CHICO UNIFIED SCHOOL DISTRICT

MARSH JUNIOR HIGH SCHOOL MULTIPURPOSE BUILDING PROJECT

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Prepared for:

CHICO UNIFIED SCHOOL DISTRICT
1163 EAST SEVENTH STREET
CHICO, CA 95928

Prepared by:

PMC®
140 INDEPENDENCE CIRCLE, SUITE C
CHICO, CA 95973

JULY 2014

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5.0 REFERENCES

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1.0 Introduction

1.1 INTRODUCTION AND REGULATORY GUIDANCE

This document is an Initial Study which concludes that a Mitigated Negative Declaration is the appropriate California Environmental Quality Act (CEQA) document for the Marsh Junior High School Multipurpose Building Project (project; proposed project). The Mitigated Negative Declaration has been prepared in accordance with the California Environmental Quality Act, Public Resources Code Section 21000 et seq., and the State CEQA Guidelines, California Code of Regulations Section 15000 et seq.

An initial study is conducted by a lead agency to determine whether a project may have a significant effect on the environment. In accordance with CEQA Guidelines Section 15063, an environmental impact report (EIR) must be prepared if an initial study indicates that the proposed project under review may have a potentially significant impact on the environment which cannot be initially avoided or mitigated to a level that is less than significant. A negative declaration may be prepared if the lead agency also prepares a written statement describing the reasons why the proposed project would not have a significant effect on the environment and therefore why it does not require the preparation of an EIR (CEQA Guidelines Section 15371). According to CEQA Guidelines Section 15070, a negative declaration shall be prepared for a project subject to CEQA when either:

a) *The initial study shows there is no substantial evidence, in light of the whole record before the agency, that the proposed project may have a significant effect on the environment, or*

b) *The initial study identifies potentially significant effects, but:*

   (1) *Revisions in the project plans or proposals made by or agreed to by the applicant before the proposed negative declaration is released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and*

   (2) *There is no substantial evidence, in light of the whole record before the agency, that the proposed project as revised may have a significant effect on the environment.*

If revisions are adopted in the proposed project in accordance with CEQA Guidelines Section 15070(b), including the adoption of mitigation measures included in this document, a mitigated negative declaration is prepared.

1.2 LEAD AGENCY

The lead agency is the public agency with primary responsibility over a proposed project. Where two or more public agencies will be involved with a project, CEQA Guidelines Section 15051 provides criteria for identifying the lead agency. In accordance with CEQA Guidelines Section 15051(b)(1), "the lead agency will normally be the agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose." Based on the criteria above, the Chico Unified School District (CUSD) is the lead agency for the proposed Marsh Junior High School Multipurpose Building Project.

1.3 PURPOSE AND DOCUMENT ORGANIZATION

The purpose of this Initial Study is to evaluate the potential environmental impacts of the proposed project. This document is divided into the following sections:

1.0 Introduction – This section provides an introduction and describes the purpose and organization of the document.

2.0 Project Information – This section provides general information regarding the proposed project, including the project title, lead agency and address, contact person, brief description of the project location, General Plan land use designation, and zoning district, identification of surrounding land uses, and identification of other public agencies whose review, approval, and/or permits may be required. Also listed in this section is a checklist of the environmental factors that are potentially affected by the project.

3.0 Project Description – This section provides a detailed description of the proposed project.

4.0 Environmental Checklist – This section describes the environmental setting and overview for each of the environmental subject areas, evaluates a range of impacts classified as "no impact," "less than significant impact," "less than significant impact with mitigation incorporated," and "potentially significant impact" in response to the environmental checklist.

5.0 References – This section identifies documents, websites, people, and other sources consulted during the preparation of this Initial Study.

1.4 EVALUATION OF ENVIRONMENTAL IMPACTS

Section 4.0, Environmental Checklist, is the analysis portion of this Initial Study. The section provides an evaluation of the potential environmental impacts of the project. Section 4.0 includes 18 environmental issue subsections, including CEQA Mandatory Findings of Significance. The environmental issue subsections, numbered 1 through 18, consist of the following:

1. Aesthetics
2. Agriculture and Forest Resources
3. Air Quality
4. Biological Resources
5. Cultural Resources
6. Geology and Soils
7. Greenhouse Gases
8. Hazards and Hazardous Materials
9. Hydrology and Water Quality
10. Land Use and Planning
11. Mineral Resources
12. Noise
13. Population and Housing
14. Public Services
15. Recreation
16. Transportation/Traffic
17. Utilities and Service Systems
18. Mandatory Findings of Significance

Each environmental issue subsection is organized in the following manner:

The **Overview** summarizes the existing conditions at the regional, subregional, and local levels, as appropriate, and identifies applicable plans and technical information for the particular issue area.

The **Checklist Discussion/Analysis** provides a detailed discussion of each of the environmental issue checklist questions. The level of significance for each topic is determined by considering the predicted magnitude of the impact. Four levels of impact significance are evaluated in this Initial Study:

No Impact: No project-related impact to the environment would occur with project development.

Less Than Significant Impact: The impact would not result in a substantial adverse change in the environment. This impact level does not require mitigation measures.

Less Than Significant Impact With Mitigation Incorporated: An impact that may have a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (CEQA Guidelines Section 15382). However, the incorporation of mitigation measures that are specified after analysis would reduce the project-related impact to a less than significant level.

Potentially Significant Impact: An impact that is "potentially significant" but for which mitigation measures cannot be immediately suggested or the effectiveness of potential mitigation measures cannot be determined with certainty, because more in-depth analysis of the issue and potential impact is needed. In such cases, an EIR is required.

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2.0 PROJECT INFORMATION

1. **Project title:** Marsh Junior High School Multipurpose Building Project

2. **Lead agency name and address:** Chico Unified School District
1163 East Seventh Street
Chico, CA 95928

3. **Contact person and phone number:** Julia Kistle, Director of Facilities and Construction
(530) 891-3140

4. **Project location:** 2253 Humboldt Road
Chico, CA 95928
Latitude 39º44'17"N, Longitude 121º47'48"W
(APN: 002-180-090)

5. **Project sponsor's name and address:** Chico Unified School District
1163 East Seventh Street
Chico, CA 95928

6. **General Plan designation:** Public Facilities and Services (PFS)

7. **Zoning:** Public/Quasi Public Facilities (PQ)

8. **Description of project:** The Chico Unified School District proposes to construct a new ±12,000-square-foot single-story multipurpose building incorporating a performing arts classroom space, storage/janitorial supply room, kitchen/food preparation space, and main dining area/assembly space. The structure would incorporate restroom facilities accessible from the exterior of the building as well as a covered outdoor gathering and exterior dining space located on the west side of the structure. In order to accommodate the needed space for the multipurpose building, the existing greenhouse and school garden will be relocated. The existing dining facility/ multipurpose room, consisting of four relocatable buildings, will be sold and removed. The project also includes a new outdoor instructional/ assembly space incorporating hardscape elements, a raised stage area, and concrete seating pads in the center of campus. In addition, the project includes construction of a new single-story ±7,300-square-foot classroom instructional building to be located east of the existing parking lot on the western portion of campus. The classroom instructional building will include four laboratories and a teacher workroom. Improvements associated with the project include walking paths, maintenance and delivery roads, pedestrian bridges, accessible routes of travel, installation of new water-efficient

landscape and irrigation, new outdoor recreation space (basketball courts), and service (trash) enclosures. Minor infrastructure improvements include the installation of new storm drainage inlets and electrical power conduit. Minor infrastructure modifications include reduction of a fence enclosure, removal of a bike rack, relocation of irrigation lines, and relocation of a flag pole.

9. Surrounding land uses and setting:

The Marsh Junior High School campus is located at the southeast corner of Notre Dame Boulevard and Humboldt Road. The school is located in Chico in Butte County, California. The campus is located adjacent to residential development, office commercial development, vacant land, and lands that are deeded with a conservation easement.

10. Other public agencies whose approval may be required (e.g., permits, financing approval, or participation agreement):

- Butte County Air Quality Management District – Construction Permit
- California Department of Education, School Facilities Planning Division – Project Plans Approval
- California Department of General Services, Division of the State Architect – Building Permits
- State Water Resources Control Board – Construction General Permit

11. 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	☐ Agriculture and Forest Resources	☒ Air Quality
☐ Biological Resources	☒ Cultural Resources	☐ Geology and Soils
☐ Greenhouse Gases	☒ Hazards and Hazardous Materials	☐ Hydrology and Water Quality
☐ Land Use and Planning	☐ Mineral Resources	☒ Noise
☐ Population and Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities and Service Systems	☒ Mandatory Findings of Significance

12. Determination: (to be completed by the lead agency)

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.

☐ 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.

Julia M. Kistle
Signature

7/24/14
Date

Julia M. Kistle
Printed Name

Chico Unified School District
Lead Agency

Director of Facilities and Construction
Title

3.0 Project Description

3.1 PROJECT LOCATION

The project is located on the existing campus of Marsh Junior High School located at 2253 Humboldt Road in Chico, California. The project site is south of Humboldt Road, east of Notre Dame Boulevard, west of Bruce Road, and north of Little Chico Creek. Specifically, the project is located on Butte County Assessor's Parcel Number 002-180-090, Section 30, Township 22N, Range 2E, Chico, CA (Latitude 39º44'17"N, Longitude 121º47'48"W).

The location of the project site is illustrated in **Figure 3.0-1, Regional Vicinity**.

3.2 PROJECT SUMMARY

Marsh Junior High School, constructed in 1999, is located on a ±20-acre parcel (see **Figure 3.0-2, Project Location**). The school site contains classroom buildings, a gymnasium, a library, an administration office, a relocatable dining facility/multipurpose room, two solar array fields, three parking lots, turf and hard court play areas, and related site improvements. Currently, Marsh Junior High School utilizes four relocatable buildings for a dining facility/multipurpose room. The Chico Unified School District (CUSD) proposes to construct a new ±12,000-square-foot multipurpose building, including a performing arts classroom space, storage/janitorial supply room, kitchen/food preparation space, and main dining area/assembly space. The structure would incorporate restroom facilities accessible from the exterior of the building as well as a covered outdoor gathering and exterior dining space located on the west side of the structure. In order to accommodate the needed space for the multipurpose building, the existing greenhouse and school garden will be relocated. The existing dining facility/multipurpose room will be sold and removed from campus. In addition, a new outdoor instructional/assembly space incorporating hardscape elements, a raised stage area, and concrete seating pads will be constructed in the center of campus. The project also includes construction of a new single-story ±7,300-square-foot classroom instructional building to be located east of the existing parking lot on the western portion of campus. The instructional building will include four laboratories and a teacher workroom. Improvements associated with the project include walking paths, maintenance and delivery roads, pedestrian bridges, accessible routes of travel, installation of new water-efficient landscaping and irrigation, new outdoor recreation space (basketball courts), and service (trash) enclosures. Minor infrastructure improvements include the installation of new storm drainage piping and electrical power conduits. Minor infrastructure modifications include reduction of a fence enclosure, removal of a bike rack, relocation of irrigation lines, and relocation of a flag pole.

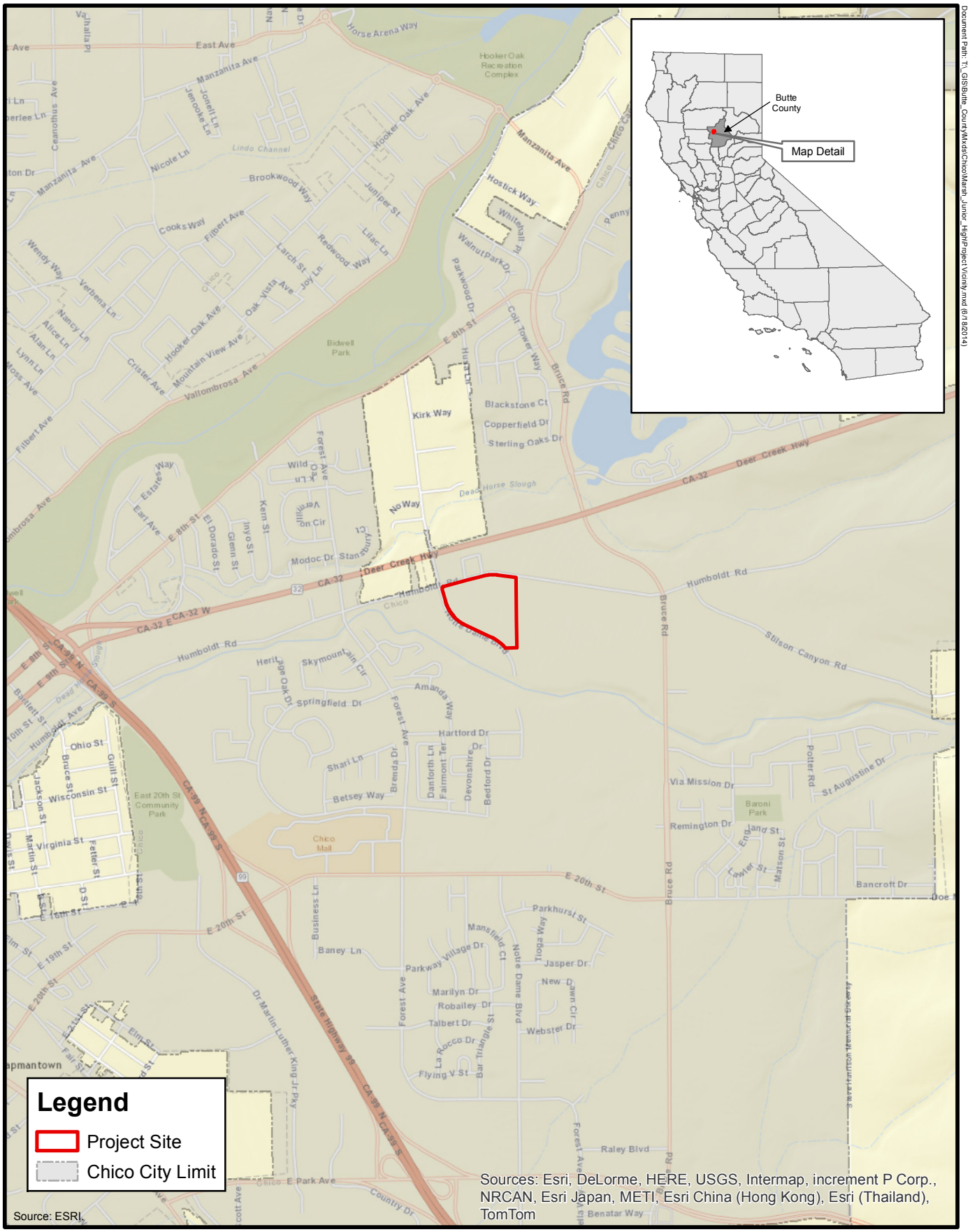
Both the multipurpose building and the classroom instructional building were part of the approved Campus Master Plan for Marsh Junior High School. The facilities were not built at the time of original construction of the school due to funding limitations.

As shown in **Figure 3.0-3, Project Site Plan**, the majority of the proposed work, including the multipurpose building and the outdoor instructional/assembly space, will be located in the center of the school campus. The center of campus is a square area bisected by an unimproved student walking path: the northern area is covered in grass with approximately seven trees scattered throughout, and the southern area is compacted dirt developed with a school garden and greenhouse. The garden and greenhouse will be moved to the north of the existing solar panels along Notre Dame Boulevard and will be expanded. The new classroom instructional building will be located immediately east of the northern parking lot along Notre Dame Boulevard, south of the administration building, and west of the library. The majority of the classroom instructional building site is a lawn area with approximately eleven trees, and the southwestern portion is compacted dirt with an unimproved walking path. The parking lot to the

south of the gym will be modified from 146 parking spaces to 84 parking spaces to accommodate eight new basketball courts.

3.3 PROJECT CHARACTERISTICS

As stated above, the additions and improvements to Marsh Junior High School would occur entirely within the developed and previously disturbed area of the existing school campus. The ±12,000-square-foot multipurpose building and outdoor instructional/assembly space would be constructed in the center of campus on a disturbed area covered partially with grass, compacted dirt, a greenhouse, and a school garden. The new single-story ±7,300-square-foot classroom instructional building would be constructed east of the existing northern parking lot along Notre Dame Boulevard. The existing greenhouse and school garden would be moved to an area that is covered with an improved walking path and an existing concrete pad used for bike racks east of the solar panels on Notre Dame Boulevard. The new eight basketball courts would be located on an area that is currently a parking lot south of the gymnasium.

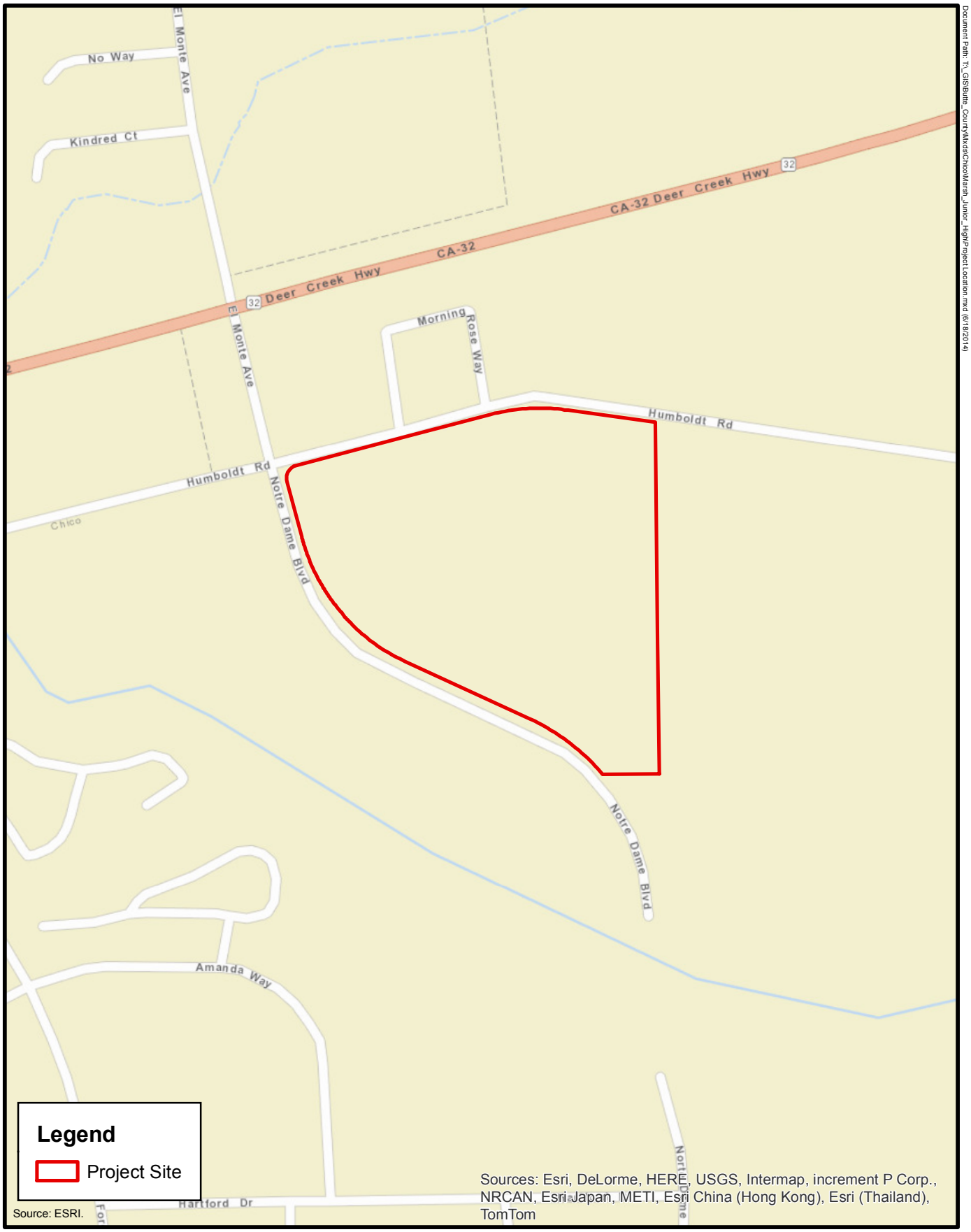


Document Path: T:_GIS\Butte_County\Mxds\Chico\Marsh_Junior_High\Project Vicinity.mxd (6/18/2014)

