities and events, that would change the current traffic circulation patterns and operations in the area. The project will not add new driveways or parking. The project is public school that serves the students from the nearby community and, as such, would be exempt from VMT analysis. According to the Governor's Office of Planning and Research (Technical Advisory on Evaluating Transportation Impacts in CEQA, April 2018), similar to small projects, locally serving retail and land uses, and local-serving public facilities, including schools, are presumed to have a

less than significant impact on VMT. As indicated above, the project is not a new project but the replacement of an existing facility and would be mainly used by the school. As such, the VMT impact of the project would be **less than significant**.

c, d) The proposed project would not introduce new design features or other changes that are incompatible with the existing transportation infrastructure or otherwise adversely affect emergency access, and it would not create any traffic hazards. The new parking lot would have a driveway onto Buchannan Street, however considering the limited traffic to and from that lot, along with good sight distances along that stretch of roadway, it would not affect safety on Buchannan Street. Therefore, **no impact** would occur.

XVIII. Tribal Cultural Resources

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project cause a significant adverse change in the significance of a tribal cultural resource defined in Public Resource 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:				
i) 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			**X**	
ii) 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 criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			**X**	

Background

As discussed in the Cultural Resources section, he existing school on the site was constructed in the 1970's or 1980's. The entire project site was graded at the time of construction and has been in use as a school use. The project site also is surrounded by suburban land uses and not near any streams or other areas where Native American habitation are likely to have occurred. There is no undisturbed land on or near the site.

Discussion

a) i., ii. As described in the Cultural Resources section of the IS, because the site has already been graded and is the location of an existing high school facility, and because the project would have minimal earthmoving beyond the previously graded depths, impacts to culturally sensitive sites would be unlikely. Additionally, Mitigation Measures

CULT-1 and CULT -2, in the Cultural Resources section would address impacts on any unknown cultural resources and would assure that any potential tribal cultural resource impacts would be reduced to **less than significant**.

XIX. Utilities and Service Systems

Would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?				**X**
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				**X**
c) Result in a determination by the waste water 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?			**X**	
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?				**X**
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			**X**	

Background

Wastewater collection in Sausalito is provided by the City of Sausalito Department of Public Works. Wastewater treatment and conveyance services in Sausalito are provided by the Sausalito-Marin City Sanitary District (SMCSD). The Sausalito-Marin City Sanitary District treatment plant is located just outside Sausalito City limits at 1 East Road. The District operates and maintains a wastewater conveyance and treatment system with a 6.0 million gallon per day secondary wastewater treatment capacity. The system consists of a plant designed for 1.8 million-gallon per day average dry weather daily flow, ten sewage pump stations, and approximately ten miles of pipelines. Four of these pump stations are operated and maintained by SMCSD for the City of Sausalito on a contract basis.

The City of Sausalito purchases its water from the Marin Municipal Water District (MMWD). About 75% of the District's water supply originates from rainfall on the Mt. Tamalpais watershed and in the grassy hills of west Marin, flowing into the District's seven reservoirs. The District also supplements its supply with water from the Sonoma County Water Agency (SCWA), which comes from the Russian

River system in Sonoma County. The Russian River water supply originates from rainfall that flows into Lake Sonoma and Lake Mendocino. The MMWD does not rely substantially on groundwater.

Zero Waste Marin (ZWM) is the formal name for the Marin Hazardous and Solid Waste Joint Powers Authority (JPA), which is comprised of representatives from all over Marin County. ZWM is comprised of the city and town managers of Belvedere, Corte Madera, Fairfax, Larkspur, Mill Valley, Novato, Ross, San Anselmo, San Rafael, Sausalito and Tiburon and the County of Marin. Zero Waste Marin ensures Marin's compliance with the California Integrated Waste Management Act and its waste reduction mandates. ZWM's mission is to help residents and businesses meet the county's Zero Waste goal by 2025 by reducing and recycling their solid waste and safely disposing of hazardous materials. ZWM provides information on household hazardous waste collection, recycling, composting and waste disposal. The Marin County Department of Public Works/Waste Management administers Zero Waste Marin.

The City of Sausalito's solid waste collection and disposal is provided by Bay Cities Refuse. Construction debris that is not recycled or composted is disposed of by private haulers at landfill of their choice.

Discussion

a, b, c) The project would replace the existing school and would convert a natural turf field to artificial turf, and therefore not increase water demand. Therefore, **no impact** would occur to water supplies or associated facilities. Similarly, the quantity of sewage generated is not expected to change substantially from that generated by the existing school facilities. These facilities would discharge to the City of Sausalito's existing sewer system. The City would review and approve the reconstructed school's wastewater connection, however, because of the minimal, if any, increase in sewage anticipated to be generated by the project, any impacts are expected to be **less than significant**. Peak stormwater generated on the site would increase due the increase in impervious surfaces from the project (primarily due to the replacement of the existing natural-turf field with an artificial-turf field, which is considered an impervious surface). This impact would be reduced to a **less-than-significant** level by the proposed on-site stormwater detention facilities.

d, e) Because the project would replace the existing school facilities on the site, there would be no increase in solid waste generation as a result of project operation. Solid wastes would be generated during demolition of the existing buildings and construction of the new buildings. As much of this material would be reused and composted of as feasible. Therefore the project would have **a less-than-significant** impact on solid waste generation or disposal.

XX. Wildfire Hazards

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:

Environmental Issue	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				**X**
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?				**X**
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?				**X**
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?				**X**

Discussion

a, b) The project is in a developed urban area, surrounded by other urban uses, but is mapped as being in "high" and "very high" wildfire hazard areas[14]. The site itself is generally developed with urban uses with the exception of two groves of large trees on the western side of the campus, which would remain with the project. The proposed facility would replace an existing facility, and would be reviewed by both the Office of the State Architect and the Southern Marin Fire Protection District prior to approval. Additionally, the reconstructed school facilities would include upgraded fire protection facilities (alarms, sprinklers, etc.) as required by current codes. Smoking would not be permitted during construction, and all equipment would be required to be muffled and, have spark arrestors, as applicable. As discussed in Items XVII c and d, the project would not affect emergency access or emergency response. The project would replace an existing school and field with similar facilities, and therefore would not exacerbate wildfire risks. Therefore, the project would have a **less-than-significant** impact with respect to these wildfire hazards.

[14]https://gisopendata.marincounty.org/datasets/MarinCounty::fire-hazard-severity-zone-1/explore?location=37.864395%2C-122.502329%2C16.00

c, d) The project is in an urbanized area, and would not require any additional fire protection infrastructure or fuel breaks. Because of the developed state of the project site and area, it would not expose people or structures to post-fire land instability or runoff issues. Therefore, the project would have a **less-than-significant** impact with respect to these wildfire hazards.

IV. MANDATORY FINDINGS OF SIGNIFICANCE

Environmental Issue	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Does the Project have the potential to 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, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare or threatened species or eliminate important examples of the major periods of California history or prehistory?		**X**		
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)?				**X**
c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			**X**	

a) Compliance with the mitigation measures for the unearthing of any unknown cultural resources would ensure all potential impacts associated with cultural resources would be reduced to a **less-than-significant** level. Similarly, impacts to nesting bird habitat would be mitigated to **less than significant** with measures included in this document.

b) No other projects are proposed at the school that would overlap this project. Based on a review of the City of Sausalito current projects lists, there are currently no proposed development projects in the project area. Therefore, the proposed project would not contribute to any cumulative impacts associated with development in the project area. **No impact** would result.

c) The proposed project would not increase long-term air pollutant emissions and greenhouse gasses because it would not add any net new workers or residents. The project's noise impacts also would be **less than significant** with mitigation. The project's hazards to human health and safety would **be less than significant**, as described in Section VIII of this Initial Study.

V. REFERENCES

Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Bay Area Air Quality Management District (BAAQMD), *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans*, April 2022, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en

California Air Pollution Officers Association, *California Emissions Estimator Model User's Guide*, May 2021, http://www.caleemod.com/

California Air Resources Board (CARB), California's 2017 Climate Change Scoping Plan, November 2017 https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf

California Air Resources Board (CARB), 2022 Scoping Plan for Achieving Carbon Neutrality, November 2022 https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf

California Air Resources Board, *Emissions Trends Report 2000-2019 (2021 Edition)*, https://ww2.arb.ca.gov/ghg-inventory-data

California Department of Toxic Substances Control, http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=41820008 Accessed April 19, 2022.

California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement.*

California Department of Transportation (Caltrans). 1998a. *Technical Noise Supplement.*

California Department of Transportation (Caltrans) 1998b. *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Project.*

California Department of Transportation (Caltrans) 2002. *Transportation Related Earthborne Vibrations.*

City of Sausalito Municipal Code, Title 10, Zoning Ordinance.

City of Sausalito, 2021 General Plan. Adopted February 9, 2021.

Federal Highway Administration (FHWA), 2006. *Roadway Construction Noise Model User's Guide*.

IPCC, *2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, https://www.ipcc.ch/site/assets/uploads/2018/05/SYR_AR5_FINAL_full_wcover.pdf

Miller Pacific Engineering Group, Geotechnical Investigation, SMCSD - MLK K-5 Academy, New Campus Structures, 636 Nevada Street, Sausalito, California, December 8, 2022

NorBay Consulting, *Asbestos and Lead Inspection, Nevada Street Campus, Sausalito, California*. April 9, 2021.

Office of Environmental Health Hazard Assessment (OEHHA). *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, February 2015.

United States Environmental Protection Agency (USEPA). 1973. *Legal Compilation: Statutes and Legislative History, Executive Orders, Regulations, Guidelines and Reports.*

VI. REPORT PREPARERS

Sausalito Marin City School District

Itoco Garcia, Superintendent

Grassetti Environmental Consulting

Richard Grassetti, Principal
Richard Denney, Graphics

RCH Group, Inc.

Paul Miller, RCH Group, Air Quality/Noise Specialist
Dan Jones, RCH Group, Air Quality Specialist
Luis Rosa, RCH Group, Noise Specialist

Solano Archaeological Services

Jason Coleman, Principal Archaeologist

Greystone West Company

Todd Lee, Principal
Jason Cave, Project Manager

APPENDIX A: AIR QUALITY AND GREENHOUSE GAS REPORT

Supporting Air Quality and Greenhouse Gas Emissions Information

- CalEEMod Version 2020.4.0 Annual Construction Emissions Output (46 pages)
- Health Risk Assessment (48 pages)

Sausalito MLK Academy Construction Only - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Sausalito MLK Academy Construction Only

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	20.00	1000sqft	0.46	20,005.00	0
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Non-Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Parking Lot	0.73	Acre	0.73	31,711.68	0
City Park	2.00	Acre	2.00	87,120.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**Operational Year**	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 20,005 SF of new buildings, 0.728 acres of parking lot. Best estimates for other asphalt surfaces (basketball court/play area), sports field, and other concrete such as sidewalks/walkways.

Construction Phase - Greystone West, March 2023.

Trips and VMT -

Demolition - Greystone West, 2023

Grading - 32,450 cy of export and 56,400 cy of fill split up evenly between the phases

Vehicle Trips - construction only

Sausalito MLK Academy Construction Only - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Area Coating - construction only

Energy Use - Construction Only

Water And Wastewater - Construction Only

Solid Waste - Construction Only

Construction Off-road Equipment Mitigation - BAAQMD Basic Fugitive Dust BMPs
Mitigation Measure for Tier 4 Final Engines to reduce DPM emissions impact

Area Mitigation - construction only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Residential_Exterior	150	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Parking	7130	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	23.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Sausalito MLK Academy Construction Only - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	230.00	58.00
tblConstructionPhase	NumDays	230.00	285.00
tblConstructionPhase	NumDays	230.00	45.00
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	20.00	25.00
tblEnergyUse	LightingElect	2.51	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	NT24E	1.27	0.00
tblEnergyUse	NT24NG	1.62	0.00
tblEnergyUse	T24E	0.59	0.00
tblEnergyUse	T24NG	14.70	0.00
tblGrading	MaterialExported	0.00	16,225.00
tblGrading	MaterialExported	0.00	16,225.00
tblGrading	MaterialImported	0.00	28,200.00
tblGrading	MaterialImported	0.00	28,200.00
tblLandUse	LandUseSquareFeet	20,000.00	20,005.00
tblLandUse	LandUseSquareFeet	31,798.80	31,711.68
tblSolidWaste	SolidWasteGenerationRate	0.17	0.00
tblSolidWaste	SolidWasteGenerationRate	26.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	19.52	0.00
tblWater	IndoorWaterUseRate	579,938.34	0.00
tblWater	OutdoorWaterUseRate	2,382,962.70	0.00
tblWater	OutdoorWaterUseRate	1,491,270.03	0.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2023	0.1542	1.7783	1.4907	4.6400e-003	0.3103	0.0631	0.3734	0.1295	0.0590	0.1885	0.0000	434.8574	434.8574	0.0660	0.0339	446.6093
2024	0.1875	1.6149	2.0113	4.2800e-003	0.0980	0.0670	0.1650	0.0266	0.0629	0.0895	0.0000	381.9128	381.9128	0.0660	0.0120	387.1403
2025	0.1567	1.7765	1.6574	4.9600e-003	0.3345	0.0577	0.3922	0.1399	0.0538	0.1937	0.0000	462.2999	462.2999	0.0732	0.0333	474.0503
Maximum	**0.1875**	**1.7783**	**2.0113**	**4.9600e-003**	**0.3345**	**0.0670**	**0.3922**	**0.1399**	**0.0629**	**0.1937**	**0.0000**	**462.2999**	**462.2999**	**0.0732**	**0.0339**	**474.0503**

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					
2023	0.0584	0.6825	1.6481	4.6400e-003	0.1922	9.5200e-003	0.2017	0.0727	9.3600e-003	0.0820	0.0000	434.8572	434.8572	0.0660	0.0339	446.6090
2024	0.0859	0.4549	2.1871	4.2800e-003	0.0980	0.0101	0.1082	0.0266	0.0100	0.0367	0.0000	381.9125	381.9125	0.0660	0.0120	387.1400
2025	0.0620	0.7003	1.8547	4.9600e-003	0.2067	9.6900e-003	0.2164	0.0783	9.5200e-003	0.0878	0.0000	462.2996	462.2996	0.0732	0.0333	474.0500
Maximum	**0.0859**	**0.7003**	**2.1871**	**4.9600e-003**	**0.2067**	**0.0101**	**0.2164**	**0.0783**	**0.0100**	**0.0878**	**0.0000**	**462.2996**	**462.2996**	**0.0732**	**0.0339**	**474.0500**

Sausalito MLK Academy Construction Only - Marin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	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	**58.62**	**64.45**	**-10.28**	**0.00**	**33.10**	**84.39**	**43.44**	**40.02**	**83.54**	**56.22**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**6-5-2023**	**9-4-2023**	1.1450	0.4976
2	**9-5-2023**	**12-4-2023**	0.5926	0.1776
3	**12-5-2023**	**3-4-2024**	0.5688	0.1764
4	**3-5-2024**	**6-4-2024**	0.5611	0.1739
5	**6-5-2024**	**9-4-2024**	0.5598	0.1726
6	**9-5-2024**	**12-4-2024**	0.2745	0.0650
7	**12-5-2024**	**3-4-2025**	0.6007	0.1701
8	**3-5-2025**	**6-4-2025**	0.8391	0.4323
9	**6-5-2025**	**9-4-2025**	0.4886	0.1581
		Highest	1.1450	0.4976

