April 2016 | **MND and Initial Study**

RICHARDSON MIDDLE SCHOOL GYMNASIUM

Torrance Unified School District

PLACEWORKS

TORRANCE UNIFIED SCHOOL DISTRICT

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MITIGATED NEGATIVE DECLARATION

Pursuant to the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Sections 15000 et seq.), the Torrance Unified School District has completed this Mitigated Negative Declaration (MND) for the project described below based on the assessment presented in the attached Initial Study.

LEAD AGENCY & PROJECT PROPONENT: Torrance Unified School District

PROJECT TITLE: Richardson Middle School Gymnasium Project

PROJECT LOCATION: The project site is on Richardson Middle School at 23751 Nancy Lee Lane in the City of Torrance. The site is 0.35 acre and encompasses an asphalt area, sandbox, and grass playfield.

PROJECT DESCRIPTION: The proposed project is the construction and operation of a new gymnasium on the Richardson Middle School campus. The facility would be approximately 8,260 square feet, with bleachers for seating up to 250 spectators. The proposed facility would not significantly change the existing operations of the school, which would continue to operate under the current schedule. The gymnasium would supplement the school's physical education program with new locker facilities and an indoor multiuse basketball and volleyball court. Although no joint-use programs are proposed for the gymnasium, the facility would be available for community use through the Civic Center Act.

EXISTING CONDITIONS: Richardson Middle School operates on a traditional calendar, generally starting near Labor Day and ending the middle of June. Typical school hours are between 8:10 AM and 2:57 PM; after-school clubs and enrichment programs are offered until 6:00 PM. Other than the standard school operation hours, the school also has nighttime school events, such as Back to School Night, Open House, school performances, athletic clubs, talent shows, and awards ceremonies. The performances and assemblies are currently held in the school's multipurpose room. When not in use by the school and District, the RMS school facilities are available for community use through the Civic Center Act.

DOCUMENT AVAILABILITY: The MND and supporting Initial Study for the Richardson Middle School Gymnasium Project are available for review at:

- Torrance Unified School District Administration, 2335 Plaza Del Amo, Torrance, CA 90501
- Richardson Middle School, 23751 Nancy Lee Lane, Torrance, CA 90505
- Katy Geissert Civic Center Library, 3301 Torrance Boulevard, Torrance, CA 90503
- District website: http://www.tusd.org/

SUMMARY OF IMPACTS: The attached Initial Study was prepared to identify the potential effects on the environment from the construction and operation of the proposed Richardson Middle School Gymnasium Project and to evaluate the significance of those effects.

Based on the environmental analysis, the proposed project would have no impacts or less-than-significant environmental impacts on the following 16 resources analyzed in the Initial Study:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Geology and Soil
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Noise
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

Project development would have potentially significant impacts on Cultural Resources. A mitigation measure has been incorporated into the project to effectively minimize all of the potentially significant environmental impacts. Compliance with the mitigation measure would avoid or reduce potentially significant impacts to less than significant levels.

CUL-1 Prior to the beginning of ground disturbances, Torrance Unified School District shall retain a qualified archaeologist/paleontologist to monitor ground-disturbing activities that occur five feet below ground surface. The archaeologist shall meet the Secretary of the Interior's Professional Qualifications Standards (48 Federal Register 44738-39). Before ground-disturbing activities begin, the archaeologist/ paleontologist shall prepare an archaeological monitoring plan consistent with CEQA Guidelines section 15064.5, specifying the frequency, duration, and methods of monitoring. The archaeologist/paleontologist shall train construction workers regarding types of archaeological and paleontological resources that could be identified in site soils. The archaeologist/paleontologist shall have the authority to stop grading or construction work within 25 feet of the site of any discovery of potential historical, archaeological, or paleontological resources until a find can be recovered and the significance of the find identified per CEQA. All resources recovered shall be curated at the facilities of the Natural History Museum of Los Angeles County.

April 2016 | Initial Study

Richardson Middle School Gymnasium

Torrance Unified School District

Prepared for:

Torrance Unified School District
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PLACEWORKS

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Abbreviations

AAQS	ambient air quality standards
AB	Assembly Bill
AQMP	air quality management plan
BAU	business as usual
BMP	best management practices
CAFÉ	Corporate Average Fuel Economy
CALGreen	California Green Building Code
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CDE	California Department of Education
CEQA	California Environmental Quality Act
CMP	congestion management program
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
dB	decibel
dBA	A-weighted decibel
DPM	diesel particulate matter
EIR	environmental impact report
EPA	United States Environmental Protection Agency
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
GHG	greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
JWPCP	Joint Water Pollution Control Plant
L_{eq}	equivalent continuous noise level
LACSD	Sanitation Districts of Los Angeles County
LARA	Los Angeles Regional Agency
LARWQCB	Los Angeles Regional Water Quality Control Board
LCFS	Low Carbon Fuel Standard
LST	localized significance thresholds

Abbreviations

MBTA	Migratory Bird Treaty Act
Metro	Los Angeles County Metropolitan Transportation Authority
mgd	million gallons per day
MND	mitigated negative declaration
MMT	million metric tons
MRZ	mineral resource zone
MT	metric ton
MWD	Metropolitan Water District of Southern California
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O_3	ozone
OEHHA	Office of Environmental Health Hazards Assessment
PCH	Pacific Coast Highway
PM	particulate matter
ppm	parts per million
PPV	peak particle velocity
RMS	Edward J. Richardson Middle School
RTP	Regional Transportation Plan
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SHS	South High School
SoCAB	South Coast Air Basin
SO_X	sulfur oxides
SRA	source receptor area [or state responsibility area]
TFD	Torrance Fire Department
TMWD	Torrance Municipal Water Department
TPD	Torrance Police Department
TUSD	Torrance Unified School District
UWMP	Urban Water Management Plan
VdB	velocity decibels
VOC	volatile organic compound

1. Introduction

Torrance Unified School District (TUSD) proposes to construct a new gymnasium on the Edward J. Richardson Middle School (RMS) campus (proposed project).

The proposed project is required to undergo an environmental review pursuant to the California Environmental Quality Act (CEQA) (California Public Resources Code §§ 21000 et seq.). This initial study evaluates the potential environmental consequences of the project.

1.1 ENVIRONMENTAL PROCESS

The completion of the environmental compliance process is governed by two principal regulations: CEQA and the State CEQA Guidelines (California Code of Regulations §§ 15000 et seq.). CEQA was enacted in 1970 by the California Legislature to disclose to decision makers and the public the significant environmental effects of proposed activities and to identify ways to avoid or reduce the environmental effects through feasible alternatives or mitigation measures. Compliance with CEQA applies to California government agencies at all levels: local, regional, and state agencies, boards, commissions, and special districts (such as school districts and water districts). TUSD is the lead agency for the proposed project and is therefore required to analyze the potential environmental effects associated with the project.

Public Resources Code Section 21080(a) states that analysis of a project's environmental impact is required for any "discretionary projects proposed to be carried out or approved by public agencies…." In this case, TUSD has determined that an initial study is required to determine whether there is substantial evidence that implementation of the project would result in environmental impacts. An initial study is a preliminary environmental analysis to determine whether an environmental impact report (EIR), a mitigated negative declaration (MND), or a negative declaration (ND) is required for a project (CEQA Guidelines § 15063). An initial study must have a project description; a description of the environmental setting; an identification of environmental effects by checklist or other similar form; an explanation of environmental effects; a discussion of mitigation for significant environmental effects; an evaluation of the project's consistency with existing, applicable land use controls; the names of persons who prepared the study; and identification of data sources (CEQA Guidelines § 15063(d)).

When an initial study identifies substantial evidence of the potential for significant environmental impacts, the lead agency must prepare an EIR (CEQA Guidelines § 15064); however, if all impacts can be mitigated to a less than significant level, the lead agency can prepare an MND that incorporates mitigation measures into the project (CEQA Guidelines § 15070).

1.2 IMPACT TERMINOLOGY

The following terminology is used to describe the level of significance of impacts.

- A finding of ***no impact*** is appropriate if the analysis concludes that the project would not affect the particular topic area in any way.
- An impact is considered ***less than significant*** if the analysis concludes that it would cause no substantial adverse change to the environment and requires no mitigation.
- An impact is considered ***less than significant with mitigation incorporated*** if the analysis concludes that it would cause no substantial adverse change to the environment with the inclusion of environmental commitments or other enforceable mitigation measures.
- An impact is considered ***potentially significant*** if the analysis concludes that it could have a substantial adverse effect on the environment. If any impact is identified as potentially significant, an EIR would need to be prepared.

1.3 ORGANIZATION OF THE INITIAL STUDY

The content and format of this report are designed to meet the requirements of CEQA. The conclusions in this initial study are that the proposed project would have no significant impacts. This initial study contains the following sections:

- **Section 1, *Introduction***, identifies the purpose and scope of the initial study and the terminology used.
- **Section 2, *Environmental Setting,*** describes the existing conditions, surrounding land uses, general plan designation, and existing zoning at the project site and surrounding area.
- **Section 3, *Project Description,*** identifies the location and background, and describes the proposed project in detail.
- **Section 4, *Environmental Checklist,*** presents the CEQA checklist and the significance finding for each resource topic.
- **Section 5, *Environmental Analysis,*** provides an evaluation of the impact categories in the environmental checklist and identifies mitigation measures, if applicable.
- **Section 6, *References,*** identifies all references and individuals cited in this initial study.
- **Section 7, *List of Preparers,*** identifies the individuals who prepared the initial study and technical studies and their areas of technical specialty.
- **Appendices** present data supporting the analysis or contents of this initial study.
  - Appendix A: Air Quality and Greenhouse Gas Background and Modeling Data

2. Environmental Setting

2.1 PROJECT LOCATION

The project site is on the Richardson Middle School (RMS) campus, at 23751 Nancy Lee Lane in the City of Torrance, Los Angeles County, California (Assessor's Parcel Number 7531-010-900). The school is north of Newton Street and west of Nancy Lee Lane. Regional access to the school is provided by Pacific Coast Highway (PCH), immediately north of RMS, and Interstates 110 and 405, approximately 4.5 and 5.0 miles to the east and north, respectively. Figure 1, *Regional Location*, and Figure 2, *Local Vicinity*, show the school from regional and local perspectives. As shown in Figure 1, the City of Torrance is surrounded by the cities of Gardena, Lawndale, Redondo Beach, Lomita, Palos Verdes Estates, Rolling Hills Estates, and Los Angeles.

2.2 EXISTING LAND USE

2.2.1 Richardson Middle School

RMS is a traditional school that serves students in grades 6 through 8. It has a maximum enrollment capacity of 700 seats. During the 2014–15 school year, RMS had an enrollment of 691 students.

The school is irregularly shaped and encompasses 8.9 acres. It is developed with permanent buildings, portable classrooms, blacktop playground, sandbox, grass playfield, and a parking lot with 37 off-street stalls. The campus has a library and a cafeteria that serves as a multipurpose room. The campus is accessed via a driveway at the northeast corner of the property from Nancy Lee Lane.

The school operates on a traditional calendar, generally starting near Labor Day and ending in the middle of June. Summer school and other programs are occasionally offered. School hours are between 8:10 AM and 2:57 PM; after-school clubs and enrichment programs are offered until 6:00 PM. Other than standard school operation hours, the school also has nighttime events, such as Back to School Night, Open House, school performances, athletic clubs, art shows, talent shows, and awards ceremonies. School performances and assemblies are currently held in the school's multipurpose room. When not in use by the School and District, the RMS facilities are available for community use through the Civic Center Act.[1]

Project Site

The project site encompasses a 0.35-acre area in the mid-central perimeter of the southern campus boundary. It is developed with an asphalt playground, a sandbox, and grass playfield. Figure 3, *Aerial Photograph*, shows

[1] Section 38130 et seq. of the California Education Code, known as the Civic Center Act, states that every public school in the state must contain a civic center that is made available by the governing school district for public use. Specific uses and users of the civic center are in the Education Code.

an aerial view of RMS and its surrounding neighborhood. Figure 4, *Site Photographs*, shows the existing physical conditions at the school.

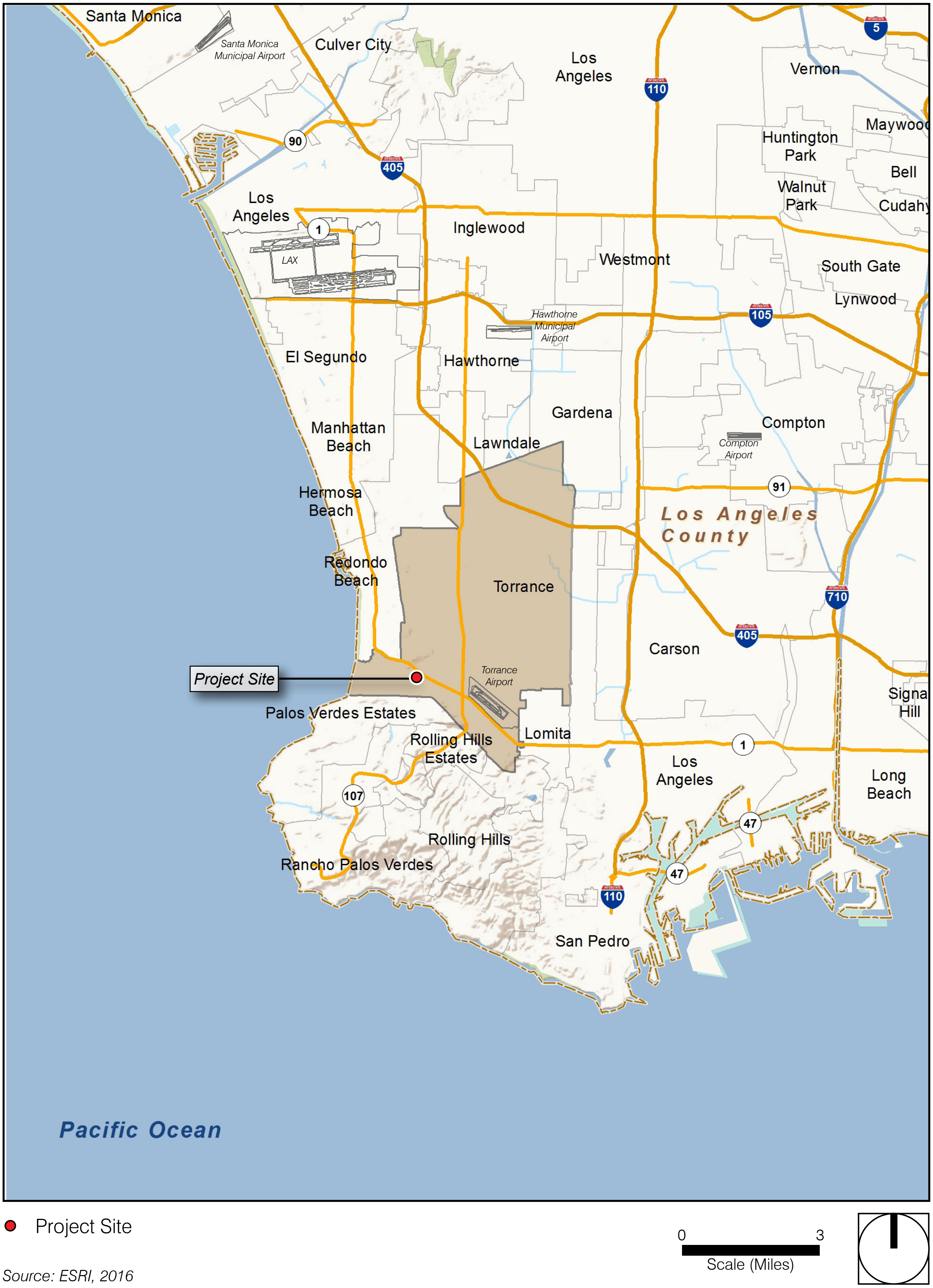
2.2.2 Surrounding Land Use

The project site is bordered by school uses on three sides, including a grass playfield to the west, blacktop to the north, and classrooms to the east. Adjacent to the south is a vegetated slope that leads to Newton Street. RMS is in a residential community; single family residences surround the campus on all sides. Commercial uses and South High School are farther north.

2.3 EXISTING ZONING AND GENERAL PLAN

The project site is designated Public/Quasi-Public/Open Space by the City of Torrance General Plan and Public Use (PU) by the Zoning Map.

Figure 1 - Regional Location



Source: ESRI, 2016

2. Environmental Setting

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Figure 2 - Local Vicinity

Source: ESRI, 2015

2. Environmental Setting

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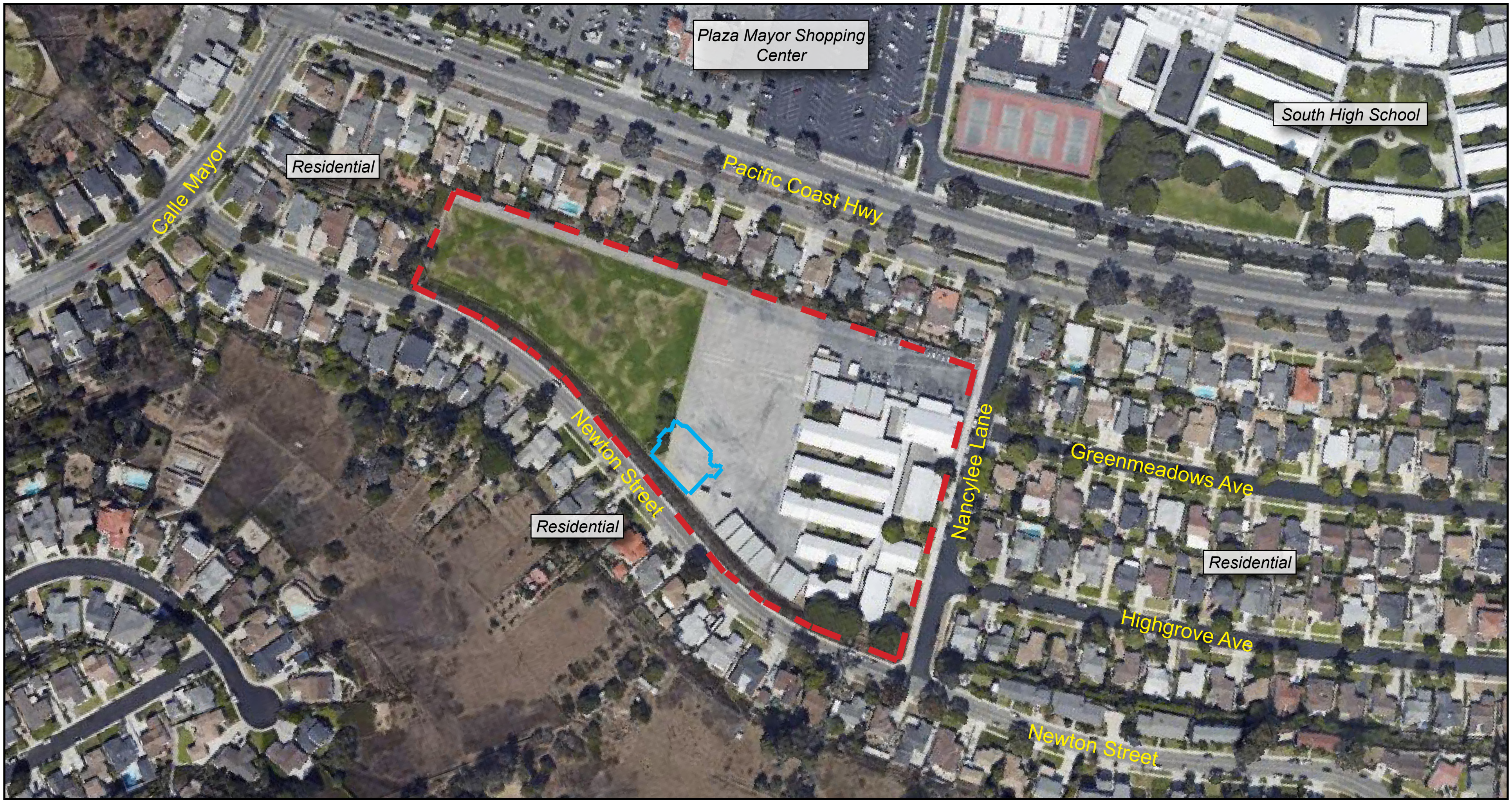
Figure 3 - Aerial Photograph



School Boundary
Project Site

0 200
Scale (Feet)

Source: GoogleEarth, 2016

2. Environmental Setting

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Figure 4 - Site Photographs

View of project site facing north on Newton Street. The site is below a vegetated slope.

View of project site facing west from campus. Note the proximity of the project site to the classrooms on the left.

2. Environmental Setting

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3. Proposed Project

3.1 PROJECT DESCRIPTION

The proposed project is the construction and operation of a new gymnasium at Richardson Middle School.

3.1.1 Proposed Improvements

Construction of the proposed facility would require the removal of a small asphalt playground area, a sandbox, small turf area, and three ornamental trees. The new structure would be approximately 8,260 square feet, with bleachers for seating of up to 250 spectators. Table 1, *Proposed Gymnasium Uses*, provides a breakdown of the spaces in the proposed building and corresponds to Figure 5, *Gymnasium Floor Plan*.

Table 1 Proposed Gymnasium Uses

Use	Area (sf)
Gymnasium	5,985
Storage	197
Office #1	118
Office #2	118
Office #3	118
Electrical/Data	85
Locker Room #1	426
Locker Room #2	426
Service Yard	--
Total	7,473 (Net)

Source: HMC Architects, May 20, 2015.

The proposed building would be "boxy" and angular in nature. The maximum height of the building would be 34 feet. Figure 6, *Exterior Building Concepts*, and Figures 7 and 8, *Gymnasium Elevation Drawings*, illustrate the front, side, and rear views of the building. Exterior lighting would be provided for security purposes; high-intensity nighttime lighting would not be installed. The facility would include sustainable features, including but not limited to: sensor toilets, waterless urinals, metered sinks, dual-glazed insulated windows, cool roofing, and LED lighting.

3.1.2 Proposed Operation

Operation of the proposed facility would not substantially change the existing operations of RMS. The school would continue to operate under the current schedule, as specified in Section 2.2.1. The gymnasium would supplement the school's physical education program with new locker facilities and an indoor multiuse basketball and volleyball court. Although no joint-use programs are proposed for the gymnasium, the facility—as with all of the school's facilities—would be available for community use through the Civic Center Act.

3.2 PROJECT PHASING

Construction is proposed to commence in the fall of 2016 and would be completed in one general phase lasting 16 months:

- Asphalt Demolition (2 weeks)
- Site Preparation and Rough Grading (1 month)
- Utility Trenching (2 weeks)
- Fine Grading (1 week)
- Building Construction (7 months)
- Architectural Coating (1 month)
- Asphalt Paving (2 weeks)
- Finishing/Landscaping (1 month)

A construction worksite traffic control plan would be prepared and implemented by the District. The plan would identify haul routes, hours of construction, protective devices, warning signs, and access. The active construction and staging areas would be on the campus and clearly marked with barriers to separate the project site from pedestrian routes and classroom areas. Anticipated construction equipment includes water trucks, box trucks and flatbeds, semi-trailer/dump trucks, concrete mixer, and pumper.

3.3 PROJECT APPROVAL AND PERMITS

3.3.1 Lead Agency

TUSD is the lead agency under CEQA and has approval authority over the proposed project. This initial study must be considered for adoption by the TUSD Governing Board of Education, confirming its adequacy in complying with the requirements of CEQA. The board will consider the information in the initial study in deciding to approve or deny the proposed project. The analysis is intended to provide environmental review for the whole of the proposed project, including planning, construction, and ongoing operation of the proposed gymnasium.