Figure 3.0-1

Regional Vicinity

PMC®



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0 200 400

FEET

Figure 3.0-2
Project Location

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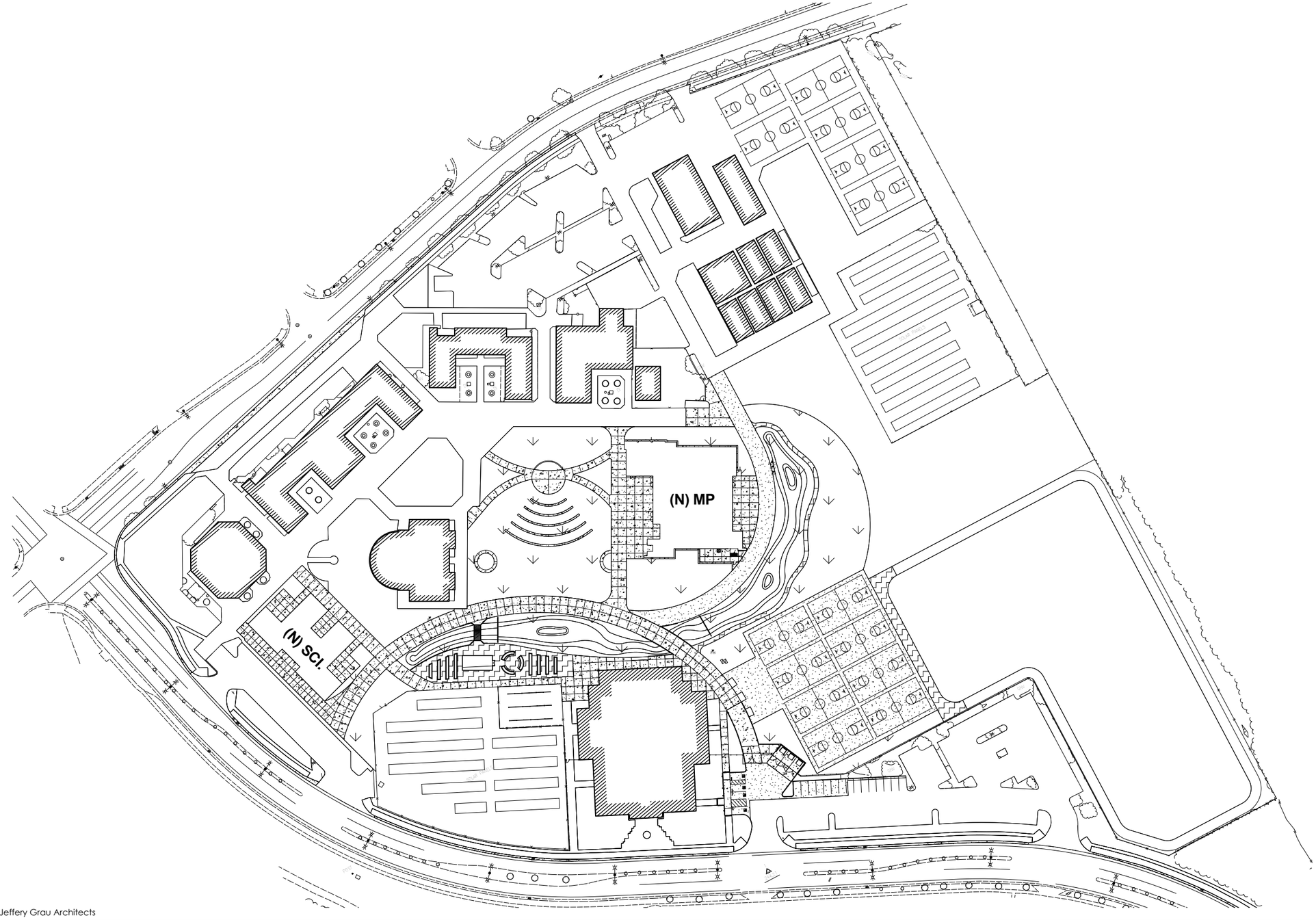
T:_CS\Work\Chico Unified School District\Marsh Junior High School\Figures



Source: Michael Rainforth & Jeffery Grau Architects

Not to scale

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Figure 3.0-3
Project Site Plan

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3.4 REQUIRED PERMITS AND APPROVALS

- Construction General Permit from the State Water Resources Control Board (SWRCB)
- Project Plans Approval from the California Department of Education, School Facilities Planning Division
- Building Permits from the California Department of General Services, Division of the State Architect
- Construction Permit from the Butte County Air Quality Management District (BCAQMD)

3.5 RELATIONSHIP OF PROJECT TO OTHER PLANS AND PROJECTS

CITY OF CHICO GENERAL PLAN

The City of Chico General Plan is the fundamental document governing land use development within the city. The General Plan was last adopted in April 2011.

The City's General Plan includes numerous goals and policies pertaining to sustainability; land use; circulation; community design; downtown; economic development; housing; parks, public facilities, and services; open space and environment; cultural resources and historic preservation; safety; and noise. The proposed project will be required to abide by all applicable goals and policies included in the City's adopted General Plan.

CHICO UNIFIED SCHOOL DISTRICT FACILITIES MASTER PLAN

The purpose of the Chico Unified School District Facilities Master Plan is to provide a fact-based, data-driven report for CUSD staff and the Chico Unified School District Board to make decisions related to CUSD educational facilities that best serve the needs of all present and future students. The Facilities Master Plan guides the Chico Unified School District in constructing new facilities; evaluating existing facilities and programs by site, age, and type; and integrating student enrollments in the decision-making processes for current, planned, and future facilities. The Facilities Master Plan was approved on April 14, 2014.

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4.0 ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.1 AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

OVERVIEW

The project site is located within the urbanized area of Chico. The construction and site improvements will occur completely on the existing school campus. The new ±12,000-square-foot multipurpose building and outdoor instructional/assembly space will be constructed on a disturbed area in the center of campus. The center of campus is a square area bisected by an unimproved student walking path: the northern area is covered in grass with approximately seven trees scattered throughout, and the southern area is compacted dirt developed with a school garden and greenhouse. The ±7,300-square-foot classroom instructional building will be built immediately east of the northern parking lot along Notre Dame Boulevard, south of the administration building, and west of the library. The majority of the classroom instructional building site is a lawn area with approximately eleven trees, and the southwestern portion is compacted dirt with an unimproved walking path. Both the multipurpose building and the classroom instructional building were part of the approved Campus Master Plan for Marsh Junior High School. The facilities were not built at the time of original construction of the school due to funding limitations.

The off-campus area surrounding the project site consists of residential and office commercial development to the north, undeveloped land to the northeast and east, residential and undeveloped land to the west, and mutli-family residential and Little Chico Creek to the south. The on-site surrounding area consists of classroom buildings, a gymnasium, an administration office, two solar array fields, three parking lots, turf and hard court play areas, and related site improvements. Scenic views available from the project site include the Sierra Nevada range to the east and the Cascade mountains to the northeast. On clear days, the Coast Range is visible to the west. No state scenic highways are located in the vicinity of campus.

DISCUSSION OF IMPACTS

a) *No Impact.* Scenic vistas include natural features such as topography, watercourses, rock outcrops, natural vegetation, and man-made alterations to the landscape. The project site is fully developed and consists of a junior high school campus. The project's surrounding vicinity

is urban, with the area to the north developed with residential and office uses as well as undeveloped parcels and parcels deeded with conservation easements. The area immediately to the west is undeveloped and farther west is residential. The area to the south is developed with multi-family housing, with Little Chico Creek beyond. Additional residential uses are located farther to the south. The area to the immediate east is undeveloped with a ±22-acre parcel deeded with a conservation easement. Farther east to Bruce Road and south of Little Chico Creek to E. 20th Street, the Meriam Park Project is slated for residential, commercial, and public development, including a new courthouse. The project site does not contain unique visual features that would distinguish it from surrounding areas nor is it located within a designated scenic vista. In addition, there are no distinct or distinguishing rock features on the project site. New construction is slated to be single story, with the highest roof peak at 27.5 feet on the multipurpose building. Therefore, the proposed project is not considered an impediment to views of the Sierra Nevada foothills, and the project would have no impact on scenic vistas.

b) *No Impact.* The project would be located on a developed junior high school campus. No state scenic highways, scenic resources, or historic buildings existing on the site or within the project vicinity. Therefore, the project would have no impact on scenic resources.

c) *Less Than Significant Impact.* The proposed project site is a developed junior high school campus, with the majority of construction taking place on the undeveloped area in the center of campus. The northern half of the area is covered in grass, and the southern half is compacted dirt with a school garden and greenhouse in the southernmost corner. Although the removal of the existing dining facility/multipurpose room and construction of the multipurpose building, classroom instructional building, outdoor assembly space, and outdoor recreation space would alter views of the project site, the proposed changes would be consistent with other facilities located on the campus, which are already visible. Construction of the buildings, instructional, recreational, and assembly areas, and improvements would not detract from the current visual character of the site, as the project would be an addition to the existing school site and consist of structures and improvements approved by the California Board of Education, School Facilities Planning Division and the California Department of General Services, Division of the State Architect.

   Further, grading and construction activities associated with the project have the potential to cause temporary degradation of local aesthetics for residents living close to the school site and for Marsh Junior High School staff and students. However, such activities are temporary and would cease with completion of these activities. Due to the temporary nature of this impact, this impact is considered less than significant.

d) *Less Than Significant Impact With Mitigation Incorporated.* No new light or glare sources visible beyond the project site would be introduced during construction of the proposed project. All construction work will be performed during normal daylight construction hours, thereby eliminating any need for temporary light sources necessary for nighttime work.

   The proposed project will further develop an existing school campus, which may result in a moderate increase of artificial light and glare into the existing environment. Potential sources of light and glare include external building lighting, parking lot lighting, security lighting, building windows, and reflective building materials. The introduction of new sources of light and glare may contribute to nighttime light pollution and result in impacts to nighttime views in the area. Implementation of mitigation measure **MM 4.1.1** would reduce potential impacts to a level that is considered less than significant.

MITIGATION MEASURES

MM 4.1.1 All lighting shall be shielded or full cutoff fixtures and directed inward onto the project site. Lighting shall not create glare on neighboring properties. Tall fixtures that illuminate large areas shall be directed downward to prevent spillover onto neighboring properties and streets. Lighting shall be directed away from adjacent roadways and shall not interfere with traffic or create a safety hazard. All outdoor lighting on the project site shall be shielded.

Timing/Implementation: *Prior to occupancy of the new school facilities*

Enforcement/Monitoring: *Chico Unified School District*

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.2 AGRICULTURE AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997), prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
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 nonagricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526 and by Government Code Section 51104(f)), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forestland or conversion of forestland to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use?	☐	☐	☐	☒

OVERVIEW

The California Department of Conservation manages the Farmland Mapping and Monitoring Program (FMMP), which identifies and maps significant farmland. Farmland is classified using a system of five categories including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The classification of farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is based on the suitability of soils for agricultural production, as determined by a soil survey conducted by the Natural Resources Conservation Service (NRCS). The California Department of Conservation manages an interactive website, the California Important Farmland Finder, which classifies the project area as Urban and Built-up Land.

DISCUSSION OF IMPACTS

a) *No Impact.* According to the NRCS (2012), project site soils comprise Redtough loam and Redswale cobbly loam. The California Department of Conservation (2004) classified the project area as Urban and Built-up Land due to the abundance of commercial and

residential development surrounding the site and because the site is in the Chico urban area. Therefore, the proposed project will not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. There would be no impact.

b) *No Impact.* The project would be located on a developed educational campus site. This site is not subject to a Williamson Act contract, and the site is zoned Public/Quasi Public Facilities (PQ) in the City of Chico Zoning Ordinance. This zoning district was not intended for agricultural uses. Therefore, implementation of the proposed project will have no impact on zoning for agricultural use or a Williamson Act contract.

c) *No Impact*. The project site contains no forest or timber resources, is not zoned for forestland protection or timber production, and would have no impact on any lands with such zoning.

d) *No Impact*. The project site contains no forest or timber resources.

e) *No Impact*. No project features would necessitate or result in the conversion of off-site farmland. The entirety of the proposed multipurpose building project would occur on the existing ±20-acre school campus.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.3 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:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

OVERVIEW

The project area is located in the Sacramento Valley. The Sacramento Valley is located between two mountain ranges to the east and the west and is bordered at its northern end by more mountains. This topography is conducive to trapping air pollutants. The problem is exacerbated by a temperature inversion layer that traps air at lower levels below an overlying layer of warmer air. Prevailing winds in the area are from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Butte County is located in the Northern Sacramento Valley Air Basin (NSVAB), which also includes Shasta, Tehama, Glenn, Colusa, Sutter, and Yuba counties.

Both the US Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are ozone, carbon monoxide (CO), particulate matter (PM), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The Butte County portion of the Sacramento Valley is designated as a nonattainment area for ozone, coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) for state standards and ozone and $PM_{2.5}$ for federal standards (CARB 2014).

In Butte County, the air quality regulating authority is the Butte County Air Quality Management District (BCAQMD). The BCAQMD monitors air quality in the county and serves as the lead agency responsible for implementing and enforcing federal, state, and Butte County air quality regulations. Air pollution sources in the county include seasonal burning of agricultural fields, dust from agricultural operations, and motor vehicle emissions.

DISCUSSION OF IMPACTS

a) *No Impact.* As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The Northern Sacramento Valley Planning Area (NSVPA) 2012 Triennial Air Quality Attainment Plan is the most recent air quality planning document for Butte County and constitutes the region's SIP. State Implementation Plans are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls describing how the state will attain national ambient air quality standards (NAAQS) for pollutants of concern. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts prepare SIP elements and submit them to CARB for review and approval. The NSVPA Air Quality Attainment Plan includes forecasts for ozone precursors (reactive organic gases (ROG) and oxides of nitrogen (NO_x)) emissions for the entire NSVPA region through the year 2020. These emissions are not appropriated by county or municipality.

According to the BCAQMD, the consistency of the proposed project with the NSVPA 2012 Air Quality Attainment Plan, which is also the SIP for the air basin, should be determined by both (a) the project's consistency with population and vehicle use projections utilized by the Air Quality Attainment Plan and (b) the extent to which the project implements transportation control measures in the plan (BCAQMD 2008).

The project would not represent a new type of land use on the site or a wholly new land use or air emissions generation source. No population growth would occur as a result of the project. When complete, the project would not increase existing traffic. As discussed in detail below, the proposed project would result in negligible operational-related criteria air pollutants and/or precursor emissions that would not exceed BCAQMD thresholds of significance. Construction-generated criteria air pollutants would be mitigated, as the project would be required to adhere to standard air pollutant reduction measures during construction activities. Implementation of these basic mitigation measures during construction would ensure project consistency with the air quality plan.

As the project would not result in an increase in population or generate new traffic, includes feasible control measures, and would not disrupt or hinder implementation of any NSVPA Air Quality Attainment Plan control measures, no impact would occur.

b) *Less Than Significant Impact With Mitigation Incorporated*. Implementation of the proposed project could result in air quality impacts during project construction and operation. The BCAQMD has developed a tiered approach to significance levels: a project with emissions meeting Level A thresholds will require the most basic mitigations; projects with projected emissions in the Level B range will require more extensive mitigations; and those projects which exceed Level C thresholds will require the most extensive mitigations. The BCAQMD-recommended thresholds are identified in **Table 4.3-1**.

TABLE 4.3-1
BCAQMD-RECOMMENDED SIGNIFICANCE THRESHOLDS

Significance Level	Project-Generated Emissions (lbs/day)		
	NO_x	ROG	PM_{10}
Level A	≤25	≤25	≤80
Level B	26–137	26–137	81–137
Level C	>137	>137	>137

Source: BCAQMD 2008

These thresholds are recommended for use by lead agencies when preparing initial studies. If, during the preparation of the initial study, the lead agency finds that any of the following thresholds may be exceeded and cannot be mitigated to Level B, then a determination of significant air quality impact must be made and an EIR is required.

For evaluation of project-related air quality impacts, implementation of the proposed project would be considered significant if the project would:

- Exceed BCAQMD-recommended significance thresholds, as identified in **Table 4.3-1**. In accordance with BCAQMD-recommended thresholds of significance, project-generated short- or long-term increases in emissions in excess of Level C thresholds for NO_X, ROG, or PM_{10} would be considered significant. The BCAQMD has not adopted thresholds of significance for $PM_{2.5}$. However, because $PM_{2.5}$ is a subset of PM_{10}, significant increases in PM_{10} would be considered to also result in significant increases in $PM_{2.5}$.

- It is important to note that in cases when predicted emissions are projected to be below the Level C thresholds but exceeding the Level A thresholds (thereby placing project-related air quality impacts at Level B), the project would be considered potentially significant, subject to the recommended measures of the BCAQMD's Standard Mitigation Measures and Best Available Mitigation Measures (BAMMs) (BCAQMD 2008). Implementation of the appropriate BCAQMD mitigation from this collection of measures would reduce Level B air quality impacts to a less than significant level.

CONSTRUCTION EMISSIONS

Implementation of the proposed project would result in short-term emissions from construction and demolition activities. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but possess the potential to represent a significant air quality impact. Implementation of the proposed project would result in the temporary generation of emissions resulting from site grading and paving, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment. Emissions commonly associated with construction activities include

fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. During construction, fugitive dust, the dominant source of PM_{10} and $PM_{2.5}$ (particulate matter smaller than 2.5 microns) emissions, is generated when wheels or blades disturb surface materials. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities. Demolition and renovation of buildings can also generate PM_{10} and $PM_{2.5}$ emissions. Off-road construction equipment is often diesel-powered and can be a substantial source of NO_X emissions, in addition to PM_{10} and $PM_{2.5}$ emissions. Worker commute trips and architectural coatings are dominant sources of ROG emissions.

The predicted maximum daily construction-generated emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ associated with project construction are summarized in **Table 4.3-2**. The projected criteria pollutant emissions resulting from construction activities were estimated by PMC using the California Emissions Estimator Model (CalEEMod). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. CalEEMod contains default values for much of the information needed to calculate emissions. However, project-specific, user-supplied information can also be used when it is available. Results of the modeling conducted by PMC are included in **Appendix A**.

TABLE 4.3-2
PROJECT CONSTRUCTION EMISSIONS (MAXIMUM) POUNDS PER DAY

Construction Phase	ROG	NOx	PM_{10}	$PM_{2.5}$	CO
Demolition and Earthwork[1]	5.69	57.02	21.32	12.81	44.32
Building Construction[2]	8.31	29.11	2.25	1.89	20.60
Hardscape Installation[3]	7.97	45.90	4.19	3.06	40.70
Total (accounts for the unlikely scenario that all construction phases occur simultaneously)	*21.97*	*132.03*	*27.76*	*17.76*	*105.62*
BCAQMD Level A/B Thresholds	**25/137**	**25/137**	**80/137**	**None**	**None**
Individual Project Areas Exceed Level A/B/C Thresholds?	No/No	Yes/No	No/No	NA	NA

*Source: Emissions modeled by PMC using the CalEEMod computer program. See **Appendix A** for modeling outputs.*

Notes:

1. Emissions calculations account for the demolition of 1,226.5 tons of material and subsequent earthwork disturbance of 5 acres of land.