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0867	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0867**	**0.0000**	**2.3000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.4000e-004**	**4.4000e-004**	**0.0000**	**0.0000**	**4.7000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0867	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0867**	**0.0000**	**2.3000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.4000e-004**	**4.4000e-004**	**0.0000**	**0.0000**	**4.7000e-004**

	ROG	NOx	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	P1 Demolition	Demolition	6/5/2023	6/30/2023	5	20	
2	P1 Site Preparation	Site Preparation	7/1/2023	7/14/2023	5	10	
3	P1 Grading	Grading	7/15/2023	8/25/2023	5	30	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	P1 Building Construction	Building Construction	8/26/2023	9/27/2024	5	285	
5	P1 Paving	Paving	9/28/2024	11/1/2024	5	25	
6	P2 Demolition	Demolition	1/2/2025	2/5/2025	5	25	
7	P2 Site Preparation	Site Preparation	2/6/2025	2/19/2025	5	10	
8	P2 Grading and Utilities	Grading	2/20/2025	4/9/2025	5	35	
9	P2 Field and Play Yard Construction	Building Construction	4/10/2025	6/11/2025	5	45	
10	P3 Modernization	Building Construction	6/12/2025	8/29/2025	5	58	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 30

Acres of Paving: 2.73

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
P1 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
P1 Demolition	Excavators	3	8.00	158	0.38
P1 Demolition	Rubber Tired Dozers	2	8.00	247	0.40
P1 Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
P1 Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
P1 Grading	Excavators	1	8.00	158	0.38
P1 Grading	Graders	1	8.00	187	0.41
P1 Grading	Rubber Tired Dozers	1	8.00	247	0.40
P1 Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
P1 Building Construction	Cranes	1	7.00	231	0.29
P1 Building Construction	Forklifts	3	8.00	89	0.20
P1 Building Construction	Generator Sets	1	8.00	84	0.74
P1 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

P1 Building Construction	Welders	1	8.00	46	0.45
P1 Paving	Pavers	2	8.00	130	0.42
P1 Paving	Paving Equipment	2	8.00	132	0.36
P1 Paving	Rollers	2	8.00	80	0.38
P2 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
P2 Demolition	Excavators	3	8.00	158	0.38
P2 Demolition	Rubber Tired Dozers	2	8.00	247	0.40
P2 Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
P2 Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
P2 Grading and Utilities	Excavators	1	8.00	158	0.38
P2 Grading and Utilities	Graders	1	8.00	187	0.41
P2 Grading and Utilities	Rubber Tired Dozers	1	8.00	247	0.40
P2 Grading and Utilities	Tractors/Loaders/Backhoes	3	8.00	97	0.37
P2 Field and Play Yard Construction	Cranes	1	7.00	231	0.29
P2 Field and Play Yard Construction	Forklifts	3	8.00	89	0.20
P2 Field and Play Yard Construction	Generator Sets	1	8.00	84	0.74
P2 Field and Play Yard Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
P2 Field and Play Yard Construction	Welders	1	8.00	46	0.45
P3 Modernization	Cranes	1	7.00	231	0.29
P3 Modernization	Forklifts	3	8.00	89	0.20
P3 Modernization	Generator Sets	1	8.00	84	0.74
P3 Modernization	Tractors/Loaders/Backhoes	3	7.00	97	0.37
P3 Modernization	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
P1 Demolition	6	15.00	0.00	70.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

P1 Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
P1 Grading	6	15.00	0.00	5,553.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
P1 Building Construction	9	95.00	37.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
P1 Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
P2 Demolition	6	15.00	0.00	70.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
P2 Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
P2 Grading and Utilities	6	15.00	0.00	5,553.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
P2 Field and Play Yard Construction	9	95.00	37.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
P3 Modernization	9	95.00	37.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 P1 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.6100e-003	0.0000	7.6100e-003	1.1500e-003	0.0000	1.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0227	0.2148	0.1964	3.9000e-004		9.9800e-003	9.9800e-003		9.2800e-003	9.2800e-003	0.0000	33.9921	33.9921	9.5200e-003	0.0000	34.2301
Total	**0.0227**	**0.2148**	**0.1964**	**3.9000e-004**	**7.6100e-003**	**9.9800e-003**	**0.0176**	**1.1500e-003**	**9.2800e-003**	**0.0104**	**0.0000**	**33.9921**	**33.9921**	**9.5200e-003**	**0.0000**	**34.2301**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 P1 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	5.2500e-003	1.4800e-003	2.0000e-005	5.9000e-004	4.0000e-005	6.3000e-004	1.6000e-004	4.0000e-005	2.0000e-004	0.0000	2.1982	2.1982	1.4000e-004	3.5000e-004	2.3062
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	4.2000e-004	2.7000e-004	3.2400e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9282	0.9282	3.0000e-005	3.0000e-005	0.9367
Total	**5.0000e-004**	**5.5200e-003**	**4.7200e-003**	**3.0000e-005**	**1.7700e-003**	**5.0000e-005**	**1.8200e-003**	**4.7000e-004**	**5.0000e-005**	**5.2000e-004**	**0.0000**	**3.1264**	**3.1264**	**1.7000e-004**	**3.8000e-004**	**3.2429**

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					3.4300e-003	0.0000	3.4300e-003	5.2000e-004	0.0000	5.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6200e-003	0.0200	0.2328	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	33.9920	33.9920	9.5200e-003	0.0000	34.2300
Total	**4.6200e-003**	**0.0200**	**0.2328**	**3.9000e-004**	**3.4300e-003**	**6.2000e-004**	**4.0500e-003**	**5.2000e-004**	**6.2000e-004**	**1.1400e-003**	**0.0000**	**33.9920**	**33.9920**	**9.5200e-003**	**0.0000**	**34.2300**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 P1 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	5.2500e-003	1.4800e-003	2.0000e-005	5.9000e-004	4.0000e-005	6.3000e-004	1.6000e-004	4.0000e-005	2.0000e-004	0.0000	2.1982	2.1982	1.4000e-004	3.5000e-004	2.3062
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	4.2000e-004	2.7000e-004	3.2400e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9282	0.9282	3.0000e-005	3.0000e-005	0.9367
Total	**5.0000e-004**	**5.5200e-003**	**4.7200e-003**	**3.0000e-005**	**1.7700e-003**	**5.0000e-005**	**1.8200e-003**	**4.7000e-004**	**5.0000e-005**	**5.2000e-004**	**0.0000**	**3.1264**	**3.1264**	**1.7000e-004**	**3.8000e-004**	**3.2429**

3.3 P1 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 P1 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.6000e-004	1.9400e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5569	0.5569	2.0000e-005	2.0000e-005	0.5620
Total	**2.5000e-004**	**1.6000e-004**	**1.9400e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5569**	**0.5569**	**2.0000e-005**	**2.0000e-005**	**0.5620**

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					0.0442	0.0000	0.0442	0.0227	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0101	0.1043	1.9000e-004		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**2.3300e-003**	**0.0101**	**0.1043**	**1.9000e-004**	**0.0442**	**3.1000e-004**	**0.0445**	**0.0227**	**3.1000e-004**	**0.0230**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 P1 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.6000e-004	1.9400e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5569	0.5569	2.0000e-005	2.0000e-005	0.5620
Total	**2.5000e-004**	**1.6000e-004**	**1.9400e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5569**	**0.5569**	**2.0000e-005**	**2.0000e-005**	**0.5620**

3.4 P1 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1088	0.0000	0.1088	0.0518	0.0000	0.0518	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0257	0.2690	0.2213	4.4000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	39.0909	39.0909	0.0126	0.0000	39.4070
Total	**0.0257**	**0.2690**	**0.2213**	**4.4000e-004**	**0.1088**	**0.0116**	**0.1204**	**0.0518**	**0.0107**	**0.0624**	**0.0000**	**39.0909**	**39.0909**	**0.0126**	**0.0000**	**39.4070**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 P1 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.2200e-003	0.4165	0.1172	1.7100e-003	0.0468	3.0200e-003	0.0498	0.0129	2.8900e-003	0.0158	0.0000	174.3814	174.3814	0.0112	0.0278	182.9480
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	6.3000e-004	4.1000e-004	4.8600e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.3923	1.3923	4.0000e-005	4.0000e-005	1.4050
Total	**6.8500e-003**	**0.4170**	**0.1220**	**1.7300e-003**	**0.0486**	**3.0300e-003**	**0.0516**	**0.0133**	**2.9000e-003**	**0.0162**	**0.0000**	**175.7736**	**175.7736**	**0.0113**	**0.0279**	**184.3530**

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					0.0489	0.0000	0.0489	0.0233	0.0000	0.0233	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4500e-003	0.0236	0.2663	4.4000e-004		7.3000e-004	7.3000e-004		7.3000e-004	7.3000e-004	0.0000	39.0909	39.0909	0.0126	0.0000	39.4069
Total	**5.4500e-003**	**0.0236**	**0.2663**	**4.4000e-004**	**0.0489**	**7.3000e-004**	**0.0497**	**0.0233**	**7.3000e-004**	**0.0240**	**0.0000**	**39.0909**	**39.0909**	**0.0126**	**0.0000**	**39.4069**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 P1 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.2200e-003	0.4165	0.1172	1.7100e-003	0.0468	3.0200e-003	0.0498	0.0129	2.8900e-003	0.0158	0.0000	174.3814	174.3814	0.0112	0.0278	182.9480
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	6.3000e-004	4.1000e-004	4.8600e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.3923	1.3923	4.0000e-005	4.0000e-005	1.4050
Total	**6.8500e-003**	**0.4170**	**0.1220**	**1.7300e-003**	**0.0486**	**3.0300e-003**	**0.0516**	**0.0133**	**2.9000e-003**	**0.0162**	**0.0000**	**175.7736**	**175.7736**	**0.0113**	**0.0279**	**184.3530**

3.5 P1 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0708	0.6473	0.7310	1.2100e-003		0.0315	0.0315		0.0296	0.0296	0.0000	104.3121	104.3121	0.0248	0.0000	104.9325
Total	**0.0708**	**0.6473**	**0.7310**	**1.2100e-003**		**0.0315**	**0.0315**		**0.0296**	**0.0296**	**0.0000**	**104.3121**	**104.3121**	**0.0248**	**0.0000**	**104.9325**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 P1 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2900e-003	0.0790	0.0299	3.5000e-004	0.0109	4.3000e-004	0.0113	3.1500e-003	4.1000e-004	3.5700e-003	0.0000	34.8270	34.8270	1.3400e-003	4.9200e-003	36.3258
Worker	0.0119	7.8100e-003	0.0923	2.9000e-004	0.0337	1.8000e-004	0.0339	8.9600e-003	1.6000e-004	9.1300e-003	0.0000	26.4531	26.4531	7.8000e-004	7.5000e-004	26.6954
Total	**0.0142**	**0.0868**	**0.1222**	**6.4000e-004**	**0.0446**	**6.1000e-004**	**0.0452**	**0.0121**	**5.7000e-004**	**0.0127**	**0.0000**	**61.2800**	**61.2800**	**2.1200e-003**	**5.6700e-003**	**63.0212**

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	0.0242	0.1193	0.7939	1.2100e-003		4.1800e-003	4.1800e-003		4.1800e-003	4.1800e-003	0.0000	104.3120	104.3120	0.0248	0.0000	104.9324
Total	**0.0242**	**0.1193**	**0.7939**	**1.2100e-003**		**4.1800e-003**	**4.1800e-003**		**4.1800e-003**	**4.1800e-003**	**0.0000**	**104.3120**	**104.3120**	**0.0248**	**0.0000**	**104.9324**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 P1 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2900e-003	0.0790	0.0299	3.5000e-004	0.0109	4.3000e-004	0.0113	3.1500e-003	4.1000e-004	3.5700e-003	0.0000	34.8270	34.8270	1.3400e-003	4.9200e-003	36.3258
Worker	0.0119	7.8100e-003	0.0923	2.9000e-004	0.0337	1.8000e-004	0.0339	8.9600e-003	1.6000e-004	9.1300e-003	0.0000	26.4531	26.4531	7.8000e-004	7.5000e-004	26.6954
Total	**0.0142**	**0.0868**	**0.1222**	**6.4000e-004**	**0.0446**	**6.1000e-004**	**0.0452**	**0.0121**	**5.7000e-004**	**0.0127**	**0.0000**	**61.2800**	**61.2800**	**2.1200e-003**	**5.6700e-003**	**63.0212**

3.5 P1 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1435	1.3108	1.5763	2.6300e-003		0.0598	0.0598		0.0563	0.0563	0.0000	226.0529	226.0529	0.0535	0.0000	227.3893
Total	**0.1435**	**1.3108**	**1.5763**	**2.6300e-003**		**0.0598**	**0.0598**		**0.0563**	**0.0563**	**0.0000**	**226.0529**	**226.0529**	**0.0535**	**0.0000**	**227.3893**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 P1 Building Construction - 2024

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	4.7300e-003	0.1697	0.0622	7.5000e-004	0.0236	9.4000e-004	0.0245	6.8300e-003	9.0000e-004	7.7300e-003	0.0000	74.2298	74.2298	2.8600e-003	0.0105	77.4209
Worker	0.0242	0.0151	0.1863	6.0000e-004	0.0730	3.7000e-004	0.0733	0.0194	3.4000e-004	0.0198	0.0000	55.4740	55.4740	1.5400e-003	1.5100e-003	55.9618
Total	**0.0289**	**0.1848**	**0.2485**	**1.3500e-003**	**0.0966**	**1.3100e-003**	**0.0979**	**0.0263**	**1.2400e-003**	**0.0275**	**0.0000**	**129.7038**	**129.7038**	**4.4000e-003**	**0.0120**	**133.3826**

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	0.0507	0.2546	1.7186	2.6300e-003		8.3200e-003	8.3200e-003		8.3200e-003	8.3200e-003	0.0000	226.0526	226.0526	0.0535	0.0000	227.3890
Total	**0.0507**	**0.2546**	**1.7186**	**2.6300e-003**		**8.3200e-003**	**8.3200e-003**		**8.3200e-003**	**8.3200e-003**	**0.0000**	**226.0526**	**226.0526**	**0.0535**	**0.0000**	**227.3890**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 P1 Building Construction - 2024

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	4.7300e-003	0.1697	0.0622	7.5000e-004	0.0236	9.4000e-004	0.0245	6.8300e-003	9.0000e-004	7.7300e-003	0.0000	74.2298	74.2298	2.8600e-003	0.0105	77.4209
Worker	0.0242	0.0151	0.1863	6.0000e-004	0.0730	3.7000e-004	0.0733	0.0194	3.4000e-004	0.0198	0.0000	55.4740	55.4740	1.5400e-003	1.5100e-003	55.9618
Total	**0.0289**	**0.1848**	**0.2485**	**1.3500e-003**	**0.0966**	**1.3100e-003**	**0.0979**	**0.0263**	**1.2400e-003**	**0.0275**	**0.0000**	**129.7038**	**129.7038**	**4.4000e-003**	**0.0120**	**133.3826**