3.3.2 Responsible Agencies

A public agency other than the lead agency that has discretionary approval power over a project is known as a "responsible agency," as defined by CEQA Guidelines Section 15381. Development of the proposed project would not require approval (e.g., permits, financing approval, or participation agreement) from other public agencies. Therefore, there are no identified responsible agencies.

3.3.3 Reviewing Agencies

Reviewing agencies include agencies that do not have discretionary powers to approve or deny the proposed project or actions needed to implement it, but may review the initial study for adequacy and accuracy. Reviewing agencies for the proposed project may include:

3.3.3.1 STATE

- California Department of General Services, Division of the State Architect

3.3.3.2 REGIONAL

- Los Angeles Regional Water Quality Control Board
- South Coast Air Quality Management District

3.3.3.3 LOCAL

- City of Torrance

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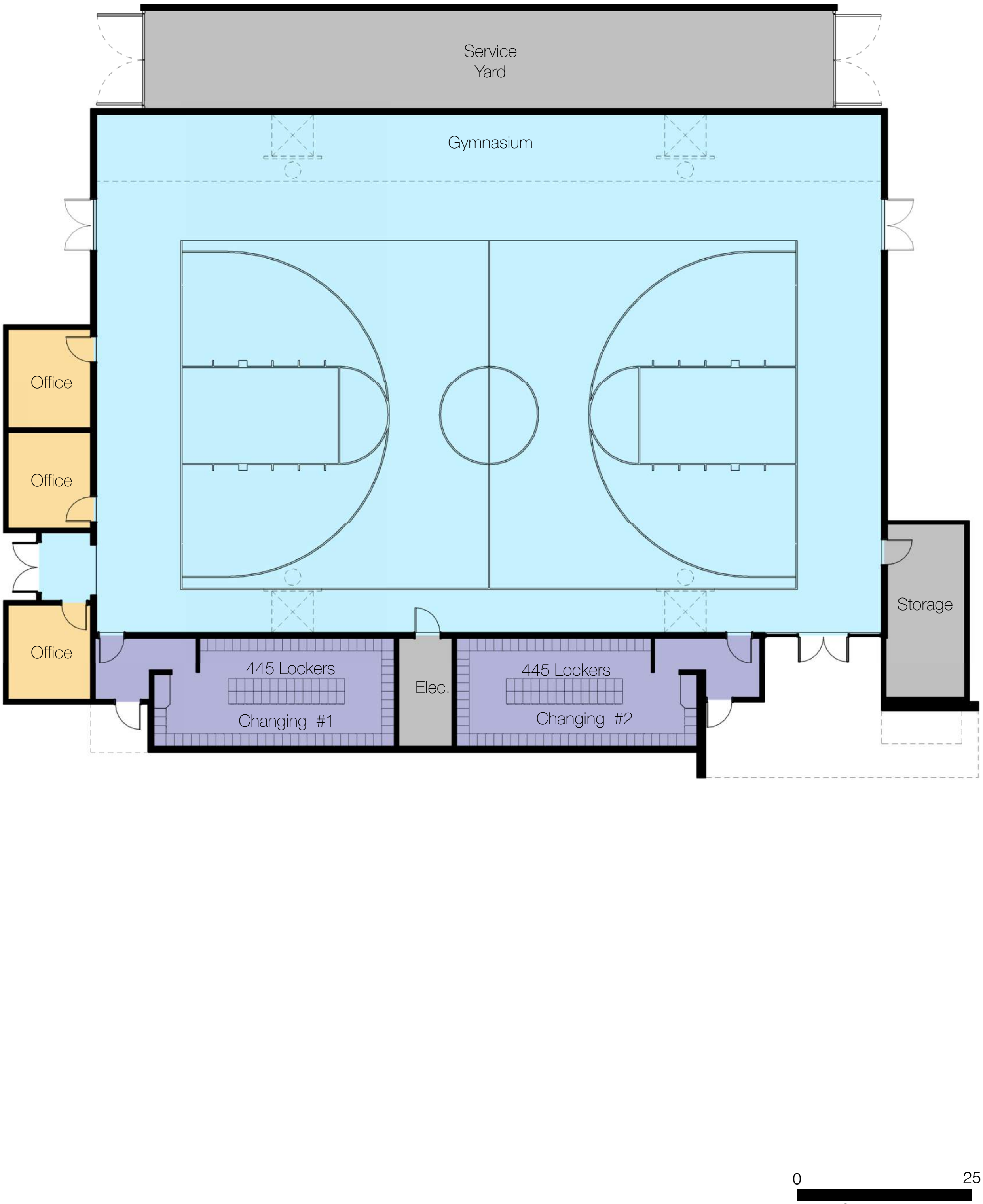
Figure 5 - Gymnasium Floor Plan



Source: HMC Architects, 2015

3. Proposed Project

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Figure 6 - Exterior Building Concepts

Source: HMC Architects, 2015

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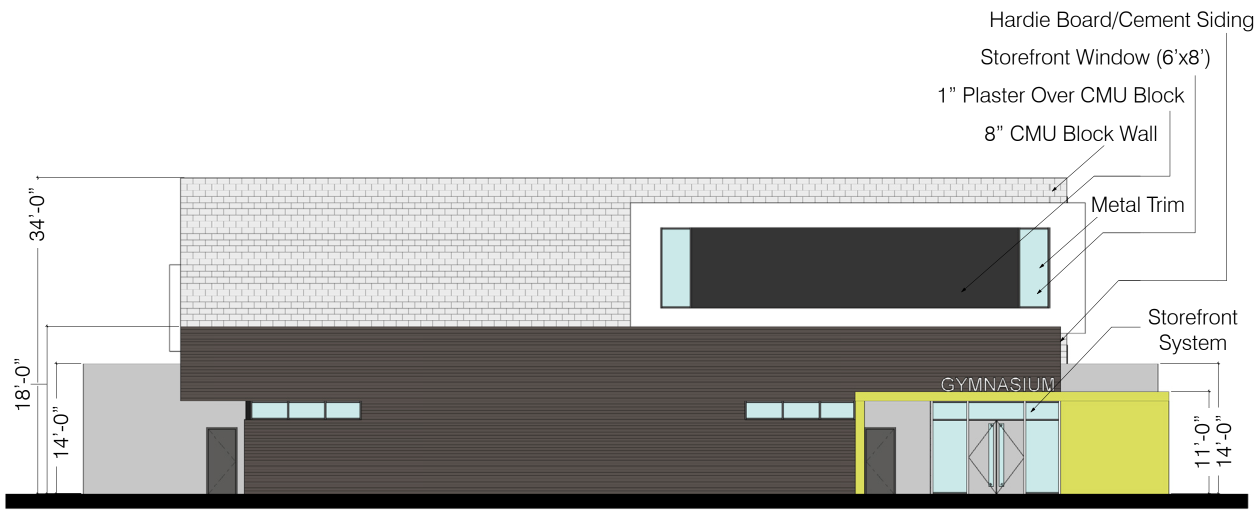
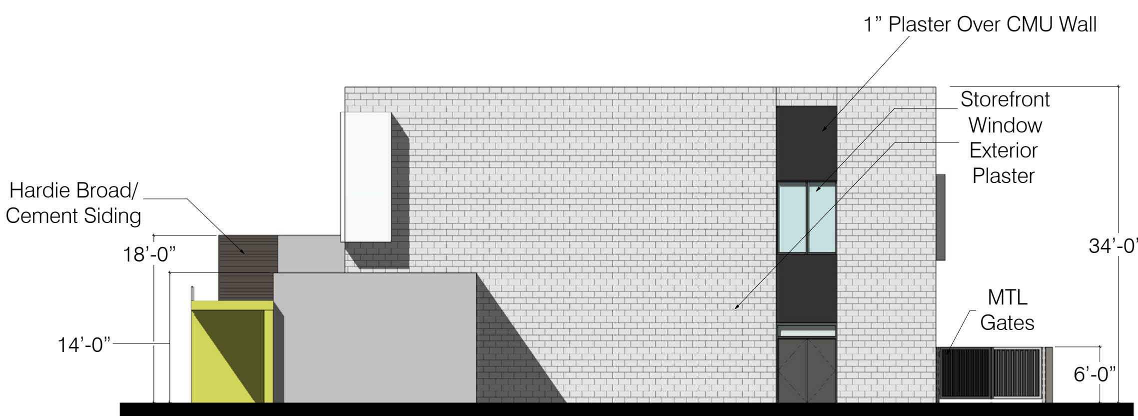
Figure 7 - Gymnasium Elevation Drawings



Front Elevation



Right Elevation

0 20
Scale (Feet)

Source: HMC Architects, 2015

3. Proposed Project

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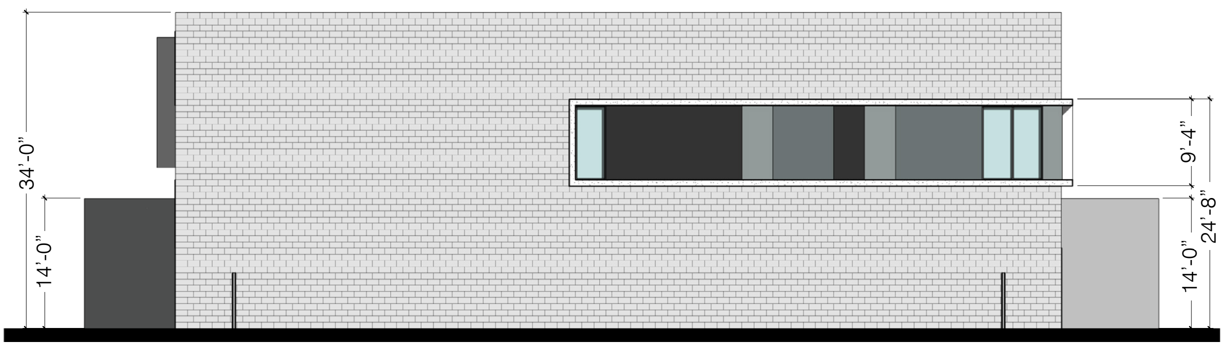
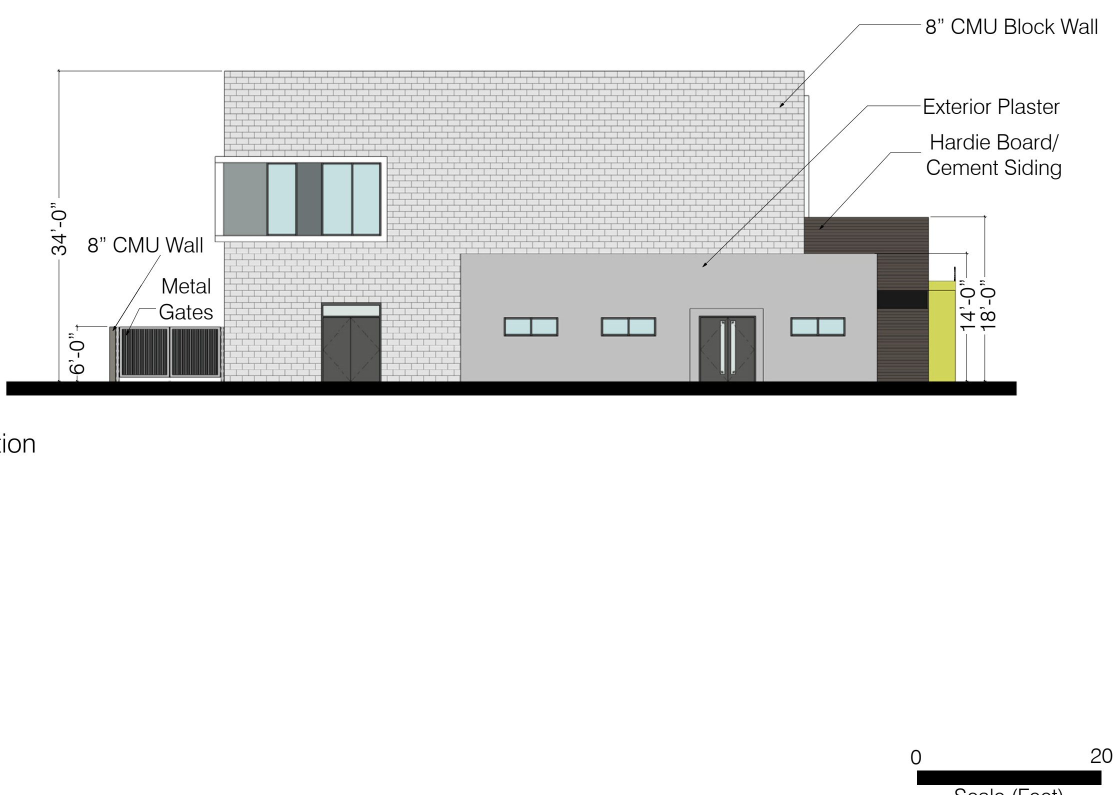
Figure 8 - Gymnasium Elevation Drawings



Rear Elevation



Left Elevation

Source: HMC Architects, 2015

3. Proposed Project

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4. Environmental Checklist

4.1 BACKGROUND

1. **Project Title:** Richardson Middle School Gymnasium

2. **Lead Agency Name and Address:**
   Torrance Unified School District
   2335 Plaza Del Amo
   Torrance, CA 90509

3. **Contact Person and Phone Number:**
   Donald Stabler, Deputy Superintendent
   310.972.6500

4. **Project Location:**
   The site is a 0.35-acre area on the mid-central perimeter of the southern boundary of Richardson Middle School, at 23751 Nancy Lee Lane in the City of Torrance, Los Angeles County, California (Assessor's Parcel Number 7531-010-900)

5. **Project Sponsor's Name and Address:**
   Torrance Unified School District
   2335 Plaza Del Amo
   Torrance, CA 90509

6. **General Plan Designation:** Public/Quasi-Public/Open Space

7. **Zoning:** Public Use (PU)

8. **Description of Project**:
   See section 3.1, *Project Description*.

9. **Surrounding Land Uses and Setting**:
   RMS is in a single-family residential community. The campus is surrounded by Nancy Lee Lane to the east, and Newton Avenue to the south. Pacific Coast Highway is to the north. Other major uses in the area include commercial/retail and South High School north of RMS.

10. **Other Public Agencies Whose Approval Is Required**
    None.

4. Environmental Checklist

4.2 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	☐ Agricultural and Forest Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

4.3 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.

[signature]	March 29, 2016
Signature	*Date*
Donald A. Stabler	Torrance Unified School District
Printed Name	*For*

4.4 EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g. the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) **Earlier Analyses Used.** Identify and state where they are available for review.

   b) **Impacts Adequately Addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) **Mitigation Measures.** For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g. general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated. A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

4. Environmental Checklist

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significant.

5. Environmental Analysis

5.1 AESTHETICS

Would the project:

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

Comments:

a) Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. A scenic vista is characterized as an expansive view of a landscape which enhances the scenic value of the area. The City of Torrance General Plan identifies the segment of Calle Mayor, south of Pacific Coast Highway, a scenic view corridor (Torrance 2010). Calle Mayor is 0.2 mile west of the project site. Due to the distance between Calle Mayor and the project site; the topography of this area, e.g., the project site is at a lower elevation than Calle Mayor; and the curvilinear nature of Newton Street, the proposed improvements would have no effect on the existing views along Calle Mayor. Additionally, the project site is not part of any scenic vista. The site is developed as part of a middle school campus, and implementation of the proposed project would not have a substantial adverse effect on a scenic vista. A less than significant impact would occur, and no mitigation measures are required.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. There are no state-designated scenic highways within the City of Torrance. The nearest eligible (not officially designated) state scenic highway is near the City of Santa Monica, approximately 15 miles north of the site. No scenic resources would be damaged due to project implementation (Caltrans 2015). No impact would occur, and no mitigation measures are required.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact. The proposed gymnasium is an 8,260-square-foot "boxy" building (see Figure 6, *Exterior Building Concepts*). The height of the gymnasium would range from approximately 14 feet at the entrance to 34 feet at the back of the building. Figures 7 and 8, *Gymnasium Elevation Drawings*, show the exterior elevations of the front, side, and rear views of the proposed building. The new gymnasium would be constructed on the RMS blacktop, sandbox, and grass playfield. The proposed project would require the removal of three ornamental trees on the grass playfield. Existing campus buildings are boxy, one-story buildings with flat rooflines, as shown in Figure 4, *Site Photographs*. The new gymnasium would be the tallest building on the campus, with modern architecture. Although the new gymnasium would look different from the existing buildings, its design would provide visual breaks to avoid continuous roof lines and monotonous "boxes". The facility would enhance, not degrade, the campus aesthetics.

RMS is in a residential neighborhood, and the nearest resident to the project site is approximately 75 feet to the south across Newton Street. Due to the topography of the area, the homes across Newton Street are approximately 15 feet above the grade of the project site, and viewers along Newton Street have an open view of the playground and rooftops of the school buildings and structures north of Newton Street. Other nearby viewers include the residences adjoining the northern campus boundary; they are approximately 350 feet away and 15 feet below the grade of the campus. A combination of chain-link and wood fencing exist along the northern boundary of the campus.

The maximum height of the proposed gymnasium would be 34 feet. It would be visible from Newton Street. Due to the topography, the gymnasium would be approximately 20 feet taller than the grade of Newton Street. The visual character along Newton Street would change as a result of the proposed improvement. However, the change would not be substantial; similar to the placement of the portable buildings along the southern perimeter of the campus, the gymnasium would also be set back by approximately 30 feet from the edge of the sidewalk. Additionally, the new structure on the middle school campus would not be considered a significant adverse visual impact since the proposed gymnasium is a compatible use with the existing school development, with similar architectural features and styles. The proposed project would be compatible with the middle school facilities. The proposed project would not degrade the existing visual quality of the existing campus and surrounding area. No significant impacts would occur, and no mitigation measures are required.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. Artificial light sources can create glare effects and light pollution. The existing nighttime environment includes street lights on Newton Street and Nancy lee Lane, and security lighting at the school and surrounding residences. The proposed project would provide lighting mainly for safety purposes—walkway and building illumination and security lighting—and would not create substantial exterior lighting impacts to nearby sensitive receptors. The nearest viewers are those along Newton Street, including residences approximately 15 feet above the grade of the project site. Nighttime light exposure from project implementation would not be substantially higher than existing conditions, and lights constructed for security purposes would be directed toward the campus and away from the residences and other sensitive viewers, such as drivers along Newton Street.

Additionally, as shown in Figure 6, *Exterior Building Concepts*, the proposed project would not be constructed with reflective building materials other than glass for windows and dark metal trims; the proposed structure would not cause substantial daytime glare impacts. No electrical signage, high-intensity, or flashing nighttime lights would be installed. No significant lighting impacts would occur, and no mitigation measures are required.

5.2 AGRICULTURE AND FORESTRY 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. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

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

5. Environmental Analysis

Comments:

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

No Impact. The City of Torrance, including the project site, is outside of the survey area on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency (DOC 2015). The FMMP maps for Los Angeles County cover only about half of its land area due to the fact that most of the county—incorporated cities and unincorporated county areas—does not contain any important farmland. The project site is part of a middle school campus in an urban area and is currently developed with blacktop, sandbox, and a grass playfield. The proposed project would not convert any special status farmland to nonagricultural use. No impact would occur, and no mitigation measures are required.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The project site is zoned Public Use (PU) by the city's zoning map. The proposed gymnasium use is consistent with the existing middle school use and would not conflict with any agricultural use or a Williamson Act contract. No impact would occur, and no mitigation measures are required.

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

No Impact. The project site is zoned Public Use, and no rezoning of forest land or timberland would result from project implementation. No impact would occur, and no mitigation measures are required.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The project site is part of a middle school campus in an urban area, and no forest land would be lost due to project implementation. No impact would occur, and no mitigation measures are required.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The proposed project would be on the existing middle school campus and would not result in the conversion of farmland to nonagricultural or forest land to nonforest use. No impact would occur, and no mitigation measures are required.

5.3 AIR QUALITY

The Air Quality section addresses the impacts of the proposed project on ambient air quality and the exposure of people, especially sensitive individuals, to unhealthful pollutant concentrations. A background discussion on the air quality regulatory setting, meteorological conditions, existing ambient air quality in the vicinity of the project site, and air quality modeling can be found in Appendix A.

The primary air pollutants of concern for which ambient air quality standards (AAQS) have been established are ozone (O_3), carbon monoxide (CO), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and lead (Pb). Areas are classified under the federal and California Clean Air Act as either in attainment or nonattainment for each criteria pollutant based on whether the AAQS have been achieved. The South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (SCAQMD), is designated nonattainment for O_3, and $PM_{2.5}$ under the California and National AAQS, nonattainment for PM_{10} under the California AAQS, and nonattainment for lead (Los Angeles County only) under the National AAQS (CARB 2014a).

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:

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

Comments:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the air quality management plan (AQMP). It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration at an early enough stage to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals in the AQMP. The most recent adopted comprehensive plan is the 2012 AQMP, adopted on December 7, 2012 (see Appendix A to this Initial Study for a description of the 2012 AQMP).

5. Environmental Analysis

Regional growth projections are used by SCAQMD to forecast future emission levels in the SoCAB. For southern California, these regional growth projections are provided by the Southern California Association of Governments (SCAG) and are partially based on land use designations in city/county general plans. Typically, only large, regionally significant projects have the potential to affect the regional growth projections. The proposed project is not considered a regionally significant project that would warrant Intergovernmental Review by SCAG under CEQA Guidelines section 15206.

The proposed project involves construction of a gymnasium and would not result in an increase in enrollment at the existing middle school. The land use is consistent with City of Torrance's underlying General Plan land use designation, and the site currently operates as a middle school. Thus, it would not have the potential to substantially affect the regional growth projections. Additionally, the regional emissions generated by construction and operation of the proposed project would be less than the SCAQMD emissions thresholds, and SCAQMD would not consider the project a substantial source of air pollutant emissions that would have the potential to affect the attainment designations in the SoCAB. Therefore, the project would not affect the regional emissions inventory or conflict with strategies in the AQMP. Impacts are less than significant, and no mitigation measures are required.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact. The following describes project-related impacts from short-term construction activities and long-term operation of the proposed project.

Short-Term Air Quality Impacts

Construction activities would result in the generation of air pollutants. These emissions would primarily be 1) exhaust emissions from off-road diesel-powered construction equipment; 2) dust generated by grading, earthmoving, and other construction activities; 3) exhaust emissions from on-road vehicles; and 4) off-gas emissions of volatile organic compounds (VOCs) from application of asphalt, paints, and coatings.

Construction activities would occur on approximately 0.35 acre. Construction would involve concrete demolition; grading; utility trenching; construction of the gymnasium; paving; and architectural coating. Construction activities would start in the fall of 2016 and would take approximately 16 months. Construction emissions were estimated using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2, based on the project's preliminary construction schedule, phasing, and equipment list provided by the District. The construction schedule and equipment mix is based on preliminary engineering and is subject to changes during final design and as dictated by field conditions. Results of the construction emission modeling in Table 2, *Maximum Daily Regional Construction Emissions*, show that air pollutant emissions from construction-related activities would be less than their respective SCAQMD regional significance threshold values. Therefore, air quality impacts from project-related construction activities would be less than significant. No mitigation measures are required.