2. Emissions calculations account for the construction of 19,225 square feet of building space (multipurpose building and classroom instructional building).

3. Emissions calculations account for all hardscape installation including outdoor instructional/assembly space with stage and concrete seating, walking paths, sidewalks, maintenance & delivery roads, pedestrian bridges, and basketball courts (196,200 square feet of paving total).

It is important to note that actual daily emissions would vary from day to day and would be dependent on the activities conducted. Furthermore, it is possible that several "construction phases" could potentially be under construction simultaneously and would generate cumulative construction emissions. Based on the modeling conducted, estimated short-term daily emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ associated with construction activities (both individual construction phases and the total of all phases) would not exceed the Level B significance threshold;

however, the Level A significance threshold would be surpassed for ROG and NO_x emissions. As previously stated, if a project has emissions that exceed the Level A thresholds, the project applicant must apply all feasible mitigation measures for construction from the lists of BCAQMD-recommended Standard Mitigation Measures and appropriate Best Available Mitigation Measures as determined by the City. The appropriate type and number of BAMMs applied to a project are based on the unique characteristics of the project, and BAMMs would be selected from a list of measures kept updated by the BCAQMD. Mitigation measure **MM 4.3.1** is recommended and described below to reduce the impact to a level that is considered less than significant.

MITIGATION MEASURES

MM 4.3.1 The project construction contractor shall implement the following measures during all construction activities:

- All adequate dust control measures shall be implemented in a timely and effective manner during all phases of project development and construction.
- All material excavated, stockpiled, or graded shall be sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day.
- All areas (including unpaved roads) with vehicle traffic shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.
- All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.
- All land clearing, grading, earth-moving, or excavation activities on the project site shall be suspended when sustained winds are expected to exceed 20 miles per hour.
- All portions of the development site which have been stripped of vegetation by construction activities and left inactive for more that ten days shall be seeded and/or watered until a suitable grass cover is established.
- Approved nontoxic soil stabilizers (according to manufacturers' specifications) shall be applied to all inactive construction areas (previously graded areas that remain inactive for 96 hours).
- All trucks hauling dirt, sand, soil, or loose material shall be covered or shall maintain at least 2 feet of freeboard (i.e., minimum vertical distance between top of the load and the trailer) in accordance with the requirements of California Vehicle Code Section 23114. This provision shall be enforced by local law enforcement agencies.
- All material transported off-site shall be either sufficiently watered or securely covered to prevent a public nuisance.

- During initial grading, earth moving, or site preparation, a paved (or dust palliative treated) apron, at least 100 feet in length, shall be constructed onto the project site from the adjacent paved road(s).

- Paved streets adjacent to the development site shall be swept or washed at the end of each day to remove excessive accumulations of silt and/or mud that may have accumulated as a result of activities on the development site.

- Wheel washers shall be installed where project vehicles and/or equipment enter and/or exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed prior to each trip.

- Off-road construction equipment shall not be left idling for periods longer than 5 minutes when not in use.

- Prior to final occupancy, ground cover shall be re-established on the construction site through seeding and watering.

Timing/Implementation: *Prior to and during construction*

Enforcement/Monitoring: *Chico Unified School District; project contractor*

OPERATIONAL EMISSIONS

Operational air quality impacts could include emissions from project-generated vehicle traffic and facility operations, including the use of water heaters and landscape maintenance equipment. However, these potential impacts are not substantially greater than those associated with current operations of Marsh Junior High School. While the project would increase the intensity of the land use on the project site, the project would not represent a new type of land use on the site or a wholly new land use or air emissions generation source. When complete, the project would not increase existing traffic in the localized project area; thus, it would not increase existing traffic-generated air pollutants. Therefore, operational air quality impacts are considered less than significant.

c) *Less Than Significant Impact.* As noted above, Butte County is currently in nonattainment for various federal and state ambient air quality standards. Due to the region's nonattainment status, if project-generated emissions of either of the ozone precursor pollutants (i.e., ROG and NO_x), $PM_{2.5}$, or PM_{10} would exceed the long-term thresholds, the project's cumulative impacts would be considered significant. As discussed in Issue b), the project would not increase existing traffic in the localized project area; thus, it would not increase existing traffic-generated air pollutants, resulting in operational air quality impacts that are considered less than significant.

d) *Less Than Significant Impact With Mitigation Incorporated*. Sensitive receptors are generally defined as facilities that house or attract groups of children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Schools, hospitals, residential areas, and convalescent facilities are examples of sensitive receptors.

TOXIC AIR CONTAMINANTS

There are many different types of toxic air contaminants (TACs), with varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining and chrome plating

operations, and commercial operations, such as gasoline stations and dry cleaners. Mobile sources of air toxics include freeways and major roadways. These roadways are sources of diesel particulate matter (diesel PM), which CARB has listed as a toxic air contaminant.

The proposed project would not be a source of TACs. However, there is a potential that the project site may be located in an area that is exposed to substantial TAC emissions. In April 2005, CARB released the *Air Quality and Land Use Handbook: A Community Health Perspective*, which offers guidance on siting sensitive land uses in proximity to sources of air toxics. Sensitive land uses identified in the handbook include residential communities, schools and schoolyards, day-care centers, parks and playgrounds, and hospitals and medical facilities. One particular source of air toxics treated in the guidance is freeways and major roadways.

The handbook recommends that sensitive land uses be sited no closer than 500 feet from a freeway or major roadway. This 500-foot buffer area was developed to protect sensitive receptors from exposure to diesel PM and was based on traffic-related studies that showed a 70 percent drop in PM concentrations at a distance of 500 feet from the roadway. Presumably, acute and chronic risks as well as lifetime cancer risk due to diesel PM exposure are lowered proportionately. The proposed multipurpose building, instructional classroom building, and outdoor instructional/assembly area are all more than 600 feet from State Highway 32, which is beyond the 500-foot buffer. Furthermore, the project site is buffered from State Route 32 by residences and office buildings that are situated north of the school. Sensitive receptors would not be negatively affected by toxic air contaminants generated at any of the major transportation facilities in the vicinity.

SHORT-TERM CONSTRUCTION TOXICS

Though the proposed project could create a hazard to the student population and surrounding residents through exposure to substantial pollutant concentrations such as $PM_{2.5}$ and/or other toxic air contaminants during construction activities, these impacts are anticipated to be temporary and short term, so students would not be present throughout the majority of construction. Construction activities would involve the use of a variety of gasoline- or diesel-powered equipment that emits exhaust fumes. However, the duration of exposure would be short, and exhaust from construction equipment dissipates rapidly. Furthermore, mitigation measure **MM 4.3.1** would ensure fugitive dust (PM_{10} and $PM_{2.5}$) and equipment fume (NOx and $PM_{2.5}$) control measures are incorporated into the project plans to reduce the emissions of fugitive dust and diesel equipment–generated air toxics during construction activities at the project area, which would ensure workers and sensitive receptors in the vicinity of the project area would not be exposed to these pollutants.

e) *No Impact*. The project would not create any significant objectionable odors.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.4 BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

OVERVIEW

The project site is in the urbanized area of Chico. The area to the north is developed with residential and office uses as well as undeveloped parcels and parcels deeded with conservation easements. The area immediately to the west is undeveloped, with residential uses farther west. The area to the south is developed with multifamily housing, with Little Chico Creek beyond. Farther south is residential, and south and east of the site is the Meriam Park Project that is slated for residential, commercial, and public development. The area to the immediate east is undeveloped with a ±22-acre parcel deeded with a conservation easement. The construction of a multipurpose building, classroom instructional building, outdoor instructional/assembly space, and site improvements to Marsh Junior High School would be on an existing school

campus that is developed and used for school-related activities since 1999. Approximately 50 mature trees are located throughout the campus.

Native and introduced wildlife species that are tolerant of human activities also thrive in urban biological communities. Wildlife species that occur in these areas typically include introduced species adapted to human habitation, including rock pigeon (*Columba livia*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), house mouse (*Mus musculus*), and Norway rat (*Rattus norvegicus*). Some native species that may occur in urban areas include American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), common barn own (*Tyto alba*), red-tailed hawk (*Buteo jamaicensis*), western fence lizard (*Sceloporus occidentalis*), Brewer's blackbird (*Euphagus cyanocephalus*), and house finch (*Carpodacus mexicanus*).

SPECIAL-STATUS SPECIES

Special-status plant and wildlife species are those that are afforded special recognition by federal, state, or local resource agencies or organizations. Special-status species are of relatively limited distribution and generally require specialized habitat conditions. Special-status species are defined as:

- Listed, proposed, or candidate for listing under the state or federal Endangered Species Acts
- Protected under other regulations (e.g., local policies, Migratory Bird Treaty Act)
- California Department of Fish and Wildlife Species of Special Concern and California Fully Protected Species
- Listed as species of concern (List 1B, 2, or 3 plants) by the California Native Plant Society
- Species that receive consideration during environmental review under CEQA

The potential for special-status species to occur within the project site or be adversely impacted by the proposed project was evaluated based on the site conditions and the project description. Given the disturbed and urban nature of the project site, the project site does not support suitable habitat for any special-status species.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact.* As indicated above, the project site is an existing school campus and has therefore been intensely used due to junior high school–related activities occurring for several years. Over 50 mature, ornamental trees are located throughout the campus. The proposed project will be removing trees in the parking lot south of the gymnasium on Notre Dame Boulevard, in the lawn area east of the parking lot north of the gymnasium on Notre Dame Boulevard, and in the center of campus. These trees are located in highly disturbed areas not suitable for nesting migratory bird and raptor habitat. The project would have a less than significant impact.

b) *No Impact.* The project site is located within an existing developed school campus, which has been highly disturbed due to junior high school–related activities occurring for several years. No riparian habitats or natural communities would be impacted.

c) *No Impact.* The project would be located on a developed site. No wetlands or other jurisdictional waters of the United States are located on the project site. No surface water bodies or drainages occur on the project site. The project would have no impact on federally protected wetlands.

d) *No Impact.* The project site is located on a developed junior high school campus. The site does not provide nursery sites for wildlife, nor is it conducive to function as a corridor for migratory wildlife. No streams or waterways are located on the project site. The project would have no impact on the movement of wildlife.

e) *No Impact.* The City of Chico has a tree preservation ordinance that applies to projects proposed on undeveloped property of 10,000 square feet or greater and for projects that require a discretionary approval of a land use entitlement. The project is on a developed site, and the Chico Unified School District is not required to obtain a land use entitlement from the City of Chico for this project.

f) *No Impact*. The Butte Regional Conservation Plan is currently being prepared by the Butte County Association of Governments (BCAG) and is scheduled to be adopted in 2014. However, the developed site is in an urban area and has no habitat value or identified environmental constraints.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.5 CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

OVERVIEW

Little was known of the archaeology of the Sacramento Valley until the 1950s when intensive fieldwork was conducted in association with federal and state water projects. As a result of this fieldwork, a sequence of cultural patterns was defined for the area.

The Windmiller Pattern (4,000 to 2,500 years ago), corresponding to the earliest intensive occupation of the area, was characterized by the use of mortars for grinding acorns and seeds, large projectile points, and evidence of fishing. Twined basketry was developed, and *Halitotis* and *Olivella* shell beads were used in decoration. Bone was used for awls, needles, and flakers. Obsidian and shells were traded throughout parts of Northern California. The Berkeley Pattern (3,000 to 1,500 years ago) developed in the San Francisco Bay region and later spread to Central California, focused on acorns as a dietary staple. Mortars and pestles, a well-developed tool industry, large concave-based diagonally flaked projectile points, and *Halitotis* and *Olivella* bead ornaments were characteristic of this pattern. The Augustine Pattern (1,500 to 250 years ago), marking the last period of prehistory, was distinguished by intensive fishing, hunting, and gathering; large populations; social stratification; and elaborate ceremonialism. Shaped mortars and pestles, bone awls, and the bow and arrow were typical of this period.

Chico is located within the boundaries of Konkow or Northwestern Maidu territory. Further, the city is still home to a vibrant Native American community as exemplified by the Mechoopda Tribe of the Chico Rancheria.

In October 2007, a records search was conducted at the Northeast Information Center of the California Historical Resources Information System at California State University, Chico, for the City of Chico's General Plan update. That search identified 244 known archaeological sites and isolated features/artifacts, including prehistoric and historic sites, within the City's Planning Area. The majority of the prehistoric sites were bedrock milling stations and lithic scatters (e.g., areas representing the manufacture of stone tools) that are located along creeks and streams such as Mud Creek and Big Chico Creek. These are areas of high archaeological sensitivity. Many Mechoopda villages were located along these drainages as recently as the late nineteenth century.

Historic sites in Chico primarily consist of residential and commercial buildings, but several trails and other linear features (e.g., the Southern Pacific Railroad alignment, historic roads, and wagon wheel ruts) are located throughout the City's Planning Area (Chico 2010, pp. 4.11-5 - 4.11-6).

DISCUSSION OF IMPACTS

a) *No Impact.* The project site consists of a junior high school campus and related improvements as well as three parking lots. There are no historic buildings or other historic resources located within the project area.

b) *Less Than Significant With Mitigation Incorporated*. The entire project site has been developed and used for school-related activities for many years, and no known cultural resources or significant archaeological resources have been identified within the project area. Unanticipated and accidental archaeological discoveries are possible during project implementation, especially during excavation, and have the potential to impact unique archaeological resources. Therefore, mitigation measures **MM 4.5.1** and **MM 4.5.3** have been incorporated into the project.

MITIGATION MEASURES

MM 4.5.1 If any prehistoric and/or historic resources or other indications of cultural resources are found during future development of the site, all work in the immediate vicinity of the find must stop and the project construction contractor shall immediately notify the Chico Unified School District. An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, shall be retained to evaluate the finds and recommend appropriate mitigation measures.

Timing/Implementation: *During future grading and construction activities*

Monitoring/Enforcement: *Chico Unified School District; project contractor*

c) *Less Than Significant Impact With Mitigation Incorporated*. No known paleontological resources exist within the project area. Regardless, unanticipated and accidental paleontological discoveries are possible during project implementation, especially excavation, and have the potential to impact unique paleontological resources. Therefore, mitigation measure **MM 4.5.2** has been incorporated into the project.

MITIGATION MEASURES

MM 4.5.2 If any paleontological resources are found during future development of the site, all work in the immediate vicinity of the find must stop and the project construction contractor shall immediately notify the Chico Unified School District. A qualified paleontologist (i.e., one with a graduate degree in paleontology, geology, or related field and having demonstrated experience in the vertebrate, invertebrate, or botanical paleontology of California) shall be retained to evaluate the finds and recommend appropriate mitigation measures.

Timing/Implementation: *During grading and construction activities*

Monitoring/Enforcement: *Chico Unified School District; project contractor*

d) *Less Than Significant Impact With Mitigation Incorporated*. There is the possibility that human remains could be encountered below the surface during construction activities. Therefore, mitigation measure **MM 4.5.3** has been incorporated into the project.

MITIGATION MEASURES

MM 4.5.3 If human remains are discovered during future development of the site, all work must stop in the immediate vicinity of the find, and the county coroner must be notified, according to California Health and Safety Code Section 7050.5. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed.

Timing/Implementation: *During future grading and construction activities*

Monitoring/Enforcement: *Chico Unified School District; project contractor*

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.6 GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to 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.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

OVERVIEW

The topography of the proposed project site is flat, with no significant topographic features. The site is located within the Great Valley geomorphic province, which is primarily described as a relatively flat alluvial plain, about 50 miles wide and 400 miles long, with thick sequences of sedimentary deposits of Jurassic through Holocene age. Boundaries of the Great Valley geomorphic province are the Klamath and Cascade mountain ranges on the north, the Sierra Nevada mountain range on the east, and the Coast Ranges on the west.

The geologic history of the area includes a mixture of ancient marine and alluvial deposits. Up to 155 million years ago, periods of volcanic activity and uplifting were followed by periods of uplifting and folding, which formed the Coast Ranges. The Sacramento Valley floor is a structural

trough formed by the uplift of the mountains surrounding it. This trough has been filled in by sequences of marine and alluvial sediments ranging in age from 135 million years ago to the present.

According to the Natural Resources Conservation Service (2012), project site soils comprise Redtough loam and Redswale cobbly loam. These soil types are classified as somewhat poorly drained with a slight erosion hazard.

DISCUSSION OF IMPACTS

a)

i) *No Impact*. The proposed project area, as with virtually all sites in California, is subject to minor ground shaking and potential secondary hazards (i.e., liquefaction and subsidence) as a result of earthquakes. The primary seismic hazard in Butte County is minor ground shaking, which can result in partial collapse of buildings and extensive damage in poorly built or substandard structures. No active or potentially active faults are known to occur in the vicinity of the project area. The nearest fault zone mapped by the California Geological Survey under the Alquist-Priolo Earthquake Fault Zoning Act is the Lineament Bear Mountain Fault located approximately 35 miles south of Chico. The California Geological Survey does not identify Chico as a city affected by this fault or any other Alquist-Priolo Earthquake Fault Zone. As such, future seismic events associated with this fault system are not anticipated to adversely affect the proposed project, and ground rupture due to faulting is considered to be unlikely. There is no impact.

ii) *Less Than Significant Impact*. Although it is impossible to predict the intensity of future seismic activity, the proposed project site is located in one of the least active seismic regions in California. Further, all project-related development will be required to comply with requirements of the California Building Code, which includes seismic safety standards for proposed development in seismically active areas. This impact is less than significant.

iii) *Less Than Significant Impact*. Liquefaction occurs when loose sand and silt that is saturated with water behaves like a liquid when shaken by an earthquake. Liquefaction can result in the following types of seismic-related ground failure:

- Loss of bearing strength – soils liquefy and lose the ability to support structures
- Lateral spreading – soils slide down gentle slopes or toward stream banks
- Flow failures – soils move down steep slopes with large displacement
- Ground oscillation – surface soils, riding on a buried liquefied layer, are thrown back and forth by shaking
- Flotation – floating of light buried structures to the surface
- Settlement – settling of ground surface as soils reconsolidate
- Subsidence – compaction of soil and sediment

Three factors are required for liquefaction to occur: (1) loose, granular sediment; (2) saturation of the sediment by groundwater; and (3) strong shaking. Project site soils are Redtough loam and Redswale cobbly loam. According to the Natural Resources Conservation Service, both of these soil series consist of relatively high percentages of sand and silt (42.7 percent and 38.3 percent, respectively). As described in Issue a)ii) above, the project area has moderate potential for ground shaking. These characteristics indicate a less than significant risk of liquefaction on the project site.

iv) No Impact. The project site has flat topography, indicating no potential for landslides.

b) *Less Than Significant Impact*. Construction activities during project site development, such as grading, excavation, and soil hauling, would disturb soils and potentially expose them to wind and water erosion. According to the NRCS (2012), Redtough loam and Redswale cobbly loam have a slight susceptibility to erosion. The project applicant will be required to prepare a stormwater pollution prevention plan (SWPPP) in order to comply with the Regional Water Quality Control Board's (RWQCB's) General Construction Storm Water Permit. The SWPPP will identify best management practices (BMPs) to be implemented on the project site to minimize soil erosion and protect local waterways and existing drainage systems. Compliance with the State's General Construction Storm Water Permit would minimize soil erosion and loss of topsoil from project implementation and would reduce this impact to a level of less than significant.

c) *Less Than Significant Impact.* The potential for landslides on the project site was addressed under Issue a)iv) and was determined to have no impact. The potential for lateral spreading, liquefaction, subsidence, and other types of ground failure or collapse was addressed under Issue a)iii) above and was determined to be a less than significant impact.

d) *Less Than Significant Impact*. Expansive or shrink-swell soils are soils that swell when subjected to moisture and shrink when dry. Expansive soils typically contain clay minerals that attract and absorb water, greatly increasing the volume of the soil. This increase in volume can cause damage to foundations, structures, and roadways. The project site contains Redtough loam and Redswale cobbly loam soils. According to the NRCS, these soil types have a clay content of 19.0 percent and a resulting moderate shrink-swell potential. Therefore, prior to construction a site-specific soils analysis will be conducted to ensure that future development is not impacted by potentially expansive soils.

e) *No Impact*. As proposed, the project will connect to the City of Chico's existing wastewater conveyance and treatment system. No septic tanks or alternative wastewater disposal systems will be installed on the site.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.7 GREENHOUSE GASES. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	☐	☐	☒	☐

OVERVIEW

Since the early 1990s, scientific consensus holds that the world's population is releasing greenhouse gases (GHG) faster than the earth's natural systems can absorb them. These gases are released as byproducts of fossil fuel combustion, waste disposal, energy use, land-use changes, and other human activities. This release of gases, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), and chlorofluorocarbons, creates a blanket around the earth that allows light to pass through but traps heat at the surface preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels. The overabundance of GHGs in the atmosphere has led to an unexpected warming of the earth and has the potential to severely impact the earth's climate system.