3.6 P1 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0124	0.1191	0.1828	2.9000e-004		5.8600e-003	5.8600e-003		5.3900e-003	5.3900e-003	0.0000	25.0332	25.0332	8.1000e-003	0.0000	25.2356
Paving	2.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0146**	**0.1191**	**0.1828**	**2.9000e-004**		**5.8600e-003**	**5.8600e-003**		**5.3900e-003**	**5.3900e-003**	**0.0000**	**25.0332**	**25.0332**	**8.1000e-003**	**0.0000**	**25.2356**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 P1 Paving - 2024

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	4.9000e-004	3.1000e-004	3.7700e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.1230	1.1230	3.0000e-005	3.0000e-005	1.1328
Total	**4.9000e-004**	**3.1000e-004**	**3.7700e-003**	**1.0000e-005**	**1.4800e-003**	**1.0000e-005**	**1.4800e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.1230**	**1.1230**	**3.0000e-005**	**3.0000e-005**	**1.1328**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5100e-003	0.0152	0.2162	2.9000e-004		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	25.0331	25.0331	8.1000e-003	0.0000	25.2355
Paving	2.2700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.7800e-003**	**0.0152**	**0.2162**	**2.9000e-004**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**25.0331**	**25.0331**	**8.1000e-003**	**0.0000**	**25.2355**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 P1 Paving - 2024

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	4.9000e-004	3.1000e-004	3.7700e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.1230	1.1230	3.0000e-005	3.0000e-005	1.1328
Total	**4.9000e-004**	**3.1000e-004**	**3.7700e-003**	**1.0000e-005**	**1.4800e-003**	**1.0000e-005**	**1.4800e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.1230**	**1.1230**	**3.0000e-005**	**3.0000e-005**	**1.1328**

3.7 P2 Demolition - 2025

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					7.6100e-003	0.0000	7.6100e-003	1.1500e-003	0.0000	1.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0262	0.2400	0.2427	4.9000e-004		0.0107	0.0107		9.9000e-003	9.9000e-003	0.0000	42.4971	42.4971	0.0119	0.0000	42.7937
Total	**0.0262**	**0.2400**	**0.2427**	**4.9000e-004**	**7.6100e-003**	**0.0107**	**0.0183**	**1.1500e-003**	**9.9000e-003**	**0.0111**	**0.0000**	**42.4971**	**42.4971**	**0.0119**	**0.0000**	**42.7937**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 P2 Demolition - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	5.1200e-003	1.4600e-003	2.0000e-005	5.9000e-004	4.0000e-005	6.3000e-004	1.6000e-004	4.0000e-005	2.0000e-004	0.0000	2.1147	2.1147	1.4000e-004	3.4000e-004	2.2187
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	4.6000e-004	2.7000e-004	3.5300e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.0855	1.0855	3.0000e-005	3.0000e-005	1.0948
Total	**5.4000e-004**	**5.3900e-003**	**4.9900e-003**	**3.0000e-005**	**2.0700e-003**	**5.0000e-005**	**2.1100e-003**	**5.5000e-004**	**5.0000e-005**	**6.0000e-004**	**0.0000**	**3.2002**	**3.2002**	**1.7000e-004**	**3.7000e-004**	**3.3134**

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					3.4300e-003	0.0000	3.4300e-003	5.2000e-004	0.0000	5.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7800e-003	0.0250	0.2910	4.9000e-004		7.7000e-004	7.7000e-004		7.7000e-004	7.7000e-004	0.0000	42.4970	42.4970	0.0119	0.0000	42.7937
Total	**5.7800e-003**	**0.0250**	**0.2910**	**4.9000e-004**	**3.4300e-003**	**7.7000e-004**	**4.2000e-003**	**5.2000e-004**	**7.7000e-004**	**1.2900e-003**	**0.0000**	**42.4970**	**42.4970**	**0.0119**	**0.0000**	**42.7937**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 P2 Demolition - 2025

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	8.0000e-005	5.1200e-003	1.4600e-003	2.0000e-005	5.9000e-004	4.0000e-005	6.3000e-004	1.6000e-004	4.0000e-005	2.0000e-004	0.0000	2.1147	2.1147	1.4000e-004	3.4000e-004	2.2187
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	4.6000e-004	2.7000e-004	3.5300e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.0855	1.0855	3.0000e-005	3.0000e-005	1.0948
Total	**5.4000e-004**	**5.3900e-003**	**4.9900e-003**	**3.0000e-005**	**2.0700e-003**	**5.0000e-005**	**2.1100e-003**	**5.5000e-004**	**5.0000e-005**	**6.0000e-004**	**0.0000**	**3.2002**	**3.2002**	**1.7000e-004**	**3.7000e-004**	**3.3134**

3.8 P2 Site Preparation - 2025

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0124	0.1262	0.0896	1.9000e-004		5.4300e-003	5.4300e-003		5.0000e-003	5.0000e-003	0.0000	16.7335	16.7335	5.4100e-003	0.0000	16.8688
Total	**0.0124**	**0.1262**	**0.0896**	**1.9000e-004**	**0.0983**	**5.4300e-003**	**0.1037**	**0.0505**	**5.0000e-003**	**0.0555**	**0.0000**	**16.7335**	**16.7335**	**5.4100e-003**	**0.0000**	**16.8688**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 P2 Site Preparation - 2025

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	2.2000e-004	1.3000e-004	1.6900e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5211	0.5211	1.0000e-005	1.0000e-005	0.5255
Total	**2.2000e-004**	**1.3000e-004**	**1.6900e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5211**	**0.5211**	**1.0000e-005**	**1.0000e-005**	**0.5255**

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					0.0442	0.0000	0.0442	0.0227	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0101	0.1043	1.9000e-004		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	16.7335	16.7335	5.4100e-003	0.0000	16.8688
Total	**2.3300e-003**	**0.0101**	**0.1043**	**1.9000e-004**	**0.0442**	**3.1000e-004**	**0.0445**	**0.0227**	**3.1000e-004**	**0.0230**	**0.0000**	**16.7335**	**16.7335**	**5.4100e-003**	**0.0000**	**16.8688**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 P2 Site Preparation - 2025

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	2.2000e-004	1.3000e-004	1.6900e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5211	0.5211	1.0000e-005	1.0000e-005	0.5255
Total	**2.2000e-004**	**1.3000e-004**	**1.6900e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5211**	**0.5211**	**1.0000e-005**	**1.0000e-005**	**0.5255**

3.9 P2 Grading and Utilities - 2025

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					0.1265	0.0000	0.1265	0.0603	0.0000	0.0603	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0267	0.2680	0.2545	5.2000e-004		0.0109	0.0109		0.0100	0.0100	0.0000	45.6222	45.6222	0.0148	0.0000	45.9911
Total	**0.0267**	**0.2680**	**0.2545**	**5.2000e-004**	**0.1265**	**0.0109**	**0.1374**	**0.0603**	**0.0100**	**0.0704**	**0.0000**	**45.6222**	**45.6222**	**0.0148**	**0.0000**	**45.9911**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.9 P2 Grading and Utilities - 2025

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	6.0900e-003	0.4058	0.1160	1.6400e-003	0.0468	3.0200e-003	0.0498	0.0129	2.8900e-003	0.0158	0.0000	167.7550	167.7550	0.0109	0.0268	176.0043
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	6.5000e-004	3.8000e-004	4.9400e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0800e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.5198	1.5198	4.0000e-005	4.0000e-005	1.5327
Total	**6.7400e-003**	**0.4062**	**0.1209**	**1.6600e-003**	**0.0489**	**3.0300e-003**	**0.0519**	**0.0134**	**2.9000e-003**	**0.0163**	**0.0000**	**169.2747**	**169.2747**	**0.0110**	**0.0268**	**177.5369**

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					0.0569	0.0000	0.0569	0.0271	0.0000	0.0271	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.3600e-003	0.0275	0.3107	5.2000e-004		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	45.6221	45.6221	0.0148	0.0000	45.9910
Total	**6.3600e-003**	**0.0275**	**0.3107**	**5.2000e-004**	**0.0569**	**8.5000e-004**	**0.0578**	**0.0271**	**8.5000e-004**	**0.0280**	**0.0000**	**45.6221**	**45.6221**	**0.0148**	**0.0000**	**45.9910**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.9 P2 Grading and Utilities - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0900e-003	0.4058	0.1160	1.6400e-003	0.0468	3.0200e-003	0.0498	0.0129	2.8900e-003	0.0158	0.0000	167.7550	167.7550	0.0109	0.0268	176.0043
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	6.5000e-004	3.8000e-004	4.9400e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0800e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.5198	1.5198	4.0000e-005	4.0000e-005	1.5327
Total	**6.7400e-003**	**0.4062**	**0.1209**	**1.6600e-003**	**0.0489**	**3.0300e-003**	**0.0519**	**0.0134**	**2.9000e-003**	**0.0163**	**0.0000**	**169.2747**	**169.2747**	**0.0110**	**0.0268**	**177.5369**

3.10 P2 Field and Play Yard Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0308	0.2806	0.3619	6.1000e-004		0.0119	0.0119		0.0112	0.0112	0.0000	52.1819	52.1819	0.0123	0.0000	52.4885
Total	**0.0308**	**0.2806**	**0.3619**	**6.1000e-004**		**0.0119**	**0.0119**		**0.0112**	**0.0112**	**0.0000**	**52.1819**	**52.1819**	**0.0123**	**0.0000**	**52.4885**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.10 P2 Field and Play Yard Construction - 2025

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	1.0500e-003	0.0387	0.0139	1.7000e-004	5.4500e-003	2.2000e-004	5.6600e-003	1.5800e-003	2.1000e-004	1.7800e-003	0.0000	16.8184	16.8184	6.5000e-004	2.3700e-003	17.5404
Worker	5.2600e-003	3.1300e-003	0.0403	1.3000e-004	0.0168	8.0000e-005	0.0169	4.4800e-003	7.0000e-005	4.5500e-003	0.0000	12.3752	12.3752	3.2000e-004	3.3000e-004	12.4803
Total	**6.3100e-003**	**0.0418**	**0.0541**	**3.0000e-004**	**0.0223**	**3.0000e-004**	**0.0226**	**6.0600e-003**	**2.8000e-004**	**6.3300e-003**	**0.0000**	**29.1936**	**29.1936**	**9.7000e-004**	**2.7000e-003**	**30.0207**

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	0.0113	0.0579	0.3963	6.1000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	52.1818	52.1818	0.0123	0.0000	52.4885
Total	**0.0113**	**0.0579**	**0.3963**	**6.1000e-004**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**52.1818**	**52.1818**	**0.0123**	**0.0000**	**52.4885**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.10 P2 Field and Play Yard Construction - 2025

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	1.0500e-003	0.0387	0.0139	1.7000e-004	5.4500e-003	2.2000e-004	5.6600e-003	1.5800e-003	2.1000e-004	1.7800e-003	0.0000	16.8184	16.8184	6.5000e-004	2.3700e-003	17.5404
Worker	5.2600e-003	3.1300e-003	0.0403	1.3000e-004	0.0168	8.0000e-005	0.0169	4.4800e-003	7.0000e-005	4.5500e-003	0.0000	12.3752	12.3752	3.2000e-004	3.3000e-004	12.4803
Total	**6.3100e-003**	**0.0418**	**0.0541**	**3.0000e-004**	**0.0223**	**3.0000e-004**	**0.0226**	**6.0600e-003**	**2.8000e-004**	**6.3300e-003**	**0.0000**	**29.1936**	**29.1936**	**9.7000e-004**	**2.7000e-003**	**30.0207**

3.11 P3 Modernization - 2025

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	0.0390	0.3554	0.4584	7.7000e-004		0.0150	0.0150		0.0141	0.0141	0.0000	66.0970	66.0970	0.0155	0.0000	66.4855
Total	**0.0390**	**0.3554**	**0.4584**	**7.7000e-004**		**0.0150**	**0.0150**		**0.0141**	**0.0141**	**0.0000**	**66.0970**	**66.0970**	**0.0155**	**0.0000**	**66.4855**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.11 P3 Modernization - 2025

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	1.3300e-003	0.0490	0.0176	2.2000e-004	6.9000e-003	2.7000e-004	7.1700e-003	2.0000e-003	2.6000e-004	2.2600e-003	0.0000	21.3034	21.3034	8.2000e-004	3.0000e-003	22.2178
Worker	6.6700e-003	3.9700e-003	0.0510	1.7000e-004	0.0213	1.0000e-004	0.0214	5.6800e-003	9.0000e-005	5.7700e-003	0.0000	15.6752	15.6752	4.1000e-004	4.1000e-004	15.8084
Total	**8.0000e-003**	**0.0529**	**0.0686**	**3.9000e-004**	**0.0282**	**3.7000e-004**	**0.0286**	**7.6800e-003**	**3.5000e-004**	**8.0300e-003**	**0.0000**	**36.9786**	**36.9786**	**1.2300e-003**	**3.4100e-003**	**38.0262**

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	0.0144	0.0733	0.5020	7.7000e-004		2.2400e-003	2.2400e-003		2.2400e-003	2.2400e-003	0.0000	66.0970	66.0970	0.0155	0.0000	66.4854
Total	**0.0144**	**0.0733**	**0.5020**	**7.7000e-004**		**2.2400e-003**	**2.2400e-003**		**2.2400e-003**	**2.2400e-003**	**0.0000**	**66.0970**	**66.0970**	**0.0155**	**0.0000**	**66.4854**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.11 P3 Modernization - 2025

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	1.3300e-003	0.0490	0.0176	2.2000e-004	6.9000e-003	2.7000e-004	7.1700e-003	2.0000e-003	2.6000e-004	2.2600e-003	0.0000	21.3034	21.3034	8.2000e-004	3.0000e-003	22.2178
Worker	6.6700e-003	3.9700e-003	0.0510	1.7000e-004	0.0213	1.0000e-004	0.0214	5.6800e-003	9.0000e-005	5.7700e-003	0.0000	15.6752	15.6752	4.1000e-004	4.1000e-004	15.8084
Total	**8.0000e-003**	**0.0529**	**0.0686**	**3.9000e-004**	**0.0282**	**3.7000e-004**	**0.0286**	**7.6800e-003**	**3.5000e-004**	**8.0300e-003**	**0.0000**	**36.9786**	**36.9786**	**1.2300e-003**	**3.4100e-003**	**38.0262**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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
City Park	0.00	0.00	0.00		
Elementary School	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002741
Elementary School	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002741
Other Asphalt Surfaces	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002741
Other Non-Asphalt Surfaces	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002741
Parking Lot	0.543132	0.061625	0.200801	0.122893	0.023519	0.005568	0.006832	0.003721	0.000658	0.000395	0.027388	0.000726	0.002741

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas 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
NaturalGas 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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive 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	0.0867	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.7000e-004
Unmitigated	0.0867	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.7000e-004
Total	**0.0867**	**0.0000**	**2.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.4000e-004**	**4.4000e-004**	**0.0000**	**0.0000**	**4.7000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.7000e-004
Total	**0.0867**	**0.0000**	**2.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.4000e-004**	**4.4000e-004**	**0.0000**	**0.0000**	**4.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Elementary School	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Elementary School	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Health Risk Assessment
for the
Sausalito Dr. Martin Luther King Academy

Sausalito, California

Prepared For:

RCH GROUP
planning & environmental consulting

Prepared By:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
55 Hanover Lane
Chico, CA 95926

March 2023

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LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ASF	Age Sensitivity Factor
AT	Averaging Time
ATCM	Airborne Toxics Control Measure
BAAQMD	Bay Area Air Quality Management District
BR	Breathing Rate
BW	Body Weight
CAA	Clean Air Act
CARB	California Air Resources Board
CPF	Cancer Potency Factor
DPM	Diesel Particulate Matter
ED	Exposure Duration
EF	Exposure Frequency
FAH	Fraction of time at home
GLC	Ground Level Concentration
HAP	Hazardous Air Pollutant
HARP2	Hot Spots Analysis & Reporting Program
HRA	Health Risk Assessment
MSAT	Mobile Source Air Toxic
NAAQS	National Ambient Air Quality Standards
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
OEHHA	Office of Environment Health Hazard Assessment
PM	Particulate Matter
PM_{10}	Coarse Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
Project	Sausalito Dr. Martin Luther King Academy
REL	Reference Exposure Level
SB	Senate Bill
SFBAAB	San Francisco Bay Area Air Basin
TAC	Toxic Air Contaminants
T-BACT	Toxics Best Available Control Technology
USEPA	U.S. Environmental Protection Agency

1.0 INTRODUCTION

This report documents the results of a Construction Health Risk Assessment (HRA) completed for the Dr. Martin Luther King Academy Project (Project). This Project proposes the demolition of existing structures on the Project Site to accommodate the construction of a new 20,005 square foot elementary school with 30,000 square feet of parking and other paved area. The purpose of this HRA is to evaluate potential health risks associated with exposure of toxic air contaminants (TACs) (or hazardous air pollutants [HAPs] in the federal parlance), including diesel particulate matter (DPM), generated by the construction equipment on the Project Site and construction vehicular traffic traversing the Project vicinity roadways; Nevada Street; Buchanan Street and Highway 101. This Construction HRA was prepared in accordance with the requirements of the Office of Environmental Health Hazard Assessment (OEHHA) to determine if health risks are likely to occur to existing residents and workers in the vicinity of the Project Site. Technical data is included as Attachment A and Attachment B.