Table 2 Maximum Daily Regional Construction Emissions

Source	Criteria Air Pollutants (lbs/day)[1,2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2016 Asphalt/PCC Demolition & Asphalt Demo Debris Haul	3	27	23	<1	3	2
2016 Asphalt/PCC Demolition	3	25	21	<1	2	1
2016 Site Preparation + Rough Grading & Soil Haul 1	3	26	21	<1	4	3
2016 Site Preparation + Rough Grading & Soil Haul 2	4	33	36	<1	5	3
2016 Utility Trenching	<1	4	3	<1	<1	<1
2016 Fine Grading	<1	<1	1	<1	<1	<1
2016 Building Construction	2	18	13	<1	1	1
2017 Building Construction	2	16	13	<1	1	1
2017 Architectural Coating	1	<1	1	<1	<1	<1
2017 Architectural Coating + Asphalt Paving	2	14	12	<1	1	1
2017 Finishing/Landscaping	1	6	2	<1	<1	<1
Maximum Daily Emissions	4	33	36	<1	5	3
SCAQMD Regional Threshold	75	100	550	150	150	55
Exceeds Regional Threshold?	No	No	No	No	No	No

Source: CalEEMod, version 2013.2.2
Notes: Totals may not equal 100 percent due to rounding.
1 Construction phasing is based on the preliminary information provided by the District. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.
2 Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers. Modeling also assumes a VOC of 35 g/L for interior paints and 40 g/L for exterior paints based on construction information provided by the District.

Long-Term Operation-Related Air Quality Impact

Long-term air pollutant emissions generated by the project would be generated by area sources (e.g., landscape fuel use, aerosols, and architectural coatings) and energy use (natural gas) associated with the proposed gymnasium. Since the events that would be held at the proposed gymnasium are already taking place at the existing middle school, the proposed project would not generate new trips. Criteria air pollutant emissions for the proposed project were modeled using CalEEMod. Table 3, *Net Increase in Maximum Daily Regional Operational Phase Emissions*, identifies criteria air pollutant emissions from the proposed project.

Table 3 Net Increase in Maximum Daily Regional Operational Phase Emissions

Source	Criteria Air Pollutants (lbs/day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	<1	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Total Emissions	<1	<1	<1	<1	<1	<1
SCAQMD Regional Threshold	55	55	550	150	150	55
Exceeds Regional Threshold?	No	No	No	No	No	No

Source: CalEEMod Version 2013.2.2. Highest winter or summer emissions are reported. Totals may not total to 100 percent due to rounding.

5. Environmental Analysis

As shown in the table, the net increase in project-related air pollutant emissions from area sources and energy (i.e., natural gas) use would be nominal and would not exceed the SCAQMD's regional emissions thresholds for operational activities. Overall, long-term operation-related impacts to air quality would be less than significant, and no mitigation measures are required.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact. The SoCAB is designated nonattainment for O_3 and $PM_{2.5}$ under the California and National AAQS, nonattainment for PM_{10} under the California AAQS, and nonattainment for lead under the National AAQS (CARB 2014a). According to SCAQMD methodology, any project that does not exceed or can be mitigated to less than the daily threshold values would not add significantly to a cumulative impact (SCAQMD 1993). Construction and operational activities would not result in emissions in excess of SCAQMD's significant thresholds. Therefore, the project would not result in a cumulatively considerable net increase in criteria pollutants and impacts would be less than significant. No mitigation measures are required.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. The proposed project could expose sensitive receptors to elevated pollutant concentrations if it would cause or contribute significantly to elevated pollutant concentration levels. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects.

Construction LSTs

Localized significance thresholds (LSTs) are based on the California AAQS, which are the most stringent AAQS that have been established to provide a margin of safety in the protection of public health and welfare. They are designated to protect sensitive receptors most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. Construction LSTs are based on the size of the project site, distance to the nearest sensitive receptor, and Source Receptor Area. Receptors proximate to the proposed project site are the adjacent surrounding residences.

Air pollutant emissions generated by construction activities are anticipated to cause temporary increases in air pollutant concentrations. Table 4, *Localized Construction Emissions*, shows the maximum daily construction emissions (pounds per day) generated during onsite construction activities compared with the SCAQMD's LSTs. As shown in the table, construction activities would not exceed the LSTs. Therefore, localized impacts would be less than significant, and no mitigation measures are required.

Table 4 Localized Construction Emissions

Source	Pollutants(lbs/day)[1,2]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
2016 Utility Trenching	3	2	0.25	0.23
2016 Building Construction	17	10	1.03	0.99
2017 Building Construction	16	10	0.92	0.88
2017 Architectural Coating + Asphalt Paving	13	10	0.80	0.73
2017 Finishing/Landscaping	6	2	0.20	0.19
SCAQMD ≤1.00-acre LST	91	664	5.00	3.00
Exceeds 1.00-Acre LST?	No	No	No	No
2016 Asphalt/PCC Demolition & Asphalt Demo Debris Haul	25	19	2.75	1.59
2016 Asphalt/PCC Demolition	25	19	1.49	1.40
2016 Site Preparation + Rough Grading & Soil Haul 1	25	19	4.07	2.82
2016 Site Preparation + Rough Grading & Soil Haul 2	25	19	4.09	2.82
SCAQMD 1.50-acre LST	111	815	6.50	4.00
Exceeds 1.50-Acre LST?	No	No	No	No

Source: CalEEMod Version 2013.2.2., and SCAQMD, Localized Significance Methodology, 2006, October, Appendix A. Bold: Exceeds threshold.
Notes: In accordance with SCAQMD methodology, only onsite stationary sources and mobile equipment occurring on the proposed project site are included in the analysis. LSTs are based on receptors within 82 feet (25 meters) of the proposed project site in Source Receptor Area (SRA) 3.
[1] Construction phasing is based on the preliminary information provided by the District. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.
[2] Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.

Operation LSTs

Operation of the proposed project would not generate substantial quantities of emission from onsite, stationary sources. Land uses that have the potential to generate substantial stationary sources of emissions that would require a permit from SCAQMD include industrial land uses, such as chemical processing and warehousing operations where substantial truck idling could occur onsite. The proposed project does not fall within these categories of uses. Table 5, *Localized Onsite Operational Emissions,* shows the net increase in localized daily operational emissions. As shown in this table, while operation of the proposed project would result in the use of standard onsite mechanical equipment such as heating, ventilation, and air conditioning units in addition to occasional use of landscaping equipment for project site maintenance, air pollutant emissions generated from these activities would be nominal and would not exceed SCAQMD operational phase LSTs. Therefore, localized air quality impacts related to stationary-source emissions would be less than significant, and no mitigation measures are required.

5. Environmental Analysis

Table 5 Localized Onsite Operational Emissions

Source	Pollutants (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Area Sources	<1	<1	<1	<1
Maximum Daily Onsite Operation Emissions	<1	<1	<1	<1
SCAQMD LST	197	1,769	4	2
Exceeds LST?	No	No	No	No

Source: CalEEMod Version 2013.2.2., and SCAQMD, Localized Significance Methodology, 2006, October, Appendix A.
Note: LSTs are based on receptors within 82 feet (25 meters) of the proposed project site in Source Receptor Area (SRA) 3.

Carbon Monoxide Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9.0 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds.

The SoCAB has been designated attainment under both the national and California AAQS for CO. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—in order to generate a significant CO impact (BAAQMD 2011). Since student enrollment capacity would not increase and the events that would be held at the proposed gymnasium are currently taking place at the existing middle school, the proposed project would not generate new vehicle trips. The project would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the project site. Localized air quality impacts related to mobile-source emissions would be less than significant, and no mitigation measures are required.

Health Risk Assessment

SCAQMD currently does not require health risk assessments to be conducted for short-term emissions from construction equipment. Emissions from construction equipment primarily consist of diesel particulate matter (DPM). The Office of Environmental Health Hazards Assessment (OEHHA) has recently adopted new guidance for the preparation of health risk assessments issued in March 2015. OEHHA has developed a cancer risk factor and noncancer chronic reference exposure level for DPM, but these factors are based on continuous exposure over a 30-year time frame. No short-term acute exposure levels have been developed for DPM. The gymnasium has a short construction schedule (16 months), limiting exposure to onsite and offsite receptors. SCAQMD currently does not require the evaluation of long-term excess cancer risk or chronic health impacts for a short-term project. In addition, construction activities would not exceed LST significance thresholds. For the reasons stated above, it is anticipated that construction emissions would not pose a threat to onsite and offsite receptors at or near the school, and project-related construction health impacts would be less than significant.

e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. The proposed project would not result in objectionable odors. The threshold for odor is if a project creates an odor nuisance pursuant to SCAQMD Rule 402, Nuisance, which states:

> A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The uses proposed by the project do not fall within the aforementioned land uses. Emissions from construction equipment, such as diesel exhaust and volatile organic compounds from architectural coatings and paving activities, may generate odors. However, these odors would be low in concentration, temporary, and would not affect a substantial number of people. No significant impacts would occur, and no mitigation measures are required.

5.4 BIOLOGICAL RESOURCES

Would the project:

	Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?				X
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				X
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, etc.) through direct removal, filling, hydrological interruption, or other means?				X

5. Environmental Analysis

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

Comments:

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 Game or US Fish and Wildlife Service?

No Impact. Special status species include: those listed as endangered or threatened under the federal Endangered Species Act or California Endangered Species Act; species otherwise given certain designations by the California Department of Fish and Wildlife; and plant species listed as rare by the California Native Plant Society. The site is completely developed with playground uses on an existing school. Frequent disturbances preclude use of the site by sensitive species. Project development would not impact sensitive species, and no mitigation measures are required.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?

No Impact. Sensitive natural communities are natural communities that are considered rare in the region by regulatory agencies, known to provide habitat for sensitive animal or plant species, or known to be important wildlife corridors. Riparian habitats are those occurring along the banks of rivers and streams. There is no sensitive natural community or riparian habitat onsite. No impact would occur, and no mitigation measures are required.

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, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. Wetlands are defined under the federal Clean Water Act as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as swamps, marshes, and bogs. There are no wetlands onsite. The nearest wetland to the site mapped on the National

Wetlands Mapper maintained by the US Fish and Wildlife Service is Walteria Lake about 0.8 mile to the east (USFWS 2015). Project development would not impact wetlands, and no mitigation measures are required.

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?

Less than Significant Impact. The project site is on a developed school in a built-out urban area. The project site contains blacktop, a sandbox, and grass playfield with a three ornamental trees; it is heavily used throughout the week by the school and community. Project implementation would result in the removal of three ornamental trees from the grass field. Although unlikely, the trees could potentially serve as habitat for nesting migratory birds protected under the federal Migratory Bird Treaty Act (MBTA). Project implementation would require the removal of the ornamental trees during bird nesting season, between February 15 and August 31. In compliance with the MBTA as a part of the project, the District would consult a qualified biologist to inspect the trees for active nests prior to the start of construction. In accordance with the MBTA, if active nests are discovered, the District would consult with the US Fish and Wildlife Service regarding avoiding or minimizing construction-related impacts on the nesting birds. Compliance with established regulations under the MBTA would result in a less than significant impact. No mitigation measures are required.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The City of Torrance does not have a tree preservation ordinance that could be applicable onsite, and project development would not impact biological resources on public rights-of-way or violate local policies or ordinances protecting biological resources. No mitigation measures are required.

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?

No Impact. The project site is not in or next to the plan area of a habitat conservation plan or Natural Community Conservation Plan. The City of Torrance has one designated habitat preserve: the 50-acre Madrona Marsh Preserve, about 1.6 miles to the northeast, which is also designated a Significant Ecological Area by Los Angeles County (Torrance 2015; DRP 2015). Project development would occur on the disturbed blacktop of the school, sandbox, and grass playfield and would not impact the Madrona Marsh Preserve. No impact would occur, and no mitigation measures are required.

5. Environmental Analysis

5.5 CULTURAL RESOURCES

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
d) Disturb any human remains, including those interred outside of formal cemeteries?			X	
e) Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?				X

Comments:

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

No Impact. Section 15064.5 defines historic resources as resources listed or determined to be eligible for listing by the State Historical Resources Commission, a local register of historical resources, or the lead agency. Generally, a resource is considered "historically significant" if it meets one of the following criteria:

i) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

ii) Is associated with the lives of persons important in our past.

iii) Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

iv) Has yielded, or may be likely to yield, information important in prehistory or history.

RMS was initially built in 1955 and was called the Newton School. The school closed in 1986, then reopened in 1993 as Richardson Middle School. No developments are shown onsite on topographic maps dating back to 1901 and 1948 (Historic Aerials 2015). One historic resource was identified within 0.5 mile of the project site: the Plaza Mayor Shopping Center at 5001 to 5055 Pacific Coast Highway, north of the project site. The shopping center has been determined to be ineligible for listing on the National Register of Historic Places (SCCIC 2015), and thus is not a historically significant resource under CEQA. Project development would occur on the blacktop, sandbox, and grass playfield of RMS and require removal of three trees on the grass area. None of the existing school buildings would be affected or removed as a part of the project. The proposed project would not damage any built historical resources, and no impact would occur. No mitigation measures are required.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Less Than Significant Impact With Mitigation Incorporated. According to information gathered for South High School (SHS) from the South Central Coastal Information Center—a clearinghouse for cultural resources in Los Angeles County—no registered cultural resources are on or within 0.5 mile of SHS (SCCIC 2015). Because SHS is within 350 feet of the project site, the finding would be applicable to the proposed project site as well.

The geotechnical analysis conducted for the proposed project found approximately 6.5 to 10 feet of artificial fill beneath the project site (Koury 2016). The report also recommended removing at least 9 feet of soil below the existing ground surface or 7.5 feet below the building footings, whichever is greater. Therefore, construction may impact soil below the artificial fill, and it is possible that archaeological resources could be encountered during ground-disturbing activities. This impact would be potentially significant. Implementation of mitigation measure CUL-1 would reduce this impact to less than significant.

Mitigation Measure

CUL-1 Prior to the beginning of ground disturbances, Torrance Unified School District shall retain a qualified archaeologist/paleontologist to monitor ground-disturbing activities that occur five feet below ground surface. The archaeologist shall meet the Secretary of the Interior's Professional Qualifications Standards (48 Federal Register 44738-39). Before ground-disturbing activities begin, the archaeologist/paleontologist shall prepare an archaeological monitoring plan, consistent with CEQA Guidelines section 15064.5, specifying the frequency, duration, and methods of monitoring. The archaeologist/paleontologist shall train construction workers regarding types of archaeological and paleontological resources that could be identified in site soils. The archaeologist/paleontologist shall have the authority to stop grading or construction work within 25 feet of the site of any discovery of potential historical, archaeological, or paleontological resources until a find can be recovered and the significance of the find identified per CEQA. All resources recovered shall be curated at the facilities of the Natural History Museum of Los Angeles County.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact With Mitigation Incorporated. Surface deposits onsite consist of younger Quaternary alluvium underlain by older Quaternary deposits.[2] Older Quaternary deposits in the Torrance region have produced vertebrate fossils, including a horse, *Equus*, a whale, *Cetacea*, and a camel, *Camelops*. Shallow excavations in the younger and older Quaternary deposits exposed in all of the proposed project area sites are unlikely to encounter significant vertebrate fossils. Deeper excavations (i.e., more than five feet) into

[2] The Quaternary Period extends from about 1.8 million years ago to the present (USGS 2013).

older Quaternary deposits, however, may encounter remains of fossil vertebrates. This impact would be potentially significant. Implementation of mitigation measure CUL-1 would reduce this impact to less than significant. No additional mitigation is required.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. Considering that multiple prehistoric archaeological sites have been identified in Torrance, there is some potential that project ground-disturbing activities could damage human remains (Torrance 2010). California Health and Safety Code Section 7050.5 requires that in the event that human remains are discovered within the project site, disturbance of the site shall halt and remain halted until the coroner has conducted an investigation into the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. If the coroner determines that the remains are not subject to his or her authority and if the coroner has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the NAHC. The project would comply with existing law, and potential impacts to human remains would be less than significant. No mitigation measures are required.

e) Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?

No Impact. Section 21074 defines tribal cultural resource as either of the following:

1. Site features, places, cultural landscapes, sacred places, and objects of cultural value to a California Native American tribe that are either of the following:

    a. Included or determined to be eligible for inclusion in the California Register of Historical Resources.

    b. Included in a local register of historical resources as defined in subdivision (k) of section 5020.1.

2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of section 5024.1. In applying the criteria set forth in subdivision (c) of section 5024.1, lead agency shall consider the significance of the resource to a California Native American tribe.

The project site is on an existing middle school and is built with blacktop, sandbox, and a grass playfield. The project site has undergone a significant amount of ground disturbance as part of construction of the middle school and surrounding area. It is highly unlikely that subsurface resources, including tribal cultural resources, would be discovered during construction activities, and no impact would occur. However, should a resource be discovered, the District is mandated to comply with CEQA Guidelines Section 15064.5 and Public Resources Code Section 21083.2, which states "if it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state…" and "to the extent that unique archaeological resources are not preserved in place or not left in an undisturbed state, mitigation measures shall be required…." The proposed project would comply with these measures, and no impact would occur. No mitigation measures are required.

5.6 GEOLOGY AND SOILS

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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.				X
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

Comments:

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.

No Impact. Based on a review of the Alquist-Priolo Earthquake Fault Zoning Map for the Torrance 7.5' Quadrangle, the City of Torrance General Plan (2010), and the Geologic Map of the Long Beach 30' X 60' Quadrangle (Saucedo et al. 2003), the site is not located on a known fault. Therefore, there is no potential at the site for the rupture of a known earthquake fault. No impact related to an earthquake rupture would occur on the site. No mitigation measures are required.

ii) Strong seismic ground shaking?

Less Than Significant Impact. A number of faults in the southern California area are considered active, and the project site is expected to experience strong seismic ground shaking in the future. The proposed structure would be constructed in accordance with applicable building codes and standards. The most recent state building standard is the 2013 California Building Code (CBC) (Title 24, Part 2, California Code of Regulations), with local, more restrictive amendments based on local geographic, topographic, or climatic conditions. These codes provide minimum standards to protect property and the public welfare by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The CBC's provisions for earthquake safety are based on factors such as occupancy type, the types of soil and rock onsite, and the probable strength of ground motion at the project site. Additionally, in accordance with the CBC, a project-specific geotechnical/engineering report has been prepared by Koury Geotechnical Services (Koury 2016). The proposed improvements would be designed and constructed in accordance to the recommendations of this report and would adhere to the most recent version of the CBC. Impacts related to seismic ground shaking are less than significant. No mitigation measures are required.

iii) Seismic-related ground failure, including liquefaction?

No Impact. Liquefaction refers to loose, saturated sand or gravel deposits that lose their load supporting capability when subjected to intense shaking. Any buildings or structures on these sediments may float, sink, or tilt as if on water during intense shaking. Liquefaction potential varies based on three main factors: 1) cohesionless, granular soils with relatively low densities (usually of Holocene age); 2) shallow groundwater (generally less than 50 feet); and 3) moderate to high seismic ground shaking. Lateral spreading refers to lateral displacement of large, surficial blocks of soil as a result of pore pressure buildup or liquefaction in a subsurface layer.

Based on a review of the Seismic Hazard Zones map for the Torrance Quadrangle, the site is not within a zone of mandatory investigation for liquefaction, and according to the Seismic Hazard Zone Report for the Torrance 7.5' Quadrangle, historical groundwater in the area is deeper than 50 feet below ground surface. The soil testing conducted for the geotechnical analysis also did not encounter any groundwater up to a depth of 26.5 feet (Koury 2016). Therefore, liquefaction and lateral spreading are not expected at the site. No impact would occur. No mitigation measures are required.

iv) Landslides?

Less Than Significant Impact. Susceptibility of slopes to landslides and other forms of slope failure depend on several factors, which are usually present in combination—steep slopes, condition of rock and soil materials, presence of water, formational contacts, geologic shear zones, seismic activity, etc.

The topography of the project site is relatively level. The project site and surrounding school sit below the grade of Newton Street. There is a gentle slope that extends along the southern campus boundary to the eastern boundary, and slopes upward to Newton Street and Nancy Lee Lane, respectively. The slope is supported by a retaining wall to the south and east of the campus. The proposed gymnasium would be built away from the slope, and construction of the proposed improvements would not result in any landslide risk. Thus, there is not a significant hazard from slope instability, landslides, and debris flows. This conclusion is supported by the Geotechnical Report conducted by Koury Geotechnical Services and the Torrance General Plan (2010). A less than significant impact related to landslides would occur. No mitigation measures are required.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Erosion is a normal and inevitable geologic process whereby earthen materials are loosened, worn away, decomposed, or dissolved, and removed from one place and transported to another. Precipitation, water, waves, and wind are all agents of erosion. Ordinarily, erosion proceeds so slowly as to be imperceptible, but when the natural equilibrium of the environment changes, the rate of erosion can be greatly accelerated. This can create aesthetic and engineering problems. Accelerated erosion in an urban area can cause damage by undermining structures; blocking storm sewers; and depositing silt, sand, or mud in roads and tunnels. Eroded materials may eventually be deposited in local waters, where the carried silt can remain suspended in the water for some time, constituting a pollutant and altering the normal balance of plant and animal life.

Although some erosion would result from grading and construction operations, it is not expected that the project would result in significant soil erosion or loss of topsoil. The project site is relatively level and contains no unusual geographic features, and no improvements would be made on the adjoining slope. The proposed project would not expose any soil for prolonged periods of time. Exposed soil during project construction would be temporary and would not be substantial. Impacts related to soil erosion during construction activities would be less than significant. No mitigation measures are required.

Stormwater from the project would be collected in drains, which would in turn be discharged into the stormwater drainage facilities on the middle school campus or percolate through landscaped areas. Impacts related to soil erosion during operation of the proposed facility would not be significant. No mitigation measures are required.

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?

Less Than Significant Impact. According to the soil testing conducted for the geotechnical study, the project site contains approximately 6.5 to 10 feet of fill underlain by alluvium. The fill is predominantly silty sand, and the alluvial soils underlying the fill consist predominantly of silty sand (Koury 2016). As discussed in Section 5.6.a.iv, the proposed project would not result in on- or offsite landslides. Lateral spreading—the lateral displacement of large, surficial blocks of soil—is not expected at the site.

5. Environmental Analysis

Natural soils may be susceptible to expansion, consolidation, and collapse (including hydrocollapse with the addition of water). Consolidation occurs when more load is placed on soil with a low relative density, compressing pore spaces and, where saturated, squeezing water out. Hydrocollapse occurs when soil that can carry more load when dry condition collapses upon saturation. These conditions are not expected at the site (Koury 2016).

Subsidence of the ground surface has been reported in alluvial basins where significant amounts of groundwater (often in an overdraft condition; e.g., Lofgren 1971) or petroleum products (oil and natural gas) are withdrawn over several decades. The primary cause of nontectonic subsidence in alluvial basin areas has been alluvial compaction due to removal of large quantities of fluid (groundwater or oil). For groundwater basins, this results in a significant lowering of the groundwater levels, and in oil fields, in depletion of the oil reserves. RMS is immediately southwest of the Torrance Oil Field—the nearest active oil well is about 5,000 feet northeast of the site, and the nearest dry well is about 3,500 feet to the northwest. According to the geotechnical study, no hazardous or toxic materials were observed during soil testing, and no hazardous materials associated with oil fields are onsite (Koury 2016). The potential for subsidence due to oil or gas withdrawal is negligible. The proposed project would not remove significant quantities of water or other fluids from the ground. No significant impacts related to subsidence would occur, and no mitigation measures are required.

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?