Table 4.7-1 provides descriptions of the primary GHGs attributed to global climate change, including a description of their physical properties, primary sources, and contribution to the greenhouse effect.

TABLE 4.7-1
GREENHOUSE GASES

Greenhouse Gas	Description
Carbon dioxide (CO_2)	CO_2 is a colorless, odorless gas and is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
Methane (CH_4)	CH_4 is a colorless, odorless gas that is not flammable under most circumstances. CH_4 is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. CH_4 is emitted from both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (livestock intestinal fermentation and manure management), biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years.[2]
Nitrous oxide (N_2O)	N_2O is a clear, colorless gas with a slightly sweet odor. N_2O is produced by natural and human-related sources. Primary human-related sources are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: [1]EPA 2011a, [2]EPA 2011b, [3]EPA 2010

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 21 times more heat per molecule than CO_2, and N_2O absorbs 310 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact*. GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects contributes substantially to the phenomenon of global climate change and its associated environmental impacts and as such is addressed only as a cumulative impact.

GHG emissions associated with the project would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term regional emissions associated with project-related new indirect source emissions, such as electricity usage for lighting associated with the proposed ±12,000-square-foot multipurpose building and new classroom building. As previously described, the project

would not increase existing traffic and thus would not increase existing traffic-generated GHG emissions.

Thresholds of significance illustrate the extent of an impact and are a basis from which to apply mitigation measures. Significance thresholds for GHG emissions resulting from land use development projects have not been established in Butte County. In the absence of any GHG emission significance thresholds, the projected emissions are compared to the San Luis Obispo Air Pollution Control District–recommended threshold of 1,150 metric tons of CO_2e annually. While significance thresholds used in Central California are not binding on the BCAQMD or projects in Butte County, they are instructive for comparison purposes. The project would be considered to have a significant impact if the projected emissions would surpass 1,150 metric tons of CO_2e annually.

CONSTRUCTION EMISSIONS

Construction of the proposed project would result in direct emissions of GHGs from construction. The approximate quantity of daily GHG emissions generated by construction equipment utilized to build the proposed project is depicted in **Table 4.7-2.**

TABLE 4.7-2
PROJECT CONSTRUCTION GHG EMISSIONS – METRIC TONS PER YEAR

Construction Phase	CO_2	CH_4	N_2O	CO_2e
Demolition and Earthwork[1]	65	0	0	65
Building Construction[2]	134	0	0	134
Hardscape Installation[3]	161	0	0	161
Total	***360***	***0***	***0***	***360***

*Source: Emissions modeled by PMC using the CalEEMod computer program. See **Appendix B** for modeling outputs.*

Notes:

1. Emissions calculations account for the demolition of 1,226.5 tons of material and subsequent earthwork disturbance of 5 acres of land.

2. Emissions calculations account for the construction of 19,225 square feet of building space (multipurpose building and classroom instructional building).

3. Emissions calculations account for all hardscape installation including outdoor instructional/assembly space with stage and concrete seating, walking paths, sidewalks, maintenance & delivery roads, pedestrian bridges, and basketball courts (196,200 square feet of paving total).

OPERATIONAL GHG EMISSIONS

As stated above, there would also be long-term regional emissions associated with project-related new indirect source emissions, such as electricity usage associated with the proposed multipurpose building and classroom instructional building. The project would not increase existing traffic and thus would not increase existing traffic-generated GHG emissions. To be conservative, total construction-generated GHG emissions were amortized over the estimated life of the project. A project life of 30 years was assumed for the proposed project. As shown in **Table 4.7-3**, the project's long-term operations could produce an additional 97 metric tons of CO_2e annually. This would contribute to a net increase in GHGs from the proposed project.

TABLE 4.7-3
OPERATIONAL GHG EMISSIONS – METRIC TONS PER YEAR

Source	CO_2	CH_4	N_2O	CO_2e
Construction (amortized over 30 years of project life)	12	0	0	12
Area	0	0	0	0
Energy	72	0	0	72
Mobile	0	0	0	0
Solid Waste	5	0.3	0	11
Water	2	0	0	2
Total	**91**	**0.3**	**0**	**97**

*Source: Emissions modeled by PMC using the CalEEMod computer program. See **Appendix B** for modeling outputs.*

As shown in **Table 4.7-3**, estimated GHG emissions resulting from both construction and operations of the proposed would equal 97 metric tons of CO_2e per year, which is less than the GHG threshold of 1,150 metric tons of CO_2e per year and therefore a less than significant impact.

b) *Less Than Significant Impact*. The project would not conflict with any adopted plans, policies, or regulations adopted for the purpose of reducing greenhouse gas emissions.

The proposed project is also subject to compliance with the Global Warming Solutions Act (Assembly Bill (AB) 32). As identified under Issue a), proposed project-generated GHG emissions would not surpass GHG significance thresholds, which were prepared with the purpose of complying with the requirements of AB 32. Therefore, the proposed project would not conflict with AB 32.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.8 HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
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?	☐	☐	☒	☐
e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

OVERVIEW

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined by the California Health and Safety Code, Section 25501 as follows:

> *"Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.*

A hazardous material is defined in Title 22, Section 662601.10, of the California Code of Regulations as follows:

> *A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.*

The release of hazardous materials into the environment could potentially contaminate soils, surface water, and groundwater supplies.

Most hazardous materials regulation and enforcement in Butte County is managed by the Butte County Environmental Health Department, which refers large cases of hazardous materials contamination or violations to the Central Valley Regional Water Quality Control Board (RWQCB) and the California Department of Toxic Substances Control (DTSC). It is not at all uncommon for other agencies to become involved when issues of hazardous materials arise, such as the BCAQMD and both the federal and state Occupational Safety and Health Administrations (OSHA).

Under Government Code Section 65962.5, both the DTSC and the State Water Resources Control Board (SWRCB) are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. A search of the DTSC (2014) and SWRCB (2014) lists identified no hazardous waste violations in the project area.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact*. The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Schools do not generate significant amounts of hazardous materials, and only a minimal amount of routine day-to-day materials is stored on-site, such as those materials used in routine cleaning of buildings or maintenance of landscaping. These materials would be used, stored, and disposed in accordance with existing regulations and product labeling and would not create a significant hazard to the public or to the environment. The project site has already been in operation as a junior high school, and operation of the proposed project would not introduce any hazardous materials–related hazards to the public or to the environment that have not already been considered.

b) *Less Than Significant Impact With Mitigation Incorporated*. As discussed in Issue a) above, the proposed project would not result in the routine transport, use, disposal, handling, or emission of any hazardous materials that would create a significant hazard to the public or the environment. Potential construction-related hazards could be created during the course of

project construction at the project site, given that construction activities involve the use of heavy equipment, which uses small and incidental amounts of oils and fuels and other potentially flammable substances. Project construction is scheduled to begin in the fall of 2014 and end within 90 days. Because of this time frame, the project would require construction during the regular school session, with many aspects of its construction occurring during regular school hours.

In order to ensure the safety of students, staff, and campus visitors is maintained throughout the construction process, various safety measures are needed. Additionally, given the developed nature of the project site, it is possible for underground utility and service lines to be in the vicinity of the proposed trenching and foundations for the light poles. Potential impacts from risk of upset would be temporary during project construction but are considered potentially significant.

MITIGATION MEASURES

MM 4.8.1 The construction staging areas for the project site shall be identified on the project plans, including the area that will be used for storing materials and equipment. Where feasible, storage areas shall be located away from sensitive uses (nearby residents, drainages, etc.). During project construction, the staging area shall be fenced and secured and shall have access restricted. When on-site maintenance fueling, equipment cleaning, etc., is required, all of these activities shall occur within the construction staging area, and best practices, such as the use of drip pans, shall be used to address potential leakage from construction equipment.

The construction site itself shall be barricaded/fenced in such a way as to ensure students, staff, and campus visitors are not able to enter. Access routes, delivery access, and parking areas for the contractor's employees shall be separated from student traffic, and weekly safety meetings and preconstruction safety instruction for on-site personnel, as well as background checks for on-site personnel, shall also be required of the construction contractor.

Timing/Implementation: *Prior to project construction*

Enforcement/Monitoring: *Chico Unified School District; project contractor*

c) *Less Than Significant Impact*. The project site is located on an existing junior high school campus. None of the proposed uses of the building would emit any hazardous emissions. A small amount of common household hazardous materials may be stored in a janitorial storeroom, including cleaning solutions, bleach, automotive lubricants, etc. The new classroom instructional building would also be storing a small amount of hazardous materials. These materials as well as the materials stored in the janitorial storeroom would be stored, used, and disposed in accordance with product label instructions and existing state and local regulations. Due to the commonplace nature of the substances to be used, the small amount to be stored, and compliance with existing standards and regulations, this impact is considered less than significant.

d) *Less Than Significant Impact.* Under Government Code Section 65962.5, both the DTSC and the SWRCB are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. A search of the DTSC and SWRCB lists identified no hazardous waste violations in the project

area. Therefore, the project site is not on a parcel included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (DTSC 2014; SWRCB 2014). The proposed project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or to the environment. The project site is located within 5,000 feet of the Humboldt Road Burn Dump (Bruce and Humboldt Roads/State Route 32). The cases on the site have been closed due to remediation completion.

e) *No Impact*. The project site is located approximately 4 miles from the Chico Municipal Airport (public airport). The project is outside the flight path of aircraft arriving or departing from the airport.

f) *No Impact*. The project site is located approximately 4 miles from the private Chico Ranchero Airport and is not located within 2 miles of any private airport.

g) *Less Than Significant Impact*. The Butte County Office of Emergency Management has an online link to an emergency preparedness web page stating that in the event of mandatory evacuation, residents will be advised of safe routes to follow, locations of shelters, and other actions that may need to be taken. Butte County has several means of notifying the public of emergencies and possible evacuations, which include a prerecorded telephone message, e-mail message, local radio and television station announcements, and the Emergency Broadcast System. In the event of extreme cases and/or the inability to contact residents in another manner, the Police Department would go door to door. Construction of a new multipurpose building, classroom instructional building, outdoor instructional/assembly space, and site improvements to Marsh Junior High School would not obstruct evacuation routes or access to critical emergency facilities. This impact is less than significant.

h) *Less Than Significant Impact*. The project site abuts ±22 acres to the east that has a designated conservation easement on the parcel and a ±19-acre parcel to the northeast across Humboldt Road that also has a deeded conservation easement. These properties are not considered wildlands. City of Chico Fire Station #4 is within 2 miles of Marsh Junior High School. Therefore, there would be no impact regarding wildland fire hazards as a result of the project.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.9 HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐
e) 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?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of a failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

OVERVIEW

The Federal Emergency Management Agency (FEMA) has prepared a Flood Insurance Rate Map (FIRM) depicting flood hazard areas in Butte County. According to FEMA (2011), no portion of the project area is located within the 100-year floodplain (Flood Map 06007C0506E).

The project area is within the jurisdictional boundaries of the Central Valley Regional Water Quality Control Board (RWQCB), one of nine regional boards in the state. The Central Valley RWQCB, with an office in Redding, develops and enforces water quality objectives and implementation plans that safeguard the quality of water resources in its region. Specifically, the RWQCB identifies potential water quality problems, confirms and characterizes water quality problems through assessments, remedies problems through imposing or enforcing appropriate measures, and monitors problem areas to assess effectiveness of remedial measures. Remedies for problems include prevention and cleanup. Common means of prevention are the issuance of National Pollutant Discharge Elimination System (NPDES) permits, waste discharge requirements (WDRs), and discharge prohibitions and restrictions. Cleanup is implemented through enforcement measures such as Cease and Desist Orders and Cleanup and Abatement Orders.

One of the duties of the RWQCB is the development of "basin plans" for the hydrologic area over which it has jurisdiction. In 1998, the Central Valley RWQCB issued the fourth edition of its Water Quality Control Plan for the Sacramento and San Joaquin River Basins, also known as the Basin Plan. It sets forth water quality objectives for both surface water and groundwater for the region, and it describes implementation programs to achieve these objectives. The Basin Plan provides the foundation for the regulations and enforcement actions of the Central Valley RWQCB.

The school campus is connected to the City of Chico's storm water drainage system. The storm drain outfall location nearest to the campus is on Little Chico Creek.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact*. There is potential for the proposed project to result in degradation of water quality during both the construction and operational phases. Polluted runoff from the project site during construction and operation could include sediment from soil disturbances, oil and grease from construction equipment, and pesticides and fertilizers from landscaped areas. This degradation could result in violation of water quality standards. However, the Chico Unified School District or its contractor will be required to prepare a stormwater pollution prevention plan (SWPPP) pursuant to Regional Water Quality Control Board standards and subject to RWQCB review for each phase of the project. The SWPPP will include measures designed to reduce or eliminate erosion and runoff into waterways. Best management practices include wattles, covering of stockpiles, silt fences, and other physical means of slowing stormwater flow from the graded areas to allow sediment to settle before entering stormwater channels. The method used would be described in the SWPPP and may vary depending on the circumstances of construction. Additionally, the project would not violate any waste discharge requirements. Because of these standard procedures and the requirement to prepare a SWPPP, project impacts to water quality are considered to be less than significant.

b) *Less Than Significant Impact*. See discussion of Issue a)iii) of subsection 4.6, Geology and Soils. The project site is located within an established educational campus, and no new roads or extensions of existing roads are proposed. The project does not include the construction of any new homes or businesses. Implementation of the proposed project would provide a multipurpose building, a new classroom instructional building, and an outdoor

instructional/assembly space, improve student circulation and supervision, and establish outdoor student dining and gathering spaces, and expand the school garden and greenhouse. The additional water usage from the expanded school garden and greenhouse would be minor. Operation of the proposed project would not significantly increase demand for or otherwise deplete groundwater supplies, and this impact would be less than significant.

c) *Less Than Significant Impact*. See discussion of Issue b) of subsection 4.6, Geology and Soils. The project site is primarily developed and does not contain any surface water features. Implementation of the proposed project would alter the existing drainage patterns on the site by adding hardscapes to currently undeveloped land. The project applicant will be required to prepare a SWPPP in order to comply with the RWQCB's General Construction Storm Water Permit. The SWPPP will identify best management practices to be implemented on the project site to minimize soil erosion and protect existing drainage systems. Compliance with existing regulations developed to minimize erosion and siltation would reduce this impact to a less than significant level.

d) *Less Than Significant Impact*. See discussion of Issue b) of subsection 4.6, Geology and Soils. The project site is primarily developed, has flat topography, and does not contain any surface water features. The project would involve some minor changes to drainage patterns and changes to the amount of impervious surfaces. There is no alteration, expansion, or movement of the stormwater connection point. The drainage pattern at the project site and in the surrounding areas, as well as surface runoff conditions after implementation of the proposed project, would be the same as existing conditions. Therefore, the proposed project would have a less than significant impact on causing flooding on- or off-site.

e) *Less Than Significant Impact*. See discussion of Issues a) and c) in this subsection. Implementation of the proposed project would alter the existing drainage patterns on the site through changes to the amount of impervious surfaces. Polluted runoff from the project site during construction and operation could include sediment from soil disturbances; oil and grease from construction equipment, roadways, and parking lots; pesticides and fertilizers from landscaped areas; metals from paints; and gross pollutants such as trash and debris. Compliance with existing regulations developed to minimize the release of polluted runoff from construction sites would reduce this impact to a less than significant level.

f) *Less Than Significant Impact*. See discussion of Issues a), c), and e) in this subsection and Issue b) of subsection 4.6, Geology and Soils. The proposed project would have a less than significant impact on substantial degradation of water quality.

g) *No Impact*. According to FEMA flood hazard maps, the project site is not located within a flood zone. Further, the project does not propose the development of housing. Therefore, implementation of the proposed project will not have an impact related to flooding.

h) *No Impact*. Please refer to Issue g) in this subsection.

i) *Less Than Significant Impact*. The project site is not located within any dam inundation areas, and the area is not protected by levees from any flood hazard.

j) *No Impact*. The project site is not located near an ocean or large body of water with potential for seiche or tsunami. Additionally, the topography of the project site is essentially flat and not at risk of mudflows. Implementation of the proposed project will not result in any impacts related to seiche, tsunami, or mudflow.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.10 LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

OVERVIEW

The proposed project would further develop an existing school campus to incorporate elements that were originally planned and approved in the Campus Master Plan for Marsh Junior High School. All improvements would be in Chico for which the General Plan was updated in 2011. The land use designation for the project area is Public Facilities and Services, and the site is zoned Public/Quasi Public Facilities. No changes are proposed in current land use designations or zoning.

DISCUSSION OF IMPACTS

a) *No Impact*. The project would not divide an established residential community, as the project would occur entirely on an existing school campus.

b) *No Impact*. All activities associated with the project would occur on the Marsh Junior High School campus. The proposed school buildings are consistent with the property's land use designation and zoning.

c) *No Impact*. Currently, there is not an approved habitat conservation plan for the City of Chico. Through the Butte County Association of Governments, the Butte Regional Conservation Plan is slated for adoption in fall of 2014. The project is not in conflict with the proposed plan.

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

OVERVIEW

There are no active mines within or near the project site and no known areas with mineral resources on the project site.

DISCUSSION OF IMPACTS

a) *No Impact*. No mineral resource recovery sites are located on or in the immediate vicinity of the project site. Implementation of the proposed project would not result in the loss of availability of a known mineral resource or resource recovery site.

b) *No Impact*. Please refer to Issue a).

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.12 NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

OVERVIEW

There are no sources of noise that could affect the project site, with the exception of traffic-related noise.

NOISE FUNDAMENTALS

Noise is generally defined as sound that is loud, disagreeable, or unexpected. The selection of a proper noise descriptor for a specific source is dependent on the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average-hourly noise level (in L_{eq}) and the average-daily noise levels (in L_{dn}/CNEL).

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks, and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Mobile transportation sources, such as highways, and hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an

attenuation rate of about 4.5 dBA per doubling of distance from the source. Noise generated by stationary sources typically attenuates at a rate of approximately 6.0 to 7.5 dBA per doubling of distance from the source (EPA 1971).

Sound levels can be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage can also reduce noise, but are less effective than solid barriers.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact With Mitigation Incorporated*.

Short Term. Short-term noise levels related to construction of the proposed project would temporarily increase noise levels in the vicinity of the project site. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. Typical construction noise levels vary up to a maximum of 88 dBA at 50 feet from the construction site during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earth-moving equipment. Earth-moving equipment includes excavating machinery such as backhoes, bulldozers, draglines, and front loaders and earth-moving and compacting equipment, which includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings.