1.1 Project Location and Description

The Project Site is located in the City of Sausalito, located in Marin County, just north of the Golden Gate Bridge. The site is generally bound by Buchanan Drive to the northeast, Nevada Street to the east, and a meandering Lincoln Drive to the south, west, and north; and surrounded primarily by single family homes. The Project Site is relatively flat with existing structures to be demolished as part of the Project. Highway 101 traverses the area approximately 565 feet to the west.

The Project proposes which includes demolition of all existing structures on site with the exception of a K-Pod Building located at the southeast portion of the site, which is proposed to be renovated and remain. The Project would then construct a new elementary school campus consisting of six (6) buildings containing administrative offices, classrooms, multi-use community room, and a covered outdoor basketball court with storage.

2.0 HEALTH RISK ASSESSMENT

2.1 Environmental Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the San Francisco Bay Area Air Basin (SFBAAB), which encompasses the Project Site, pursuant to the regulatory authority of the Bay Area Air Quality Management District (BAAQMD).

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project Area.

2.1.1 San Francisco Bay Area Air Basin

The Project Site is located in the City of Sausalito, located in Marin County, which lies in the SFBAAB. The SFBAAB is approximately 5,600 square miles in area and consists of nine counties that surround the San Francisco Bay, including all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties; the southwestern portion of Solano County; and the southern portion of Sonoma County. The topography of the SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys and bays. This complex terrain, especially the higher elevations, distorts the normal wind flow patterns in the SFBAAB. The greatest distortions occur when low-level inversions are present and the air beneath the inversion flows independently of air above the inversion, a condition that is common in the summertime (BAAQMD 2017).

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited, and stagnant conditions are likely to result (BAAQMD 2017).

Summertime temperatures in the SFBAAB are determined by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays (BAAQMD 2017).

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills. Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno Gap.

An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth, i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground. The highest air pollutant concentrations in the SFBAAB generally occur during inversions. The areas having the highest air pollution potential tend to be those that experience the highest temperatures in the summer and the lowest temperatures in the winter. The coastal areas are exposed to the prevailing marine air, creating cooler temperatures in the summer, warmer temperatures in winter, and stratus clouds all year. The inland valleys are sheltered from the marine air and experience hotter summers and colder winters. Thus, the topography of the inland valleys creates conditions conducive to high air pollution potential.

2.1.2 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, TACs are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Carcinogenic TACs can also have noncarcinogenic health hazard levels.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children, whose lungs are still developing, and the elderly, who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Diesel engines also contribute to California's fine particulate matter ($PM_{2.5}$) air quality problems. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

2.1.2.1 Diesel Exhaust

In 2000, the California Air Resources Board (CARB) identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (i.e., heavy-duty, light-duty), engine operating conditions (i.e., idle, accelerate, decelerate), fuel formulations (i.e., high/low sulfur fuel), and the year of the manufacture of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung

irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. Project construction would be a source of DPM emissions.

2.1.3 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

The nearest sensitive land uses to the Project Site are single family homes surrounding the Project Site in all directions.

2.2 Regulatory Framework

2.2.1 Federal

2.2.1.1 Clean Air Act

The Federal Clean Air Act (CAA) was amended in 1990 to address a large number of air pollutants that are known to cause or may reasonably be anticipated to cause adverse effects to human health or adverse environmental effects. 188 specific pollutants and chemical groups were initially identified as HAPs, and the list has been modified over time. The CAA Amendments included new regulatory programs to control acid deposition and for the issuance of stationary source operating permits.

In 2001, the U.S. Environmental Protection Agency (USEPA) issued its first Mobile Source Air Toxics Rule, which identified 21 mobile source air toxic (MSAT) compounds as being HAPs that required regulation. A subset of six of these MSAT compounds were identified as having the greatest influence on health and included benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and diesel particulate matter. More recently, the USEPA issued a second MSAT Rule in February 2007, which generally supported the findings in the first rule and provided additional recommendations of compounds having the greatest impact on health. The rule also identified several engine emission certification standards that must be implemented. Unlike the criteria pollutants, toxics do not have National Ambient Air Quality Standards (NAAQS) making evaluation of their impacts more subjective.

National Emissions Standards for Hazardous Air Pollutants (NESHAPs) were incorporated into a greatly expanded program for controlling toxic air pollutants. The provisions for attainment and maintenance of the NAAQS were substantially modified and expanded. Other revisions included provisions regarding stratospheric ozone protection, increased enforcement authority, and expanded research programs.

Section 112 of the CAA Amendments governs the federal control program for HAPs. NESHAPs are issued to limit the release of specified HAPs from specific industrial sectors. These standards are technology-based, meaning that they represent the best available control technology an industrial sector could afford. The level of emissions controls required by NESHAPs are not based on health risk considerations because allowable releases and resulting concentrations have not been determined to be safe for the general public. The CAA does not establish air quality standards for HAPs that define legally acceptable concentrations of these pollutants in ambient air.

2.2.2 State

2.2.2.1 California Clean Air Act

California Air Resources Board

CARB's statewide comprehensive air toxics program was established in 1983 with AB 1807 the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology (T-BACT) to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731 which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

Diesel Risk Reduction Plan

The identification of DPM as a TAC in 1998 led CARB to adopt the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Risk Reduction Plan) in October 2000. The Risk Reduction Plan's goals included an 85 percent reduction in DPM by 2020 from the 2000 baseline. The Risk Reduction Plan includes regulations to establish cleaner new diesel engines, cleaner in-use diesel engines (retrofits), and cleaner diesel fuel.

Truck and Bus Regulation Reducing Emissions from Existing Diesel Vehicles

On December 12, 2008, CARB approved the Truck and Bus Regulation to significantly reduce particulate matter (PM) and oxides of nitrogen emissions from existing diesel vehicles operating in California. The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Heavier trucks had to be retrofitted with PM filters beginning in January 1, 2012, and older trucks had to be

replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses had to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. Small fleets with three or fewer diesel trucks can delay compliance for heavier trucks by reporting and there are a number of extensions for low-mileage construction trucks, early PM filter retrofits, adding cleaner vehicles, and other situations. Privately and publicly owned school buses have different requirements.

Tanner Air Toxics Act & Air Toxics "Hot Spot" Information and Assessment Act

CARB's Statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an ATCM for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate T-BACT to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics Hot Spots Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a HRA and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the Hot Spots Act was amended by SB 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

2.2.3 Local

2.2.3.1 Bay Area Air Quality Management District

The BAAQMD is designated by law to adopt and enforce regulations to achieve and maintain ambient air quality standards. The BAAQMD responsibilities include preparing plans for the attainment of ambient air quality standards, adopting and enforcing air pollution rules, issuing permits for and inspecting stationary air pollution sources, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing state and federal programs and regulations. The BAAQMD has also adopted various rules and regulations that are designed to reduce and control pollutant emissions from construction and operational activities.

2.2.4 Threshold of Significance

The impact analysis provided below is based on the following local (BAAQMD) health risk thresholds.

Table 2-1. BAAQMD Health Risk Significance Thresholds		
Air Pollutant/Risk Parameter	**Value**	**Units**
Ambient $PM_{2.5}$	0.3	$\mu g/m^3$
Elevated Cancer Risk	10	In One Million
Chronic Hazard Quotient	1	Health Hazard Index

Cancer risk is expressed in terms of expected incremental incidence per million population. This threshold serves to determine whether Project sources of TACs (e.g., construction) potentially have significant impacts on a receptor. The 10-in-one-million standard is a very health-protective significance threshold. A risk level of 10 in one million implies a likelihood that up to 10 persons out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of TACs over a specified duration of time. This risk would be an excess cancer that is in addition to any cancer risk borne by a person not exposed to these air toxics. To put this risk in perspective, the risk of dying from accidental drowning is 1,000 in a million, which is 100 times more than the BAAQMD's threshold of 10 in one million.

The BAAQMD has also established non-carcinogenic risk parameters for use in HRAs. Noncarcinogenic risks are quantified by calculating a *hazard index*, expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). A REL is a concentration at, or below which health effects are not likely to occur. A hazard index less of than one (1.0) means that adverse health effects are not expected. Within this analysis, non-carcinogenic exposures of less than 1.0 are considered less than significant. In addition, the BAAQMD has established a threshold for a project's contribution to ambient $PM_{2.5}$ concentrations.

2.2.5 Methodology

2.2.5.1 Road Emission and Construction Calculations

Offsite DPM concentrations resulting from construction vehicle traffic entering and exiting the Project Site via Nevada Street to Bridgeway to Highway 101, which is approximately a half mile in length, were modeled. Average daily trips as a result of Project construction were provided by RCH Group (2023). CARB's EMFAC2021 was used to estimate emission rates for diesel vehicles in Marin County. DPM emission rates were modeled using the coarse particulate matter (PM_{10}) idling exhaust emission factors as well as average speeds for the years that construction is proposed (2023 - 2025). Construction on-road equipment for offsite activities was modeled as 181-line volume sources traversing Nevada St. from the Project Site onto Highway 101 to the east and Bridgeway to the west.

Annual onsite PM_{10} exhaust emissions for onsite construction and $PM_{2.5}$ emissions were generated using trips from the California Emissions Estimator Model (CalEEMod) (RCH Group 2023). The annual emissions for worst case onsite construction year were used to estimate the onsite construction PM_{10} exhaust emissions and $PM_{2.5}$ emissions for the entire estimated Project construction duration of the three years. Detailed calculations for construction emissions can be found in Attachment B of this document.

2.2.5.2 Dispersion Modeling

The dispersion modeling for the HRA was performed using USEPA's AERMOD Version 22112 dispersion model. AERMOD is a steady-state, multiple-source, Gaussian dispersion model designed for use with emission sources situated in terrain where ground elevations can exceed the stack heights of the emission sources. The 8976_75m.dem and 8978_75m.dem files found at U.S. Geological Survey (USGS) were used for elevation data for all sources and receptors in the Project domain. All regulatory defaults were used for dispersion modeling.

AERMOD requires hourly meteorological data consisting of wind vector, wind speed, temperature, stability class, and mixing height. Pre-processed meteorological data files provided by BAAQMD using USEPA's AERMET program, designed to create AERMOD input files for the Sonoma Bayles Monitoring Station, were selected as being the most representative meteorology based on proximity. The location of the monitoring station in respect to the Project Site is presented in Attachment A of this document. The unit emission rate of one gram per second was utilized in AERMOD to create plot files containing the dispersion factor (X/Q) for each source group. Emissions for each source group as described above were input into HARP2 to calculate the ground level concentrations (GLC) related to Project operations. AERMOD summary files, calculations and figures can be found in Attachment B.

Construction equipment for onsite activities was modeled as nine volume sources equally distributed throughout the Project Area. Off-site on-road diesel vehicles were modeled as line volume sources. All source locations are provided in Attachment A of this document.

2.2.5.3 Health Risk Modeling

Based on the OEHHA methodology, the residential inhalation cancer risk from the annual average TAC concentrations is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor (ASF), the frequency of time spent at home, and the exposure duration divided by averaging time, to yield the excess cancer risk. These factors are discussed in more detail below. Cancer risk must be separately calculated for specified age groups, because of age differences in sensitivity to carcinogens and age differences in intake rates (per kilogram [kg] body weight). Separate risk estimates for these age groups provide a health-protective estimate of cancer risk by accounting for greater susceptibility in early life, including both age-related sensitivity and amount of exposure.

Exposure through inhalation (Dose-air) is a function the breathing rate, the exposure frequency, and the concentration of a substance in the air. For residential exposure, the breathing rates are determined for specific age groups, so Dose-air is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. To estimate cancer risk, the dose was estimated by applying the following formula to each ground-level concentration:

$$\mathbf{Dose_{-air} = (C_{air} * \{BR/BW\} * A * EF * 10^{-6})}$$

Where:

Dose-air	=	dose through inhalation (mg/kg/day)
C_{air}	=	air concentration (µg/m^3) from air dispersion model

{BR/BW}	=	daily breathing rate normalized to body weight (L/kg body weight – day) (361 L\kg BW-day for 3rd Trimester, 1,090 L/kg BW-day for 0<2 years, 861 L/kg BW-day for 2<9 years, 745 L/kg BW-day for 2<16 years, 335 L/kg BW-day for 16<30 years, and 290 L/kg BW-day 16<70 years)
A	=	Inhalation absorption factor (unitless [1])
EF	=	exposure frequency (unitless), days/365 days (0.96 [approximately 350 days per year])
10^{-6}	=	conversion factor (micrograms to milligrams, liters to cubic meters)

OEHHA developed ASFs to consider the increased sensitivity to carcinogens during early-in-life exposure. In the absence of chemical-specific data, OEHHA recommends a default ASF of 10 for the third trimester to age 2 years, an ASF of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood and an ASF of 1 for ages 16 through 70 years.

Fraction of time at home (FAH) during the day is used to adjust exposure duration and cancer risk from a specific facility's emissions, based on the assumption that exposure to Project construction emissions are not occurring away from home. OEHHA recommends the following FAH values: from the third trimester to age <2 years, 85 percent of time is spent at home; from age 2 through <16 years, 72 percent of time is spent at home; from age 16 years and greater, 73 percent of time is spent at home.