Less Than Significant Impact. Expansive soils swell when they become wet and shrink when they dry out, which can crack building foundations and, in some cases, distress the structure of the buildings themselves. Based on the expected lithology (physical character of the material beneath the site), a review of Saucedo et al. (2003), and a review of the Koury Geotechnical Report (2016), the project site is not on expansive soil. The soils encountered during soil testing consist predominantly of silty sands, which generally have a low susceptibility to expansion. Standard grading technologies and compliance with current grading requirements in accordance with the seismic requirements of the CBC and the recommendation of the geotechnical report would reduce impacts from expansive soils to a less than significant level. No mitigation measures are required.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. Development of the proposed project would not require the installation of a septic tank or alternative wastewater disposal system. The project would utilize the local sewer system. Therefore, no impact would result from septic tanks or other onsite wastewater disposal systems. No mitigation measures are required.

5.7 GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as greenhouse gases (GHGs), into the atmosphere. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydro fluorocarbons, per fluorocarbons, and chlorofluorocarbons.[3, 4]

This section analyzes the project's contribution to global climate change impacts in California through an analysis of project-related GHG emissions. Information on manufacture of cement, steel, and other "life cycle" emissions that would occur as a result of the project are not applicable and are not included in the analysis.[5] A background discussion on the GHG regulatory setting and GHG modeling can be found in Appendix A to this Initial Study.

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:

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

3 Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

4 Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of PM emitted from burning fuels. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2014b). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

5 Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analyses was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).

5. Environmental Analysis

Comments:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact. Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough greenhouse gas emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact.

The proposed project would generate GHG emissions from energy use (indirectly from purchased electricity use and directly through fuel consumed for building heating) and area sources (e.g., equipment used onsite, consumer products, coatings). Since the events that would be held at the proposed gymnasium are currently taking place at the existing middle school, the proposed project would not generate new daily trips, solid waste, or water uses. Annual GHG emissions were calculated for construction and operation of the project. Annual average construction emissions were amortized over 30 years and included in the emissions inventory to account for GHG emissions from the construction phase of the project. Project-related GHG emissions are shown in Table 6, *Net Increase in Project-Related GHG Emissions at Buildout*. As shown in the table, the proposed project at buildout would generate 28 metric tons of carbon dioxide–equivalent ($MTCO_2e$) emissions annually. The total GHG emissions onsite from the project would be nominal and would not exceed the SCAQMD's bright-line threshold of 3,000 $MTCO_2e$,[6] and the proposed project's cumulative contribution to GHG emissions is less than significant. No mitigation measures are required.

Table 6 Net Increase in Project-Related GHG Emissions at Buildout

Source	$MTCO_2e$/year[1]	Percent of Project Total
Area	<1	<1%
Energy	19	66%
Amortized Construction Emissions[2]	9	34%
Total Emissions	28	100%
SCAQMD's Bright-Line Threshold	3,000	NA
Exceeds Bright-Line Threshold	No	NA

Source: CalEEMod Version 2013.2.2.
Notes:
$MTCO_2e$: metric tons of carbon dioxide-equivalent
Percent changes from each source may not total to 100 percent due to rounding.
1 Assumes implementation of the 2013 California Green Building Standards Code (CALGreen) and 2013 Building and Energy Efficiency Standards. The 2013 Building and Energy Efficiency Standards are 30 percent more energy efficient than the 2008 Standards for non-residential buildings. Modeling assumes all structures onsite would be 30 percent more energy efficient than the 2008 building code for residential structures.
2 Construction emissions are amortized over a 30-year project lifetime per recommended SCAQMD methodology.

6 This threshold is based on a combined threshold of 3,000 $MTCO_2e$ for all land use types, proposed by SCAQMD's Working Group based on a survey of the GHG emissions inventory of CEQA projects. Approximately 90 percent of CEQA projects' GHG emissions inventories exceed 3,000 $MTCO_2e$, which is based on a potential threshold approach cited in CAPCOA's white paper, "CEQA and Climate Change."

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. The California Air Resources Board's (CARB's) Scoping Plan is California's GHG reduction strategy to achieve the state's GHG emissions reduction target established by Assembly Bill (AB) 32, which is to return to 1990 emission levels by year 2020. To estimate the reductions necessary, CARB projected statewide 2020 business-as-usual (BAU) GHG emissions and identified that the state as a whole would need to reduce GHG emissions by 28.5 percent from year 2020 BAU to achieve the target of AB 32 (CARB 2008). The GHG emissions forecast was updated as part of the First Update to the Scoping Plan. In the First Update to the Scoping Plan, CARB projected that statewide BAU emissions in 2020 would be approximately 509 million $MTCO_2e$.[7] Therefore, to achieve the AB 32 target of 431 million $MTCO_2e$ (i.e., 1990 emissions levels) by 2020, the State would need to reduce emissions by 78 million $MTCO_2e$ compared to BAU conditions, a reduction of 15.3 percent from BAU in 2020 (CARB 2014b).[8, 9]

Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard (LCFS), California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the Corporate Average Fuel Economy (CAFE) standards, and other early action measures to ensure the state is on target to achieve the GHG emissions reduction goals of AB 32. In addition, new buildings are required to comply with the current Building and Energy Efficiency Standards and California Green Building Code (CALGreen). The project's GHG emissions would be reduced through compliance with statewide measures that have been adopted since AB 32 was adopted.

In addition to AB 32, the California legislature passed Senate Bill (SB) 375 to connect regional transportation planning to land use decisions made at a local level. SB 375 requires the metropolitan planning organizations to prepare a Sustainable Communities Strategy (SCS) in their regional transportation plans to achieve the per capita GHG reduction targets. For the Southern California Association of Governments (SCAG) region, the SCS was adopted in April 2012 (SCAG 2012), and SCAG recently released the Draft 2016 Regional Transportation Plan (RTP)/SCS (SCAG 2015). The SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency for governments and developers. The proposed project is consistent with the underlying general plan land use designation and would not interfere with SCAG's ability to implement the regional strategies outlined in the RTP/SCS. No impact would occur, and no mitigation measures are required.

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7 The BAU forecast includes GHG reductions from Pavley and the 33% Renewable Portfolio Standard (RPS).

8 If the GHG emissions reductions from Pavley I and the Renewable Electricity Standard are accounted for as part of the BAU scenario (30 million $MTCO_2e$ total), then the State would need to reduce emissions by 108 million $MTCO_2e$, which is a 20 percent reduction from BAU.

9 In May 2014, CARB completed a five year update to the 2008 Scoping Plan. CARB recalculated the 1990 GHG emission levels with the updated global warming potential (GWP) in the Intergovernmental Panel on Climate Change's Fourth Assessment Report, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, is slightly higher, at 431 $MMTCO_2e$ (CARB 2014b).

5. Environmental Analysis

5.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
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?				X
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
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?				X

Comments:

a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

Less Than Significant Impact. The proposed project involves the construction of a gymnasium at an existing middle school campus. Project-related construction activities would require the use of hazardous materials such as fuels, lubricants, and greases in construction equipment and coatings used in construction. Onsite construction equipment might require routine or emergency maintenance that could result in the release of oil, diesel fuel, transmission fluid, or other materials. However, the materials used would not be in such quantities or stored in such a manner as to pose a significant safety hazard or environmental threat. These activities would also be short term or one time in nature. Significant amounts of hazardous materials would not be transported, used, or disposed of in conjunction with the operation of the proposed project. Maintenance of the new facility would likely require the use of cleaners, solvents, paints, and other janitorial products that are potentially hazardous. However, these materials would be utilized in relatively small quantities and would be stored in compliance with established state and federal requirements. With the exercise of normal operational safety practices, as currently employed at the school, significant impacts would not occur. No mitigation measures are required.

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?

Less Than Significant Impact. The project site is on a blacktop playground, sandbox, and grass playfield at a developed middle school, which does not use any significant quantities of hazardous materials in its operation. Also, construction activities would not involve a significant amount of hazardous materials, and their use would be temporary. Project construction and operational workers would be trained on the proper use, storage, and disposal of hazardous materials. Construction projects typically maintain supplies onsite for containing and cleaning small spills of hazardous materials. No significant impacts would result from project implementation. No mitigation measures are required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. The proposed project involves constructing a gymnasium on a middle school campus. Operation of the proposed facility would not emit hazardous emissions, and no significant amounts of hazardous materials, substances, or wastes would be transported, used, or disposed of in conjunction with the facility's operation. The onsite use of hazardous materials at the proposed facility would be restricted to typical cleaning solvents and paints already used by the school's janitorial and/or maintenance staff. These materials would be utilized in small quantities and stored in compliance with established state and federal requirements. No significant impacts would result from project implementation. No mitigation measures are required.

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?

No Impact. The project site is proposed on a middle school campus, which is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The project site was not listed on any of the following hazardous materials websites: Envirostor, Enviromapper, and Geotracker. In addition, all construction activities would occur on the campus and would not disturb any offsite properties. No impact would occur.

5. Environmental Analysis

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

No Impact. The nearest airport is Torrance Airport/Zamperini Field, approximately 1 mile southeast of the project site. However, the project site is not within an airport land use plan area and is not in the Airport Influence Area of the Torrance Airport (LACALUC 2003). Federal Aviation Regulation 77.23 generally requires a 200-foot height restriction for development in the Height Restriction Zone. The project site is not in a height restriction zone, and the proposed gymnasium would not exceed 35 feet. The proposed project would not increase the student capacity of the campus and would not exacerbate the existing conditions at the project site. No impact would occur, and no mitigation measures are required.

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?

No Impact. The project site is not in the vicinity of any private airstrip. One private heliport is in the vicinity of the project site—Toyota Helistop, about 4.5 miles northeast of the project site. Based on the distance from the school, operations from this heliport would not impact the project site. The proposed project would have no impact on any private airstrip operations and would not result in a safety hazard for people working or residing in the project area. No impact would occur, and no mitigation measures are required.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. The proposed project would not conflict with any adopted emergency response or evacuation plans. The site's surrounding roadways would continue to provide emergency access through the project area and to surrounding properties during the project's construction. The proposed project would not necessitate any offsite roadway modification. If temporary closure of any street is required, TUSD's contractor would provide the city with a construction schedule and plans for the closure of the street and to ensure that the placement of construction materials and equipment do not obstruct a detour route. The District would also be required to comply with recommendations from the Torrance Fire Department for reducing impacts to emergency response or evacuation plans. Onsite emergency response would continue to be facilitated through the use of the site's driveways, parking lot, and paved areas. Fire access to the gymnasium would be the same as that of the existing campus. No significant impacts would occur as a result of project development, and no mitigation measures are required.

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?

No Impact. The project site is in a developed urban community, and no significant areas of brush, grass, trees, or other natural fuel sources are close enough to the site to present a significant fire hazard. The project site is not in a fire hazard area delineated by the Torrance General Plan. No impact would occur, and no mitigation measures are required.

5.9 HYDROLOGY AND WATER QUALITY

Would the project:

	Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements?			X	
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)?			X	
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?			X	
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, which would result in flooding on- or off-site?			X	
e)	e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			X	
f)	Otherwise substantially degrade water quality?			X	
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?				X
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j)	Expose people or structures to inundation by seiche, tsunami, or mudflow?				X

Comments:

a) Violate any water quality standards or waste discharge requirements?

Less Than Significant Impact. The project site is within the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQCB). Drainage and surface water discharges from the proposed project would not violate any water quality standards or waste discharge requirement. However, site preparation and other soil-disturbing activities during construction of the project could temporarily increase the amount of soil erosion and siltation entering the local stormwater drainage system.

The area to be disturbed by the proposed project is 0.35 acre. Pursuant to Section 402 of the Clean Water Act, the EPA has established regulations under the National Pollution Discharge Elimination System (NPDES) program to control direct stormwater discharges. In California, the State Water Resources Control Board administers the NPDES permitting program and is responsible for developing NPDES permitting requirements. The NPDES program regulates industrial pollutant discharges, including construction activities for sites larger than one acre. Since implementation of the proposed project would disturb less than one acre, the proposed project would not be subject to the NPDES permit requirements. Although no grading permits are required from the city, it is standard practice for the District's retained contractors to implement appropriate best management practices (BMPs) to control erosion and prevent any discharge of sediments from the site. The City of Torrance has the below standards for projects where compliance with the NPDES is not required, which the District will implement The District will also engage in similar practices to manage stormwater runoff during construction.

- Retain onsite the sediments generated on or brought to the project site, using Treatment Control or Structural BMPs.
- Retain construction-related materials and wastes, spills, and residues at the project site and prevent discharges to streets, drainage facilities, the MS4, receiving waters, or adjacent properties.
- Contain nonstorm water runoff from equipment and vehicle washing at the project site.
- Control erosion from slopes and channels through use of effective BMPs, such as limitation of grading during the wet season; inspection of graded areas during rain events; planting and maintenance of vegetation on slopes, if any; and covering any slopes susceptible to erosion.

Implementation of standard BMPs would ensure that construction activities do not violate any applicable water quality standards or waste discharge requirement. No surface discharges during operation of the proposed project would occur other than routine cleaning and maintenance of the grounds, which would be conducted to avoid discharge into storm drains. Impacts are less than significant, and no mitigation measures are required.

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)?

Less Than Significant Impact. The project site is in the West Coast Groundwater Basin and already served by the City of Torrance Municipal Water District. Approximately 15 percent to 18 percent of the supply comes from groundwater (Torrance 2011). The project site is currently developed with blacktop, a sandbox, and grass playfield and does not contain any wells or direct groundwater connections. Therefore, project implementation would not result in a net deficit in aquifer volume or a lowering of the local groundwater table. The proposed gymnasium would accommodate existing school programs and school population; therefore, it would not result in substantial increase in potable water use to impact groundwater supplies. Implementation of the proposed project would not substantially interfere with groundwater recharge. No significant impacts to the local groundwater table would result from project implementation. No mitigation measures are required.

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?

Less Than Significant Impact. The project site is developed with impervious blacktop, sandbox, and grass playfield. The proposed project would connect to the existing drainage system and would not substantially alter existing drainage patterns or substantially increase stormwater runoff to existing drainage facilities. Additionally, implementation of applicable BMPs as discussed in Section 5.9.a would ensure that erosion or siltation impacts are reduced to a less than significant level. No mitigation measures are required.

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, which would result in flooding on- or off-site?

Less Than Significant Impact. The project site is part of an existing middle school campus with available stormwater connection. The project site is developed with blacktop, a sandbox, and grass playfield, and project implementation would not significantly increase the impervious area within the middle school. Drainage from the project site would be connected to the existing storm drain system, and a substantial increase in stormwater runoff would not occur. Implementation of the proposed project would not result in substantial alteration to existing drainage patterns of the campus that could result in on- or offsite flooding. Impacts would not be significant, and no mitigation measures are required.

e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. The project site is developed with impervious blacktop and pervious sandbox and grass playfield, and the proposed project would not result in a significant increase in volume and rate of stormwater flow to contribute additional sources of polluted runoff to the existing drainage system. Moreover, appropriate BMPs would be implemented during construction to ensure that impacts are reduced to a less than significant level. During operation, the proposed gymnasium would generate similar urban runoff pollutants as other on-campus buildings and would not result in substantial additional sources of polluted runoff. Impacts would not be significant, and no mitigation measures are required.

f) Otherwise substantially degrade water quality?

Less Than Significant Impact. Provided that standard BMPs are implemented, as discussed in Section 5.9.a, the proposed project would not substantially degrade the water quality. No additional mitigation measures are required.

5. Environmental Analysis

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?

No Impact. The project site is outside of 100-year flood zones, and the project would not develop housing. The project site is in Federal Emergency Management Agency Flood Zone X, 0.2 percent annual chance flood hazard zone (Flood Insurance Rate Map ID# 06037C1940F); therefore, it is outside of 100-year flood zone (FEMA 2008). No impact would occur, and no mitigation measures are required.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. The project site is outside of the 100-year flood zone, and no impact would occur. No mitigation measures are required.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The project site is not identified as a potential flooding area in the City of Torrance General Plan Safety Element Flood Hazard Map. The proposed project would not increase the flooding hazard on the existing campus and would not expose people or structures to a significant risk of loss, injury, or death involving flooding. No impact would occur, and no mitigation measures are required.

j) Expose people or structures to inundation by seiche, tsunami, or mudflow?

No Impact. Development of the proposed project would not result in any flood hazards arising from a seiche, tsunami, or mudflow.

- **Seiche.** A seiche is a surface wave created when an inland water body is shaken, usually by earthquake activity. There are no inland water bodies near the project site that could pose a flood hazard to the site due to a seiche.

- **Tsunami.** A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. The project site is 1.5 miles inland from the Pacific Ocean; therefore, project development would not cause any tsunami-related flood hazard.

- **Mudflow.** A mudflow is a landslide composed of saturated rock debris and soil with a consistency of wet cement. There are no substantial slopes on or next to the site that could pose a mudflow hazard to the site.

No impact related to site inundation by seiche, tsunami, or mudflow would occur. No mitigation measures are required.

5.10 LAND USE AND PLANNING

Would the project:

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

Comments:

a) Physically divide an established community?

No Impact. The project site is currently developed as blacktop, sandbox, and grass playfield as part of the existing RMS campus, and the project would not physically divide an established community. No impact would occur, and no mitigation measures are required.

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?

No Impact. The project site is designated Public/Quasi-Public/Open Space by the City of Torrance General Plan and Public Use (PU) by the zoning map. In the PU zoning district, all offices and facilities owned by or operated by public school districts are permissible. The project site is within the existing RMS campus, and the new gymnasium would serve the existing RMS programs and students. Implementation of the proposed project would not conflict with any applicable land use plans or regulations. No impact would occur, and no mitigation measures are required.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The project site is currently developed as blacktop, sandbox, and grass playfields as part of the existing RMS campus and is not within a Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or state habitat conservation plan. No impact would occur, and no mitigation measures are required.

5. Environmental Analysis

5.11 MINERAL RESOURCES

Would the project:

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

Comments:

a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?

Less Than Significant Impact. The City of Torrance has mapped its mineral resources designation pursuant to the California Surface Mining and Reclamation Act of 1975. Four mineral resource zones (MRZ) classify sand, gravel, and crushed rock resources (Torrance 2010):

- **MRZ-1.** Adequate information indicates that no significant mineral deposits are present or likely to be present.
- **MRZ-2.** Adequate information indicates that significant mineral deposits are present or there is a high likelihood for their presence, and development should be controlled.
- **MRZ-3.** The significance of mineral deposits cannot be determined from the available data.
- **MRZ-4.** There is insufficient data to assign any other MRZ designation.

The project site is in MRZ-3, where the significance of mineral deposits cannot be determined. This mineral resource designation is intended to prevent incompatible land use development on areas determined to have significant mineral resource deposits. The project site and its surrounding areas are already developed with no ongoing mineral extractions. The proposed project is consistent with the existing use of the project site as a school, and no loss of availability of known resources would result from project implementation. Therefore, impacts are less than significant, and no mitigation measures are required.

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?

No Impact. The project site is designated MRZ-3, and it is not a locally important mineral resource recovery site, as delineated in the City of Torrance General Plan. Implementation of the proposed project would not result in the loss of availability of a locally important mineral resource. No impact would occur, and no mitigation measures are required.

5.12 NOISE

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and the City of Torrance have established criteria to protect public health and safety and to prevent disruption of certain human activities. Characterization of noise and vibration, existing regulations, and pertinent calculations for construction noise and vibration levels are provided in the analysis below.

Terminology and Noise Descriptors

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}).** The energy-average noise level over a specified measurement period (typically one hour). The L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Statistical Sound Level (L_n).** The statistical sound levels, or *n*-exceeded sound levels, are noise metrics that represent fractional percentages of the measurement period that are exceeded for 'n' percent of the time. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time (i.e., half the time the noise level exceeds this level and half the time the noise level is less than this level) or 30 minutes in an hour. Similarly, the L_{02}, L_{08}, and L_{25} represent the noise levels that are exceeded 2, 8, and 25 percent of the time, respectively (or 1, 5, and 15 minutes per hour). These statistical sound levels are typically used to demonstrate compliance with a noise ordinance for stationary noise sources.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB added from 10:00 PM to 7:00 AM.

Existing Conditions

The noise environment around the school site is dominated by traffic flows from Pacific Coast Highway and Newton Street including cars, trucks, commercial uses, and activities around neighborhoods and the school. Aircraft overflights from Torrance Airport/Zamperini Field, Hawthorne Municipal Airport, Compton Airport, and Los Angeles International Airport also contribute to overall community noise levels. Secondary noise sources include nearby residential uses and Nancy Lee Lane to the east.

5. Environmental Analysis

Applicable Noise and Vibration Regulations

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

Operational/Long-Term Noise Regulations

The City of Torrance's noise element, a component of the general plan, sets goals and policies to minimize adverse noise impacts and preserve the high quality of life for residents. The goals of the noise element are implemented and enforced through the municipal code.

Torrance's noise ordinance is designed to protect people from non-transportation noise sources such as music, construction activity, machinery and pumps, and air conditioners. Enforcement of the ordinance ensures that adjacent properties are not exposed to excessive noise from stationary sources. It is unlawful to produce noise that exceeds the limits in section 46.7.2 of the municipal code.

The municipal code establishes noise limits in most residential areas of 50 to 55 dB between 7 AM to 10 PM, and 45 to 50 dB between 10 PM to 7 AM, depending on location. The four receiver regions established by the municipal code are described below, and differing noise regulations are shown in Tables 7 and 8.

- **Region 1** includes the predominantly industrial areas in and around the refineries and industrial uses on the western edge of the City.
- **Region 2** includes the area in and around the airport and the commercial and industrial uses south of Lomita Boulevard and north of Pacific Coast Highway.
- **Region 3** encompasses the residential neighborhoods south of Pacific Coast Highway and west of Hawthorne Boulevard.
- **Region 4** includes the remainder of the City.

For receivers on residential land (in Regions 3 and 4), where receivers are 500 feet or more from the boundaries of Regions 1 (industrial uses south of W. 190th Street) and Region 2 (surrounding Torrance Airport), the limits are shown in Table 7, *Noise Level Limits for Residential Receivers*. In Regions 3 and 4 where receivers are within 500 feet of the boundary of Region 1 or 2, the limits are 5 dB above the levels in Table 7 or 5 dB above the ambient noise level, whichever is lowest. The regions and the related 500-foot boundary zones are mapped on Exhibit A of section 46.7.2 of the municipal code.

Table 7 Noise Level Limits for Residential Receivers

Receiver Region	Noise Level (dB)	
	Day (7 AM to 10 PM)	Night (10 PM to 7 AM)
3 (Residential Neighborhoods South of Highway 1 and West of Hawthorne Blvd.)	50	45
4 (Remainder of City Not Included in Regions 1, 2, or 3)	55	50

Noise sources on industrial and commercial land are prohibited from producing noise levels at their boundaries above the thresholds in Table 8, *Noise Limits at Industrial and Commercial Boundaries*.

Table 8 Noise Limits at Industrial and Commercial Boundaries

Source Region	Noise Level (dB)	
	Day (7 AM to 10 PM)	Night (10 PM to 7 AM)
1 (Industrial Uses South of W. 190th St.)	70	65
2 (Surrounding Torrance Airport)	60	55
All Remaining Industrial Land Uses	60	55
All Commercial Land Use	60	55

Additionally, noise sources on commercial and industrial land must not produce noise that causes residential receivers to exceed the limits in Table 7. Table 9, *Corrections to Noise Limits*, shows the adjustments to the limits in Tables 7 and 8 under certain conditions.