Construction of the proposed project is expected to require the use of earthmovers such as bulldozers and scrapers, loaders and graders, water trucks, and dump trucks. The maximum noise level generated by each earthmover on the proposed project site is calculated to be 88 dBA at 50 feet from the operating piece of equipment based on the noise distance divergence formula for point sources of noise. The maximum noise level generated by a paver is approximately 87 dBA at 50 feet from this equipment (see **Table 4.12-1**).

TABLE 4.12-1
TYPICAL CONSTRUCTION NOISE LEVELS

Equipment	Noise Levels at 50 Feet
Front-End Loader	85 dBA
Bulldozer	85 dBA
Backhoe	80 dBA
Water Truck (or other heavy truck)	88 dBA
Generator	81 dBA
Concrete Mixer	85 dBA
Tamper/Roller	75 dBA
Crane, Mobile	83 dBA
Paver	87 dBA

Sources: FTA 2006; EPA 1971

During the construction phase of the project, exterior noise levels resulting from construction could affect the nearest existing sensitive receivers in the vicinity of the project site. Based on a review of the proposed site plans, the nearest noise-sensitive land uses would include the existing classrooms at Marsh Junior High School, which are anticipated to be as close as 50 feet to construction activities at the nearest point. The nearest residential properties are approximately 180 feet to the southwest and 280 feet to the north of the project site.

The City of Chico General Plan Noise Element establishes policies and regulations concerning the generation and control of noise that could adversely affect the city's residents and noise-sensitive land uses. For instance, the maximum allowable noise levels for non-transportation sources under the City's General Plan Noise Element is 55 dBA L_{eq} between the daytime hours of 7:00 AM and 10:00 PM and 50 dBA L_{eq} between the nighttime hours of 10:00 PM and 7:00 AM.

For some land uses such as educational facilities, interior daytime noise levels would be of additional concern due to a potential for activity interference, including speech interference. Interior noise levels would be of primary concern with regard to nearby on-site school classrooms. Predicted interior noise levels at these nearby uses can be estimated by subtracting the combined noise transmission loss (i.e., noise reduction) for building façade components (i.e., walls, doors, windows) from the predicted exterior noise level. The transmission loss of the building components is dependent on the materials and construction methods used. For instance, double-glazed windows typically provide greater noise reduction than single-glazed windows, and stuccoed walls typically provide greater noise reduction than wood siding. Additional building construction methods, such as the use of insulation in wall cavities, increased wall thickness, and decreased stud spacing, as well as measures designed to decrease air infiltration such as baffled vents, also contribute to increased exterior-to-interior noise reductions. Buildings constructed in accordance with current building and energy efficiency standards typically achieve minimum exterior-to-interior noise reductions of 25–30 dBA with windows closed. Older buildings typically achieve average noise reductions of approximately 20 dBA with windows closed and 15 dBA with windows partially opened. The absorptive characteristics of interior rooms, such as carpeted floors, draperies, and furniture, can result in further reductions in interior noise. For schools and other noise-sensitive interior uses, an interior average-daily noise level of 45 dBA L_{eq} is typically recommended.

As depicted in **Table 4.12-1**, noise generated by individual equipment can reach levels of up to approximately 88 dBA at a distance of 50 feet for brief periods. The highest noise levels would occur during activities involving the use of heavy-duty off-road equipment, including portable cranes and trucks likely required for the project. Based on the above noise levels and assuming an average noise-attenuation rate of 6 dB per doubling of distance from the source center, predicted exterior average-hourly noise levels would be approximately 88 dBA L_{eq} at the nearest existing classrooms and approximately 66 dBA L_{eq} at the nearest residential land uses. In terms of interior daytime noise levels in nearby on-site classrooms, assuming an average exterior-to-interior noise reduction of 25 dBA, predicted interior construction noise levels could reach levels of approximately 63 dBA L_{eq} in the nearest classrooms. Although largely shielded from line of sight of on-site construction areas, predicted construction-generated noise levels at Marsh Junior High School may be detectable on an intermittent basis, which may result in temporary activity interference.

As described, construction-generated noise levels would be projected to exceed the City's noise standard and would result in significant increases in interior daytime noise levels at the nearest existing on-site classrooms. In addition, construction activities during the more noise-

sensitive evening and nighttime hours (i.e., 7:00 PM to 7:00 AM) could result in increased levels of annoyance and potential sleep disruption for occupants of nearby residences. As a result, construction activities would be considered to have a potentially significant impact.

Implementation of **MM 4.12.1** would reduce the amount of construction noise by muffling equipment and limiting hours of activities.

MITIGATION MEASURES

MM 4.12.1 The following measures shall be implemented to reduce construction-generated noise levels:

a. Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the hours of 7:00 AM and 9:00 PM on weekdays and Saturdays, and between 10:00 AM and 6:00 PM on Sundays and legal holidays.

b. Construction activities that would result in noise levels surpassing 55 dBA L_{eq} in school classrooms (accounting for exterior-to-interior noise reduction) during normal classroom educational hours shall be restricted to hours outside of normal educational hours.

c. Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

d. All equipment shall be turned off if not in use for more than 10 minutes.

e. An information sign shall be posted at the construction site entrance that identifies the permitted construction hours and provides a telephone number to call and receive information about the construction project or to report complaints regarding excessive noise levels. The designated construction contact shall record all noise complaints received and actions taken in response, and shall submit this record to the project planner upon request.

f. The staff at Marsh Junior High School shall be notified a minimum of one week prior to commencement of on-site construction activities so that any necessary precautions (such as rescheduling or relocation of interior noise-sensitive activities) can be implemented. The written notice shall include the name and telephone number of the individual empowered to manage construction noise from the project. In the event that noise complaints are received, the individual empowered to manage construction noise shall respond to the complaint within 24 hours. To the extent feasible, the response shall include identification of measures being taken by the Chico Unified School District to reduce construction-related noise. Such measures may include, but are not limited to, the relocation of equipment, use of equipment noise shields, or construction of temporary barriers or curtains.

Timing/Implementation: *Upon start of construction activities, throughout construction*

Enforcement/Monitoring: *Chico Unified School District*

Long Term. Long-term noise-related impacts associated with the proposed project would be similar to existing conditions. The project would be located on a developed school site. Since the project itself proposes the new buildings on an existing educational campus, operation of the proposed project is not expected to result in any substantial changes in the noise environment. Therefore, the proposed project would not result in substantial permanent long-term operational increases in noise levels. This would be considered a less than significant impact.

b) *Less Than Significant Impact With Mitigation Incorporated*. Sources of earthborne vibration include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous, such as factory machinery, and transient, such as explosions. As is the case with airborne sound, earthborne vibration may be described by amplitude and frequency. Increases in groundborne vibration levels attributable to the proposed project would be primarily associated with short-term construction-related activities. No permanent noise sources that would expose persons to excessive groundborne vibration or noise levels would be located within the project site. Therefore, implementation of the proposed project would not permanently expose persons within or around the project site to excessive groundborne vibration or noise.

Construction activities associated with implementation of the proposed project could temporarily expose persons in the vicinity of the project site to excessive groundborne vibration or groundborne noise levels. However, with implementation of mitigation measure **MM 4.12.1,** this impact would be reduced to a less than significant level.

c) *Less Than Significant Impact*. The addition of a multipurpose building, outdoor instruction space, classroom instructional building, and related improvements on the existing Marsh Junior High School campus would not result in the creation of significant, permanent noise levels. The purpose and objective of this project is to provide greater teaching flexibility, educational opportunities, and classroom space availability to accommodate education as well as to provide improved student circulation and supervision. When complete, the project would not increase existing traffic within the localized project area and thus would not increase existing traffic-generated noise.

d) *Less Than Significant Impact With Mitigation Incorporated*. Noise impacts from the project could result from construction-related activities. The construction activities would temporarily increase project area noise levels, with construction equipment and activities anticipated to generate noise levels generally ranging from 75 dBA to 88 dBA at a distance of 50 feet from the center of construction activities. As stated under Issue a), implementation of mitigation measure **MM 4.12.1** would reduce the amount of construction noise reaching nearby residences by limiting hours of activities and by muffling and moving equipment away. Impacts after mitigation resulting from short-term construction noises would be less than significant.

e) *No Impact.* The project site is not within 2 miles of a public airport. The project site is located approximately 4 miles south of the nearest public airport, Chico Municipal Airport, and is well outside of the airport influence area.

f) *No Impact*. The project site is not in the vicinity of a private airstrip. Therefore, there is no impact.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.13 POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

OVERVIEW

The project site is located in Chico on an existing school site. No residences are proposed as part of the project.

DISCUSSION OF IMPACTS

a) *No Impact*. The project site is located within an established school campus, and no new roads or extensions of existing roads are proposed. The project does not include the construction of any new homes or businesses**.** The objective of the proposed project is to provide a multipurpose building, a classroom instructional building, and an outdoor instructional/assembly space, improve student circulation and supervision, establish outdoor student dining and gathering spaces, and expand the school garden and greenhouse. Therefore, direct or indirect increases in population growth would not occur as a result of the proposed project.

b) *No Impact*. No residences would be displaced or removed as a result of the proposed project, and the project would have no impact on existing housing.

c) *No Impact.* As discussed under Issue b), the project would not involve the removal or relocation of any housing and would therefore not displace any people or necessitate the construction of any replacement housing.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.14 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:				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒

OVERVIEW

FIRE PROTECTION

The City of Chico Fire Department (Chico Fire) provides fire protection and emergency medical services to the project site. Chico Fire services include fire suppression, emergency medical service, rescue service, hazardous material emergency service, public assists (post-fire/accident cleanup, water removal, flooding assistance, assistance to the Police Department), fire prevention and life safety, and emergency preparedness including operation of the Emergency Operations Center (EOC) at the Fire Training Center. Chico Fire has mutual aid agreements with the California Department of Forestry and Fire Protection (Cal Fire) and the Butte County Fire Department. Chico Fire currently operates six fire stations. The fire station closest to the project site is Station #4 located near the corner of Notre Dame Boulevard and Forest Avenue. Equipment at this station includes a fire engine, a patrol vehicle, and a foam trailer (Chico 2014).

POLICE PROTECTION

The Chico Police Department (Chico PD) provides law enforcement services to the project site. If requested by the Butte County Sheriff's Office or the California Highway Patrol, Chico PD may provide assistance on a case-by-case basis. As of May 2014, Chico PD has 137 full-time employees with 84 of them being sworn police officers. Chico PD personnel are organized into two divisions: Operations and Support. The Operations Division comprises the Patrol Section, Special Operations Section, and Animal Control Unit. The Support Division comprises the Communications Section, Records Section, Property Section, Detective Bureau, Juvenile Bureau, Crime Analysis Unit, Training Unit, and Tech Services Unit. Business Services for the Chico PD and the Public Information Unit are managed out of the Office of the Chief of Police.

SCHOOLS

The Chico Unified School District (CUSD) was formed in 1965 and now serves a 322-square-mile area that includes the entire city as well as the surrounding unincorporated areas of Butte County. The CUSD operates eleven kindergarten through 6th grade (K–6) elementary schools, one kindergarten through 8th grade (K–8) open structure classroom school, three junior high

schools, two comprehensive high schools, one continuation high school, one charter high school, one independent study program, and one community day school.

PARKS

Park, recreation, and open space resources, facilities, and services have historically been provided by both the City of Chico Park Division and the Chico Area Recreation and Park District (CARD). In the past, the City had primary responsibility for Bidwell Park and neighborhood parks and CARD had primary responsibility for recreation programming and community parks. In 2010, the City of Chico and CARD entered into a Memorandum of Understanding of Intergovernmental Cooperation, Coordination and Understanding that streamlines the provision of parks and recreational services to the city and surrounding community through a realignment of the roles and responsibilities of each agency. Through this arrangement, the City will retain ownership and maintenance responsibility for Bidwell Park, creekside greenways, and City-owned preserves, while CARD will assume ownership and operation of the various other developed parks and recreation systems in the city.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact.* The proposed project would not require any additional Chico Fire Department facilities, equipment, and/or staff and is not anticipated to create an additional burden on Chico Fire.

   Chico Fire requires emergency vehicle access to all portions of the proposed site buildings. In addition, water for fire suppression must be available to the proposed buildings. The project site provides fire lanes and fire hydrants to the campus buildings; water pressures on the site exceed the minimum required for fire suppression support. Compliance with these requirements would ensure that this impact is less than significant.

b) *Less Than Significant Impact.* The proposed project would not result in a significant increase in demand for police service, because no increase in student capacity is proposed. School buildings would be equipped with an active alarm system, and the school would utilize exterior lighting for improved visibility and security to the facilities.

c) *Less Than Significant Impact*. The purpose of the project is to provide a multipurpose building and a new instructional building, improve student circulation and supervision, establish outdoor student dining and gathering spaces, and expand the school garden and greenhouse. No increase in student enrollment is proposed as part of this project.

d) *No Impact*. The proposed project would not require additional staffing at nearby parks and recreation-oriented public facilities. Additionally, significant deterioration or accelerated deterioration at parks and recreation-oriented public facilities from possible increased usage is not expected. The proposed project would have no impact on parks and other public facilities.

e) *No Impact*. The project is not anticipated to have significant impacts on other public facilities.

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

OVERVIEW

Chico currently includes a total of 4,317 acres of park, recreation, and open space areas, including Bidwell Park. The nearest park is Bidwell Park approximately three-quarters of a mile from the project site. The project proposes eight basketball courts.

DISCUSSION OF IMPACTS

a) *No Impact*. See the discussion in subsection 4.14, Public Services. The proposed project would not require additional staffing at nearby parks and recreation-oriented public facilities. Additionally, significant deterioration or accelerated deterioration at parks and recreation-oriented public facilities from possible increased usage is not expected.

b) *Less Than Significant Impact*. The proposed project would provide a greater amount of play space/basketball courts on the school site. As a part of the project, the existing parking lot south of the gymnasium will be reconfigured and reduced from 146 parking stalls to 84 parking stalls. The eight basketball courts will be constructed on the converted parking lot area. The conversion of the previously disturbed parking lot area is not expected to have an adverse physical effect on the environment. Therefore, this impact is considered to be less than significant.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.16 TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location which results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

OVERVIEW

The project site is located on the campus of Marsh Junior High School in Chico urban area. The campus is bounded by Humboldt Road to the north; Notre Dame Boulevard to the west; multi-family housing, open space, and Little Chico Creek to the south; and vacant, undeveloped land to the east.

The major roadway in the vicinity is State Route 32 located approximately 500 feet to the north of the project site. State Route 99 is to the west of the project site approximately three-quarters of a mile. Access to the site would be from State Route 32 to El Monte Avenue (which becomes Notre Dame Boulevard) or from Humboldt Road. Notre Dame Boulevard is a fully developed arterial roadway with curb, gutter, and sidewalk improvements. A cul-de-sac turn-bulb is provided at the south terminus. The intersection of El Monte Avenue and State Route 32 is signalized. Humboldt Road is a fully developed collector roadway with curb, gutter, and sidewalk improvements. The intersection at Humboldt and Notre Dame Boulevard is a four-way stop.

The existing parking lot to the south of the gymnasium will be reconfigured and reduced to make room for basketball courts. No additional student enrollment is proposed as a part of this project, so no additional parking is required.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact*. Potential traffic impacts would not be greater than those associated with current operations at Marsh Junior High School. While the project would increase the intensity of the land use on the project site, the project would not represent a new type of land use on the site or a wholly new land use. The purpose and objective of this project is to provide a multipurpose building, a classroom instructional building, and an outdoor instructional/assembly space, improve student circulation and supervision, establish outdoor student dining and gathering spaces, and expand the school garden and greenhouse. Since no additional vehicle trips are anticipated after this project is completed, the traffic efficiency in the area should not be affected. Because the project will not result in a change to the adopted level of service (LOS) standards or worsen an existing nonconforming LOS situation, this impact is less than significant.

b) *No Impact*. See discussion for Issue a) above. The proposed project would have a less than significant impact on established level of service standards for all site access roads. The project would have no impact.

c) *No Impact*. The project would not affect air traffic volumes. The project is located outside the airport land use influence area of the Chico Municipal Airport; therefore, it would not affect flight patterns or interfere with airport operations. There is no impact.

d) *No Impact*. Access to the project site would be provided by existing access points on Notre Dame Boulevard and Humboldt Road. The existing access points would not create hazards due to design features or incompatible uses. There is no impact.

e) *No Impact*. Emergency vehicles would access the site from State Route 32 to El Monte Avenue to an access point east of the staff parking lot on Humboldt Road. At this location, a paved accessway allows emergency vehicles to enter the site to the proposed multipurpose building. This accessway is already utilized for access to the existing facilities and would continue to accommodate through movements of emergency vehicles. There is no impact from the proposed project.

f) *No Impact*. The project proposes the construction of a planned multipurpose building, an instructional classroom building, and an outdoor instructional/assembly space, along with improvement of student circulation and supervision, establishment of an outdoor student dining and gathering space, and expansion of a school garden and greenhouse. Marsh Junior High School is already served by bus routes and bike/pedestrian paths. The proposed project will not conflict with adopted plans for alternative transportation and will not have an impact on alternative transportation.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.17 UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider that 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?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

OVERVIEW

The City of Chico provides wastewater services for Marsh Junior High School and maintains public storm drainage improvements. California Water Service Company provides water to the school. Other utilities, including electricity and solid waste disposal, are provided to the community by private companies.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact*. Marsh Junior High School is connected to the City of Chico's existing wastewater collection treatment system. The wastewater treatment plant is currently in compliance with all wastewater standards and treatment requirements of the Central Valley RWQCB

b) *No Impact*. There is no proposed increase in student capacity as part of this project. No additional demand for water from the California Water Service Company or increase in wastewater flows entering the City's wastewater treatment plant is anticipated. The project

would not result in the construction of new water or wastewater facilities that would result in a physical impact to the environment. As such, the project will have no impact on water and wastewater facilities.

c) *Less Than Significant Impact*. Implementation of the proposed project would increase the amount of impervious surfaces on the project site, resulting in greater stormwater runoff. However, existing on-site drainage retention facilities at Marsh Junior High School are sufficient to accommodate this increase in stormwater runoff. The school is connected to the City of Chico's storm drain system. Therefore, the proposed project would have a less than significant impact.

d) *Less Than Significant Impact*. Marsh Junior High School is provided domestic water service by California Water Service Company. Water service demand would not be substantially greater than the existing demand for water service. This impact is considered less than significant, because the project will not be increasing student capacity at the site.

e) *Less Than Significant Impact*. The proposed project will be provided sanitary sewer service by the City of Chico through its wastewater collection and treatment system. The City of Chico currently generates and treats approximately 7.2 million gallons of wastewater each day (Chico 2010, pg. 4.12-61). Capacity at the City's wastewater treatment plant is 9–12 million gallons per day. The proposed project would not result in substantially greater wastewater collection demand than that associated with current operations at the project site. The impact is less than significant.

f) *Less Than Significant Impact*. The proposed project would not significantly increase the amount of solid waste already generated by Marsh Junior High School. The Neal Road Recycling and Waste Facility has projected adequate capacity at current disposal rates through 2034 (Butte County 2010, pg. 353) and has sufficient capacity to accommodate the relatively minor amounts of waste that would be generated by the proposed project. Solid waste collection and disposal service is available to the project site via private hauler service and regular collections service. This is a less than significant impact.

g) *Less Than Significant Impact*. The proposed project will comply with all state and federal statutes regarding solid waste. This impact is considered less than significant.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
4.18 MANDATORY FINDINGS OF SIGNIFICANCE				
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 wild-life population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
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.	☐	☒	☐	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact With Mitigation Incorporated*. Several Initial Study subsections have identified the potential for significant environmental impacts, including subsections 4.1 Aesthetics, 4.3 Air Quality, 4.5 Cultural Resources, 4.6 Geology and Soils, 4.8 Hazards and Hazardous Materials, and 4.12 Noise, above. However, with implementation of mitigation measures proposed in the relevant sections of this Initial Study, these potential impacts would be reduced to a level that is considered less than significant.

b) *Less Than Significant Impact With Mitigation Incorporated*. Implementation of the proposed project, in conjunction with other approved or pending projects in the region, has the potential to result in cumulatively considerable impacts to the physical environment. However, with implementation of mitigation measures proposed in the relevant subsections of this Initial Study, these potential impacts would be reduced to a level that is considered less than significant.

c) *Less Than Significant Impact With Mitigation Incorporated*. With implementation of proposed mitigation measures, the addition of a multipurpose building and various improvements to Marsh Junior High School will not result in adverse impacts on human beings.