To estimate the cancer risk, the dose is multiplied by the cancer potency factor, the ASF, the exposure duration divided by averaging time, and the frequency of time spent at home (for residents only):

$$\mathbf{Risk_{inh\text{-}res} = (Dose_{air} * CPH * ASF * ED/AT * FAH)}$$

Where:

$Risk_{inh\text{-}res}$	=	residential inhalation cancer risk (potential chances per million)
$Dose_{air}$	=	daily dose through inhalation (mg/kg-day)
CPF	=	inhalation cancer potency factor (mg/kg-day^{-1})
ASF	=	age sensitivity factor for a specified age group (unitless)
ED	=	exposure duration (in years) for a specified age group (0.25 years for 3rd trimester, 2 years for 0<2, 7 years for 2<9, 14 years for 2<16, 14 years for 16<30, 54 years for 16-70)
AT	=	averaging time of lifetime cancer risk (years)
FAH	=	fraction of time spent at home (unitless)

Non-cancer chronic impacts are calculated by dividing the annual average concentration by the REL for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The following equation was used to determine the non-cancer risk:

$$\mathbf{Hazard\ Quotient = Ci/RELi}$$

Where:

Ci	=	Concentration in the air of substance i (annual average concentration in µg/m^3)
RELi	=	Chronic noncancer Reference Exposure Level for substance i (µg/m^3)

Construction cancer risk calculations for existing residential and worker receptors were done so for the total time that construction is proposed, 3 years. The calculated cancer risk accounts for 350 days per year of exposure to residential and worker receptors. While the average American spends 87 percent of their

life indoors (USEPA 2001), neither the pollutant dispersion modeling nor the health risk calculations account for the reduced exposure structures provide. Instead, health risk calculations account for the equivalent exposure of continual outdoor living and working.

2.3 Results

2.3.1 Cancer Risk Analysis

The calculated carcinogenic risk at Project vicinity receptors is depicted in Table 2-2 for unmitigated construction emissions.

Table 2-2. Maximum Cancer Risk Summary – Unmitigated

Maximum Exposure Scenario	Total Maximum Risk
3-Year Exposure Resident	22.50
3-Year Exposure Worker	0.02
Significance Threshold	*10*
Exceed Threshold?	**Yes**

Source: ECORP Consulting 2023. See Attachments A & B.

The highest residential risk or maximumly effected individual resident (MEIR) is located directly to the east of the site on the east side of Nevada Street. The maximumly effected individual worker is located to the west of the site at a Sausalito City Facility on the corner of Tomales and Nevada streets.

Table 2-2 shows that the emissions of these pollutants during construction would result in significant concentrations of pollutants at nearby sensitive receptors for cancer risk during the course of construction. Therefore, mitigation measure AQ-1 is required in order to reduce DPM emissions resulting in cancer risk below the significance threshold.

Mitigation measure AQ-1 would mandate the use of Tier 4 Certified engines for offroad equipment rated greater than 50 horsepower used during Project construction. Tier 4 equipment has specific emission standards established by the USEPA that regulate the amount of PM and NOx emitted by diesel engines in construction equipment. Tier 4 standards require the use of advanced engine technologies such as DPM filters and selective catalytic reduction systems, to significantly reduce diesel exhaust emissions. The use of Tier 4 compliant construction equipment can reduce diesel exhaust by up to 90 percent compared to non-compliant equipment.

Mitigation Measure

AQ-1: Prior to the certificate of construction-related permits for the Dr. Martin Luther King Academy Project, the Project Applicant shall demonstrate to the satisfaction of the City of Sausalito Planning Division that the following measure would be implemented during Project construction.

- All offroad equipment of greater that 50 horsepower used in Project construction shall be California Air Resources Board (CARB) Tier 4 Certified, as set forth in Section 2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 of the Code of Federal Regulations.

Table 2-3 shows the cancer risk results of construction emissions with implementation of mitigation measure AQ-1.

Table 2-3. Maximum Cancer Risk Summary – Mitigated

Maximum Exposure Scenario	Total Maximum Risk
3-Year Exposure Resident	2.21
3-Year Exposure Worker	0.002
Significance Threshold	*10*
Exceed Threshold?	**No**

Source: ECORP Consulting 2023. See Attachments A & B of this document.
Notes: Modeling calculations assumes all off-road equipment over 50 horsepower used during construction is equipped with a Tier 4 engine.

As shown in Table 2-3, adherence to mitigation measure AQ-1 would ensure that the Proposed Project would not generate DPM emissions resulting in a cancer risk more than BAAQMD significance thresholds during construction. Therefore, significant impacts would not occur concerning maximum cancer risk during construction activities.

2.3.2 Non-Carcinogenic Hazard Analysis

In addition to cancer risk, the significance thresholds for TAC exposure requires an evaluation of non-cancer risk stated in terms of a hazard index and incremental $PM_{2.5}$ concentration. Non-cancer chronic impacts are calculated by dividing the annual average concentration by the REL for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. RELs are designed to protect sensitive individuals within the population. The calculation of acute non-cancer impacts is like the procedure for chronic non-cancer impacts. However, no acute risk was analyzed for as DPM has no identified acute risk. The $PM_{2.5}$ concentrations in Table 2-4 account for onsite emissions as calculated in the RCH group's CalEEMod emissions model for this project (RCH Group 2023).

Table 2-4. Maximum Non-Cancer Risk Summary		
Maximum Exposure Scenario	**Noncancer Risk**	
	Chronic HI	**$PM_{2.5}$ (ug/m^3)**
Unmitigated		
3-Year Exposure Resident	0.0118	0.159
3-Year Exposure Worker	0.0008	0.159
Mitigated		
3-Year Exposure Resident	0.0012	0.055
3-Year Exposure Worker	0.0001	0.055
Significance Threshold	*1*	*0.3*
Exceed Threshold?	**No**	**No**

Source: ECORP Consulting 2022. See Attachment B.

A chronic hazard index of 1.0 is considered individually significant. The hazard index is calculated by dividing the chronic exposure by the REL. The highest maximum chronic hazard indexes for residents and workers in the Proposed Project vicinity as a result of construction emission exposure would be below the significance threshold. No acute health risk is associated with DPM under current OEHHA guidelines, thus acute health risk cannot be quantified for the Project. As shown in Table 2-4, impacts related to non-cancer risk (chronic hazard index) and $PM_{2.5}$ as a result of Project construction are less than significant.

3.0 REFERENCES

Bay Area Air Quality Management District (BAAQMD). 2017. Bay Area Air Quality Management District CEQA Air Quality Guidelines.

California Air Resources Board (CARB). 2022. HARP Air Dispersion Modeling and Risk Tool 22118. https://ww2.arb.ca.gov/resources/documents/harp-air-dispersion-modeling-and-risk-tool

_____. 2021. EMFAC California Mobile Source Emission Factor model.

_____. 2008. Health Risk Assessment for the City of Industry Railyard Union Pacific Railroad.

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Guidance Manual for Preparation of Health Risk Assessments.

RCH Group. 2023. Sausalito MLK Academy Construction Only CalEEMod Outputs.

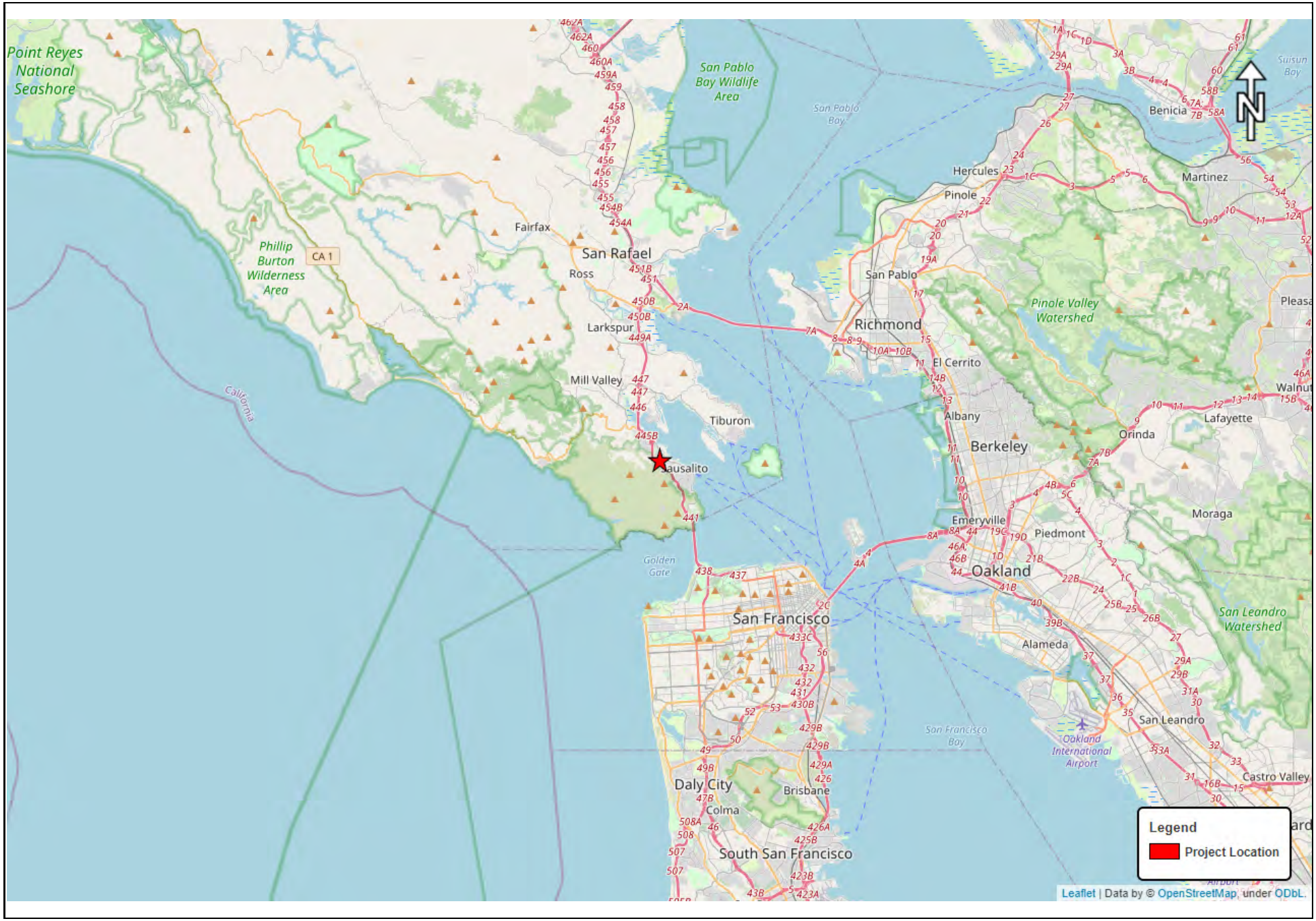
U.S. Environmental Protection Agency (USEPA). 2002. Health Assessment Document for Diesel Engine Exhaust. https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=300055PV.TXT.