Table 9 Corrections to Noise Limits

Noise Conditions	Correction to Limits (dB)
1. Noise contains a steady, audible tone, such as a whine, screech, or hum.	–5
2. Noise is a repetitive impulsive noise, such as hammering or riveting	–5
3. If the noise is not continuous, one of the following corrections to the limits shall be applied:	
a) Noise occurs less than 5 hours per day or less than 1 hour per night	+5
b) Noise occurs less than 90 minutes per day or less than 20 minutes per night	+10
c) Noise occurs less than 30 minutes per day or less than 6 minutes per night	+15
4. Noise occurs on Sunday morning (12:01 AM to 12:01 PM)	–5

In addition, any noise that disturbs the peace or quiet of a neighborhood or causes discomfort or annoyance to residents is prohibited.

Construction Noise Regulations

According to municipal code section 46.3.1, construction is allowed from 7:30 AM to 6:00 PM Monday through Friday and 9:00 AM to 5:00 PM on Saturdays. Construction is prohibited on Sundays and holidays, except between the hours of 10:00 AM to 4:00 PM for homeowners who reside at the property. Construction is allowed outside these hours as long as noise levels do not exceed 50 dB, as measured at property lines in or adjacent to a residential area, or a written request has been approved by the community development director.

5. Environmental Analysis

Except for emergencies, heavy construction equipment—pile drivers, mechanical shovels, derricks, hoists, pneumatic hammers, compressors—is prohibited from operating in or adjacent to a residential area without permission from the community development director.

Vibration Regulations

The Torrance Municipal Code does not have any standards regarding vibration. This analysis will use Federal Transit Administration (FTA) criteria to evaluate potential vibration impacts.

Based on the FTA Noise and Vibration Impact Guidelines (FTA 2006), an impact would occur if construction activities generate vibration that is strong enough to physically damage buildings. The threshold for vibration-induced architectural damage is 0.2 peak particle velocity (PPV) in inches per second (in/sec) for typical wood-framed buildings. The threshold for human annoyance at residential receptors during the daytime is 78 VdB.

Would the project result in:

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

Comments:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact.

Project-Related Traffic Noise

The project would not increase enrollment at the school. Therefore, the project would not substantially increase the number of vehicle trips to or from the area. Traffic-induced noise levels would not change appreciably, and impacts are less than significant. No mitigation is required.

Stationary-Source Noise Impacts

Operation of the proposed project would include use of heating, ventilation, and air conditioning (HVAC) systems and other sources of mechanical noise. Mechanical systems would be installed to comply with the noise limits in the municipal code. Additionally, any mechanical system would generate the same type of noise already present in the general area and would be overshadowed by noise from Pacific Coast Highway and Newton Street. Therefore, use of such equipment would not substantially elevate average daytime or nighttime noise levels in the vicinity of the project site, and stationary-source noise impacts are less than significant. No mitigation measures are necessary.

Project-Related Event Noise

Events would generate noise from use of the parking lot[10] and arrival and departure of attendees. However, noise generated by traffic on Pacific Coast Highway and Newton Street would remain the dominant noise source in the area and would mask noises generated by events in the gymnasium. New traffic from project-related event trips, if any, would be a small additional increment compared to existing traffic flows and would not notably increase traffic flows on Newton Street or surrounding streets, and therefore would not cause perceptible noise increases at nearby homes. Project-related event noise impacts generated from use of the gymnasium would be less than significant. No mitigation measures are necessary.

Land Use Compatibility

The project site is on an existing school campus. The project would not increase enrollment at the school or change its basic function. Therefore, there would be no changes in land use or in noise compatibility due to project implementation.

Furthermore, it is important to note that with the recent Supreme Court decision regarding the assessment of the environment's impacts onto proposed projects (*CBIA v BAAQMD*, issued December 17, 2015),[11] it is no longer the purview of the CEQA process to evaluate the impact of existing (or future) environmental conditions onto any given project; with limited exceptions.[12] For noise, the application of this ruling means

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[10] Parking lots typically generate noise from car horns, car engines, brakes and tires, automatic lock beeps, alarm horns/sirens, car radios, and people talking.

[11] California Supreme Court. *California Building Industry Association v. Bay Area Air Quality Management District* (2015) [Case No. S213478]

[12] Exceptions to this rule apply to airport (§ 21096), school construction projects (§ 21151.8), and housing development projects which meet particular criteria (§§ 21159.21, subds. (f), (h), 21159.22, subds. (a), (b)(3), 21159.23, subd. (a)(2)(A), 21159.24, subd. (a)(1), (3), 21155.1, subd. (a)(4), (6)). For the school construction projects exceptions, the criterion is:

a. school sites are located on or near sources of hazardous substances or waste or in close proximity to freeways or other operations that might emit hazardous emissions. (§ 21151.8, subd. (a), (a)(2)(A).

Since this condition does not apply to this project, the school exception also does not apply and, therefore, the main ruling of CBIA v BAAQMD is applicable (regarding no requirement for a CEQA impact determination [regarding Noise Compatibility]).

5. Environmental Analysis

that the analysis of traffic, rail, aircraft, and long-term stationary noise effects at the project site is no longer part of CEQA. Therefore, exterior noise effects from nearby offsite sources onto the project are no longer a topic for impact evaluation under CEQA, and no statement of impact significance is required.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact.

Operations-Phase Vibration

Project operations would not generate substantial levels of vibration since there are no significant vibration-generating sources as part of the proposed improvements.

Construction-Phase Vibration

Construction activities can generate ground vibration that varies depending on the construction procedures, equipment used, and proximity to vibration-sensitive uses. Construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance. Such vibrations may have two types of potential impacts: (a) architectural damage to nearby buildings and (b) annoyance to vibration-sensitive receptors. The project would be constructed on the mid-central perimeter of the southern campus boundary. The project site is generally level, so relatively little heavy earthwork would be required. Thus, there would be limited use of vibration-inducing construction equipment such as bulldozers, graders, jackhammers, and loaders/backhoes. Construction equipment would primarily employ items that would not generate substantial levels of vibration, including forklifts, cranes, and haul trucks. The use of high-vibration equipment, such as pile drivers or vibratory rollers, is not required. Construction activities would start as early as the fall of 2016 and would take approximately 16 months.

Table 10, *Typical Vibration Levels Produced by Common Construction Equipment Items*, shows the peak particle velocities of some common construction equipment and haul trucks (loaded trucks).

Table 10 Vibration Levels Produced by Common Construction Equipment

Equipment	Peak Particle Velocity in inches per second		
	at 25 ft.	at 50 ft.	at 150 ft.
Vibratory Roller	0.210	0.074	0.014
Large Bulldozer	0.089	0.031	0.006
Loaded Trucks	0.076	0.027	0.005
Jackhammer	0.035	0.012	0.002
Small Bulldozer	0.003	0.001	0.000

Source: Federal Transit Administration: Transit Noise and Vibration Impact Assessment, 2006.

Vibration-Induced Architectural Damage

The threshold at which there is a risk of architectural damage to typical wood-framed buildings is 0.2 in/sec (FTA 2006). Building damage is not normally a factor unless the project requires blasting and/or pile driving

(FTA 2006). No blasting, pile driving, or hard rock ripping/crushing activities would be required for the proposed project. Small construction equipment generates vibration levels less than 0.1 PPV in/sec at 25 feet away.

The nearest buildings to the gymnasium are classrooms at RMS, which are as near as 25 feet southeast of the project site. Under the assumption that vibratory rollers would not be used, these nearest onsite buildings would not be exposed to vibration levels in excess of the threshold. The nearest offsite structures east, north, west, and south of the site are at least 75 feet away from the construction zone and would be exposed to vibration levels below thresholds.

Since no vibration-intensive activities (such as pile driving) will take place, the maximum construction-related vibration level would be below the 0.2 PPV in/sec criteria for vibration-induced architectural damage at the nearby structures, and architectural-damage vibration impacts from construction would be less than significant.

Vibration Annoyance

The threshold for vibration annoyance at vibration-sensitive uses is 78 VdB. Vibration is typically noticed nearby when objects in a building generate noise from rattling windows or picture frames. It is typically not perceptible outdoors, and therefore impacts are based on the distance to the nearest building (FTA 2006). The effect on buildings near a construction site depends on soil type, ground strata, and receptor building construction. Vibration can range from no perceptible effects at the lowest levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels.

Vibration dissipates quickly with distance, with vibration levels from most construction equipment (excluding vibratory rollers and pile drivers) falling below the annoyance threshold of 78 VdB at a distance of 75 feet. Since the use of vibratory rollers or pile drivers is not needed during project construction and the nearest offsite receptors are at least 75 feet from the construction zone, vibration levels at offsite receptors would be well below the 78 VdB threshold for vibration-induced annoyance.

However, since construction activities may take place while school is in session and since the nearest classrooms are as close as 25 feet from the project site, it is possible that the students' learning activities may be affected. The nearest classrooms—those up to approximately 75 feet from activities—may occasionally experience vibration levels in excess of 78 VdB when large equipment operates near the boundary of the construction area. However, these episodes would be short term and sporadic. Further, vibration levels would diminish rapidly with distance between the equipment and the classrooms, falling quickly below the annoyance threshold. Because of the potential for exposure of students and faculty to perceptible groundborne vibration levels during construction of the gymnasium—depending on exact timing—the following Project Design Features would ensure that future classrooms would not experience undue vibration annoyance from nearby construction activities.

5. Environmental Analysis

Project Design Features

A During the phases of construction that typically use the most vibration-intensive equipment (i.e., grading and trenching phases), if heavy equipment such as vibratory rollers, jack hammers, hoe rams, large bulldozers, or loaded trucks are used, one of the following measures will be taken by the District's contractor:

(1) Limit the operation of heavy equipment at the construction zone to outside school instructional hours (after school is released in the afternoon, Saturday, or during extended school breaks).

OR

(2) Vibratory rollers, jack hammers, hoe rams, large bulldozers, and loaded trucks will not be operated at the construction zone within 75 feet of the classrooms at RMS when school is in session.

OR

(3) Relocate students to campus facilities that are at least 75 feet from the edge of the construction zone.

B Prior to construction, the District will meet with the construction contractor to discuss alternative methods to reduce vibration impacts of demolition and construction activities at instructional buildings within 75 feet of the construction zone(s). During the pre-construction meeting, the construction contractor will identify demolition methods not involving vibration-intensive construction equipment or activities.

C Prior to construction activities, the construction contractor will inspect and report on the current foundation and structural condition of the existing instructional buildings that are less than 25 feet from the construction site.

D The construction contractor will implement alternative, less-vibration-intensive methods identified in the preconstruction meeting during demolition, excavation, and construction for work conducted less than 25 feet to instructional buildings.

Given the relatively large distances to offsite receptors and the project design features for onsite receptors, construction vibration impacts related to annoyance would be less than significant, and no mitigation measures are necessary.

Vibration Summary

In summary, both construction and operations activities would not create substantial groundborne vibration or groundborne noise. This impact is less than significant, and no mitigation measures are necessary.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. As described in section 5.12.a, above, increases in operational noise levels related to the project would not substantially affect the existing noise environment. Therefore, permanent operation-related noise impacts are less than significant, and no mitigation measures are necessary.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. Construction noise is caused by construction-related traffic on roads and construction equipment operating at the project site.

Construction Traffic Impacts

Construction-related traffic can generate noise that affects uses along roadways. However, the proposed project would not require substantial site preparation—the site is generally flat, and the project would not require excavation underground—so the number of vendor and haul truck events would not be substantial. Therefore, construction-related traffic would not create perceptible noise impacts at noise-sensitive uses along nearby roads.

Construction Activity Impacts

According to the city's noise ordinance, construction is only allowed between 7:30 AM and 6:00 PM on weekdays and between 9:00 AM and 5:00 PM on Saturday. Although project construction would temporarily increase ambient noise, noise levels would subside again after construction.

Typically, demolition and grading activities generate the loudest noise because they involve the biggest equipment. However, the project site is generally level, so very little heavy earthwork would be required. In general, construction equipment for the project would be limited to relatively small equipment such as delivery/dump trucks, loaders/backhoes, a rubber-tired dozer, a grader, a forklift, and a crane. The total duration for construction of the gymnasium would be approximately 16 months.

As shown in Table 11, *Typical Construction Equipment Noise Levels*, operational noise levels of most construction equipment range between 80 and 88 dBA at 50 feet. Construction equipment typically moves around on the site and uses various power levels. Noise from localized point sources (such as construction equipment) decreases by approximately 6 to 7.5 dB with each doubling of distance between the source and receptor.[13] For example, a dozer that generates 85 dBA at 50 feet would measure 79 dBA at 100 feet, 73 dBA at 200 feet, 67 dBA at 400 feet, and 61 dBA at 800 feet (at –6 dB per doubling).

[13] As sound energy travels outward from the source, spreading loss accounts for a 6 dB decrease in noise level. Soft ground and atmospheric absorption effects can decrease this by an additional 1.5 dB.

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Table 11 Typical Construction Equipment Noise Level

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 ft.)	Suggested Maximum Sound Levels for Analysis (dBA at 50 ft.)
Jack Hammers	75–85	82
Pneumatic Tools	78–88	85
Pumps	74–84	80
Dozers	77–90	85
Scrapers	83–91	87
Haul Trucks	83–94	88
Cranes	79–86	82
Portable Generators	71–87	80
Rollers	75–82	80
Tractors	77–82	80
Front-End Loaders	77–90	86
Hydraulic Backhoe	81–90	86
Hydraulic Excavators	81–90	86
Graders	79–89	86
Air Compressors	76–89	86
Trucks	81–87	86

Source: Bolt, Beranek & Newman; Noise Control for Buildings and Manufacturing Plants, 1987.

The nearest offsite receptors would be the single-family residences to the south on Newton Street, approximately 75 feet from the project boundary to the residences property lines; homes across Nancy Lee Lane 420 feet to the east; and homes adjacent to campus approximately 350 feet to the north. Equipment operates intermittently and moves around; therefore, noise would also be intermittent as well as temporary during the construction period. The heaviest and loudest equipment would be used during the site preparation and grading phases. Subsequent phases would mostly use lighter equipment—such as forklifts, cranes, welders, and compressors—so the noise levels would be less than that for site preparation and grading.

Composite construction noise by phase has been characterized by Bolt, Beranek, and Newman (1971). In their study, construction noise for earthwork and finish work related to industrial development is presented as an aggregate of 89 dBA L_{eq} when measured at a distance of 50 feet from the construction effort. This summed value takes into account both the number of pieces and the spacing of the heavy equipment used in the construction effort. Noise levels are typically reduced from this value due to usage factors (discussed above), as well as the barrier effects provided by the physical structures themselves (once erected). However, as a worst-case scenario, the 89 dBA L_{eq} value is used to assess the impact of construction.

The operation of such equipment would result in the generation of both steady and episodic noise significantly above the ambient levels currently experienced near the project site. The noise produced from construction decreases at a rate of approximately 6 dB per doubling of distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and/or shielding/scattering effects). Therefore, at 100 feet, the source noise level would be about 6 dB less or 83 dBA L_{eq}. Similarly, at 200 feet, the noise level would be about 12 dB less or 77 dBA L_{eq}.

Construction noise levels would be reduced by 3 dB at the homes on Newton Street (75 feet), 18 dB at homes to the north (350 feet), and 18 dB at the homes across Nancy Lee Lane (420 feet) due to distance attenuation alone. Thus, construction noise levels at the nearby noise-sensitive uses would be 86 dBA L_{eq} or less at homes on Newton Street, and 71 dBA L_{eq} or less at homes to the north and across Nancy Lee Lane.

Differences in elevation between the construction site and receptors can further reduce noise levels experienced at receiving locations. The project site is below the grade of the homes to the south. The campus has a vegetated slope that extends along the southern and eastern campus borders. The surrounding slope would attenuate noise generated by construction activities and reduce their impact on homes across Newton Street. Construction noise traveling east towards homes across Nancy Lee Lane would be attenuated further by classroom facilities, trees, and the slope on the east side of campus. Homes adjoining the north portion of campus are below the campus grade, which would reduce noise impacts. Additionally, homes north of campus experience high ambient noise levels due to vehicle traffic on PCH. While construction-related noise levels would elevate the community noise environment around the campus, the attenuation provided by the distances to these offsite receptors, high ambient noise levels at receptors, surrounding noise-attenuating physical features, the temporary, short-term period for construction activities, and activities being conducted during the least sensitive portions of the day would result in construction noise being less than significant at offsite receptors.

Construction activities may take place while school is in session, and student learning activities at nearby buildings may be affected by construction noise. Due to the proximity of the nearest school buildings (as close as 25 feet from the construction zone), construction noise would reach up to 83 dBA L_{eq} during grading, and 78 dBA L_{eq} during remaining phases. These noise levels could interfere with school activities. Because of this potential exposure of students and faculty to excessive construction noise levels, noise reduction measures are in the Project Design Features (detailed below). Implementation of these Project Design Features would reduce noise impacts during construction by either (1) relocating classes away from the construction site, OR (2) installing a temporary sound blanket along the building façade facing the site. This would prevent exposure of students and faculty to excessive noise during construction.

Project Design Features

E During all phases of the construction of the Richardson Middle School Gymnasium, the District will either

(1) Limit the operation of construction equipment at the construction zone to outside school instructional hours (i.e., after school is released in the afternoon, Saturday, or during extended school breaks).

OR

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(2) Relocate students to campus facilities that are at least 150 feet from the edge of the construction zone or do not face the construction site,

OR

(3) Erect a temporary noise barrier/curtain between the construction zone and all classrooms. The temporary sound barrier will have a minimum height of 12 feet and be free of gaps and holes and must achieve a Sound Transmission Class (STC) of 35 or greater. The barrier can be (a) a ¾-inch-thick plywood wall OR (b) a hanging blanket/curtain with a surface density or at least 2 pounds per square foot (Thalheimer 2000). For either configuration, the construction side of the barrier will have an exterior lining of sound absorption material with a Noise Reduction Coefficient (NRC) rating of at least 0.7.

In summary, given the large distances to offsite receptors and the project design features for onsite receptors, construction noise impacts would be less than significant. Construction activities would not create substantial noise. This impact would be less than significant, and no mitigation measures are needed.

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

No Impact. The nearest airport is Torrance Airport/Zamperini Field, approximately 1 mile southeast of the site, which serves as a general aviation airport. Other nearby airports are Hawthorne Municipal Airport (8 miles north), Los Angeles International Airport (9.5 miles northwest), and Compton/Woodley Airport (9 miles northeast). However, the Torrance Airport/Zamperini Field's influence area extends northwest to southeast; the project site is outside any airport's influence area and 65 dBA CNEL noise contours. No impact would occur, and no mitigation is required.

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?

No Impact. The project is not in the vicinity of a private airstrip and would not expose people to excessive, airstrip-related noise. The nearest private airport is the Goodyear Blimp Base, approximately 6 miles to the northeast, but blimp operations are relatively infrequent and generally do not direct air traffic over the project site. The nearest heliport is the Toyota Helistop, 4.5 miles to the northeast, but the heliport does not direct air traffic over the project site. Therefore, the proposed project would not expose students and staff to excessive noise from aircraft at this heliport. No impact would occur, and no mitigation is required.

5.13 POPULATION AND HOUSING

Would the project:

	Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

Comments:

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

No Impact. The intent of the project is to better serve existing RMS programs and students. Implementation of the proposed project would not result in population growth in the area, directly or indirectly. No impact would occur, and no mitigation measures are required.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project would occur within the existing RMS campus, and no housing units would be displaced. No replacement housing construction is necessary, and no impact would occur. No mitigation measures are required.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project would occur within the existing RMS campus, and no people would be displaced by project implementation. No replacement housing construction is necessary. No impact would occur, and no mitigation measures are required.

5.14 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

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construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

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

Comments:

a) Fire protection?

Less Than Significant Impact. Fire protection and emergency medical services for RMS are provided by the City of Torrance Fire Department (TFD). The nearest fire station, TFD Station No. 6, is 1.8 miles to the northeast of the school at 2401 Del Amo Circle West. Although implementation of the proposed project would result in the construction and operation of a new gymnasium with seating for 250 spectators, this facility would mainly accommodate the school's existing activities and programs. The facility would not increase the overall student enrollment capacity of RMS or substantially increase community use of the school. Therefore, the proposed project would not substantially increase demands for fire services and the need for additional fire protection facilities.

Furthermore, the final design of the proposed gymnasium will be reviewed for consistency with applicable code requirements. The Division of the State Architect (DSA) will assess the facility's structural safety and evaluate its compliance with state fire and building codes found in Title 24 of the California Code of Regulations. The building will also be reviewed by TFD, who will evaluate the proposed site plan related to emergency access, fire hydrant placement, and water flow. Impacts to fire protection services would be less than significant, and no mitigation measures are required.

b) Police protection?

Less Than Significant Impact. Law enforcement and police protection services at RMS are provided by the City of Torrance Police Department (TPD). TPD operations are based at 3300 Civic Center Drive, approximately 2.5 miles northeast of the project site. The demand for police protection services is generally tied to population growth. Since the proposed project would not directly increase the student population or substantially intensify use of the campus, project implementation would not substantially increase the demand for police services and generate a need for additional law enforcement facilities. Impacts to police protection services would be less than significant, and no mitigation measures are required.

c) Schools?

No Impact. The proposed gymnasium would have a beneficial impact on RMS by providing a new venue for existing activities and programs. The proposed facility does not include classrooms and would not directly increase the school's enrollment capacity or community use of the school facilities. School services demands are created primarily by growth-inducing projects such as residential development. The proposed project would serve existing RMS programs and students and would not generate school services demands. Implementation of the proposed project would not adversely impact the provision of school services by TUSD or require the construction of additional instructional space. No impact would occur, and no mitigation measures are required.

d) Parks?

No Impact. Impacts to parks are generally caused by a project's inducement of population or employment growth, which can reduce levels of service at existing parks. The proposed project would provide a new recreational amenity that would accommodate existing activities, programs, and students as well as the community through the Civic Center Act. The project would not increase student enrollment capacity at RMS, increase community use of school facilities, or add new residents to the area that would increase the demand or existing use of neighborhood or regional parks. The proposed gymnasium would replace a portion of the paved outdoor play area that currently features asphalt courts, a sandbox, and grass playfield. However, upon construction of the gymnasium and reconfiguration of the area's painted markings, the sandbox would be removed. The remaining blacktop and grass playfield would be large enough to accommodate existing sports activities and the school's physical education program. Implementation of the proposed project would have an overall beneficial impact on parks, and no mitigation measures are required.

e) Other public facilities?

No Impact. The proposed gymnasium would accommodate programs and activities already occurring at RMS. The project would not increase enrollment at the school or otherwise induce population growth in the area that would generate a demand for other public facilities, such as library facilities. No impact would occur and no mitigation measures are required.

5.15 RECREATION

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

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Comments:

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?

No Impact. The demand for recreational facilities increases with growth-inducing projects that increase population, such as residential development. The proposed project would serve the existing programs and students of the middle school. No additional population would be generated, and the proposed project would not increase the use of offsite recreational facilities. No impact would occur, and no mitigation measures are required.

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?

Less Than Significant Impact. The proposed project involves construction of a gymnasium, increasing the recreational facilities of the existing middle school and community when used via the Civic Center Act. Although the proposed project would slightly reduce the playground area of the middle school, the remaining area would continue to provide adequate space for the school's physical education program and community use, and no replacement recreational facilities would be necessary. The proposed project would not result in adverse physical effects on the environment other than those discussed throughout this Initial Study. Impacts are not significant, and no mitigation measures are required.

5.16 TRANSPORTATION/TRAFFIC

Would the project:

	Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			X	
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?			X	
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d)	Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?				X

Issues		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e)	Result in inadequate emergency access?				X
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?			X	
g)	Result in inadequate parking capacity?			X	

Comments:

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?