5.0 REFERENCES

5.1 DOCUMENTS REFERENCED IN INITIAL STUDY AND/OR INCORPORATED BY REFERENCE

The following documents were used or to determine the potential for impact from the proposed project. Compliance with federal, state, and local laws is assumed in all projects.

Butte County. 2010. *Butte County 2030 General Plan*. Accessed May 22, 2014. http://www.buttecounty.net/dds/Planning/GeneralPlan/Chapters.aspx.

BCAQMD (Butte County Air Quality Management District). 2008. *CEQA Air Quality Handbook*.

———. 2009. "Butte County Ambient Air Quality Attainment Status." Accessed May 29, 2014. http://www.bcaqmd.org/page/_files/Attainment-status.pdf.

California Climate Action Registry. 2009. California Climate Action Registry General Reporting Protocol Version 3.1.

CalRecycle (California Department of Resources Recycling and Recovery). 2014. Solid Waste Facility Listing/Details. Accessed May 22. http://www.calrecycle.ca.gov/SWFacilities/Directory/04-AA-0002/Detail/.

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

———. 2004. *Transportation and Construction-Induced Vibration Guidance Manual.*

———. 2012a. *California Scenic Highway Mapping System*. http://www.dot.ca.gov/hq/LandArch/scenic_highways/.

———. 2012b. *Traffic and Vehicle Data Systems Unit – 2012 All Traffic Volumes on California State Highway System.* Accessed May 22, 2014. http://traffic-counts.dot.ca.gov/2012all/Route22-33.html.

CARB (California Air Resources Board). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.*

———. 2014. 2013 Area Designation Maps. Accessed May 29. http://www.arb.ca.gov/desig/adm/adm.htm.

Central Valley Regional Water Quality Control Board. 1998. *Water Quality Control Plan for the Sacramento and San Joaquin River Basins.*

CGS (California Department of Conservation, California Geological Survey). 2007. Accessed May 22, 2014. http://www.quake.ca.gov/gmaps/WH/regulatorymaps.htm .

Chico, City of. 2010. *City of Chico General Plan Environmental Impact Report (EIR)*.

———. 2011. *City of Chico General Plan*. Accessed May 22, 2014. http://www.chico.ca.us/document_library/general_plan/documents/_CompleteGP_Adopted.pdf.

———. 2014. Phone conversation with Elisa Allen, Office Assistant, City of Chico Fire Department. May 22.

Chico Unified School District. 2014. *Facilities Master Plan.*

DOC (California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program). 2004. *Guide to Farmland Mapping and Monitoring*. Accessed June 18, 2014. http://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp_guide_2004.pdf.

———. 2012. California Important Farmland Finder. Accessed June 4, 2014. http://maps.conservation.ca.gov/ciff/ciff.html.

DTSC (California Department of Toxic Substances Control). 2014. Envirostor database. Accessed May 29. http://www.envirostor.dtsc.ca.gov/public/.

EPA (United States Environmental Protection Agency). 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*.

———. 2010. *Nitrous Oxide*. http://www.epa.gov/nitrousoxide/scientific.html.

———. 2011a. *Climate Change – Greenhouse Gas Emissions: Carbon Dioxide*. http://www.epa.gov/climatechange/emissions/co2.html.

———. 2011b. *Methane*. http://www.epa.gov/methane/scientific.html.

FEMA (Federal Emergency Management Agency). 2011. Flood Insurance Rate Map 06007C0506E, January 2011. Accessed May 22, 2014. https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1.

FHWA (Federal Highway Administration). 2006. *Roadway Construction Noise Model.*

FTA (Federal Transit Administration). 2006. *Transit Noise and Vibration Impact Assessment*.

NRCS (US Department of Agriculture, National Resource Conservation Service). 2012. *Web Soil Survey.* http://websoilsurvey.nrcs.usda.gov/app/.

Rainforth Grau Architects. 2014. Architectural Plans – Marsh Junior High School Multi-purpose Building.

Sacramento Valley Basinwide Air Pollution Control Council. 2013. *Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan.*

SWRCB (California State Water Resources Control Board). 2010. Storm Water Program, 2009-0009-DWQ Construction General Permit. http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

———. 2014. Geotracker. Accessed May 29. http://geotracker.waterboards.ca.gov.

APPENDIX A
AIR QUALITY

Marsh Project - Demolition and Earthwork

Butte County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	0.00	1000sqft	5.00	210,925.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Area of disturbance = approximately 5 acres

Construction Phase -

Demolition -

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	0.00	210,925.00
tblLandUse	LotAcreage	0.00	5.00
tblProjectCharacteristics	OperationalYear	2014	2016

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	5.6970	57.0260	44.3240	0.0463	18.2379	3.0899	21.3279	9.9762	2.8427	12.8189	0.0000	4,742.9136	4,742.9136	1.2393	0.0000	4,768.9381
Total	**5.6970**	**57.0260**	**44.3240**	**0.0463**	**18.2379**	**3.0899**	**21.3279**	**9.9762**	**2.8427**	**12.8189**	**0.0000**	**4,742.9136**	**4,742.9136**	**1.2393**	**0.0000**	**4,768.9381**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	5.6922	56.9739	44.2849	0.0462	18.2379	3.0871	21.3250	9.9762	2.8401	12.8163	0.0000	4,739.1271	4,739.1271	1.2381	0.0000	4,765.1280
Total	**5.6922**	**56.9739**	**44.2849**	**0.0462**	**18.2379**	**3.0871**	**21.3250**	**9.9762**	**2.8401**	**12.8163**	**0.0000**	**4,739.1271**	**4,739.1271**	**1.2381**	**0.0000**	**4,765.1280**

	ROG	NOx	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	**0.0848**	**0.0915**	**0.0882**	**0.0864**	**0.0000**	**0.0919**	**0.0133**	**0.0000**	**0.0918**	**0.0204**	**0.0000**	**0.0798**	**0.0798**	**0.0904**	**0.0000**	**0.0799**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	1/28/2015	5	20	
2	Site Preparation	Site Preparation	1/29/2015	2/4/2015	5	5	
3	Grading	Grading	2/5/2015	2/16/2015	5	8	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	3	8.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	121.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3123	0.0000	1.3123	0.1987	0.0000	0.1987			0.0000			0.0000
Off-Road	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858		4,127.1934	4,127.1934	1.1188		4,150.6886
Total	**4.5083**	**48.3629**	**36.0738**	**0.0399**	**1.3123**	**2.4508**	**3.7631**	**0.1987**	**2.2858**	**2.4845**		**4,127.1934**	**4,127.1934**	**1.1188**		**4,150.6886**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4094	1.7766	1.2953	4.5200e-003	0.1056	0.0299	0.1355	0.0289	0.0275	0.0564		460.4824	460.4824	3.5900e-003		460.5577
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3634	0.1137	1.4102	1.8400e-003	0.1431	1.3800e-003	0.1444	0.0379	1.2400e-003	0.0392		155.2378	155.2378	9.7800e-003		155.4432
Total	**0.7728**	**1.8902**	**2.7056**	**6.3600e-003**	**0.2487**	**0.0312**	**0.2799**	**0.0669**	**0.0287**	**0.0956**		**615.7202**	**615.7202**	**0.0134**		**616.0009**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3123	0.0000	1.3123	0.1987	0.0000	0.1987			0.0000			0.0000
Off-Road	4.5041	48.3186	36.0407	0.0399		2.4486	2.4486		2.2837	2.2837	0.0000	4,123.4069	4,123.4069	1.1178		4,146.8806
Total	**4.5041**	**48.3186**	**36.0407**	**0.0399**	**1.3123**	**2.4486**	**3.7609**	**0.1987**	**2.2837**	**2.4824**	**0.0000**	**4,123.4069**	**4,123.4069**	**1.1178**		**4,146.8806**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4094	1.7766	1.2953	4.5200e-003	1.6254	0.0299	1.6552	0.4020	0.0275	0.4294		460.4824	460.4824	3.5900e-003		460.5577
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3634	0.1137	1.4102	1.8400e-003	0.1431	1.3800e-003	0.1444	0.0379	1.2400e-003	0.0392		155.2378	155.2378	9.7800e-003		155.4432
Total	**0.7728**	**1.8902**	**2.7056**	**6.3600e-003**	**1.7684**	**0.0312**	**1.7997**	**0.4399**	**0.0287**	**0.4686**		**615.7202**	**615.7202**	**0.0134**		**616.0009**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

Acres of Grading: 4

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5225**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4361	0.1364	1.6923	2.2100e-003	0.1717	1.6600e-003	0.1733	0.0455	1.4900e-003	0.0470		186.2854	186.2854	0.0117		186.5318
Total	**0.4361**	**0.1364**	**1.6923**	**2.2100e-003**	**0.1717**	**1.6600e-003**	**0.1733**	**0.0455**	**1.4900e-003**	**0.0470**		**186.2854**	**186.2854**	**0.0117**		**186.5318**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2561	56.8375	42.5927	0.0391		3.0855	3.0855		2.8386	2.8386	0.0000	4,107.9721	4,107.9721	1.2264		4,133.7265
Total	**5.2561**	**56.8375**	**42.5927**	**0.0391**	**18.0663**	**3.0855**	**21.1517**	**9.9307**	**2.8386**	**12.7693**	**0.0000**	**4,107.9721**	**4,107.9721**	**1.2264**		**4,133.7265**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4361	0.1364	1.6923	2.2100e-003	0.1717	1.6600e-003	0.1733	0.0455	1.4900e-003	0.0470		186.2854	186.2854	0.0117		186.5318
Total	**0.4361**	**0.1364**	**1.6923**	**2.2100e-003**	**0.1717**	**1.6600e-003**	**0.1733**	**0.0455**	**1.4900e-003**	**0.0470**		**186.2854**	**186.2854**	**0.0117**		**186.5318**

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421		3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**		**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3634	0.1137	1.4102	1.8400e-003	0.1431	1.3800e-003	0.1444	0.0379	1.2400e-003	0.0392		155.2378	155.2378	9.7800e-003		155.4432
Total	**0.3634**	**0.1137**	**1.4102**	**1.8400e-003**	**0.1431**	**1.3800e-003**	**0.1444**	**0.0379**	**1.2400e-003**	**0.0392**		**155.2378**	**155.2378**	**9.7800e-003**		**155.4432**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8292	40.3790	26.6487	0.0298		2.3262	2.3262		2.1401	2.1401	0.0000	3,126.1451	3,126.1451	0.9333		3,145.7441
Total	**3.8292**	**40.3790**	**26.6487**	**0.0298**	**6.5523**	**2.3262**	**8.8786**	**3.3675**	**2.1401**	**5.5076**	**0.0000**	**3,126.1451**	**3,126.1451**	**0.9333**		**3,145.7441**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3634	0.1137	1.4102	1.8400e-003	0.1431	1.3800e-003	0.1444	0.0379	1.2400e-003	0.0392		155.2378	155.2378	9.7800e-003		155.4432
Total	**0.3634**	**0.1137**	**1.4102**	**1.8400e-003**	**0.1431**	**1.3800e-003**	**0.1444**	**0.0379**	**1.2400e-003**	**0.0392**		**155.2378**	**155.2378**	**9.7800e-003**		**155.4432**

Marsh Project - Building Construction

Butte County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	19.26	1000sqft	0.44	19,255.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Building construction, paving, and painting assumed to occur concurrently

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	PhaseEndDate	10/26/2015	6/8/2015
tblConstructionPhase	PhaseEndDate	10/26/2015	6/8/2015
tblConstructionPhase	PhaseStartDate	6/9/2015	1/20/2015
tblConstructionPhase	PhaseStartDate	6/9/2015	1/20/2015
tblProjectCharacteristics	OperationalYear	2014	2016

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.3193	29.1127	20.6094	0.0299	0.2955	1.9552	2.2507	0.0789	1.8200	1.8989	0.0000	2,957.4588	2,957.4588	0.7085	0.0000	2,972.3365
Total	**8.3193**	**29.1127**	**20.6094**	**0.0299**	**0.2955**	**1.9552**	**2.2507**	**0.0789**	**1.8200**	**1.8989**	**0.0000**	**2,957.4588**	**2,957.4588**	**0.7085**	**0.0000**	**2,972.3365**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.3164	29.0866	20.5933	0.0298	0.2955	1.9534	2.2489	0.0789	1.8183	1.8973	0.0000	2,955.1040	2,955.1040	0.7078	0.0000	2,969.9684
Total	**8.3164**	**29.0866**	**20.5933**	**0.0298**	**0.2955**	**1.9534**	**2.2489**	**0.0789**	**1.8183**	**1.8973**	**0.0000**	**2,955.1040**	**2,955.1040**	**0.7078**	**0.0000**	**2,969.9684**

	ROG	NOx	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	**0.0338**	**0.0898**	**0.0782**	**0.1005**	**0.0000**	**0.0916**	**0.0795**	**0.0000**	**0.0912**	**0.0874**	**0.0000**	**0.0796**	**0.0796**	**0.0889**	**0.0000**	**0.0797**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/20/2015	6/8/2015	5	100	
2	Paving	Paving	1/20/2015	6/8/2015	5	100	
3	Architectural Coating	Architectural Coating	1/20/2015	6/8/2015	5	100	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	5	8.00	3.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4538	14.3777	8.2983	0.0113		0.9995	0.9995		0.9195	0.9195		1,191.7021	1,191.7021	0.3558		1,199.1733
Total	**1.4538**	**14.3777**	**8.2983**	**0.0113**		**0.9995**	**0.9995**		**0.9195**	**0.9195**		**1,191.7021**	**1,191.7021**	**0.3558**		**1,199.1733**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1088	0.4099	0.4184	1.0000e-003	0.0285	7.5600e-003	0.0361	8.1100e-003	6.9400e-003	0.0151		100.9881	100.9881	8.3000e-004		101.0055
Worker	0.1938	0.0606	0.7521	9.8000e-004	0.0763	7.4000e-004	0.0770	0.0202	6.6000e-004	0.0209		82.7935	82.7935	5.2200e-003		82.9030
Total	**0.3027**	**0.4705**	**1.1706**	**1.9800e-003**	**0.1048**	**8.3000e-003**	**0.1131**	**0.0283**	**7.6000e-003**	**0.0360**		**183.7816**	**183.7816**	**6.0500e-003**		**183.9085**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4524	14.3645	8.2907	0.0113		0.9986	0.9986		0.9187	0.9187	0.0000	1,190.6088	1,190.6088	0.3555		1,198.0731
Total	**1.4524**	**14.3645**	**8.2907**	**0.0113**		**0.9986**	**0.9986**		**0.9187**	**0.9187**	**0.0000**	**1,190.6088**	**1,190.6088**	**0.3555**		**1,198.0731**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1088	0.4099	0.4184	1.0000e-003	0.0285	7.5600e-003	0.0361	8.1100e-003	6.9400e-003	0.0151		100.9881	100.9881	8.3000e-004		101.0055
Worker	0.1938	0.0606	0.7521	9.8000e-004	0.0763	7.4000e-004	0.0770	0.0202	6.6000e-004	0.0209		82.7935	82.7935	5.2200e-003		82.9030
Total	**0.3027**	**0.4705**	**1.1706**	**1.9800e-003**	**0.1048**	**8.3000e-003**	**0.1131**	**0.0283**	**7.6000e-003**	**0.0360**		**183.7816**	**183.7816**	**6.0500e-003**		**183.9085**

3.3 Paving - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2092	11.5427	7.3586	0.0111		0.7247	0.7247		0.6703	0.6703		1,093.5433	1,093.5433	0.2970		1,099.7794
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2092**	**11.5427**	**7.3586**	**0.0111**		**0.7247**	**0.7247**		**0.6703**	**0.6703**		**1,093.5433**	**1,093.5433**	**0.2970**		**1,099.7794**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4361	0.1364	1.6923	2.2100e-003	0.1717	1.6600e-003	0.1733	0.0455	1.4900e-003	0.0470		186.2854	186.2854	0.0117		186.5318
Total	**0.4361**	**0.1364**	**1.6923**	**2.2100e-003**	**0.1717**	**1.6600e-003**	**0.1733**	**0.0455**	**1.4900e-003**	**0.0470**		**186.2854**	**186.2854**	**0.0117**		**186.5318**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2081	11.5321	7.3518	0.0111		0.7240	0.7240		0.6697	0.6697	0.0000	1,092.5401	1,092.5401	0.2967		1,098.7705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2081**	**11.5321**	**7.3518**	**0.0111**		**0.7240**	**0.7240**		**0.6697**	**0.6697**	**0.0000**	**1,092.5401**	**1,092.5401**	**0.2967**		**1,098.7705**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4361	0.1364	1.6923	2.2100e-003	0.1717	1.6600e-003	0.1733	0.0455	1.4900e-003	0.0470		186.2854	186.2854	0.0117		186.5318
Total	**0.4361**	**0.1364**	**1.6923**	**2.2100e-003**	**0.1717**	**1.6600e-003**	**0.1733**	**0.0455**	**1.4900e-003**	**0.0470**		**186.2854**	**186.2854**	**0.0117**		**186.5318**

3.4 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.4625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**4.8691**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0485	0.0152	0.1880	2.5000e-004	0.0191	1.8000e-004	0.0193	5.0600e-003	1.7000e-004	5.2200e-003		20.6984	20.6984	1.3000e-003		20.7258
Total	**0.0485**	**0.0152**	**0.1880**	**2.5000e-004**	**0.0191**	**1.8000e-004**	**0.0193**	**5.0600e-003**	**1.7000e-004**	**5.2200e-003**		**20.6984**	**20.6984**	**1.3000e-003**		**20.7258**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.4625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4062	2.5680	1.9000	2.9700e-003		0.2207	0.2207		0.2207	0.2207	0.0000	281.1898	281.1898	0.0366		281.9587
Total	**4.8687**	**2.5680**	**1.9000**	**2.9700e-003**		**0.2207**	**0.2207**		**0.2207**	**0.2207**	**0.0000**	**281.1898**	**281.1898**	**0.0366**		**281.9587**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0485	0.0152	0.1880	2.5000e-004	0.0191	1.8000e-004	0.0193	5.0600e-003	1.7000e-004	5.2200e-003		20.6984	20.6984	1.3000e-003		20.7258
Total	**0.0485**	**0.0152**	**0.1880**	**2.5000e-004**	**0.0191**	**1.8000e-004**	**0.0193**	**5.0600e-003**	**1.7000e-004**	**5.2200e-003**		**20.6984**	**20.6984**	**1.3000e-003**		**20.7258**

Marsh Project - Hardscape Installation

Butte County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	196.20	1000sqft	4.50	196,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Hardscape includes outdoor instructional/assembly space with stage and concrete seating. Also includes walking paths, side walks, mainenance and delivery roads, pedestrial bridges, and basketball courts.