_____. 2001. National Human Activity Pattern Survey.

LIST OF ATTACHMENTS

ATTACHMENT A

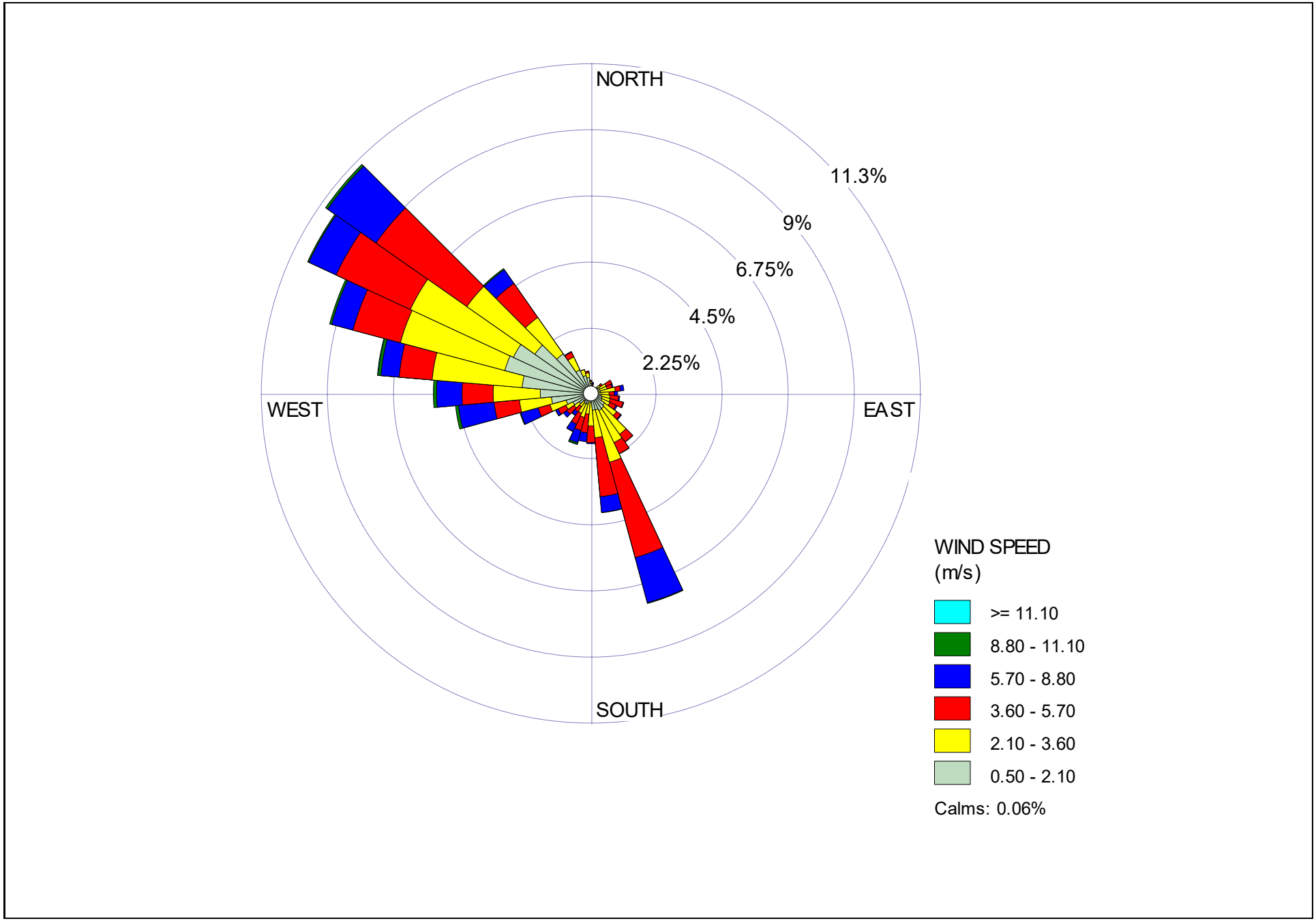
Health Risk Figures



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure A-1. Project Location

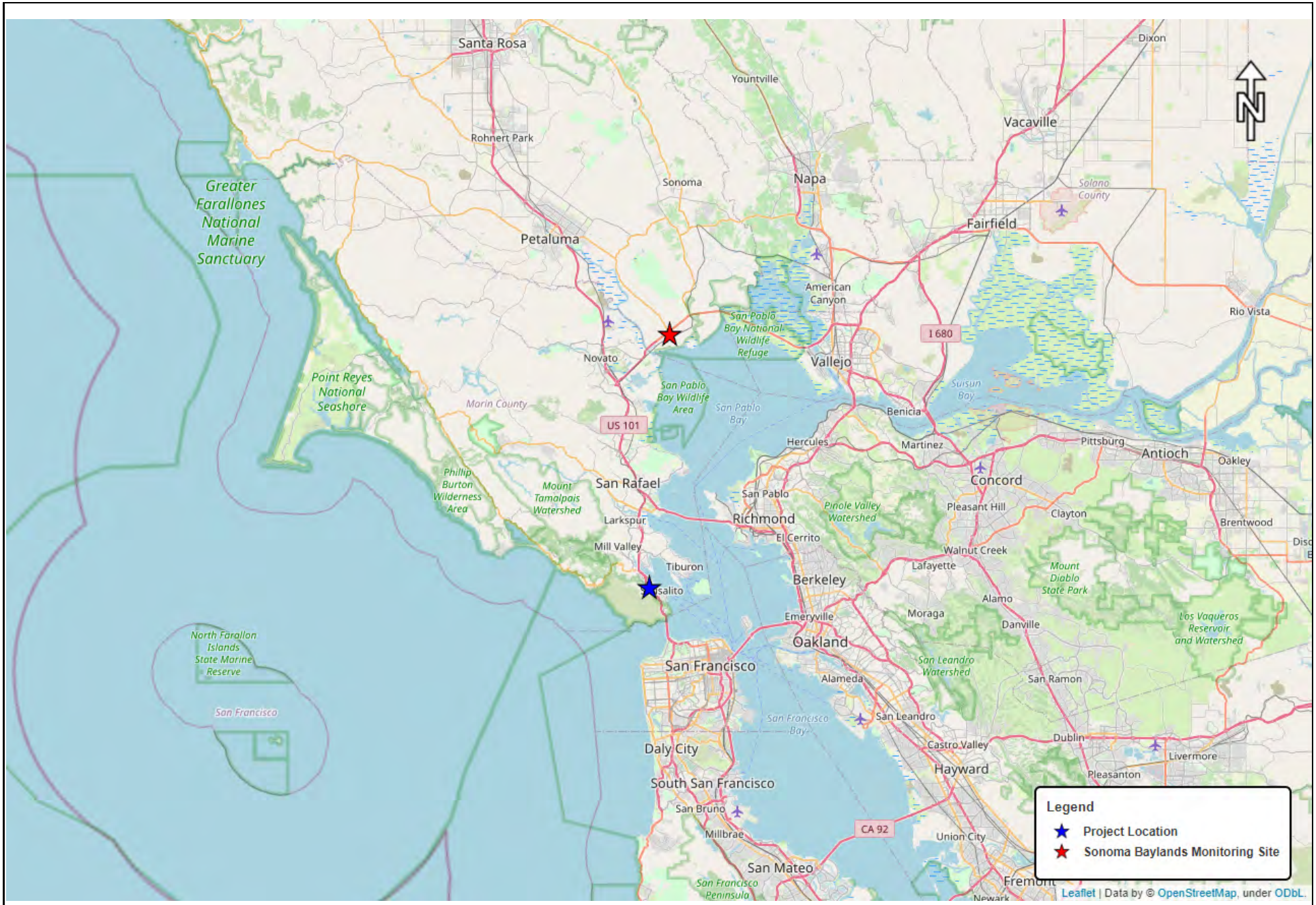
2022-039.06 Dr. Martin Luther King Academy



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure A-2. Wind Sonoma Baylds Windrose

2022-039.06 Dr. Martin Luther King Academy



ECORP Consulting, Inc.
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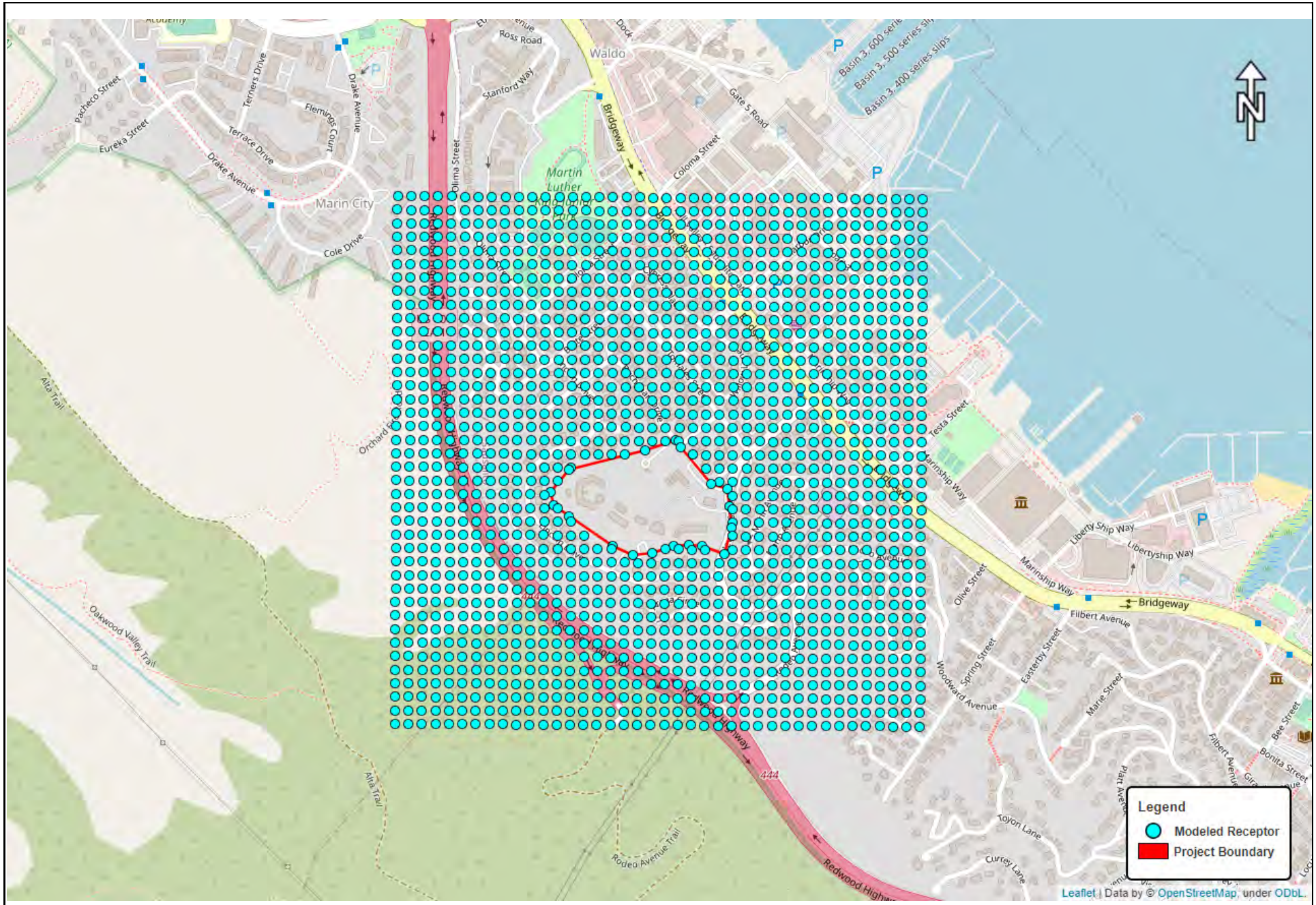
Figure A-3. Meteorological Monitoring Station

2022-039.06 Dr. Martin Luther King Academy



ECORP Consulting, Inc.
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Figure A-4. Receptor Locations

2022-039.06 Dr. Martin Luther King Academy

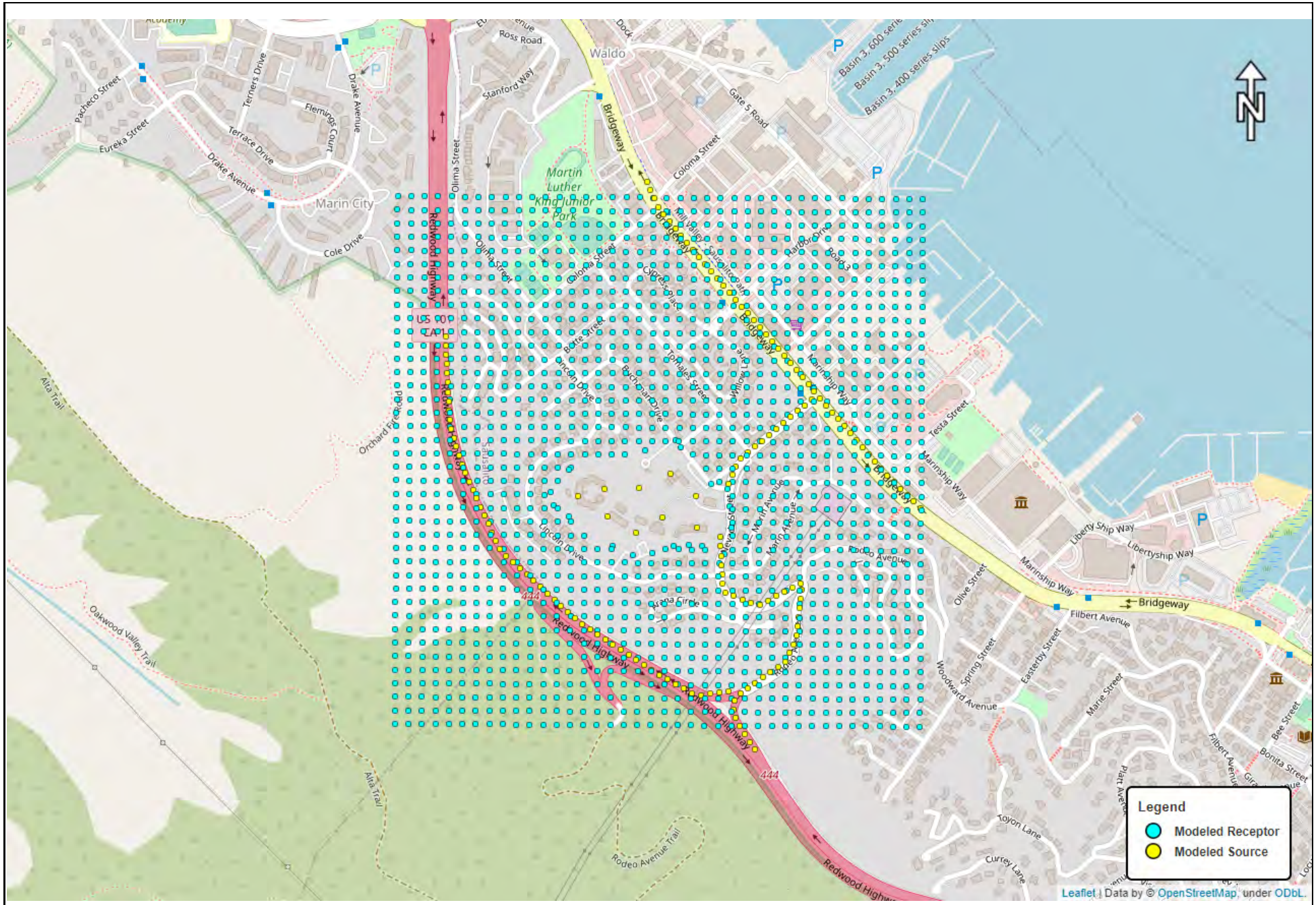

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Figure A-5. Source and Receptor Locations

2022-039.06 Dr. Martin Luther King Academy

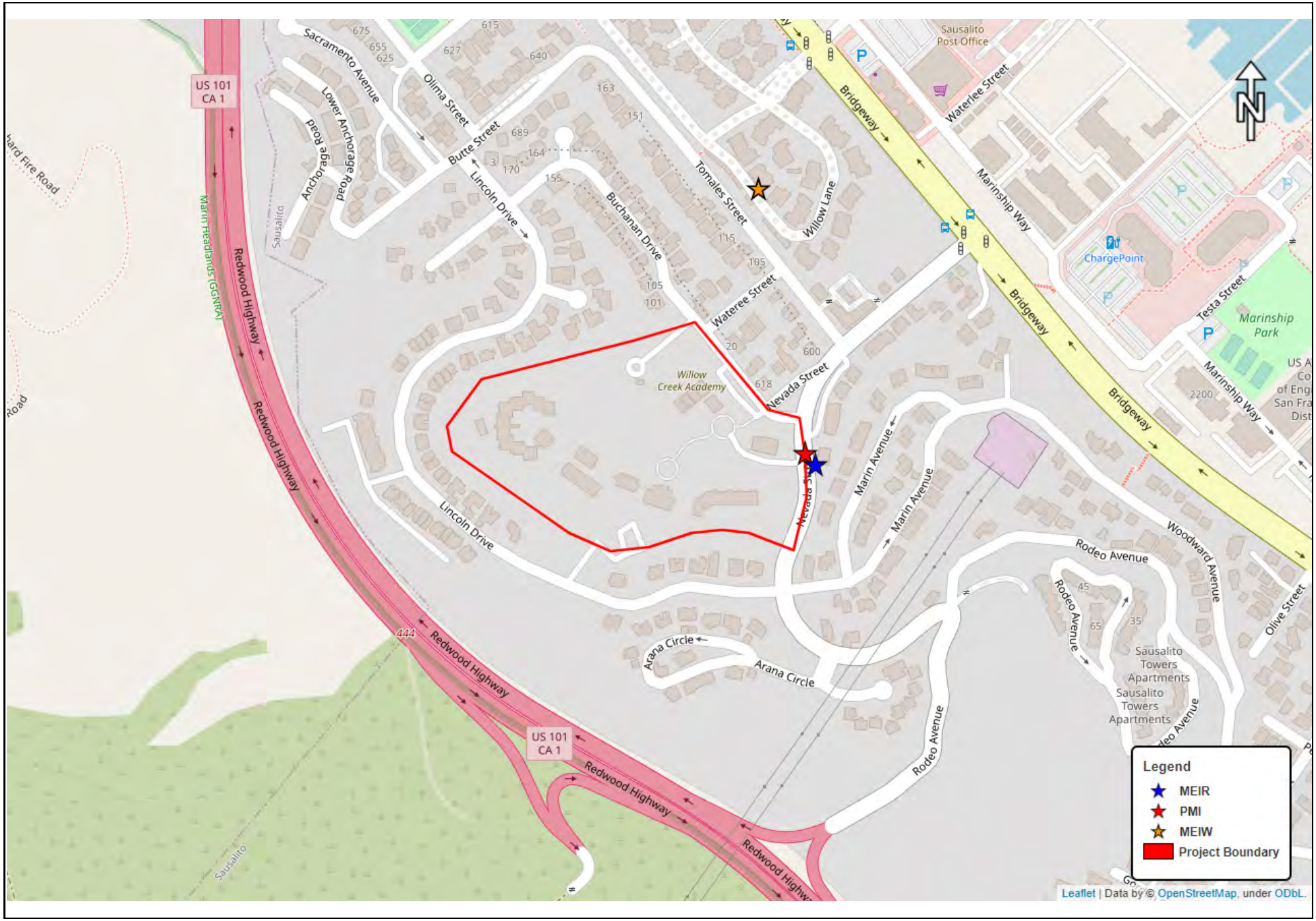

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Figure A-6. Maximum Construction Risk Locations

2022-039.06 Dr. Martin Luther King Academy

ATTACHMENT B

Health Risk Analysis Output Files

HARP2 Emissions Inputs

Dr. Martin Luther King Academy Project - HARP2 Inputs

Table B-1. Source Information and Modeled DPM Emissions

Source Description	Source ID	Type	Diesel Particulate Mater Emissions			
			Unmitigated		Mitigated[2]	
			Max Hourly[1] (lb/hr)	Annual (lb/yr)	Max Hourly[1] (lb/hr)	Annual (lb/yr)
Nevada St. 101 to Project Site	SLINE1	Line Volume	0.00005	0.18507	0.00005	0.18507
101 North	SLINE2	Line Volume	0.00007	0.26723	0.00007	0.26723
Nevada St. Project to Bridgeway	SLINE3	Line Volume	0.00002	0.07999	0.00002	0.07999
Bridgeway	SLINE4	Line Volume	0.00004	0.16467	0.00004	0.16467
Onsite 1 (CalEEMod)	VOL1	Volume	0.00973	14.591	0.00094	1.407
Onsite 2 (CalEEMod)	VOL2	Volume	0.00973	14.591	0.00094	1.407
Onsite 3 (CalEEMod)	VOL3	Volume	0.00973	14.591	0.00094	1.407
Onsite 4 (CalEEMod)	VOL4	Volume	0.00973	14.591	0.00094	1.407
Onsite 5 (CalEEMod)	VOL5	Volume	0.00973	14.591	0.00094	1.407
Onsite 6 (CalEEMod)	VOL6	Volume	0.00973	14.591	0.00094	1.407
Onsite 7 (CalEEMod)	VOL7	Volume	0.00973	14.591	0.00094	1.407
Onsite 8 (CalEEMod)	VOL8	Volume	0.00973	14.591	0.00094	1.407
Onsite 9 (CalEEMod)	VOL9	Volume	0.00973	14.591	0.00094	1.407

(1) Max hourly calculated as annual emissions / 350 days per year / 5 hours per day.