Less Than Significant Impact. The proposed gymnasium would have bleachers for seating up to 250 spectators. Typically, a new facility where people congregate would generate new vehicle trips. However, the new gymnasium would mainly serve the school's existing physical educational program and would not significantly change operations at RMS. RMS currently holds performances and assemblies in the school's multipurpose room, including Back to School Night, Open House, awards ceremonies, plays, and talent shows. Such events take place both during school hours and in the evenings. With the implementation of the proposed project, school performances and assemblies would now be held in the gymnasium. Evening events would typically start after clubs and enrichment programs that end at 6:00 PM—that is, after PM peak hour traffic. The new gymnasium would accommodate the activities already held at the school's multipurpose room. Therefore, the proposed project would not generate a substantial number of new vehicle trips.

The gymnasium would be available for community use only through the Civic Center Act, and no formal joint-use programs are proposed. Any such use would be outside of school hours on weekday evenings and weekends. It is expected that any community use of the proposed gymnasium would also be after PM peak hour traffic. Therefore, significant vehicle trips would not be generated from community use of the gymnasium.

The proposed project would not create new programs or substantially expand the school's operations to generate a substantial number of new vehicle trips. Therefore, the proposed project would not adversely impact the area circulation system, and operational impacts are less than significant. No mitigation measures are required.

Construction activities would generate new temporary vehicle traffic. Since the site is flat and little grading would be required, it is assumed that no more than 50 daily vehicle trips would be generated. Construction vehicles would access the site from Calle Mayor to the northwest and to a lesser degree, Janet Lane from Pacific Coast Highway to the northeast. Most traffic would be from Calle Mayor as it provides the shortest distance to the site and would impact the least number of residences. Based on the projected construction

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schedule, the highest traffic volume would be in July 2016 during the site preparation and grading phases. Prior to the start of construction activities, the construction contractor would prepare a Traffic Control Work Plan that would identify ways to minimize traffic during construction activities. Therefore, short-term traffic impacts caused by construction of the project would be less than significant. No mitigation measures are required.

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?

Less Than Significant Impact. The Los Angeles County Metropolitan Transportation Authority (Metro) implements the County's Congestion Management Program (CMP). The CMP includes a system of arterial roadways and freeways. The CMP for Los Angeles County requires that the traffic impact of individual development projects of potential regional significance be analyzed. The nearest CMP intersection to the project site is Hawthorne Boulevard at 190th Street, approximately 3.4 miles to the north of RMS.

As discussed in response 5.16.a, the project would not alter the traffic patterns in the vicinity of the school or cause a substantial increase in traffic volumes. Therefore, analysis of traffic impacts to CMP roadways is not required. Impacts would be less than significant, and no mitigation measures are required.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The nearest airport is Torrance Airport/Zamperini Field, approximately 1 mile southeast of the project site. The proposed building would be less than 35 feet high (see Section 3.1) and would not interfere with air travel or air safety. In addition, the project would not increase demand for air travel or increase air traffic levels. No impact would occur, and no mitigation measures are required.

d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?

No Impact. The project would be accessed via existing driveways and would not change the layout of existing school driveways to public roadways or intersections. The proposed project would not add incompatible uses to area roadways or increase hazards due to design features. No impact would occur, and no mitigation measures are required.

e) Result in inadequate emergency access?

No Impact. The project would not change the layout of existing access driveway and would not result in congestion on roadways. The new gymnasium would be constructed on the blacktop, sandbox, and grass playfield area and would not impede emergency access to the project site or to the surrounding community. No impact would occur, and no mitigation measures are required.

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?

Less Than Significant Impact. The nearest public transit bus service to RMS is Torrance Transit route 9, which operates on Carson Street. Torrance Transit routes 3 and Rapid routes 3, 4, and 8 all operate on Hawthorne Boulevard about 1 mile to the east (Metro 2014a). The Metro Line 232 operates on PCH with stops at Calle Mayor and Janet Lane. The nearest bicycle route to the project site on the Metro Bike Map is on Pacific Coast Highway, which is 0.25 mile north of the RMS campus (Metro 2014b). The proposed project would be on the blacktop, sandbox, and grass playfield near the mid-central perimeter of the southern boundary of the campus near Newton Street, but all construction staging areas would be confined within the campus and would not block sidewalks or interfere with transit bus operations or bicycle facilities. Operation of the proposed project would also not compromise alternative modes of transportation. Therefore, impacts to alternative modes of transportation and public transit facilities are less than significant. No mitigation measures are required.

g) Result in inadequate parking capacity?

Less Than Significant Impact. RMS currently holds performances and assemblies such as plays, talent shows, Back to School Night, Open House, and awards ceremonies in the school's multipurpose room. With project implementation, these activities would now be held in the new gymnasium. As discussed in response 5.16.a, the proposed gymnasium would accommodate RMS's existing programs and activities and would not generate a substantial number of new vehicle trips. Moreover, the proposed project would not displace any parking spaces on campus. Therefore, no increase in parking demand would be generated by the proposed project. Additionally, any community use of the gymnasium would be limited by the Civic Center Act (Education Code §§ 38130–38139) and coordinated so that it would not interfere with regular school hours or result in more demand for parking. Parking for the project would be accommodated on the campus's parking lot and surrounding roadways. The project would not result in inadequate parking capacity, and impacts would be less than significant. No mitigation measures would be required.

5.17 UTILITIES AND SERVICE SYSTEMS

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed waste water treatment requirements of the applicable Regional Water Quality Control Board?			X	
b) Require or result in the construction of new water or waste water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	

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	Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?			X	
e)	Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g)	Comply with federal, state, and local statutes and regulations related to solid waste?			X	

Comments:

a) Exceed waste water treatment requirements of the applicable Regional Water Quality Control Board?

Less Than Significant Impact. The City of Torrance owns and operates the wastewater collection system that serves the city, including RMS. Wastewater in the city is conveyed to the Sanitation Districts of Los Angeles County (LACSD) network of sewer mains, which transports it to LACSD's Joint Water Pollution Control Plant (JWPCP) at 24501 South Figueroa Street in the City of Carson. The JWPCP is one of the largest wastewater treatment plants in the world and provides primary and secondary treatment of approximately 280 million gallons of wastewater per day (mgd). The plant is permitted to treat up to 400 mgd (LACSD 2015). Torrance is in State Water Resources Control Board Region 4, which is under the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQCB).

The proposed gymnasium would accommodate existing programs and activities that already take place on the campus, and it would not include restrooms or showers. Therefore, the little wastewater effluent associated with operation of the gymnasium would not substantially increase pollutant loads or change the nature of pollutant loads in a way that would conflict with LARWQCB regulations or treatment requirements. In addition, the proposed project would not induce population growth, and therefore would not indirectly contribute to increased pollutant loads. Impacts are less than significant, and no mitigation measures are required.

b) Require or result in the construction of new water or waste water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. The RMS campus is currently connected to the municipal water distribution and wastewater collection systems. Onsite water and wastewater lines would not be resized or reoriented since the proposed gymnasium would not include restrooms or showers. Users of the facility would use existing restrooms in the adjacent school buildings. Therefore, implementation of the proposed project would not require expansion of water or wastewater treatment facilities. Impacts are less than significant, and no mitigation measures are required.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. See Sections 5.9.a through 5.9.e. The RMS storm drainage system ties into the municipal system. The proposed 8,260-square-foot building would mostly displace blacktop and a small portion of grass playfield, and remove the sandbox, and therefore would not substantially reduce the amount of pervious area. The existing stormwater drainage patterns would remain. Any increase in stormwater flow would be minimal, and stormwater flows at buildout of the proposed project would be similar to existing conditions. Drainage from the project site would continue to flow into existing storm drain systems without a substantial increase in stormwater runoff. Impacts associated with any modification of the onsite storm drainage system would be minimal and are analyzed throughout this Initial Study. Impacts would be less than significant, and no mitigation measures are required.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less Than Significant Impact. Four water purveyors provide water service in Torrance. However, most of the city, including RMS, is served by Torrance Municipal Water Department (TMWD). TMWD is a division of the City of Torrance Public Works Department. According to the City of Torrance Urban Water Management Plan (UWMP), approximately 83 percent of TMWD's potable water supplies consist of imported water from northern California and the Colorado River purchased from the Metropolitan Water District of California (MWD). Remaining supplies consist of potable groundwater pumped in the city and brackish groundwater treated at the Goldsworthy Desalter Project, which is operated by the Water Replenishment District of Southern California. The TMWD forecasts that in normal water year conditions over the 2015–2035 period, its total potable water supplies will remain constant at 29,007 afy, and total potable water demands in its service area will increase from 20,368 to 22,504 afy (SA Associates 2011). The difference between projected supply and demand identified in the UWMP indicates that there would be sufficient water to serve minor school improvement projects, such as the proposed gymnasium, in addition to projected growth in TMWD's service area.

It should be noted that the UWMP was prepared prior to the current multi-year drought in California—which has severely impacted MWD's potable water supplies—and prior to the implementation of aggressive water conservation measures aimed at reducing the drought's impact. However, because the proposed gymnasium would accommodate programs currently held at RMS and because it would not have new restrooms or showers, its operation would have a negligible impact on the school's use of water. Therefore, implementation of the proposed project would not require water providers to obtain new or expanded water supplies. Impacts are less than significant, and no mitigation measures are required.

e) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. See Section 5.17.b, above. The JWPCP is one of the largest wastewater treatment plants in the world and currently has the capacity to treat 220 mgd more than it currently treats. Since the project would not generate a substantial amount of wastewater, impacts of the proposed project on LACSD's capacity to treat wastewater are less than significant, and no mitigation is required.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. Solid waste collection service at RMS is provided by Consolidated Disposal Service, which is a subsidiary of Republic Services. Republic Services operates throughout Southern California and disposes solid waste at multiple locations in the region. However, most solid waste generated by TUSD schools is likely disposed at Sunshine Canyon Landfill, which is operated by Republic Services and located between the Sylmar district of Los Angeles and the City of Santa Clarita. Torrance falls within the jurisdiction of the Los Angeles Regional Agency (LARA), a consortium of 17 cities in Los Angeles County that aggregate their solid waste disposal reporting. In 2013—the most recent year for which jurisdictional disposal data is available—39.1 percent of solid waste collected in the LARA region was disposed of at Sunshine Canyon Landfill (CalRecycle 2015a). The region's remaining solid waste was disposed of in substantially smaller amounts at 28 other landfills. The Sunshine Canyon Landfill has a maximum capacity of 12,100 tons per day, an average intake of approximately 9,000 tons per day (Republic Services 2015), and a remaining capacity of 96,800,000 cubic yards or 72,677,162 tons (CalRecycle 2015b). The landfill has an estimated closing date of 2037.

Most of the Department of Resources Recycling and Recovery's (CalRecycle) sample solid waste generation rates for public venues and institutions reflect the volume of refuse generated per student, employee, or visitor (CalRecycle 2013). Because the proposed gymnasium would accommodate existing programs and activities and would not increase the student or employee population at RMS, the facility would not generate additional solid waste using these metrics. However, an example waste generation rate is 0.007 pounds per square foot per day (CalRecycle 2013). Using this metric, the 8,260-square-foot gymnasium would generate approximately 52.5 pounds of solid waste per day. This amount of additional refuse represents 0.0002 percent of Sunshine Canyon Landfill's daily intake capacity and could easily be accommodated by that facility. Therefore, project impacts on landfill capacity would be less than significant, and no mitigation measures are required.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Less Than Significant Impact. The following federal and state laws and regulations govern solid waste disposal. The EPA administers the Resource Conservation and Recovery Act of 1976 and the Solid Waste Disposal Act of 1965, which govern solid waste disposal. In the State of California, AB 939 (Integrated Solid Waste Management Act of 1989; Public Resources Code 40050 et seq.) required every California city and county to divert 50 percent of its waste from landfills by the year 2000 by such means as recycling, source reduction, and composting. In addition, AB 939 requires each county to prepare a countywide siting element specifying areas for transformation or disposal sites to provide capacity for a 15-year period for solid waste generated in the county that cannot be reduced or recycled. AB 1327, the California Solid Waste Reuse and Recycling Access Act of 1991, requires local agencies to adopt ordinances mandating the use of recyclable materials in development projects.

Solid waste would be generated during construction and operation of the proposed project. TUSD would comply with all county and state solid waste diversion, reduction, and recycling mandates, including the Countywide Integrated Waste Management Plan. To reduce the amount of waste going into local landfills from schools, the state passed the School Diversion and Environmental Education Law, SB 373, which required CalRecycle to develop school waste reduction tools for use by school districts. In compliance with this law, CalRecycle encourages school districts to establish and maintain a paper recycling program in all classrooms, administrative offices, and other areas owned and leased by the school district. Participation in this and other such programs would reduce solid waste generated from the proposed project and assist in compliance with AB 939.

TUSD and its construction contractor would make every reasonable effort to reuse and/or recycle the construction debris that would otherwise be taken to a landfill. They would dispose of hazardous wastes, including paint used during construction, only at facilities permitted to receive them and in accordance with local, state, and federal regulations. The proposed project would comply with all applicable federal, state, and local statues and regulations related to solid waste disposal. No significant impacts would result from implementation of the proposed project, and no mitigation measures are necessary.

5.18 MANDATORY FINDINGS OF SIGNIFICANCE

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) The project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?		X		
c) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)		X		
d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Comments:

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

Less Than Significant Impact With Mitigation Incorporated. The project site is in an urban setting and surrounded by roadways and built-out properties. The project site does not contain any special-status vegetation or animal species. Project development would not degrade the quality of the environment; reduce the population, range, or habitat of a species of fish or wildlife or a rare or endangered plant or animal species; and would not eliminate an important example of the major periods of California history or prehistory. Impacts to archaeological and paleontological resources would be less than significant after implementation of Mitigation Measure CUL-1. No additional mitigation is required.

b) The project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?

Less Than Significant Impact With Mitigation Incorporated. After implementation of Mitigation Measure CUL-1 in Section 5.5, *Cultural Resources*, no significant impacts to long-term or short-term environmental goals would occur. No additional mitigation is required.

c) 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.)

Less Than Significant Impact With Mitigation Incorporated. After the imposition of CUL-1, no significant project-level or cumulative impacts would occur. TUSD is in the process of implementing school facility improvements at other TUSD campuses for which separate environmental reviews have been completed. As environmental impacts would be mitigated to less than significant levels at each school site, the proposed project's contribution to cumulative impacts would not be a considerable. With the imposition of mitigation identified in this Initial Study, the proposed project's impacts, when combined with the other projects' impacts, as mitigated, are less than significant, and no additional mitigation is required.

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

Less Than Significant Impact. The proposed project would support the existing students and programs at RMS. As demonstrated in this Initial Study, the proposed development and operation of the gymnasium would not substantially increase environmental effects that would directly or indirectly affect human beings. No mitigation measures are required.

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Appendix A. Air Quality and Greenhouse Gas Background and Modeling Data

Appendix

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Air Quality and Greenhouse Gas Background and Modeling Data

AIR QUALITY

Climate/Meteorology

SOUTH COAST AIR BASIN

The project site lies within the South Coast Air Basin (SoCAB), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (SCAQMD 2005).

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the project site with temperature data is the Torrance AP Station (ID No. 048973). The lowest average low is reported at 44.3°F in January, and the highest average high is 78.6°F in August (WRCC 2015).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from October through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages 13.55 inches per year in the project area (WRCC 2015).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (SCAQMD 2005).

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area (SCAQMD 2005).

Air Quality Regulations

The proposed project has the potential to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, it falls under the ambient air quality standards promulgated at the local, state, and federal levels. The project site is in the SoCAB and is subject to the rules and regulations imposed by the South Coast Air Quality Management District (SCAQMD). However, SCAQMD reports to California Air Resources board (CARB), and all criteria emissions are also governed by the California and national Ambient Air Quality Standards (AAQS). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

AMBIENT AIR QUALITY STANDARDS

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

These National AAQS and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 1, *Ambient Air Quality Standards for Criteria Pollutants*, these pollutants include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Ozone (O_3)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm[2]	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm[1]	
	24 hours	0.04 ppm	0.014 ppm[2]	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Lead (Pb)	Monthly	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	*	1.5 µg/m^3	
	3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles[1]	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2015a.
Notes: ppm: parts per million; µg/m^3: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 When relative humidity is less than 70 percent.
2 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
3 On December 14, 2012, EPA lowered the federal primary $PM_{2.5}$ annual standard from 15.0 µg/m^3 to 12.0 µg/m^3. EPA made no changes to the primary 24-hour $PM_{2.5}$ standard or to the secondary $PM_{2.5}$ standards.

CRITERIA AIR POLLUTANTS

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_x) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and NO_2 are the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion, engines and motor vehicles operating at slow speeds are the primary source of CO in the SoCAB. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005; EPA 2015a). The SoCAB is designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2014a).

Volatile Organic Compounds (VOC) are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of VOCs include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. There are no ambient air quality standards established for VOCs. However, because they contribute to the formation of ozone (O_3), SCAQMD has established a significance threshold for this pollutant (SCAQMD 2005).

Nitrogen Oxides (NO_x) are a byproduct of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO_2). The principal form of NO_2 produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_x. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 part per million (ppm). NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure (SCAQMD 2005; EPA 2015a). The SoCAB is designated as an attainment area for NO_2 under the National AAQS California AAQS (CARB 2014a).

Sulfur Dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2 (SCAQMD 2005; EPA 2015a). When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. The SoCAB is designated as attainment under the California and National AAQS (CARB 2014a).

Suspended Particulate Matter (PM_{10} and $PM_{2.5}$) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on arid landscapes also contributes substantially to local particulate loading (i.e., fugitive dust). Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems (SCAQMD 2005).

The US Environmental Protection Agency's (EPA) scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms (SCAQMD 2005). There has been emerging evidence that even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤ 0.1 millionths of a meter or <0.000004 inch), known as ultrafine particulates (UFPs), have human health implications, because UFPs toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (SCAQMD 2013). However, the EPA or CARB have yet to adopt AAQS to regulate these particulates. Diesel particulate matter (DPM) is classified by the CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,[1] environmental damage,[2] and aesthetic damage[3]

[1] $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

[2] Particulate matter can be carried over long distances by wind and then settle on ground or water, making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

[3] Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

(SCAQMD 2005; EPA 2015a). The SoCAB is a nonattainment area for $PM_{2.5}$ under California and National AAQS and a nonattainment area for PM_{10} under the California AAQS (CARB 2014a).[4]

Ozone (O_3) is commonly referred to as "smog" and is a gas that is formed when VOCs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for the formation of this pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation during the growing season (SCAQMD 2005; EPA 2015a). The SoCAB is designated as extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2014a).

Lead (Pb) concentrations decades ago exceeded the state and federal AAQS by a wide margin, but have not exceeded state or federal air quality standards at any regular monitoring station since 1982 (SCAQMD 2005). However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources[5] recorded every localized violations of the new state and federal standards. As a result of these localized violations, the Los Angeles County portion of the SoCAB was designated in 2010 as nonattainment under the National AAQS for lead (SCAQMD 2012a; CARB 2014a). The project is not characteristic of industrial-type projects that have the potential to emit lead. Therefore, lead is not a pollutant of concern for the project.

TOXIC AIR CONTAMINANTS

The public's exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

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[4] CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the National AAQS on March 25, 2010, because the SoCAB has not violated federal 24-hour PM_{10} standards during the period from 2004 to 2007. In June 2013, the EPA approved the State of California's request to redesignate the PM_{10} nonattainment area to attainment of the PM_{10} National AAQS, effective on July 26, 2013.

[5] Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 identified that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2012a).

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Multiple Airborne Toxics Exposure Study (MATES)

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on ambient concentrations of TACs and estimated the potential health risks from air toxics in the SoCAB. In 2008, SCAQMD conducted its third update to the MATES study (MATES III). The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in a million. The largest contributor to this risk was diesel exhaust, accounting for 84 percent of the cancer risk (SCAQMD 2008).

SCAQMD recently released the fourth update (MATES IV). The results showed that the overall monitored risk for excess cancer from a lifetime exposure to ambient levels of air toxics decreased to approximately 418 in one million. Compared to the 2008 MATES III, monitored excess cancer risks decreased by approximately 65 percent. Approximately 90 percent of the risk is attributed to mobile sources while 10 percent is attributed to TACs from stationary sources, such as refineries, metal processing facilities, gas stations, and chrome plating facilities. The largest contributor to this risk was diesel exhaust, accounting for approximately 68 percent of the air toxics risk. Compared to MATES III, MATES IV found substantial improvement in air quality and associated decrease in air toxics exposure. As a result, the estimated basin-wide populationweighted risk decreased by approximately 57 percent compared to the analysis done for the MATES III time period (SCAQMD 2015a).

The Office of Environmental Health Hazard Assessment (OEHHA) updated the guidelines for estimating cancer risks on March 6, 2015. The new method utilizes higher estimates of cancer potency during early life exposures, which result in a higher calculation of risk. There are also differences in the assumptions on breathing rates and length of residential exposures. When combined together, SCAQMD estimates that risks for a given inhalation exposure level will be about 2.7 times higher using the proposed updated methods identified in MATES IV (e.g., 2.7 times higher than 418 in one million overall excess cancer risk) (SCAQMD 2015a).

Air Quality Management Planning

SCAQMD is the agency responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

2012 AQMP

On December 7, 2012 SCAQMD adopted the 2012 AQMP (Plan), which employs the most up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources. The Plan also addresses several state and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models. The Plan builds upon the approach identified in the 2007 AQMP for attainment of federal PM and ozone standards, and highlights the significant amount of reductions needed and the urgent need to engage in interagency coordinated planning to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria air pollutant standards within the timeframes allowed under the Federal CAA. The Plan demonstrates attainment of federal 24-hour $PM_{2.5}$ standard by 2014 and the federal 8-hour ozone standard by 2023. Preliminary ambient air quality data suggests that meeting the 2016 federal 24-hour $PM_{2.5}$ standards by the end of 2014 is not likely, largely due to the usually extreme drought conditions in the SoCAB (SCAQMD 2015c). The Plan includes an update to the revised EPA 8-hour ozone control plan with new commitments for short-term NO_X and VOC reductions. In addition, it also identifies emerging issues of ultrafine ($PM_{1.0}$) particulate matter and near-roadway exposure, and an analysis of energy supply and demand.

2016 Draft AQMP

The SCAQMD is in the process of updating the AQMP. The draft 2016 AQMP is anticipated to be available in fall 2015. The 2016 AQMP will address strategies and measures to attain the 2008 federal 8-hour ozone standard by 2032 and the 2012 federal annual $PM_{2.5}$ standard by 2021. The 2016 AQMP will also take an initial look at the 2015 federal 8-hour ozone standard. It will also update previous attainment plans for ozone and $PM_{2.5}$ that have not yet been met (SCAQMD 2015d).

LEAD STATE IMPLEMENTATION PLAN

In 2008 EPA designated the Los Angeles County portion of the SoCAB nonattainment under the federal lead (Pb) classification due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the new standard. The rest of the SoCAB, outside the Los Angeles County nonattainment area remains in attainment of the new standard. On May 24, 2012, CARB approved the SIP revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to EPA for approval.