Construction Phase - Building construction phase included to account for worker commutes

Off-road Equipment - No cranes or welders required for hardscape installation

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	60.00
tblConstructionPhase	NumDays	18.00	60.00
tblConstructionPhase	PhaseEndDate	8/3/2015	5/11/2015
tblConstructionPhase	PhaseStartDate	5/12/2015	2/17/2015
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2016

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	7.9757	45.9056	40.7625	0.0611	1.2768	2.9219	4.1987	0.3445	2.7202	3.0647	0.0000	6,017.9222	6,017.9222	1.0980	0.0000	6,040.9807
Total	**7.9757**	**45.9056**	**40.7625**	**0.0611**	**1.2768**	**2.9219**	**4.1987**	**0.3445**	**2.7202**	**3.0647**	**0.0000**	**6,017.9222**	**6,017.9222**	**1.0980**	**0.0000**	**6,040.9807**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	7.9717	45.8682	40.7380	0.0611	1.2768	2.9193	4.1961	0.3445	2.7178	3.0622	0.0000	6,014.3579	6,014.3579	1.0971	0.0000	6,037.3966
Total	**7.9717**	**45.8682**	**40.7380**	**0.0611**	**1.2768**	**2.9193**	**4.1961**	**0.3445**	**2.7178**	**3.0622**	**0.0000**	**6,014.3579**	**6,014.3579**	**1.0971**	**0.0000**	**6,037.3966**

	ROG	NOx	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	**0.0499**	**0.0815**	**0.0601**	**0.0654**	**0.0000**	**0.0890**	**0.0619**	**0.0000**	**0.0890**	**0.0790**	**0.0000**	**0.0592**	**0.0592**	**0.0856**	**0.0000**	**0.0593**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	2/17/2015	5/11/2015	5	60	
2	Paving	Paving	2/17/2015	5/11/2015	5	60	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	6.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Paving Equipment	2	6.00	130	0.36
Building Construction	Welders	0	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
Building Construction	7	82.00	32.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3834	20.4545	14.0303	0.0193		1.6078	1.6078		1.5096	1.5096		1,963.7899	1,963.7899	0.4639		1,973.5309
Total	**2.3834**	**20.4545**	**14.0303**	**0.0193**		**1.6078**	**1.6078**		**1.5096**	**1.5096**		**1,963.7899**	**1,963.7899**	**0.4639**		**1,973.5309**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.1610	4.3718	4.4633	0.0106	0.3041	0.0806	0.3847	0.0865	0.0741	0.1605		1,077.2064	1,077.2064	8.8300e-003		1,077.3917
Worker	1.9866	0.6213	7.7093	0.0101	0.7820	7.5400e-003	0.7896	0.2074	6.8000e-003	0.2142		848.6333	848.6333	0.0535		849.7560
Total	**3.1476**	**4.9931**	**12.1725**	**0.0207**	**1.0861**	**0.0881**	**1.1742**	**0.2939**	**0.0809**	**0.3747**		**1,925.8396**	**1,925.8396**	**0.0623**		**1,927.1477**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3812	20.4358	14.0174	0.0193		1.6064	1.6064		1.5083	1.5083	0.0000	1,961.9882	1,961.9882	0.4634		1,971.7203
Total	**2.3812**	**20.4358**	**14.0174**	**0.0193**		**1.6064**	**1.6064**		**1.5083**	**1.5083**	**0.0000**	**1,961.9882**	**1,961.9882**	**0.4634**		**1,971.7203**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.1610	4.3718	4.4633	0.0106	0.3041	0.0806	0.3847	0.0865	0.0741	0.1605		1,077.2064	1,077.2064	8.8300e-003		1,077.3917
Worker	1.9866	0.6213	7.7093	0.0101	0.7820	7.5400e-003	0.7896	0.2074	6.8000e-003	0.2142		848.6333	848.6333	0.0535		849.7560
Total	**3.1476**	**4.9931**	**12.1725**	**0.0207**	**1.0861**	**0.0881**	**1.1742**	**0.2939**	**0.0809**	**0.3747**		**1,925.8396**	**1,925.8396**	**0.0623**		**1,927.1477**

3.3 Paving - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9601	20.3064	12.6794	0.0186		1.2241	1.2241		1.1280	1.1280		1,921.3091	1,921.3091	0.5588		1,933.0446
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9601**	**20.3064**	**12.6794**	**0.0186**		**1.2241**	**1.2241**		**1.1280**	**1.1280**		**1,921.3091**	**1,921.3091**	**0.5588**		**1,933.0446**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4846	0.1515	1.8803	2.4600e-003	0.1907	1.8400e-003	0.1926	0.0506	1.6600e-003	0.0522		206.9837	206.9837	0.0130		207.2576
Total	**0.4846**	**0.1515**	**1.8803**	**2.4600e-003**	**0.1907**	**1.8400e-003**	**0.1926**	**0.0506**	**1.6600e-003**	**0.0522**		**206.9837**	**206.9837**	**0.0130**		**207.2576**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9583	20.2878	12.6677	0.0186		1.2230	1.2230		1.1270	1.1270	0.0000	1,919.5464	1,919.5464	0.5583		1,931.2711
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9583**	**20.2878**	**12.6677**	**0.0186**		**1.2230**	**1.2230**		**1.1270**	**1.1270**	**0.0000**	**1,919.5464**	**1,919.5464**	**0.5583**		**1,931.2711**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4846	0.1515	1.8803	2.4600e-003	0.1907	1.8400e-003	0.1926	0.0506	1.6600e-003	0.0522		206.9837	206.9837	0.0130		207.2576
Total	**0.4846**	**0.1515**	**1.8803**	**2.4600e-003**	**0.1907**	**1.8400e-003**	**0.1926**	**0.0506**	**1.6600e-003**	**0.0522**		**206.9837**	**206.9837**	**0.0130**		**207.2576**

Marsh Project - Operations

Butte County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	19.23	1000sqft	0.44	19,225.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Project will not generate additional traffic

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2014	2016
tblVehicleTrips	WD_TR	13.78	0.00

2.0 Emissions Summary

2.1 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5337	2.0000e-005	2.0100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.2100e-003	4.2100e-003	1.0000e-005		4.4600e-003
Energy	0.0150	0.1360	0.1142	8.2000e-004		0.0103	0.0103		0.0103	0.0103		163.1569	163.1569	3.1300e-003	2.9900e-003	164.1498
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.5486**	**0.1360**	**0.1162**	**8.2000e-004**	**0.0000**	**0.0103**	**0.0103**	**0.0000**	**0.0103**	**0.0103**		**163.1611**	**163.1611**	**3.1400e-003**	**2.9900e-003**	**164.1543**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5337	2.0000e-005	2.0100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.2100e-003	4.2100e-003	1.0000e-005		4.4600e-003
Energy	0.0150	0.1360	0.1142	8.2000e-004		0.0103	0.0103		0.0103	0.0103		163.1569	163.1569	3.1300e-003	2.9900e-003	164.1498
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.5486**	**0.1360**	**0.1162**	**8.2000e-004**	**0.0000**	**0.0103**	**0.0103**	**0.0000**	**0.0103**	**0.0103**		**163.1611**	**163.1611**	**3.1400e-003**	**2.9900e-003**	**164.1543**

	ROG	NOx	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.0 Operational Detail - Mobile

3.1 Mitigation Measures Mobile

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

3.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior High School	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

3.3 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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior High School	10.52	10.52	10.52	72.80	22.20	5.00	63	25	12

3.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.401602	0.057230	0.218293	0.159986	0.073836	0.007900	0.014763	0.050950	0.001710	0.001152	0.007480	0.000857	0.004240

4.0 Energy Detail

Historical Energy Use: N

4.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0150	0.1360	0.1142	8.2000e-004		0.0103	0.0103		0.0103	0.0103		163.1569	163.1569	3.1300e-003	2.9900e-003	164.1498
NaturalGas Unmitigated	0.0150	0.1360	0.1142	8.2000e-004		0.0103	0.0103		0.0103	0.0103		163.1569	163.1569	3.1300e-003	2.9900e-003	164.1498

4.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior High School	1386.83	0.0150	0.1360	0.1142	8.2000e-004		0.0103	0.0103		0.0103	0.0103		163.1569	163.1569	3.1300e-003	2.9900e-003	164.1498
Total		**0.0150**	**0.1360**	**0.1142**	**8.2000e-004**		**0.0103**	**0.0103**		**0.0103**	**0.0103**		**163.1569**	**163.1569**	**3.1300e-003**	**2.9900e-003**	**164.1498**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior High School	1.38683	0.0150	0.1360	0.1142	8.2000e-004		0.0103	0.0103		0.0103	0.0103		163.1569	163.1569	3.1300e-003	2.9900e-003	164.1498
Total		**0.0150**	**0.1360**	**0.1142**	**8.2000e-004**		**0.0103**	**0.0103**		**0.0103**	**0.0103**		**163.1569**	**163.1569**	**3.1300e-003**	**2.9900e-003**	**164.1498**

5.0 Area Detail

5.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5337	2.0000e-005	2.0100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.2100e-003	4.2100e-003	1.0000e-005		4.4600e-003
Unmitigated	0.5337	2.0000e-005	2.0100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.2100e-003	4.2100e-003	1.0000e-005		4.4600e-003

5.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1221					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4114					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.0100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.2100e-003	4.2100e-003	1.0000e-005		4.4600e-003
Total	**0.5337**	**2.0000e-005**	**2.0100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.2100e-003**	**4.2100e-003**	**1.0000e-005**		**4.4600e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1221					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4114					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.0100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.2100e-003	4.2100e-003	1.0000e-005		4.4600e-003
Total	**0.5337**	**2.0000e-005**	**2.0100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.2100e-003**	**4.2100e-003**	**1.0000e-005**		**4.4600e-003**

APPENDIX B
GREENHOUSE GAS EMISSIONS

Marsh Project - Demolition and Earthwork

Butte County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	0.00	1000sqft	5.00	210,925.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Area of disturbance = approximately 5 acres

Construction Phase -

Demolition -

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	0.00	210,925.00
tblLandUse	LotAcreage	0.00	5.00
tblProjectCharacteristics	OperationalYear	2014	2016

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.0836	0.8085	0.6097	6.9000e-004	0.0878	0.0419	0.1297	0.0412	0.0388	0.0800	0.0000	64.4505	64.4505	0.0165	0.0000	64.7971
Total	**0.0836**	**0.8085**	**0.6097**	**6.9000e-004**	**0.0878**	**0.0419**	**0.1297**	**0.0412**	**0.0388**	**0.0800**	**0.0000**	**64.4505**	**64.4505**	**0.0165**	**0.0000**	**64.7971**

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					
2015	0.0835	0.8075	0.6090	6.9000e-004	0.1023	0.0418	0.1441	0.0447	0.0388	0.0835	0.0000	64.3813	64.3813	0.0165	0.0000	64.7276
Total	**0.0835**	**0.8075**	**0.6090**	**6.9000e-004**	**0.1023**	**0.0418**	**0.1441**	**0.0447**	**0.0388**	**0.0835**	**0.0000**	**64.3813**	**64.3813**	**0.0165**	**0.0000**	**64.7276**

	ROG	NOx	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	**0.1076**	**0.1150**	**0.1132**	**0.0000**	**-16.4617**	**0.0956**	**-11.1094**	**-8.6207**	**0.1288**	**-4.3745**	**0.0000**	**0.1073**	**0.1073**	**0.1211**	**0.0000**	**0.1073**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	1/28/2015	5	20	
2	Site Preparation	Site Preparation	1/29/2015	2/4/2015	5	5	
3	Grading	Grading	2/5/2015	2/16/2015	5	8	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	3	8.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	121.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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					0.0131	0.0000	0.0131	1.9900e-003	0.0000	1.9900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0451	0.4836	0.3607	4.0000e-004		0.0245	0.0245		0.0229	0.0229	0.0000	37.4413	37.4413	0.0102	0.0000	37.6544
Total	**0.0451**	**0.4836**	**0.3607**	**4.0000e-004**	**0.0131**	**0.0245**	**0.0376**	**1.9900e-003**	**0.0229**	**0.0249**	**0.0000**	**37.4413**	**37.4413**	**0.0102**	**0.0000**	**37.6544**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.1300e-003	0.0188	0.0149	5.0000e-005	1.0200e-003	3.0000e-004	1.3200e-003	2.8000e-004	2.7000e-004	5.5000e-004	0.0000	4.1733	4.1733	3.0000e-005	0.0000	4.1740
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4900e-003	1.2600e-003	0.0122	2.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.8000e-004	0.0000	1.2684	1.2684	9.0000e-005	0.0000	1.2702
Total	**7.6200e-003**	**0.0201**	**0.0271**	**7.0000e-005**	**2.3900e-003**	**3.1000e-004**	**2.7000e-003**	**6.4000e-004**	**2.8000e-004**	**9.3000e-004**	**0.0000**	**5.4417**	**5.4417**	**1.2000e-004**	**0.0000**	**5.4442**

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					0.0131	0.0000	0.0131	1.9900e-003	0.0000	1.9900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0450	0.4831	0.3603	4.0000e-004		0.0245	0.0245		0.0228	0.0228	0.0000	37.3967	37.3967	0.0101	0.0000	37.6096
Total	**0.0450**	**0.4831**	**0.3603**	**4.0000e-004**	**0.0131**	**0.0245**	**0.0376**	**1.9900e-003**	**0.0228**	**0.0248**	**0.0000**	**37.3967**	**37.3967**	**0.0101**	**0.0000**	**37.6096**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.1300e-003	0.0188	0.0149	5.0000e-005	0.0155	3.0000e-004	0.0158	3.8300e-003	2.7000e-004	4.1000e-003	0.0000	4.1733	4.1733	3.0000e-005	0.0000	4.1740
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4900e-003	1.2600e-003	0.0122	2.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.8000e-004	0.0000	1.2684	1.2684	9.0000e-005	0.0000	1.2702
Total	**7.6200e-003**	**0.0201**	**0.0271**	**7.0000e-005**	**0.0169**	**3.1000e-004**	**0.0172**	**4.1900e-003**	**2.8000e-004**	**4.4800e-003**	**0.0000**	**5.4417**	**5.4417**	**1.2000e-004**	**0.0000**	**5.4442**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

Acres of Grading: 4

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.1422	0.1066	1.0000e-004		7.7200e-003	7.7200e-003		7.1000e-003	7.1000e-003	0.0000	9.3253	9.3253	2.7800e-003	0.0000	9.3837
Total	**0.0132**	**0.1422**	**0.1066**	**1.0000e-004**	**0.0452**	**7.7200e-003**	**0.0529**	**0.0248**	**7.1000e-003**	**0.0319**	**0.0000**	**9.3253**	**9.3253**	**2.7800e-003**	**0.0000**	**9.3837**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0500e-003	3.8000e-004	3.6500e-003	0.0000	4.1000e-004	0.0000	4.2000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3805	0.3805	3.0000e-005	0.0000	0.3811
Total	**1.0500e-003**	**3.8000e-004**	**3.6500e-003**	**0.0000**	**4.1000e-004**	**0.0000**	**4.2000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3805**	**0.3805**	**3.0000e-005**	**0.0000**	**0.3811**

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0131	0.1421	0.1065	1.0000e-004		7.7100e-003	7.7100e-003		7.0900e-003	7.0900e-003	0.0000	9.3142	9.3142	2.7800e-003	0.0000	9.3726
Total	**0.0131**	**0.1421**	**0.1065**	**1.0000e-004**	**0.0452**	**7.7100e-003**	**0.0529**	**0.0248**	**7.0900e-003**	**0.0319**	**0.0000**	**9.3142**	**9.3142**	**2.7800e-003**	**0.0000**	**9.3726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0500e-003	3.8000e-004	3.6500e-003	0.0000	4.1000e-004	0.0000	4.2000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3805	0.3805	3.0000e-005	0.0000	0.3811
Total	**1.0500e-003**	**3.8000e-004**	**3.6500e-003**	**0.0000**	**4.1000e-004**	**0.0000**	**4.2000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3805**	**0.3805**	**3.0000e-005**	**0.0000**	**0.3811**

3.4 Grading - 2015

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0153	0.1617	0.1067	1.2000e-004		9.3100e-003	9.3100e-003		8.5700e-003	8.5700e-003	0.0000	11.3544	11.3544	3.3900e-003	0.0000	11.4256
Total	**0.0153**	**0.1617**	**0.1067**	**1.2000e-004**	**0.0262**	**9.3100e-003**	**0.0355**	**0.0135**	**8.5700e-003**	**0.0220**	**0.0000**	**11.3544**	**11.3544**	**3.3900e-003**	**0.0000**	**11.4256**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-003	5.0000e-004	4.8700e-003	1.0000e-005	5.5000e-004	1.0000e-005	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5074	0.5074	4.0000e-005	0.0000	0.5081
Total	**1.4000e-003**	**5.0000e-004**	**4.8700e-003**	**1.0000e-005**	**5.5000e-004**	**1.0000e-005**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5074**	**0.5074**	**4.0000e-005**	**0.0000**	**0.5081**

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0153	0.1615	0.1066	1.2000e-004		9.3000e-003	9.3000e-003		8.5600e-003	8.5600e-003	0.0000	11.3409	11.3409	3.3900e-003	0.0000	11.4120
Total	**0.0153**	**0.1615**	**0.1066**	**1.2000e-004**	**0.0262**	**9.3000e-003**	**0.0355**	**0.0135**	**8.5600e-003**	**0.0220**	**0.0000**	**11.3409**	**11.3409**	**3.3900e-003**	**0.0000**	**11.4120**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-003	5.0000e-004	4.8700e-003	1.0000e-005	5.5000e-004	1.0000e-005	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5074	0.5074	4.0000e-005	0.0000	0.5081
Total	**1.4000e-003**	**5.0000e-004**	**4.8700e-003**	**1.0000e-005**	**5.5000e-004**	**1.0000e-005**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5074**	**0.5074**	**4.0000e-005**	**0.0000**	**0.5081**

Marsh Project - Building Construction

Butte County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	19.26	1000sqft	0.44	19,255.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Building construction, paving, and painting assumed to occur concurrently

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	PhaseEndDate	10/26/2015	6/8/2015
tblConstructionPhase	PhaseEndDate	10/26/2015	6/8/2015
tblConstructionPhase	PhaseStartDate	6/9/2015	1/20/2015
tblConstructionPhase	PhaseStartDate	6/9/2015	1/20/2015
tblProjectCharacteristics	OperationalYear	2014	2016

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.4147	1.4579	1.0160	1.4700e-003	0.0142	0.0978	0.1119	3.8000e-003	0.0910	0.0948	0.0000	132.8316	132.8316	0.0321	0.0000	133.5065
Total	**0.4147**	**1.4579**	**1.0160**	**1.4700e-003**	**0.0142**	**0.0978**	**0.1119**	**3.8000e-003**	**0.0910**	**0.0948**	**0.0000**	**132.8316**	**132.8316**	**0.0321**	**0.0000**	**133.5065**

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					
2015	0.4146	1.4562	1.0149	1.4700e-003	0.0142	0.0976	0.1118	3.8000e-003	0.0909	0.0947	0.0000	132.6931	132.6931	0.0321	0.0000	133.3672
Total	**0.4146**	**1.4562**	**1.0149**	**1.4700e-003**	**0.0142**	**0.0976**	**0.1118**	**3.8000e-003**	**0.0909**	**0.0947**	**0.0000**	**132.6931**	**132.6931**	**0.0321**	**0.0000**	**133.3672**