(2) Mitigated emissions account for Tier 4 engines for all off-road equipment rated over 50 horsepower

HARP2 Emissions Inputs

Dr. Martin Luther King Academy Project - HARP2 Inputs

Table B-2. Source Information and Modeled $PM_{2.5}$ Emissions						
			Diesel Particulate Mater Emissions			
			Unmitigated		Mitigated[2]	
Source Description	Source ID	Type	Max Hourly[1] (lb/hr)	Annual (lb/yr)	Max Hourly[1] (lb/hr)	Annual (lb/yr)
Nevada St. 101 to Project Site	SLINE1	Line Volume	0.00005	0.18507	0.00005	0.18507
101 North	SLINE2	Line Volume	0.00007	0.26723	0.00007	0.26723
Nevada St. Project to Bridgeway	SLINE3	Line Volume	0.00002	0.07999	0.00002	0.07999
Bridgeway	SLINE4	Line Volume	0.00004	0.16467	0.00004	0.16467
Onsite 1 (CalEEMod)	VOL1	Volume	0.02404	36.067	0.00834	12.511
Onsite 2 (CalEEMod)	VOL2	Volume	0.02404	36.067	0.00834	12.511
Onsite 3 (CalEEMod)	VOL3	Volume	0.02404	36.067	0.00834	12.511
Onsite 4 (CalEEMod)	VOL4	Volume	0.02404	36.067	0.00834	12.511
Onsite 5 (CalEEMod)	VOL5	Volume	0.02404	36.067	0.00834	12.511
Onsite 6 (CalEEMod)	VOL6	Volume	0.02404	36.067	0.00834	12.511
Onsite 7 (CalEEMod)	VOL7	Volume	0.02404	36.067	0.00834	12.511
Onsite 8 (CalEEMod)	VOL8	Volume	0.02404	36.067	0.00834	12.511
Onsite 9 (CalEEMod)	VOL9	Volume	0.02404	36.067	0.00834	12.511

(1) Max hourly calculated as annual emissions / 350 days per year / 5 hours per day.

(2) Mitigated emissions account for Tier 4 engines for all off-road equipment rated over 50 horsepower

HARP2 Emissions Inputs

Dr. Martin Luther King Academy Project - Off-Site Emissions

Table B-3. Modeled Roadway Dimensions				
Roadway Link Description	**AERMOD ID**	**Length (m)**	**Width[1] (m)**	**Area (m^2)**
Nevada St. 101 to Project Site	SLINE1	646.9	7.4	4,787.1
101 North	SLINE2	934.1	8.6	8,033.3
Nevada St. Project to Bridgeway	SLINE3	279.6	14.8	4,138.1
Bridgeway	SLINE4	575.6	14.8	8,518.9

(1) All roadways modeled as two lanes with standard 3.7 meter width per lane.

Table B-4. Total Trip Information	
Trip Type	**Trips**
Average Daily Trips[1]	47

(1) Daily trip count for construction of Dr. Martin Luther King Academy (RCH Group, 2023)

Table B-5. Vehicle EMFAC2021 Emission Rates						
	Type	**DPM Emission Rates[2] (g/mi)**				
Vehicle Type	**Breakdown[1]**	**Idle[3]**	**5 mph**	**15 mph**	**45 mph**	**Composite[4]**
LDT	49.7%	0.091	0.015	0.010	0.014	0.014
MDT	40.3%	0.091	0.020	0.013	0.006	0.008
HHDT	10.0%	0.017	0.058	0.031	0.010	0.019
Vehicle Composite		0.083	0.021	0.013	0.010	0.012

(1) Type breakdown for Marin County

(2) DPM Emission Rates conservatively represented using PM10 Exhaust emission factors for 2023 Marin County.

(3) Idle emission rates in grams per hour per EMFAC2021 outputs.

(4) Composite factor is 70% @ 45 mph + 15% @ 15 mph + 15% @ 5 mph + 1 minute idle per mile

Table B-6. Vehicle EMFAC2021 Emission Rates						
	Type	**DPM Emission Rates[2] (g/mi)**				
Vehicle Type	**Breakdown[1]**	**Idle[3]**	**5 mph**	**15 mph**	**45 mph**	**Composite[4]**
LDT	49.7%	0.091	0.015	0.010	0.014	0.014
MDT	40.3%	0.091	0.020	0.013	0.006	0.008
HHDT	10.0%	0.017	0.058	0.031	0.010	0.019
Vehicle Composite		0.083	0.021	0.013	0.010	0.012

(1) Type breakdown for Marin County

(2) DPM Emission Rates conservatively represented using PM10 Exhaust emission factors for 2023 Marin County.

(3) Idle emission rates in grams per hour per EMFAC2021 outputs.

(4) Composite factor is 70% @ 45 mph + 15% @ 15 mph + 15% @ 5 mph + 1 minute idle per mile

Table B-6. Percentage Project Trips			
	Trip Information		
Roadway Link	**Percentage Total Trips**	**Peak Hourly[1]**	**Average Daily**
Nevada St. 101 to Project Site	50%	2.1	23.5
101 North	50%	2.1	23.5
Nevada St. Project to Bridgeway	50%	2.1	23.5
Bridgeway	50%	2.1	23.5

(1) Peak hourly is represented as average daily emissions divided by 11 per industry standard estimate.

Equations:

HARP2 Emissions Inputs

Dr. Martin Luther King Academy Project - Off-Site Emissions

Emissions (lbs./hr.) = Hourly Trips * Composite Emission Factor (g/mi) * Distance (m) / 454 (g/lb.) / 1,609 (m/mi)

Emissions (lbs./yr.) = Daily Trips * Composite EF (g/mi) * Distance (m) * 365 (d) / 454 (g/lb.) / 1,609 (m/mi)

Table B-7. Calculated Truck Emissions

Roadway Link	Emissions	
	Peak Hourly (lbs/hr)	Annual (lbs/yr)
Nevada St. 101 to Project Site	0.00005	0.185
101 North	0.00007	0.267
Nevada St. Project to Bridgeway	0.00002	0.080
Bridgeway	0.00004	0.165

*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** MODEL SETUP
OPTIONS SUMMARY ***
- -
- -

** Model Options Selected:
* Model Uses Regulatory DEFAULT Options
* Model Is Setup For Calculation of Average CONCentration
Values.
* NO GAS DEPOSITION Data Provided.
* NO PARTICLE DEPOSITION Data Provided.
* Model Uses NO DRY DEPLETION. DDPLETE = F
* Model Uses NO WET DEPLETION. WETDPLT = F
* Stack-tip Downwash.
* Model Accounts for ELEVated Terrain Effects.
* Use Calms Processing Routine.
* Use Missing Data Processing Routine.
* No Exponential Decay.
* Model Uses URBAN Dispersion Algorithm for the SBL for
163 Source(s),
for Total of 1 Urban Area(s):
Urban Population = 50000.0 ; Urban Roughness Length =
1.000 m
* Urban Roughness Length of 1.0 Meter Used.
* TEMP_Sub - Meteorological data includes TEMP
substitutions
* Model Assumes No FLAGPOLE Receptor Heights.
* The User Specified a Pollutant Type of: OTHER

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 163 Source(s); 14 Source Group(s);
and 1544 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 163 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 RLINE/RLINEXT source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with a total
of 0 line(s)

```
                and:      0 SWPOINT source(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  18081

 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by
Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for
Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked
Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:
c for Calm Hours

m for Missing Hours

b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =
7.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units =
GRAMS/SEC                                ;  Emission Rate Unit
Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      4.6 MB of
RAM.

 **Input Runstream File:          aermod.inp
 **Output Print File:             aermod.out

 **Detailed Error/Message File:   mlkschool.err
 **File for Summary of Results:   mlkschool.sum
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** METEOROLOGICAL
DAYS SELECTED FOR PROCESSING ***
(1
=YES; 0=NO)

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1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
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1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
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            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
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NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED
WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST
THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09,
5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

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Met Version: 18081
Profile file: ..\Sonoma Baylds\SONOMA_BAYLANDS_2014.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 93227 Upper air
station no.: 23230
Name: UNKNOWN
Name: OAKLAND/WSO_AP
Year: 2014
Year: 2014

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
14	01	01	1	01	-1.3	0.034	-9.000	-9.000	-999.	15.	2.6	0.01	0.75	1.00	1.10	266.	10.0	275.2	4.3
14	01	01	1	02	-1.3	0.034	-9.000	-9.000	-999.	15.	2.6	0.01	0.75	1.00	1.10	312.	10.0	274.1	4.3
14	01	01	1	03	-4.9	0.065	-9.000	-9.000	-999.	39.	5.0	0.01	0.75	1.00	2.10	296.	10.0	273.4	4.3
14	01	01	1	04	-2.9	0.049	-9.000	-9.000	-999.	26.	3.8	0.01	0.75	1.00	1.60	283.	10.0	273.0	4.3
14	01	01	1	05	-3.6	0.055	-9.000	-9.000	-999.	31.	4.3	0.01	0.75	1.00	1.80	300.	10.0	272.2	4.3
14	01	01	1	06	-10.1	0.092	-9.000	-9.000	-999.	67.	7.1	0.01	0.75	1.00	3.00	290.	10.0	271.2	4.3
14	01	01	1	07	-2.9	0.049	-9.000	-9.000	-999.	26.	3.8	0.01	0.75	1.00	1.60	285.	10.0	271.1	4.3
14	01	01	1	08	-3.2	0.052	-9.000	-9.000	-999.	29.	4.0	0.01	0.75	1.00	1.70	308.	10.0	271.1	4.3
14	01	01	1	09	-1.3	0.050	-9.000	-9.000	-999.	27.	9.2	0.01	0.75	0.39	1.50	282.	10.0	273.4	4.3
14	01	01	1	10	36.1	0.133	0.425	0.020	78.	116.	-5.9	0.01	0.75	0.26	1.70	288.	10.0	278.4	4.3
14	01	01	1	11	68.7	0.097	0.677	0.019	164.	72.	-1.2	0.01	0.75	0.21	1.00	280.	10.0	282.4	4.3
14	01	01	1	12	87.7	0.107	0.804	0.017	216.	84.	-1.3	0.01	0.75	0.20	1.20	147.	10.0	285.9	4.3

```
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0.01   0.75   0.19    1.60  141.   10.0  287.6    4.3
 14 01 01   1 14   80.3  0.136  0.868  0.013  296.  121.     -2.9
0.01   0.75   0.20    1.70  119.   10.0  288.9    4.3
 14 01 01   1 15   54.3  0.120  0.794  0.012  334.  100.     -2.9
0.01   0.75   0.24    1.50  183.   10.0  289.1    4.3
 14 01 01   1 16   16.5  0.114  0.546  0.012  358.   93.     -8.2
0.01   0.75   0.32    1.60  129.   10.0  289.9    4.3
 14 01 01   1 17   -1.1  0.032 -9.000 -9.000 -999.   20.      2.7
0.01   0.75   0.55    1.10  130.   10.0  288.8    4.3
 14 01 01   1 18   -0.5  0.022 -9.000 -9.000 -999.    8.      1.7
0.01   0.75   1.00    0.70  313.   10.0  285.2    4.3
 14 01 01   1 19   -1.9  0.040 -9.000 -9.000 -999.   19.      3.1
0.01   0.75   1.00    1.30  306.   10.0  281.4    4.3
 14 01 01   1 20   -5.8  0.071 -9.000 -9.000 -999.   45.      5.5
0.01   0.75   1.00    2.30  293.   10.0  278.8    4.3
 14 01 01   1 21   -6.4  0.074 -9.000 -9.000 -999.   48.      5.7
0.01   0.75   1.00    2.40  296.   10.0  277.2    4.3
 14 01 01   1 22   -4.9  0.065 -9.000 -9.000 -999.   39.      5.0
0.01   0.75   1.00    2.10  292.   10.0  276.0    4.3
 14 01 01   1 23   -5.9  0.071 -9.000 -9.000 -999.   45.      5.5
0.01   0.75   1.00    2.30  284.   10.0  275.5    4.3
 14 01 01   1 24   -6.9  0.077 -9.000 -9.000 -999.   51.      6.0
0.01   0.75   1.00    2.50  278.   10.0  275.6    4.3


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW
sigmaV
 14 01 01 01    4.3 0 -999.  -99.00   275.3
999.0  -99.00  -99.00
 14 01 01 01   10.0 1  266.    1.10  -999.0   35.0  -99.00
0.56

 F indicates top of profile (=1) or below (=0)
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** THE SUMMARY OF
MAXIMUM PERIOD (8784 HRS) RESULTS ***