AREA DESIGNATIONS

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the State Implementation Plan (SIP). Areas are classified as attainment or nonattainment areas for particular pollutants, depending on whether they meet ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

- **Unclassified:** a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment:** a pollutant is in attainment if the CAAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment:** a pollutant is in nonattainment if there was at least one violation of a state AAQS for that pollutant in the area.
- **Nonattainment/Transitional:** a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB is shown in Table 2, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*. The SoCAB is designated in attainment of the California AAQS for sulfates. The SoCAB is designated as nonattainment for lead (Los Angeles County only) under the National AAQS. Transportation conformity for nonattainment and maintenance areas is required under the Federal CAA to ensure federally supported highway and transit projects conform to the SIP. The U.S. EPA approved California's SIP revisions for attainment of the 1997 8-hour O_3 National AAQS for the SoCAB in March 2012. Findings for the new 8-hour O_3 emissions budgets for the SoCAB and consistency with the recently adopted 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) were submitted to the U.S. EPA for approval.

Table 2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment
PM_{10}	Serious Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only)[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2014a.
[1] In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new federal and existing state AAQS as a result of large industrial emitters. Remaining areas within the SoCAB are unclassified.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements taken by the SCAQMD. The project site is in Source Receptor Area (SRA) 3 – Southwest Los Angeles County Coastal. The air quality monitoring station closest to the project site is the Long Beach – 2425 Webster Street Monitoring Station. This station monitors O_3, CO, NO_2, and SO_2. Data for PM_{10} and $PM_{2.5}$ is supplemented by the North Long Beach Monitoring Station. The most current five years of data from these monitoring stations are included in Table 3, *Ambient Air Quality Monitoring Summary*. The data show occasional violations of the state O_3 standards, federal O_3 standards, and NO_2 standards in the last five years. The area consistently exceeds the federal $PM_{2.5}$ standard. The CO, SO_2, and PM_{10} standards have not been violated in the last five years.

Table 3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2010	2011	2012	2013	2014
Ozone (O_3)[1]					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	1	0	0	0	0
State 8-hour ≥ 0.07 ppm (days exceed threshold)	1	0	0	0	1
Federal 8-Hour > 0.075 ppm (days exceed threshold)	1	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.099	0.074	0.080	0.090	0.087
Max. 8-Hour Conc. (ppm)	0.084	0.064	0.067	0.070	0.072
Carbon Monoxide (CO)[1]					
State 8-Hour > 9.0 ppm (days exceed threshold)	0	0	0	*	*
Federal 8-Hour ≥ 9.0 ppm (days exceed threshold)	0	0	0	*	*
Max. 8-Hour Conc. (ppm)	2.60	3.31	2.57	*	*
Nitrogen Dioxide (NO_2)[1]					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Federal 1-Hour ≥ 0.100 ppm (days exceed threshold)	1	0	0	0	2
Max. 1-Hour Conc. (ppb)	117	90	97	81	135
Sulfur Dioxide (SO_2)[1]					
State 24-Hour ≥ 0.04 ppm (days exceed threshold)	0	0	0	*	*
Federal 24-Hour ≥ 0.14 ppm (days exceed threshold)	0	0	0	*	*
Max 24-Hour Conc. (ppm)	0.003	0.013	0.004	*	*
Coarse Particulates (PM_{10})[2]					
State 24-Hour > 50 µg/m^3 (days exceed threshold)	0	0	0	0	0
Federal 24-Hour > 150 µg/m^3 (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m^3)	44	43	45	37	*
Fine Particulates ($PM_{2.5}$)[2]					
Federal 24-Hour > 35 µg/m^3 (days exceed threshold)	0	1	4	2	2
Max. 24-Hour Conc. (µg/m^3)	35.0	39.7	49.8	47.2	51.5

Source: CARB 2015b.
ppm: parts per million; parts per billion, µg/m^3: micrograms per cubic meter
Notes: * Data not available.
[1] Data obtained from the Long Beach – 2425 Webster Street Monitoring Station.
[2] Data obtained from the North Long Beach Monitoring Station.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are also considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

Methodology

Projected construction-related air pollutant emissions are calculated using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2, distributed by the California Air Pollutant Control Officers Association (CAPCOA). CalEEMod compiles an emissions inventory of construction(fugitive dust, off-gas emissions, onroad emissions, and offroad emissions), area sources, indirect emissions from energy use, mobile sources, indirect emissions from waste disposal (annual only), and indirect emissions from water/wastewater (annual only) use. The calculated emissions of the project are compared to thresholds of significance for individual projects using the SCAQMD's CEQA Air Quality Analysis Guidance Handbook.

Thresholds of Significance

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in SCAQMD's *CEQA Air Quality Handbook* and the significance thresholds on SCAQMD's website.[6] CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation. In addition to the daily thresholds listed above, projects are also subject to the AAQS. These are addressed though an analysis of localized CO impacts and localized significance thresholds (LSTs).

REGIONAL SIGNIFICANCE THRESHOLDS

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB. Table 4, *SCAQMD Significance Thresholds*, lists SCAQMD's regional significance thresholds.

[6] SCAQMD's Air Quality Significance Thresholds are current as of March 2011 and can be found here: http://www.aqmd.gov/ceqa/hdbk.html.

Table 4 SCAQMD Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	75 lbs/day	55 lbs/day
Nitrogen Oxides (NO_X)	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day
Particulates ($PM_{2.5}$)	55 lbs/day	55 lbs/day

Source: SCAQMD 2015b.

CO HOTSPOTS

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. Typically, for an intersection to exhibit a significant CO concentration, it would operate at level of service (LOS) E or worse without improvements (Caltrans 1997). However, at the time of the 1993 Handbook, the SoCAB was designated nonattainment under the California AAQS and National AAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the SoCAB and in the state have steadily declined. In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hot spot analysis conducted for the attainment by SCAQMD for busiest intersections in Los Angeles during the peak morning and afternoon periods plan did not predict a violation of CO standards. [7] As identified in SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SoCAB in previous years, prior to redesignation, were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2011).

LOCALIZED SIGNIFICANCE THRESHOLDS

SCAQMD developed LSTs for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at the project site (offsite mobile-source emissions are not included in the LST analysis). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS and are shown in Table 5, *SCAQMD Localized Significance Thresholds*.

[7] The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

Table 5 SCAQMD Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO_2 Standard (CAAQS)	0.18 ppm
Annual NO_2 Standard (CAAQS)	0.03 ppm
24-Hour PM_{10} Standard – Construction (SCAQMD)[1]	10.4 μg/m³
24-Hour $PM_{2.5}$ Standard – Construction (SCAQMD)[1]	10.4 μg/m³
24-Hour PM_{10} Standard – Operation (SCAQMD)[1]	2.5 μg/m³
24-Hour $PM_{2.5}$ Standard – Operation (SCAQMD)[1]	2.5 μg/m³

Source: SCAQMD 2015b.
ppm – parts per million; μg/m³ – micrograms per cubic meter
[1] Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

To assist lead agencies, SCAQMD developed screening-level LSTs to back-calculate the mass amount (lbs. per day) of emissions generated onsite that would trigger the levels shown in Table 5 for projects under 5-acres. These "screening-level" LSTs tables are the localized significance thresholds for all projects of five acres and less; however, it can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required to compare concentrations of air pollutants generated by the project to the localized concentrations shown in Table 5.

LST analysis for construction is applicable to all projects of five acres and less; however, it can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required. In accordance with SCAQMD's LST methodology, construction LSTs are based on the acreage disturbed per day based on equipment use. The construction LSTs for the project site in SRA 3 are shown in Table 6, *SCAQMD Screening-Level Construction Localized Significance Thresholds*.

Table 6 SCAQMD Construction Localized Significance Thresholds

Acreage Disturbed	Threshold (lbs/day)[1]			
	Nitrogen Oxides (NO_X)	Carbon Monoxide (CO)	Coarse Particulates (PM_{10})	Fine Particulates ($PM_{2.5}$)
≤1.00 Acre Disturbed Per Day	91	664	5.00	3.00
1.50 Acres Disturbed Per Day	111	815	6.50	4.00

Source: SCAQMD 2008, Based on receptors in SRA 3.
[1] LSTs are based on receptors within 82 feet (25 meters).

Because the project is not an industrial project that has the potential to emit substantial sources of stationary emissions, operational LSTs are not an air quality impact of concern associated with the project. The operational LSTs in SRA 3 are shown in Table 7, *SCAQMD Screening-Level Operational Localized Significance Thresholds*.

Table 7 SCAQMD Screening-Level Operational Localized Significance Thresholds

Air Pollutant	Threshold (lbs/day) Operational[1]
Nitrogen Oxides (NO_X)	197
Carbon Monoxide (CO)	1,769
Coarse Particulates (PM_{10})	4.00
Fine Particulates ($PM_{2.5}$)	2.00

Source: SCAQMD 2008, Based on receptors in SRA 3.
[1] LSTs are based on receptors within 82 feet (25 meters).

HEALTH RISK THRESHOLDS

A project would expose sensitive receptors to elevated pollutant concentrations if it would place the project in an area with pollutant concentrations above ambient concentrations in the SoCAB. Recent air pollution studies have shown an association between proximity to major air pollution sources and a variety of health effects, which are attributed to a high concentration of air pollutants. Guidance from the CARB and the CAPCOA recommends the evaluation of vehicle-generated emissions when freeways are within 500 feet of sensitive land uses (i.e., residences, schools, daycare centers, and hospitals).

Whenever a project would require use of chemical compounds that have been identified in SCAQMD Rule 1401, placed on CARB's air toxics list pursuant to AB 1807, or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the SCAQMD. Table 8, *SCAQMD Toxic Air Contaminants Incremental Risk Thresholds*, lists the SCAQMD's TAC incremental risk thresholds for operation of a project. Residential, commercial, and office uses do not use substantial quantities of TACs, and these thresholds are typically applied for new industrial projects. Although not officially adopted by SCAQMD, these thresholds are also commonly used to determine air quality land use compatibility of a project with major sources of TACs within 1,000 feet of a proposed project. The proposed project is not considered a sensitive land use and is not a substantial generator of TACs that would require permitting by SCAQMD.

Table 8 SCAQMD Toxic Air Contaminants Incremental Risk Thresholds

Maximum Incremental Cancer Risk	≥ 10 in 1 million
Hazard Index (project increment)	≥ 1.0
Cancer Burden in areas ≥ 1 in 1 million	> 0.5 excess cancer cases

Source: SCAQMD 2015b.

GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,[8] carbon (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[9] The major GHG are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.

- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.

  - ***Chlorofluorocarbons (CFCs***) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-

[8] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop o rather than a primary cause of change.

[9] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2014b). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

- ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

- ***Sulfur Hexafluoride (SF6)*** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.

- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs (IPCC 2001; EPA 2015b).

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 9, *GHG Emissions and Their Relative Global Warming Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Second Assessment Report GWP values for CH_4, a project that generates 10 metric tons (MT) of CH_4 would be equivalent to 210 MT of CO_2.[10]

Table 9 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report Atmospheric Lifetime (Years)	Fourth Assessment Report Atmospheric Lifetime (Years)	Second Assessment Report Global Warming Potential Relative to CO_2[1]	Fourth Assessment Report Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	50 to 200	50 to 200	1	1
Methane[2] (CH_4)	12 (±3)	12	21	25
Nitrous Oxide (N_2O)	120	114	310	298
Hydrofluorocarbons:				
HFC-23	264	270	11,700	14,800
HFC-32	5.6	4.9	650	675

[10] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

Table 9 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report Atmospheric Lifetime (Years)	Fourth Assessment Report Atmospheric Lifetime (Years)	Second Assessment Report Global Warming Potential Relative to CO_2[1]	Fourth Assessment Report Global Warming Potential Relative to CO_2[1]
HFC-125	32.6	29	2,800	3,500
HFC-134a	14.6	14	1,300	1,430
HFC-143a	48.3	52	3,800	4,470
HFC-152a	1.5	1.4	140	124
HFC-227ea	36.5	34.2	2,900	3,220
HFC-236fa	209	240	6,300	9,810
HFC-4310mee	17.1	15.9	1,300	1,030
Perfluoromethane: CF_4	50,000	50,000	6,500	7,390
Perfluoroethane: C_2F_6	10,000	10,000	9,200	12,200
Perfluorobutane: C_4F_{10}	2,600	NA	7,000	8,860
Perfluoro-2-methylpentane: C_6F_{14}	3,200	NA	7,400	9,300
Sulfur Hexafluoride (SF_6)	3,200	NA	23,900	22,800

Source: IPCC 1995; IPCC 2007.

Notes: The IPCC has published updated global warming potential (GWP) values in its Fifth Assessment Report (2013) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2 (radiative forcing is the difference of energy from sunlight received by the earth and radiated back into space). However, GWP values identified in the Second Assessment Report are still used by SCAQMD to maintain consistency in GHG emissions modeling. In addition, the 2008 Scoping Plan was based on the GWP values in the Second Assessment Report.

1 Based on 100-year time horizon of the GWP of the air pollutant relative to CO_2.

2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

Regulatory Settings

REGULATION OF GHG EMISSIONS ON A NATIONAL LEVEL

The U.S. Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009).

The EPA's endangerment finding covers emissions of six key GHGs—CO_2, CH_4, N_2O, hydro fluorocarbons, per fluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world (the first three are applicable to the proposed project).

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 metric tons (MT) or more of CO_2 per year are required to submit an annual report.

US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 MT or more of CO_2 per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2010/2012)

The current Corporate Average Fuel Economy (CAFE) standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon [mpg] by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be deemed in compliance with state requirements. The federal government issued new standards in 2012 for model years 2017–2025, which will require a fleet average of 54.5 mpg in 2025.

EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the CAA, the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to the President's 2013 Climate Action Plan, the EPA will be directed to also develop regulations for existing stationary sources.

REGULATION OF GHG EMISSIONS ON A STATE LEVEL

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-3-05, Assembly Bill 32, and Senate Bill 375.

Executive Order S-3-05

Executive Order S-3-05, signed June 1, 2005. Executive Order S-3-05 set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Executive Order B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the State and requires state agencies to implement measures to meet the interim 2030 goal of Executive Order B-30-15 as well as the long-term goal for 2050 in Executive Order S-3-5. It also requires the Natural Resources Agency to conduct triennial updates the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in State planning and investment decisions.

Assembly Bill 32

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Assembly Bill 32 (AB 32), the Global Warming Solutions Act. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-3-05.

CARB 2008 Scoping Plan

The final Scoping Plan was adopted by CARB on December 11, 2008. AB 32 directed CARB to adopt discrete early action measures to reduce GHG emissions and outline additional reduction measures to meet the 2020 target. In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 MT of CO_2e per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be approximately 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state. The 2020 target requires a total emissions reduction of 169 $MMTCO_2e$, 28.5 percent from the projected emissions of the business-as-usual (BAU) scenario for the year 2020 (i.e., 28.5 percent of 596 $MMTCO_2e$) (CARB 2008).[11]

Key elements of CARB's GHG reduction plan that may be applicable to the project include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards (adopted and cycle updates in progress).
- Achieving a mix of 33 percent for energy generation from renewable sources (anticipated by 2020).
- A California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system for large stationary sources (adopted 2011). The cap-and-trade program was expanded in 2013 to include the electricity sector, and then again in 2015 to include fuels (including natural gas and gasoline).
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets (several Sustainable Communities Strategies have been adopted).

[11] CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

- Adopting and implementing measures pursuant to state laws and policies, including California's clean car standards (amendments to the Pavley Standards adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (LCFS) (adopted 2009).

- Creating target fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation (in progress).

Table 10, *Scoping Plan Greenhouse Gas Reduction Measures and Reductions Toward 2020 Target,* shows the proposed reductions from regulations and programs outlined in the 2008 Scoping Plan. In recognition of the critical role that local governments play in the successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of today's levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target.[12] Measures that local governments take to support shifts in land use patterns are anticipated to emphasize compact, low-impact growth over development in greenfields, resulting in fewer VMT (CARB 2008).

[12] The Scoping Plan references a goal for local governments to reduce community GHG emissions by 15 percent from current (interpreted as 2008) levels by 2020, but it does not rely on local GHG reduction targets established by local governments to meet the state's GHG reduction target of AB 32.

Table 10 Scoping Plan Greenhouse Gas Reduction Measures and Reductions Toward 2020 Target

Recommended Reduction Measures	Reductions Counted toward 2020 Target of 169 MMT CO_{2e}	Percentage of Statewide 2020 Target
Cap and Trade Program and Associated Measures		
California Light-Duty Vehicle GHG Standards	31.7	19%
Energy Efficiency	26.3	16%
Renewable Portfolio Standard (33 percent by 2020)	21.3	13%
Low Carbon Fuel Standard	15	9%
Regional Transportation-Related GHG Targets[1]	5	3%
Vehicle Efficiency Measures	4.5	3%
Goods Movement	3.7	2%
Million Solar Roofs	2.1	1%
Medium/Heavy Duty Vehicles	1.4	1%
High Speed Rail	1.0	1%
Industrial Measures	0.3	0%
Additional Reduction Necessary to Achieve Cap	34.4	20%
Total Cap and Trade Program Reductions	**146.7**	**87%**
Uncapped Sources/Sectors Measures		
High Global Warming Potential Gas Measures	20.2	12%
Sustainable Forests	5	3%
Industrial Measures (for sources not covered under cap and trade program)	1.1	1%
Recycling and Waste (landfill methane capture)	1	1%
Total Uncapped Sources/Sectors Reductions	**27.3**	**16%**
Total Reductions Counted toward 2020 Target	**174**	**100%**
Other Recommended Measures – Not Counted toward 2020 Target		
State Government Operations	1.0 to 2.0	1%
Local Government Operations[2]	To Be Determined[2]	NA
Green Buildings	26	15%
Recycling and Waste	9	5%
Water Sector Measures	4.8	3%
Methane Capture at Large Dairies	1	1%
Total Other Recommended Measures – Not Counted toward 2020 Target	**42.8**	**NA**

Source: CARB 2008. Note: the percentages in the right-hand column add up to more than 100 percent because the emissions reduction goal is 169 $MMTCO_2e$ and the Scoping Plan identifies 174 $MMTCO_2e$ of emissions reductions strategies.

$MMTCO_{2e}$: million metric tons of CO_{2e}

[1] Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target. A discussion of the regional targets for the Southern California Region and local land use changes recommended within the Southern California Association of Government's (SCAG) Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS) are included later in this section.

[2] According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 million metric tons of CO_{2e} (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 target.

2014 (First) Scoping Plan Update

CARB recently completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The final Update to the Scoping Plan was released in May, and CARB adopted it at the May 22, 2014, board hearing. The Update to the Scoping Plan defines CARB's climate change priorities for the next five years and lays the groundwork to reach post-2020 goals in Executive Orders S-3-05 and B-16-2012. The update includes the latest scientific findings related to climate change and its impacts, including short-lived climate pollutants. The GHG target identified in the 2008 Scoping Plan is based on IPCC's GWPs identified in the Second and Third Assessment Reports (see Table 9). IPCC's Fourth and Fifth Assessment Reports identified more recent GWP values based on the latest available science. CARB recalculated the 1990 GHG emission levels with the updated GWPs in the Fourth Assessment Report, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, is slightly higher, at 431 $MMTCO_2e$ (CARB 2014b).

The update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the original 2008 Scoping Plan. As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the Update to the Scoping Plan also addresses the state's longer-term GHG goals within a post-2020 element. The post-2020 element provides a high level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the state to adopt a mid-term target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with, or exceeds, the trajectory created by statewide goals (CARB 2014b).

According to the Update to the Scoping Plan, reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit (CARB 2014a).

Second Scoping Plan Update

The new Executive Order B-30-15 requires CARB to prepare another update to the Scoping Plan to address the 2030 target for the State. It is anticipated the Scoping Plan will be updated within the next five years to address the new 2030 interim target to achieve a 40 percent reduction below 1990 levels by 2030.

SB 375 – Regional Transportation Plan (RTP) / Sustainable Communities Strategy (SCS)

In 2008, Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). Southern California Association of Governments (SCAG) is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010a). SB 375 requires CARB to periodically update the targets, no later than every 8 years. CARB plans to propose updated targets for consideration in 2016, with the intent to make them effective in 2018. Sustainable communities strategies (SCSs) adopted in 2018 would be subject to the updated targets (CARB 2015c).

The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010a).

CARB is currently in the process of updating the next round of targets and methodology to comply with the requirement for updates every eight years. Considerations for the next round of targets include whether to change the nature or magnitude of the emissions reduction targets for each of the MPOs, and whether the target-setting methodology should account for advances in technologies that reduce emissions. Such changes in methodology would permit cities to account for emissions reductions from advances in cleaner fuels and vehicles and not only from land use and transportation planning strategies.

SCAG's 2012 RTP/SCS

SB 375 requires the MPOs to prepare a sustainable communities strategy in their regional transportation plan. For the SCAG region, the 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted in April 2012 (SCAG 2012). The SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS; instead, provides incentives to governments and developers for consistency.

SCAG recently released a draft of the 2016-2040 RTP/SCS, which projects that the SCAG region will meet or exceed the passenger vehicle per capita targets set in 2010 by CARB. Pursuant to the draft 2016-2040 RTP/SCS, SCAG anticipates lowering GHG emissions below 2005 levels by 8 percent by 2020, 18 percent by 2035, and 22 percent by 2040. Land use strategies to achieve the region's targets include planning for new growth around High Quality Transit Areas (HQTA), Livable Corridors, and creating Neighborhood Mobility Areas to integrate land use and transportation and plan for more active lifestyles (SCAG 2015).

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavely I). Pavely I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles (see also the discussion on the update to the CAFE standards under *Federal Laws*, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

Executive Order S-1-07

On January 18, 2007, the state set a new low carbon fuel standard (LCFS) for transportation fuels sold within the state. Executive Order S-1-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate zero-emissions vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directs the number of zero-emission vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are zero-emission by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

Senate Bills 1078, 107, and 350 and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewable portfolio standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. CARB has now approved an even higher goal of 33 percent by 2020. In 2011, the state legislature adopted this higher standard in SBX1-2. Executive Order S-14-08 was signed in November 2008, which expands the state's Renewable Energy Standard to 33 percent renewable power by 2020. Senate Bill 350 (de Leon), signed into law September 2015, establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030.[13] Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in

[13] SB 350 also sets a goal of increasing energy efficiency in existing buildings by 50 percent by 2030.

renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

California Building Standards Code – Building and Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission in June 1977 and most recently revised in 2013 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the CEC adopted the 2013 Building and Energy Efficiency Standards, which went into effect July 1, 2014. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

Most recently, the CEC adopted the 2016 Building and Energy Efficiency Standards. The 2016 Standards will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. These standards will go into effect on January 1, 2017. Under the 2016 Standards, residential buildings are 28 percent more energy efficient than the 2013 Standards while non-residential buildings are 5 percent more energy efficient than the 2013 Standards (CEC 2015a).

The 2016 standards will not get us to zero net energy (ZNE). However, they do get us very close to the State's goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve ZNE for newly constructed residential buildings throughout California (CEC 2015b).

California Green Building Standards Code – CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") was adopted as part of the California Building Standards Code (Title 24, CCR). CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[14] The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011 and were updated most recently in 2013.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non-federally regulated appliances. Though these regulations are now often viewed as

[14] The green building standards became mandatory in the 2010 edition of the code.

"business-as-usual," they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.