	ROG	NOx	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	**0.0434**	**0.1166**	**0.1024**	**0.0000**	**0.0000**	**0.1227**	**0.1072**	**0.0000**	**0.1209**	**0.1160**	**0.0000**	**0.1043**	**0.1043**	**0.1245**	**0.0000**	**0.1043**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/20/2015	6/8/2015	5	100	
2	Paving	Paving	1/20/2015	6/8/2015	5	100	
3	Architectural Coating	Architectural Coating	1/20/2015	6/8/2015	5	100	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	5	8.00	3.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0727	0.7189	0.4149	5.7000e-004		0.0500	0.0500		0.0460	0.0460	0.0000	54.0547	54.0547	0.0161	0.0000	54.3936
Total	**0.0727**	**0.7189**	**0.4149**	**5.7000e-004**		**0.0500**	**0.0500**		**0.0460**	**0.0460**	**0.0000**	**54.0547**	**54.0547**	**0.0161**	**0.0000**	**54.3936**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.5600e-003	0.0216	0.0244	5.0000e-005	1.3700e-003	3.8000e-004	1.7500e-003	3.9000e-004	3.5000e-004	7.4000e-004	0.0000	4.5703	4.5703	4.0000e-005	0.0000	4.5711
Worker	9.3100e-003	3.3600e-003	0.0325	4.0000e-005	3.6500e-003	4.0000e-005	3.6900e-003	9.7000e-004	3.0000e-005	1.0100e-003	0.0000	3.3823	3.3823	2.4000e-004	0.0000	3.3873
Total	**0.0149**	**0.0250**	**0.0569**	**9.0000e-005**	**5.0200e-003**	**4.2000e-004**	**5.4400e-003**	**1.3600e-003**	**3.8000e-004**	**1.7500e-003**	**0.0000**	**7.9526**	**7.9526**	**2.8000e-004**	**0.0000**	**7.9584**

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	0.0726	0.7180	0.4144	5.7000e-004		0.0499	0.0499		0.0459	0.0459	0.0000	53.9904	53.9904	0.0161	0.0000	54.3289
Total	**0.0726**	**0.7180**	**0.4144**	**5.7000e-004**		**0.0499**	**0.0499**		**0.0459**	**0.0459**	**0.0000**	**53.9904**	**53.9904**	**0.0161**	**0.0000**	**54.3289**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.5600e-003	0.0216	0.0244	5.0000e-005	1.3700e-003	3.8000e-004	1.7500e-003	3.9000e-004	3.5000e-004	7.4000e-004	0.0000	4.5703	4.5703	4.0000e-005	0.0000	4.5711
Worker	9.3100e-003	3.3600e-003	0.0325	4.0000e-005	3.6500e-003	4.0000e-005	3.6900e-003	9.7000e-004	3.0000e-005	1.0100e-003	0.0000	3.3823	3.3823	2.4000e-004	0.0000	3.3873
Total	**0.0149**	**0.0250**	**0.0569**	**9.0000e-005**	**5.0200e-003**	**4.2000e-004**	**5.4400e-003**	**1.3600e-003**	**3.8000e-004**	**1.7500e-003**	**0.0000**	**7.9526**	**7.9526**	**2.8000e-004**	**0.0000**	**7.9584**

3.3 Paving - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0605	0.5771	0.3679	5.6000e-004		0.0362	0.0362		0.0335	0.0335	0.0000	49.6023	49.6023	0.0135	0.0000	49.8852
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0605**	**0.5771**	**0.3679**	**5.6000e-004**		**0.0362**	**0.0362**		**0.0335**	**0.0335**	**0.0000**	**49.6023**	**49.6023**	**0.0135**	**0.0000**	**49.8852**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0209	7.5700e-003	0.0731	1.0000e-004	8.2200e-003	8.0000e-005	8.3000e-003	2.1900e-003	7.0000e-005	2.2600e-003	0.0000	7.6102	7.6102	5.3000e-004	0.0000	7.6214
Total	**0.0209**	**7.5700e-003**	**0.0731**	**1.0000e-004**	**8.2200e-003**	**8.0000e-005**	**8.3000e-003**	**2.1900e-003**	**7.0000e-005**	**2.2600e-003**	**0.0000**	**7.6102**	**7.6102**	**5.3000e-004**	**0.0000**	**7.6214**

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	0.0604	0.5765	0.3675	5.5000e-004		0.0362	0.0362		0.0335	0.0335	0.0000	49.5433	49.5433	0.0135	0.0000	49.8258
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0604**	**0.5765**	**0.3675**	**5.5000e-004**		**0.0362**	**0.0362**		**0.0335**	**0.0335**	**0.0000**	**49.5433**	**49.5433**	**0.0135**	**0.0000**	**49.8258**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0209	7.5700e-003	0.0731	1.0000e-004	8.2200e-003	8.0000e-005	8.3000e-003	2.1900e-003	7.0000e-005	2.2600e-003	0.0000	7.6102	7.6102	5.3000e-004	0.0000	7.6214
Total	**0.0209**	**7.5700e-003**	**0.0731**	**1.0000e-004**	**8.2200e-003**	**8.0000e-005**	**8.3000e-003**	**2.1900e-003**	**7.0000e-005**	**2.2600e-003**	**0.0000**	**7.6102**	**7.6102**	**5.3000e-004**	**0.0000**	**7.6214**

3.4 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2231					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0203	0.1285	0.0951	1.5000e-004		0.0110	0.0110		0.0110	0.0110	0.0000	12.7663	12.7663	1.6600e-003	0.0000	12.8012
Total	**0.2435**	**0.1285**	**0.0951**	**1.5000e-004**		**0.0110**	**0.0110**		**0.0110**	**0.0110**	**0.0000**	**12.7663**	**12.7663**	**1.6600e-003**	**0.0000**	**12.8012**

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	2.3300e-003	8.4000e-004	8.1200e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8456	0.8456	6.0000e-005	0.0000	0.8468
Total	**2.3300e-003**	**8.4000e-004**	**8.1200e-003**	**1.0000e-005**	**9.1000e-004**	**1.0000e-005**	**9.2000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8456**	**0.8456**	**6.0000e-005**	**0.0000**	**0.8468**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2231					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0203	0.1284	0.0950	1.5000e-004		0.0110	0.0110		0.0110	0.0110	0.0000	12.7511	12.7511	1.6600e-003	0.0000	12.7860
Total	**0.2434**	**0.1284**	**0.0950**	**1.5000e-004**		**0.0110**	**0.0110**		**0.0110**	**0.0110**	**0.0000**	**12.7511**	**12.7511**	**1.6600e-003**	**0.0000**	**12.7860**

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	2.3300e-003	8.4000e-004	8.1200e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8456	0.8456	6.0000e-005	0.0000	0.8468
Total	**2.3300e-003**	**8.4000e-004**	**8.1200e-003**	**1.0000e-005**	**9.1000e-004**	**1.0000e-005**	**9.2000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8456**	**0.8456**	**6.0000e-005**	**0.0000**	**0.8468**

Marsh Project - Hardscape Installation

Butte County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	196.20	1000sqft	4.50	196,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Hardscape includes outdoor instructional/assembly space with stage and concrete seating. Also includes walking paths, side walks, mainenance and delivery roads, pedestrial bridges, and basketball courts.

Construction Phase - Building construction phase included to account for worker commutes

Off-road Equipment - No cranes or welders required for hardscape installation

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	60.00
tblConstructionPhase	NumDays	18.00	60.00
tblConstructionPhase	PhaseEndDate	8/3/2015	5/11/2015
tblConstructionPhase	PhaseStartDate	5/12/2015	2/17/2015
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2016

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.2371	1.3869	1.2058	1.8000e-003	0.0368	0.0877	0.1244	9.9500e-003	0.0816	0.0916	0.0000	160.8595	160.8595	0.0299	0.0000	161.4871
Total	**0.2371**	**1.3869**	**1.2058**	**1.8000e-003**	**0.0368**	**0.0877**	**0.1244**	**9.9500e-003**	**0.0816**	**0.0916**	**0.0000**	**160.8595**	**160.8595**	**0.0299**	**0.0000**	**161.4871**

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					
2015	0.2370	1.3854	1.2048	1.7900e-003	0.0368	0.0876	0.1243	9.9500e-003	0.0815	0.0915	0.0000	160.7337	160.7337	0.0299	0.0000	161.3606
Total	**0.2370**	**1.3854**	**1.2048**	**1.7900e-003**	**0.0368**	**0.0876**	**0.1243**	**9.9500e-003**	**0.0815**	**0.0915**	**0.0000**	**160.7337**	**160.7337**	**0.0299**	**0.0000**	**161.3606**

	ROG	NOx	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	**0.0633**	**0.1053**	**0.0796**	**0.5556**	**0.0000**	**0.1141**	**0.0804**	**0.0000**	**0.1103**	**0.1092**	**0.0000**	**0.0782**	**0.0782**	**0.1338**	**0.0000**	**0.0783**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	2/17/2015	5/11/2015	5	60	
2	Paving	Paving	2/17/2015	5/11/2015	5	60	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	6.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Paving Equipment	2	6.00	130	0.36
Building Construction	Welders	0	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
Building Construction	7	82.00	32.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0715	0.6136	0.4209	5.8000e-004		0.0482	0.0482		0.0453	0.0453	0.0000	53.4456	53.4456	0.0126	0.0000	53.7107
Total	**0.0715**	**0.6136**	**0.4209**	**5.8000e-004**		**0.0482**	**0.0482**		**0.0453**	**0.0453**	**0.0000**	**53.4456**	**53.4456**	**0.0126**	**0.0000**	**53.7107**

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	0.0356	0.1383	0.1561	3.2000e-004	8.8000e-003	2.4300e-003	0.0112	2.5100e-003	2.2300e-003	4.7500e-003	0.0000	29.2498	29.2498	2.4000e-004	0.0000	29.2548
Worker	0.0573	0.0207	0.1997	2.7000e-004	0.0225	2.3000e-004	0.0227	5.9800e-003	2.0000e-004	6.1800e-003	0.0000	20.8012	20.8012	1.4600e-003	0.0000	20.8318
Total	**0.0928**	**0.1590**	**0.3558**	**5.9000e-004**	**0.0313**	**2.6600e-003**	**0.0339**	**8.4900e-003**	**2.4300e-003**	**0.0109**	**0.0000**	**50.0510**	**50.0510**	**1.7000e-003**	**0.0000**	**50.0866**

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	0.0714	0.6129	0.4204	5.8000e-004		0.0482	0.0482		0.0452	0.0452	0.0000	53.3820	53.3820	0.0126	0.0000	53.6468
Total	**0.0714**	**0.6129**	**0.4204**	**5.8000e-004**		**0.0482**	**0.0482**		**0.0452**	**0.0452**	**0.0000**	**53.3820**	**53.3820**	**0.0126**	**0.0000**	**53.6468**

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	0.0356	0.1383	0.1561	3.2000e-004	8.8000e-003	2.4300e-003	0.0112	2.5100e-003	2.2300e-003	4.7500e-003	0.0000	29.2498	29.2498	2.4000e-004	0.0000	29.2548
Worker	0.0573	0.0207	0.1997	2.7000e-004	0.0225	2.3000e-004	0.0227	5.9800e-003	2.0000e-004	6.1800e-003	0.0000	20.8012	20.8012	1.4600e-003	0.0000	20.8318
Total	**0.0928**	**0.1590**	**0.3558**	**5.9000e-004**	**0.0313**	**2.6600e-003**	**0.0339**	**8.4900e-003**	**2.4300e-003**	**0.0109**	**0.0000**	**50.0510**	**50.0510**	**1.7000e-003**	**0.0000**	**50.0866**

3.3 Paving - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0588	0.6092	0.3804	5.6000e-004		0.0367	0.0367		0.0338	0.0338	0.0000	52.2895	52.2895	0.0152	0.0000	52.6089
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0588**	**0.6092**	**0.3804**	**5.6000e-004**		**0.0367**	**0.0367**		**0.0338**	**0.0338**	**0.0000**	**52.2895**	**52.2895**	**0.0152**	**0.0000**	**52.6089**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0140	5.0500e-003	0.0487	7.0000e-005	5.4800e-003	6.0000e-005	5.5400e-003	1.4600e-003	5.0000e-005	1.5100e-003	0.0000	5.0735	5.0735	3.5000e-004	0.0000	5.0809
Total	**0.0140**	**5.0500e-003**	**0.0487**	**7.0000e-005**	**5.4800e-003**	**6.0000e-005**	**5.5400e-003**	**1.4600e-003**	**5.0000e-005**	**1.5100e-003**	**0.0000**	**5.0735**	**5.0735**	**3.5000e-004**	**0.0000**	**5.0809**

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	0.0587	0.6085	0.3799	5.6000e-004		0.0367	0.0367		0.0338	0.0338	0.0000	52.2273	52.2273	0.0152	0.0000	52.5463
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0587**	**0.6085**	**0.3799**	**5.6000e-004**		**0.0367**	**0.0367**		**0.0338**	**0.0338**	**0.0000**	**52.2273**	**52.2273**	**0.0152**	**0.0000**	**52.5463**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0140	5.0500e-003	0.0487	7.0000e-005	5.4800e-003	6.0000e-005	5.5400e-003	1.4600e-003	5.0000e-005	1.5100e-003	0.0000	5.0735	5.0735	3.5000e-004	0.0000	5.0809
Total	**0.0140**	**5.0500e-003**	**0.0487**	**7.0000e-005**	**5.4800e-003**	**6.0000e-005**	**5.5400e-003**	**1.4600e-003**	**5.0000e-005**	**1.5100e-003**	**0.0000**	**5.0735**	**5.0735**	**3.5000e-004**	**0.0000**	**5.0809**

Marsh Project - Operations

Butte County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	19.23	1000sqft	0.44	19,225.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Project will not generate additional traffic

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2014	2016
tblVehicleTrips	WD_TR	13.78	0.00

2.0 Emissions Summary

2.1 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	0.0974	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.4000e-004	3.4000e-004	0.0000	0.0000	3.6000e-004
Energy	2.7300e-003	0.0248	0.0208	1.5000e-004		1.8900e-003	1.8900e-003		1.8900e-003	1.8900e-003	0.0000	71.4191	71.4191	2.5300e-003	9.1000e-004	71.7544
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	5.0748	0.0000	5.0748	0.2999	0.0000	11.3729
Water						0.0000	0.0000		0.0000	0.0000	0.1258	1.6624	1.7882	0.0130	3.2000e-004	2.1606
Total	**0.1001**	**0.0248**	**0.0210**	**1.5000e-004**	**0.0000**	**1.8900e-003**	**1.8900e-003**	**0.0000**	**1.8900e-003**	**1.8900e-003**	**5.2006**	**73.0818**	**78.2824**	**0.3154**	**1.2300e-003**	**85.2883**

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	0.0974	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.4000e-004	3.4000e-004	0.0000	0.0000	3.6000e-004
Energy	2.7300e-003	0.0248	0.0208	1.5000e-004		1.8900e-003	1.8900e-003		1.8900e-003	1.8900e-003	0.0000	71.4191	71.4191	2.5300e-003	9.1000e-004	71.7544
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	5.0748	0.0000	5.0748	0.2999	0.0000	11.3729
Water						0.0000	0.0000		0.0000	0.0000	0.1258	1.6624	1.7882	0.0130	3.2000e-004	2.1604
Total	**0.1001**	**0.0248**	**0.0210**	**1.5000e-004**	**0.0000**	**1.8900e-003**	**1.8900e-003**	**0.0000**	**1.8900e-003**	**1.8900e-003**	**5.2006**	**73.0818**	**78.2824**	**0.3154**	**1.2300e-003**	**85.2881**

	ROG	NOx	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.1702e-003**	**0.0000**	**2.3450e-004**

3.0 Operational Detail - Mobile

3.1 Mitigation Measures Mobile

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

3.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior High School	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

3.3 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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior High School	10.52	10.52	10.52	72.80	22.20	5.00	63	25	12

3.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.401602	0.057230	0.218293	0.159986	0.073836	0.007900	0.014763	0.050950	0.001710	0.001152	0.007480	0.000857	0.004240

4.0 Energy Detail

Historical Energy Use: N

4.1 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	44.4066	44.4066	2.0100e-003	4.2000e-004	44.5776
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	44.4066	44.4066	2.0100e-003	4.2000e-004	44.5776
NaturalGas Mitigated	2.7300e-003	0.0248	0.0208	1.5000e-004		1.8900e-003	1.8900e-003		1.8900e-003	1.8900e-003	0.0000	27.0125	27.0125	5.2000e-004	5.0000e-004	27.1769
NaturalGas Unmitigated	2.7300e-003	0.0248	0.0208	1.5000e-004		1.8900e-003	1.8900e-003		1.8900e-003	1.8900e-003	0.0000	27.0125	27.0125	5.2000e-004	5.0000e-004	27.1769

4.2 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					
Junior High School	506194	2.7300e-003	0.0248	0.0208	1.5000e-004		1.8900e-003	1.8900e-003		1.8900e-003	1.8900e-003	0.0000	27.0125	27.0125	5.2000e-004	5.0000e-004	27.1769
Total		**2.7300e-003**	**0.0248**	**0.0208**	**1.5000e-004**		**1.8900e-003**	**1.8900e-003**		**1.8900e-003**	**1.8900e-003**	**0.0000**	**27.0125**	**27.0125**	**5.2000e-004**	**5.0000e-004**	**27.1769**

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					
Junior High School	506194	2.7300e-003	0.0248	0.0208	1.5000e-004		1.8900e-003	1.8900e-003		1.8900e-003	1.8900e-003	0.0000	27.0125	27.0125	5.2000e-004	5.0000e-004	27.1769
Total		**2.7300e-003**	**0.0248**	**0.0208**	**1.5000e-004**		**1.8900e-003**	**1.8900e-003**		**1.8900e-003**	**1.8900e-003**	**0.0000**	**27.0125**	**27.0125**	**5.2000e-004**	**5.0000e-004**	**27.1769**

4.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior High School	152647	44.4066	2.0100e-003	4.2000e-004	44.5776
Total		**44.4066**	**2.0100e-003**	**4.2000e-004**	**44.5776**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior High School	152647	44.4066	2.0100e-003	4.2000e-004	44.5776
Total		**44.4066**	**2.0100e-003**	**4.2000e-004**	**44.5776**

5.0 Area Detail

5.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0974	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.4000e-004	3.4000e-004	0.0000	0.0000	3.6000e-004
Unmitigated	0.0974	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.4000e-004	3.4000e-004	0.0000	0.0000	3.6000e-004

5.2 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	0.0223					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0751					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	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.4000e-004	3.4000e-004	0.0000	0.0000	3.6000e-004
Total	**0.0974**	**0.0000**	**1.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.4000e-004**	**3.4000e-004**	**0.0000**	**0.0000**	**3.6000e-004**

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	0.0223					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0751					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	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.4000e-004	3.4000e-004	0.0000	0.0000	3.6000e-004
Total	**0.0974**	**0.0000**	**1.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.4000e-004**	**3.4000e-004**	**0.0000**	**0.0000**	**3.6000e-004**

6.0 Water Detail

6.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.7882	0.0130	3.2000e-004	2.1604
Unmitigated	1.7882	0.0130	3.2000e-004	2.1606

6.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior High School	0.396542 / 1.01968	1.7882	0.0130	3.2000e-004	2.1606
Total		**1.7882**	**0.0130**	**3.2000e-004**	**2.1606**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior High School	0.396542 / 1.01968	1.7882	0.0130	3.2000e-004	2.1604
Total		**1.7882**	**0.0130**	**3.2000e-004**	**2.1604**

7.0 Waste Detail

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.0748	0.2999	0.0000	11.3729
Unmitigated	5.0748	0.2999	0.0000	11.3729

7.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior High School	25	5.0748	0.2999	0.0000	11.3729
Total		**5.0748**	**0.2999**	**0.0000**	**11.3729**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior High School	25	5.0748	0.2999	0.0000	11.3729
Total		**5.0748**	**0.2999**	**0.0000**	**11.3729**