** CONC OF OTHER IN
MICROGRAMS/M**3 **

NETWORK GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
SLINE1	1ST HIGHEST VALUE IS	212.91606 AT (543896.75, 4190655.80, 36.32, 343.00, 0.00)	DC	
	2ND HIGHEST VALUE IS	193.04486 AT (543996.75, 4190605.80, 61.40, 343.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	185.38094 AT (543896.75, 4190680.80, 30.66, 343.00, 0.00)	DC	
	4TH HIGHEST VALUE IS	168.37882 AT (543896.75, 4190705.80, 26.91, 343.00, 0.00)	DC	
	5TH HIGHEST VALUE IS	157.61622 AT (544046.75, 4190605.80, 76.62, 343.00, 0.00)	DC	
	6TH HIGHEST VALUE IS	154.99379 AT (543921.75, 4190405.80, 105.17, 343.00, 0.00)	DC	
	7TH HIGHEST VALUE IS	154.12839 AT (543946.75, 4190630.80, 44.82, 343.00, 0.00)	DC	
	8TH HIGHEST VALUE IS	152.52878 AT (543921.75, 4190630.80, 42.18, 343.00, 0.00)	DC	
	9TH HIGHEST VALUE IS	152.40861 AT (543996.75, 4190580.80, 65.73, 343.00, 0.00)	DC	
	10TH HIGHEST VALUE IS	149.59801 AT (543921.75, 4190605.80, 47.23, 343.00, 0.00)	DC	
SLINE2	1ST HIGHEST VALUE IS	131.13558 AT (543746.75, 4190505.80, 76.20, 343.00, 0.00)	DC	
	2ND HIGHEST VALUE IS	130.98375 AT (543696.75, 4190530.80, 77.49, 343.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	129.68197 AT (543571.75, 4190630.80, 64.71, 343.00, 0.00)	DC	
	4TH HIGHEST VALUE IS	127.76436 AT (543796.75, 4190455.80, 82.87, 343.00, 0.00)	DC	
	5TH HIGHEST VALUE IS	127.61396 AT (543471.75,		

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4190730.80,    66.59,   343.00,    0.00)  DC
          6TH HIGHEST VALUE IS     120.67831 AT (  543771.75,
4190480.80,    79.53,   343.00,    0.00)  DC
          7TH HIGHEST VALUE IS     119.87039 AT (  543771.75,
4190455.80,    82.08,   343.00,    0.00)  DC
          8TH HIGHEST VALUE IS     116.88360 AT (  543546.75,
4190655.80,    63.59,   343.00,    0.00)  DC
          9TH HIGHEST VALUE IS     116.14722 AT (  543721.75,
4190505.80,    77.50,   343.00,    0.00)  DC
         10TH HIGHEST VALUE IS     114.47601 AT (  543796.75,
4190480.80,    80.37,   343.00,    0.00)  DC

SLINE3    1ST HIGHEST VALUE IS     456.48826 AT (  543946.75,
4190880.80,     8.42,   343.00,    0.00)  DC
          2ND HIGHEST VALUE IS     424.48642 AT (  543921.75,
4190855.80,    10.41,   343.00,    0.00)  DC
          3RD HIGHEST VALUE IS     324.83757 AT (  543921.75,
4190905.80,     7.06,   343.00,    0.00)  DC
          4TH HIGHEST VALUE IS     322.63579 AT (  544021.75,
4190930.80,     9.15,   343.00,    0.00)  DC
          5TH HIGHEST VALUE IS     320.51068 AT (  543996.75,
4190930.80,     7.38,   343.00,    0.00)  DC
          6TH HIGHEST VALUE IS     318.82699 AT (  543971.75,
4190905.80,     7.70,   343.00,    0.00)  DC
          7TH HIGHEST VALUE IS     318.33360 AT (  544046.75,
4190955.80,    10.10,   343.00,    0.00)  DC
          8TH HIGHEST VALUE IS     306.68767 AT (  543996.75,
4190905.80,     9.06,   343.00,    0.00)  DC
          9TH HIGHEST VALUE IS     305.56235 AT (  544021.75,
4190955.80,     7.87,   343.00,    0.00)  DC
         10TH HIGHEST VALUE IS     290.46826 AT (  543946.75,
4190930.80,     6.86,   343.00,    0.00)  DC

SLINE4    1ST HIGHEST VALUE IS     194.96953 AT (  544021.75,
4191055.80,     6.78,   343.00,    0.00)  DC
          2ND HIGHEST VALUE IS     180.11666 AT (  544121.75,
4190930.80,     8.94,   343.00,    0.00)  DC
          3RD HIGHEST VALUE IS     177.91297 AT (  544046.75,
4191030.80,     7.00,   343.00,    0.00)  DC
          4TH HIGHEST VALUE IS     172.09690 AT (  543871.75,
4191230.80,     5.00,   343.00,    0.00)  DC
          5TH HIGHEST VALUE IS     165.44895 AT (  544146.75,
4190905.80,     9.04,   343.00,    0.00)  DC
          6TH HIGHEST VALUE IS     161.94121 AT (  544071.75,
4191005.80,     7.36,   343.00,    0.00)  DC
          7TH HIGHEST VALUE IS     160.42285 AT (  543896.75,
4191205.80,     6.59,   343.00,    0.00)  DC
          8TH HIGHEST VALUE IS     156.95314 AT (  543796.75,
4191305.80,     6.51,   343.00,    0.00)  DC
          9TH HIGHEST VALUE IS     153.42520 AT (  543821.75,
4191280.80,     5.91,   343.00,    0.00)  DC
         10TH HIGHEST VALUE IS     151.71746 AT (  544171.75,
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4190880.80,     9.03,   343.00,    0.00)  DC
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** THE SUMMARY OF
MAXIMUM PERIOD (8784 HRS) RESULTS ***

** CONC OF OTHER IN
MICROGRAMS/M**3 **

NETWORK GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
VOL1	1ST HIGHEST VALUE IS	306.33437 AT (543891.54, 4190785.71, 17.80, 343.00, 0.00)	DC	
	2ND HIGHEST VALUE IS	280.76143 AT (543896.75, 4190780.80, 18.67, 343.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	227.32160 AT (543896.75, 4190755.80, 20.90, 343.00, 0.00)	DC	
	4TH HIGHEST VALUE IS	195.81986 AT (543894.40, 4190747.14, 21.14, 343.00, 0.00)	DC	
	5TH HIGHEST VALUE IS	183.91948 AT (543896.75, 4190805.80, 15.34, 343.00, 0.00)	DC	
	6TH HIGHEST VALUE IS	179.82961 AT (543857.26, 4190826.42, 12.97, 343.00, 0.00)	DC	
	7TH HIGHEST VALUE IS	175.08262 AT (543921.75, 4190780.80, 20.34, 343.00, 0.00)	DC	
	8TH HIGHEST VALUE IS	162.47910 AT (543921.75, 4190755.80, 24.90, 343.00, 0.00)	DC	
	9TH HIGHEST VALUE IS	142.07607 AT (543887.26, 4190818.57, 13.42, 343.00, 0.00)	DC	
	10TH HIGHEST VALUE IS	127.21947 AT (543921.75, 4190805.80, 17.00, 343.00, 0.00)	DC	
VOL2	1ST HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	2ND HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	3RD HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	4TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	5TH HIGHEST VALUE IS	0.00000 AT (0.00,		

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0.00,     0.00,     0.00,    0.00)
          6TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          7TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          8TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          9TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
         10TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)

VOL3      1ST HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          2ND HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          3RD HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          4TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          5TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          6TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          7TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          8TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          9TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
         10TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)

VOL4      1ST HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          2ND HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          3RD HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          4TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          5TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          6TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          7TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          8TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          9TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
         10TH HIGHEST VALUE IS       0.00000 AT (       0.00,
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0.00,     0.00,     0.00,    0.00)
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** THE SUMMARY OF
MAXIMUM PERIOD (8784 HRS) RESULTS ***

** CONC OF OTHER IN
MICROGRAMS/M**3 **

NETWORK GROUP ID	AVERAGE CONC							GRID-ID
RECEPTOR	(XR,	YR,	ZELEV,	ZHILL,	ZFLAG)	OF TYPE		
VOL5	1ST HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	2ND HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	3RD HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	4TH HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	5TH HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	6TH HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	7TH HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	8TH HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	9TH HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	10TH HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
VOL6	1ST HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	2ND HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	3RD HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	4TH HIGHEST VALUE IS	0.00000	AT (	0.00,	0.00,	0.00,	0.00,	0.00)
	5TH HIGHEST VALUE IS	0.00000	AT (	0.00,				

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0.00,     0.00,     0.00,    0.00)
          6TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          7TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          8TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          9TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
         10TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)

VOL7      1ST HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          2ND HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          3RD HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          4TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          5TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          6TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          7TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          8TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          9TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
         10TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)

VOL8      1ST HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          2ND HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          3RD HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          4TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          5TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          6TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          7TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          8TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
          9TH HIGHEST VALUE IS       0.00000 AT (       0.00,
0.00,     0.00,     0.00,    0.00)
         10TH HIGHEST VALUE IS       0.00000 AT (       0.00,
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0.00,     0.00,     0.00,    0.00)
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** THE SUMMARY OF
MAXIMUM PERIOD (8784 HRS) RESULTS ***

** CONC OF OTHER IN
MICROGRAMS/M**3 **

NETWORK GROUP ID	AVERAGE CONC					RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
VOL9	1ST HIGHEST VALUE IS	0.00000	AT	(	0.00, 0.00, 0.00, 0.00, 0.00)			
	2ND HIGHEST VALUE IS	0.00000	AT	(	0.00, 0.00, 0.00, 0.00, 0.00)			
	3RD HIGHEST VALUE IS	0.00000	AT	(	0.00, 0.00, 0.00, 0.00, 0.00)			
	4TH HIGHEST VALUE IS	0.00000	AT	(	0.00, 0.00, 0.00, 0.00, 0.00)			
	5TH HIGHEST VALUE IS	0.00000	AT	(	0.00, 0.00, 0.00, 0.00, 0.00)			
	6TH HIGHEST VALUE IS	0.00000	AT	(	0.00, 0.00, 0.00, 0.00, 0.00)			
	7TH HIGHEST VALUE IS	0.00000	AT	(	0.00, 0.00, 0.00, 0.00, 0.00)			
	8TH HIGHEST VALUE IS	0.00000	AT	(	0.00, 0.00, 0.00, 0.00, 0.00)			
	9TH HIGHEST VALUE IS	0.00000	AT	(	0.00, 0.00, 0.00, 0.00, 0.00)			
	10TH HIGHEST VALUE IS	0.00000	AT	(	0.00, 0.00, 0.00, 0.00, 0.00)			
ALL	1ST HIGHEST VALUE IS	507.63958	AT	(	543946.75, 4190880.80, 8.42, 343.00, 0.00)		DC	
	2ND HIGHEST VALUE IS	492.51881	AT	(	543921.75, 4190855.80, 10.41, 343.00, 0.00)		DC	
	3RD HIGHEST VALUE IS	399.25502	AT	(	544046.75, 4190955.80, 10.10, 343.00, 0.00)		DC	
	4TH HIGHEST VALUE IS	374.40497	AT	(	544021.75, 4190930.80, 9.15, 343.00, 0.00)		DC	
	5TH HIGHEST VALUE IS	373.49118	AT	(	543921.75,			

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4190905.80,     7.06,   343.00,    0.00)  DC
          6TH HIGHEST VALUE IS     372.72829 AT (  543891.54,
4190785.71,    17.80,   343.00,    0.00)  DC
          7TH HIGHEST VALUE IS     366.77253 AT (  543996.75,
4190930.80,     7.38,   343.00,    0.00)  DC
          8TH HIGHEST VALUE IS     364.94964 AT (  544021.75,
4190955.80,     7.87,   343.00,    0.00)  DC
          9TH HIGHEST VALUE IS     364.02441 AT (  543971.75,
4190905.80,     7.70,   343.00,    0.00)  DC
         10TH HIGHEST VALUE IS     352.66173 AT (  543996.75,
4190905.80,     9.06,   343.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
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*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

NETWORK GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
SLINE1	HIGH 1ST HIGH VALUE IS	1061.57415	ON 14012523:	AT	(544021.75, 4190530.80, 85.66, 343.00, 0.00)	DC
SLINE2	HIGH 1ST HIGH VALUE IS	1011.40317	ON 14011420:	AT	(543771.75, 4190455.80, 82.08, 343.00, 0.00)	DC
SLINE3	HIGH 1ST HIGH VALUE IS	3471.50976	ON 14012523:	AT	(544046.75, 4190980.80, 8.40, 343.00, 0.00)	DC
SLINE4	HIGH 1ST HIGH VALUE IS	1288.05163	ON 14122005:	AT	(544196.75, 4190830.80, 11.81, 343.00, 0.00)	DC
VOL1	HIGH 1ST HIGH VALUE IS	2661.12254	ON 14012523:	AT	(543857.26, 4190826.42, 12.97, 343.00, 0.00)	DC
VOL2	HIGH 1ST HIGH VALUE IS	0.00000	ON 00000000:	AT	(0.00, 0.00, 0.00, 0.00, 0.00)	
VOL3	HIGH 1ST HIGH VALUE IS	0.00000	ON 00000000:	AT	(0.00, 0.00, 0.00, 0.00, 0.00)	
VOL4	HIGH 1ST HIGH VALUE IS	0.00000	ON 00000000:	AT	(0.00, 0.00, 0.00, 0.00, 0.00)	
VOL5	HIGH 1ST HIGH VALUE IS	0.00000	ON 00000000:	AT	(0.00, 0.00, 0.00, 0.00, 0.00)	
VOL6	HIGH 1ST HIGH VALUE IS	0.00000	ON 00000000:	AT	(0.00, 0.00, 0.00, 0.00, 0.00)	

```
VOL7     HIGH   1ST HIGH VALUE IS       0.00000  ON 00000000: AT
(       0.00,        0.00,     0.00,     0.00,    0.00)

VOL8     HIGH   1ST HIGH VALUE IS       0.00000  ON 00000000: AT
(       0.00,        0.00,     0.00,     0.00,    0.00)

VOL9     HIGH   1ST HIGH VALUE IS       0.00000  ON 00000000: AT
(       0.00,        0.00,     0.00,     0.00,    0.00)

ALL      HIGH   1ST HIGH VALUE IS    4133.61925  ON 14012523: AT
(  544046.75,  4190980.80,     8.40,   343.00,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 70282 Warning Message(s)
A Total of 124 Informational Message(s)

A Total of 8784 Hours Were Processed

A Total of 5 Calm Hours Identified

A Total of 119 Missing Hours Identified (1.35
Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
SO W344 2 HRQREAD: Missing HOUREMIS fields; EmisRate
set = 0. KURDAT= 2014010101
SO W344 3 HRQREAD: Missing HOUREMIS fields; EmisRate
set = 0. KURDAT= 2014010101
SO W344 4 HRQREAD: Missing HOUREMIS fields; EmisRate
set = 0. KURDAT= 2014010101
SO W344 5 HRQREAD: Missing HOUREMIS fields; EmisRate
set = 0. KURDAT= 2014010101
SO W344 6 HRQREAD: Missing HOUREMIS fields; EmisRate
set = 0. KURDAT= 2014010101
SO W344 7 HRQREAD: Missing HOUREMIS fields; EmisRate
set = 0. KURDAT= 2014010101
SO W344 8 HRQREAD: Missing HOUREMIS fields; EmisRate
set = 0. KURDAT= 2014010101
SO W344 9 HRQREAD: Missing HOUREMIS fields; EmisRate
set = 0. KURDAT= 2014010101
MX W403 524 PFLCNV: Turbulence data is being used w/o
ADJ_U* option SigA Data
MX W403 1 PFLCNV: Turbulence data is being used w/o
ADJ_U* option SigA Data
MX W344 2 HRQREAD: Missing HOUREMIS fields; EmisRate
set = 0. KURDAT= 2014010101
MX W344 3 HRQREAD: Missing HOUREMIS fields; EmisRate

APPENDIX B: MITIGATION MONITORING AND REPORTING PROGRAM

(To be added in Final IS/MND)