Solid Waste Regulations

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327, California Public Resources Code Sections 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Section 5.408 of the 2013 California Green Building Standards Code (Title 24, California Code of Regulations, Part 11) also requires that at least 50 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

Water Efficiency Regulations

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Thresholds of Significance

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions.[15]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) held in September 2010, SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency:

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD is proposing a screening-level threshold of 3,000 $MTCO_2e$ annually for all land use types or the following land-use-specific thresholds: 1,400 $MTCO_2e$ for commercial projects, 3,500 $MTCO_2e$ for residential projects, or 3,000 $MTCO_2e$ for mixed-use projects. This bright-line threshold is based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions:

[15] The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

SCAQMD has identified an efficiency target for projects that exceed the screening threshold of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan level projects (e.g., program-level projects such as general plans).[16] The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.[17]

For the purpose of this project, SCAQMD's project-level thresholds are used. If projects exceed the bright line and per capita efficiency targets, GHG emissions would be considered potentially significant in the absence of mitigation measures.

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[16] It should be noted that the Working Group also considered efficiency targets for 2035 for the first time in this Working Group meeting.
[17] SCAQMD took the 2020 statewide GHG reduction target for land use only GHG emissions sectors and divided it by the 2020 statewide employment for the land use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

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Regional Construction Emissions Worksheet

Asphalt/PCC Demolition

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2016**						
	Off-Road		2.566	25.0028	19.0854	0.0214	1.4939	1.4022
	Total		**2.566**	**25.0028**	**19.0854**	**0.0214**	**1.4939**	**1.4022**
Offsite								
	Hauling		0	0	0	0	0	0
	Vendor		0.0372	0.3588	0.4951	8.70E-04	0.0288	0.0118
	Worker		0.0695	0.0932	0.9771	2.06E-03	0.1561	0.0427
	Total		**0.1067**	**0.4521**	**1.4722**	**2.93E-03**	**0.185**	**0.0545**
TOTAL			***2.6727***	***25.4549***	***20.5576***	***0.0243***	***1.6789***	***1.4567***

Asphalt Demo Debris Haul

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2016**						
	Fugitive Dust						1.2579	0.1905
	Off-Road		0	0	0	0	0	0
	Total		**0**	**0**	**0**	**0**	**1.2579**	**0.1905**
Offsite								
	Hauling		0.1563	1.6036	2.4717	3.82E-03	0.1006	0.0413
	Vendor		0	0	0	0	0	0
	Worker		0	0	0	0	0	0
	Total		**0.1563**	**1.6036**	**2.4717**	**3.82E-03**	**0.1006**	**0.0413**
TOTAL			***0.1563***	***1.6036***	***2.4717***	***0.0038***	***1.3585***	***0.2318***
2016 Demo + Haul			***2.8290***	***27.0585***	***23.0293***	***0.0282***	***3.0374***	***1.6885***

Site Preparation + Rough Grading

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2016**						
	Fugitive Dust						2.5744	1.4151
	Off-Road		2.566	25.0028	19.0854	0.0214	1.4939	1.4022
	Total		**2.566**	**25.0028**	**19.0854**	**0.0214**	**4.0684**	**2.8173**
Offsite								
	Hauling		0	0	0	0	0	0
	Vendor		0.0372	0.3588	0.4951	8.70E-04	0.0288	0.0118
	Worker		0.0695	0.0932	0.9771	2.06E-03	0.1561	0.0427
	Total		**0.1067**	**0.4521**	**1.4722**	**2.93E-03**	**0.185**	**0.0545**
TOTAL			***2.6727***	***25.4549***	***20.5576***	***0.0243***	***4.2534***	***2.8718***

Haul 1 - Site Preparation

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2016**						
	Fugitive Dust						9.70E-04	1.50E-04
	Off-Road		0	0	0	0	0	0
	Total		**0**	**0**	**0**	**0**	**9.70E-04**	**1.50E-04**
Offsite								
	Hauling		0.04	0.3501	0.673	8.00E-04	0.0206	8.49E-03
	Vendor		0	0	0	0	0	0
	Worker		0	0	0	0	0	0
	Total		**0.04**	**0.3501**	**0.673**	**8.00E-04**	**0.0206**	**8.49E-03**
TOTAL			***0.0400***	***0.3501***	***0.6730***	***0.0008***	***0.0216***	***0.0086***
2016 SP&RG + Haul1			***2.7127***	***25.8050***	***21.2306***	***0.0251***	***4.2750***	***2.8804***

Haul 2 - Rough Grading

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2016**						
	Fugitive Dust						0.0218	3.29E-03
	Off-Road		0	0	0	0	0	0
	Total		**0**	**0**	**0**	**0**	**0.0218**	**3.29E-03**
Offsite								
	Hauling		0.9008	7.8769	15.1413	0.018	0.4641	0.191
	Vendor		0	0	0	0	0	0
	Worker		0	0	0	0	0	0
	Total		**0.9008**	**7.8769**	**15.1413**	**0.018**	**0.4641**	**0.191**
TOTAL			***0.9008***	***7.8769***	***15.1413***	***0.0180***	***0.4859***	***0.1943***
2016 SP&RG + Haul2			***3.5735***	***33.3318***	***35.6989***	***0.0423***	***4.7393***	***3.0661***

Utility Trenching

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2016**						
	Off-Road		0.3406	3.2551	2.4126	3.11E-03	0.2506	0.2306
	Total		**0.3406**	**3.2551**	**2.4126**	**3.11E-03**	**0.2506**	**0.2306**
Offsite								
	Hauling		0	0	0	0	0	0
	Vendor		0.0372	0.3588	0.4951	8.70E-04	0.0288	0.0118
	Worker		0.0371	0.0497	0.5211	1.10E-03	0.0833	0.0228
	Total		**0.0743**	**0.4086**	**1.0162**	**1.97E-03**	**0.1121**	**0.0346**
TOTAL			***0.4149***	***3.6637***	***3.4288***	***0.0051***	***0.3627***	***0.2652***

Fine Grading

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2016**						
	Fugitive Dust						0	0
	Off-Road		0	0	0	0	0	0
	Total		**0**	**0**	**0**	**0**	**0**	**0**
Offsite								
	Hauling		0	0	0	0	0	0
	Vendor		0.0372	0.3588	0.4951	8.70E-04	0.0288	0.0118
	Worker		0.0232	0.0311	0.3257	6.90E-04	0.052	0.0142
	Total		**0.0604**	**0.3899**	**0.8208**	**1.56E-03**	**0.0809**	**0.026**
TOTAL			***0.0604***	***0.3899***	***0.8208***	***0.0016***	***0.0809***	***0.0260***

Building Construction

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2016**						
	Off-Road		2.1483	17.1216	10.0206	0.0163	1.0312	0.9872
	Total		**2.1483**	**17.1216**	**10.0206**	**0.0163**	**1.0312**	**0.9872**
Offsite								
	Hauling		0	0	0	0	0	0
	Vendor		0.0558	0.5382	0.7427	1.31E-03	0.0433	0.0177
	Worker		0.1761	0.2362	2.4752	5.21E-03	0.3955	0.1082
	Total		**0.2318**	**0.7744**	**3.2179**	**6.52E-03**	**0.4388**	**0.1259**
TOTAL			***2.3801***	***17.8960***	***13.2385***	***0.0228***	***1.4700***	***1.1131***

Building Construction			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2017**						
	Off-Road		1.9299	15.7243	9.6916	0.0163	0.9218	0.8823
	Total		**1.9299**	**15.7243**	**9.6916**	**0.0163**	**0.9218**	**0.8823**
Offsite								
	Hauling		0	0	0	0	0	0
	Vendor		0.0508	0.4904	0.7044	1.31E-03	0.0424	0.0168
	Worker		0.1579	0.2136	2.2335	5.21E-03	0.3954	0.108
	Total		**0.2087**	**0.704**	**2.938**	**6.52E-03**	**0.4377**	**0.1249**
TOTAL			***2.1386***	***16.4283***	***12.6296***	***0.0228***	***1.3595***	***1.0072***

Architectural Coating			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2017**						
	Archit. Coating		0.6132				0	0
	Off-Road		0	0	0	0	0	0
	Total		**0.6132**	**0**	**0**	**0**	**0**	**0**
Offsite								
	Hauling		0	0	0	0	0	0
	Vendor		0.0169	0.1635	0.2348	4.40E-04	0.0141	5.61E-03
	Worker		0.0457	0.0618	0.6466	1.51E-03	0.1145	0.0313
	Total		**0.0626**	**0.2253**	**0.8814**	**1.95E-03**	**0.1286**	**0.0369**
TOTAL			***0.6758***	***0.2253***	***0.8814***	***0.0020***	***0.1286***	***0.0369***

Asphalt Paving			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2017**						
	Off-Road		1.2705	13.1921	9.7574	0.0143	0.7981	0.7343
	Paving		0.0214				0	0
	Total		**1.2919**	**13.1921**	**9.7574**	**0.0143**	**0.7981**	**0.7343**
Offsite								
	Hauling		0	0	0	0	0	0
	Vendor		0.0169	0.1635	0.2348	4.40E-04	0.0141	5.61E-03
	Worker		0.0623	0.0843	0.8817	2.06E-03	0.1561	0.0427
	Total		**0.0792**	**0.2478**	**1.1165**	**2.50E-03**	**0.1702**	**0.0483**
TOTAL			***1.3711***	***13.4399***	***10.8739***	***0.0168***	***0.9683***	***0.7826***
2017 AC+AP			***2.0469***	***13.6652***	***11.7553***	***0.0188***	***1.0969***	***0.8195***

Finishing/Landscaping			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2017**						
	Off-Road		0.4709	6.0077	1.7907	6.13E-03	0.2047	0.1883
	Paving		9.83E-03				0	0
	Total		**0.4807**	**6.0077**	**1.7907**	**6.13E-03**	**0.2047**	**0.1883**
Offsite								
	Hauling		0	0	0	0	0	0
	Vendor		0	0	0	0	0	0
	Worker		0.0332	0.045	0.4702	1.10E-03	0.0832	0.0227
	Total		**0.0332**	**0.045**	**0.4702**	**1.10E-03**	**0.0832**	**0.0227**
TOTAL			***0.5139***	***6.0527***	***2.2609***	***0.0072***	***0.2879***	***0.2110***
MAX DAILY			**3.57**	**33.33**	**35.70**	**0.04**	**4.74**	**3.07**
Regional Thresholds			**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds?			No	No	No	No	No	No

Localized Construction Emissions Worksheet

Asphalt/PCC Demolition

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2016**				
	Off-Road		25.0028	19.0854	1.4939	1.4022
	Total		**25.0028**	**19.0854**	**1.4939**	**1.4022**
LSTs			111	815	6.50	4.00
Exceed Thresholds?			No	No	No	No

Asphalt Demo Debris Haul

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2016**				
	Fugitive Dust				1.2579	0.1905
	Off-Road		0	0	0	0
	Total		**0**	**0**	**1.2579**	**0.1905**
2016 Demo + Haul			***25.0028***	***19.0854***	***2.7518***	***1.5927***
LSTs			111	815	6.50	4.00
Exceed Thresholds?			No	No	No	No

Site Preparation + Rough Grading

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2016**				
	Fugitive Dust				2.5744	1.4151
	Off-Road		25.0028	19.0854	1.4939	1.4022
	Total		**25.0028**	**19.0854**	**4.0684**	**2.8173**

Haul 1 - Site Preparation

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2016**				
	Fugitive Dust				9.70E-04	1.50E-04
	Off-Road		0	0	0	0
	Total		**0**	**0**	**9.70E-04**	**1.50E-04**
2016 SP&RG + Haul1			***25.0028***	***19.0854***	***4.0694***	***2.8175***
LSTs			111	815	6.50	4.00
Exceed Thresholds?			No	No	No	No

Haul 2 - Rough Grading

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2016**				
	Fugitive Dust				0.0218	3.29E-03
	Off-Road		0	0	0	0
	Total		**0**	**0**	**0.0218**	**3.29E-03**
2016 SP&RG + Haul2			***25.0028***	***19.0854***	***4.0902***	***2.8206***
LSTs			111	815	6.50	4.00
Exceed Thresholds?			No	No	No	No

Utility Trenching

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2016**				
	Off-Road		3.2551	2.4126	0.2506	0.2306
	Total		**3.2551**	**2.4126**	**0.2506**	**0.2306**
LSTs			91	664	5.00	3.00
Exceed Thresholds?			No	No	No	No

Fine Grading

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2016**				
	Fugitive Dust				0	0
	Off-Road		0	0	0	0
	Total		**0**	**0**	**0**	**0**
LSTs			91	664	5.00	3.00
Exceed Thresholds?			No	No	No	No

Building Construction

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2016**				
	Off-Road		17.1216	10.0206	1.0312	0.9872
	Total		**17.1216**	**10.0206**	**1.0312**	**0.9872**
LSTs			91	664	5.00	3.00
Exceed Thresholds?			No	No	No	No

Building Construction

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2017**				
	Off-Road		15.7243	9.6916	0.9218	0.8823
	Total		**15.7243**	**9.6916**	**0.9218**	**0.8823**
LSTs			91	664	5.00	3.00
Exceed Thresholds?			No	No	No	No

Architectural Coating

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2017**				
	Archit. Coating				0	0
	Off-Road		0	0	0	0
	Total		**0**	**0**	**0**	**0**
LSTs			91	664	5.00	3.00
Exceed Thresholds?			No	No	No	No

Asphalt Paving

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2017**				
	Off-Road		13.1921	9.7574	0.7981	0.7343
	Paving				0	0
	Total		**13.1921**	**9.7574**	**0.7981**	**0.7343**
2017 AC+AP			***13.1921***	***9.7574***	***0.7981***	***0.7343***
LSTs			91	664	5.00	3.00
Exceed Thresholds?			No	No	No	No

Finishing/Landscaping

			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2017**				
	Off-Road		6.0077	1.7907	0.2047	0.1883
	Paving				0	0
	Total		**6.0077**	**1.7907**	**0.2047**	**0.1883**
LSTs			91	664	5.00	3.00
Exceed Thresholds?			No	No	No	No

Regional Operational Emissions Worksheet

Summer	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	0.169	0.000	0.001	0.000	0.000	0.000
Energy	0.002	0.020	0.017	0.000	0.002	0.002
Mobile	0.000	0.000	0.000	0.000	0.000	0.000
Total	**0.171**	**0.020**	**0.018**	**0.000**	**0.002**	**0.002**

Winter	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	0.169	0.000	0.001	0.000	0.000	0.000
Energy	0.002	0.020	0.017	0.000	0.002	0.002
Mobile	0.000	0.000	0.000	0.000	0.000	0.000
Total	**0.171**	**0.020**	**0.018**	**0.000**	**0.002**	**0.002**

Max Daily	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Area	0.169	0.000	0.001	0.000	0.000	0.000
Energy	0.002	0.020	0.017	0.000	0.002	0.002
Mobile	0.000	0.000	0.000	0.000	0.000	0.000
Total	**0.171**	**0.020**	**0.018**	**0.000**	**0.002**	**0.002**
Regional Thresholds	**55**	**55**	**550**	**150**	**150**	**550**
Exceeds Thresholds?	No	No	No	No	No	No

Localized Operational Emissions Worksheet

Summer

	NOx	CO	PM10 Total	PM2.5 Total
Area	0.000	0.001	0.000	0.000

Winter

	NOx	CO	PM10 Total	PM2.5 Total
Area	0.000	0.001	0.000	0.000

Max Daily

	NOx	CO	PM10 Total	PM2.5 Total
Area	0.000	0.001	0.000	0.000
Regional Thresholds	**197**	**1,769**	**4**	**2**
Exceeds Thresholds?	No	No	No	No

GHG Emissions Worksheet

	MTons Total	
Total Construction	284	

Source	MTons/Year	Percent of Total
Area	0	0%
Energy	19	66%
Mobile	0	0%
Waste	0	0%
Water	0	0%
Amortized Construction Emissions*	9	34%
Total All Sectors	28	100%

CalEEMod Project Characteristics Inputs

Project Location:	Los Angeles County - South Coast
Climate Zone:	8
Land Use Setting:	Urban
Operational Year:	2017
Utility Company:	Southern California Edison
Air Basin:	South Coast Air Basin
Air District:	SCAQMD
SRA:	3

New Pavement, Hardscape, and Landscaping

Non-Parking Asphalt	3,750	SQFT
Hardscape	2,500	SQFT
Landscaping	800	SQFT

CalEEMod Land Use Inputs

Land Use	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Square Feet
Gymnasium	Educational	Junior High School	8.26	1000sqft	0.19	8,260
Non-Parking Asphalt	Parking	Other Asphalt Surfaces	0.09	acres	0.09	0
Hardscape & Landscaping	Parking	Other Non-Asphalt Surfaces	0.08	acres	0.08	0
					0.35	acre

Asphalt Demolition

Construction Activity	Demolition Volume (Ton)	Total Haul Trips	Total Haul Duration	Trip Ends/Day
Asphalt Demo Debris Haul	275	28	2	14

Haul Distance:	7	miles
Import/Export Facility Location:	Gardena, CA	
Haul Truck Capacity	20	tons

Soil Hauling

Construction Activity	Import Volume (CY)	Export Volume (CY)	Total Haul Trips	Total Haul Duration
Haul 1 (Site Preparation)	0	300	60	15
Haul 2 (Rough Grading)	3,300	3,450	1,350	15

Haul Distance:	5	miles
Import/Export Facility Location:	Chandler's Sand & Gravel, Rolling Hills Estate, CA (Assumed based on District response)	
Haul Truck Capacity	10	CY

Architectural Coating

Percentage of Buildings' Exterior Painted:	20%	percent
Percentage of Buildings' interior Painted:	90%	percent
Interior Paint VOC content:	35	grams per liter
Exterior Paing VOC content:	40	grams per liter

Land Use	Land Use Amount (BSF)	CalEEMod Paintable Surface Area Multiplier	Total Paintable Surface Area (BSF)*	Total Paintable Interior Surface Area (BSF)*	Total Paintable Exterior Surface Area (BSF)*
Gymnasium	8,260	2.0	16,520	11,151	826

*Based on CalEEMod methodology in calculating the paintable surface areas for a nonresidential building.

<u>Construction - Unmitigated Run</u>

SCAQMD Rule 403

Replace Ground Cover	PM10:	5	% Reduction
	PM25:	5	% Reduction
Water Exposed Area	Frequency:	2	per day
	PM10:	55	% Reduction
	PM25:	55	% Reduction
Unpaved Roads	Vehicle Speed:	15	mph

SCAQMD Rule 1186

Clean Paved Road	9	% PM Reduction

Modeling Adjustments for Operational Architectural Coating

SCAQMD Rule 1113

Anticipated Exterior Area:	826	SQFT
Default Exterior Exterior Area:	4,130	SQFT
Difference:	20%	
Exterior VOC:	40	grams per liter
Adjusted Exterior VOC:*	**8**	grams per liter
Anticipated Interior VOC:	35	grams per liter
Default Interior VOC:	250	grams per liter
Difference:	14%	
Interior Area:	11,151	SQFT
Adjusted Interior Area:	**1,561**	SQFT

**Adjustment made due to modeling software limitation.*

Energy

Buildings constructed after July 1, 2014 are required to meet the 2013 Building and Energy Efficiency Standards. The 2013 Standards are 30% more energy efficient for non-residential buildings than the 2008 Building and Energy Efficiency Standards.

Water/Wastewater

Assumes the proposed gymnasium would not result in an overall increase in water and wastewater generation as no new events or an increase in student capacity would occur.

Solid Waste

Assumes the proposed gymnasium would not result in an overall increase in solid waste generation as no new events or an increase in student capacity would occur.

Construction Phasing*

*Based on information provided and verified by the District.

Construction Phase	Start Date	End Date	Workdays
Asphalt/PCC Demolition	6/1/2016	6/14/2016	10
Asphalt Demo Debris Haul	6/1/2016	6/2/2016	2
Site Prepation + Rough Grading	7/1/2016	8/11/2016	30
Haul 1 - Site Preparation	7/1/2016	7/21/2016	15
Haul 2 - Rough Grading	7/22/2016	8/11/2016	15
Utility Trenching	8/12/2016	9/1/2016	15
Fine Grading	9/2/2016	9/12/2016	7
Building Construction	9/13/2016	7/3/2017	210
Architectural Coating	7/4/2017	8/16/2017	32
Asphalt Paving	7/15/2017	7/31/2017	12
Finishing/Landscaping	8/17/2017	9/19/2017	24

CalEEMod Construction Off-Road Equipment Inputs*

Equipment Type	CalEEMod Equipment Type	Unit Amount	Hours/Day	HP	LF**	Worker Trips	Vendor Trips
Asphalt/PCC Demolition						5+10 (default)	4***
Concrete/Industrial Saws	Concrete/Industrial Saws	1	8	81	0.73		
Rubber Tired Dozers	Rubber Tired Dozers	1	8	255	0.4		
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	2	8	97	0.37		
Site Prep + Rough Grading						5+10 (default)	4***
Concrete/Industrial Saws	Concrete/Industrial Saws	1	8	81	0.73		
Rubber Tired Dozers	Rubber Tired Dozers	1	8	255	0.4		
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	2	8	97	0.37		
Fine Grading						5	4***
No Equipment							
Utility Trenching						5+3 (default)	4***
CAT 416F (Tractors/Loaders/Backhoes)	Tractors/Laoders/Backhoes	1	8	97	0.37		
Building Construction						35+3 (default)	5+1 (default)
Cranes	Cranes	1	8	226	0.29		
Forklifts	Forklifts	1	8	89	0.2		
Generator Sets	Generator Sets	1	8	84	0.74		
Welders	Welders	1	8	46	0.74		
Architectural Coating						10+1 (default)	2
No Equipment							
Asphalt Paving						5+10 (default)	2
Pavers	Pavers	1	8	125	0.42		
Paving Equipment	Paving Equipment	1	8	130	0.36		
Rollers	Rollers	1	8	80	0.38		
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	1	8	97	0.37		
Finishing/Landscaping						5+3 (default)	0
Skip Loader	Rubber Tired Loaders	1	8	199	0.4		

*Based on information provided and verified by the District.
***Assumes 4 water truck trips per day.

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	8.26	1000sqft	0.19	8,260.00	0
Other Asphalt Surfaces	0.09	Acre	0.09	0.00	0
Other Non-Asphalt Surfaces	0.08	Acre	0.08	0.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 33

Climate Zone 8 **Operational Year** 2017

Utility Company Southern California Edison

CO2 Intensity (lb/MWhr) 630.89 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 0 Land Use Square Feet to exclude striping

Construction Phase - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Placeholder only.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Placeholder only.

Off-road Equipment - Placeholder only.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Trips and VMT - Based on information provided and verified by the District.

Demolition -

Grading -

Architectural Coating - Based on CalEEMod methodology in calculating the paintable surface areas for a nonresidential building.

Vehicle Trips - Assume no new students.

Area Coating - Adjustment made due to modeling software limitation.

Water And Wastewater - Assumes the proposed gymnasium would not result in an overall increase in water and wastewater generation as no new events or an increase in student capacity would occur.

Solid Waste - Assumes the proposed gymnasium would not result in an overall increase in solid waste generation as no new events or an increase in student capacity would occur.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403 & 1186

Energy Mitigation -

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	4,130.00	826.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	12,390.00	11,151.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	40.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	35.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	8
tblAreaCoating	Area_Nonresidential_Interior	12390	1561
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	8	250
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstructionPhase	NumDays	5.00	32.00
tblConstructionPhase	NumDays	100.00	210.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	2.00	15.00
tblConstructionPhase	NumDays	2.00	7.00
tblConstructionPhase	NumDays	5.00	11.00
tblConstructionPhase	NumDays	5.00	24.00
tblConstructionPhase	NumDays	1.00	15.00
tblConstructionPhase	PhaseEndDate	6/16/2016	6/2/2016
tblConstructionPhase	PhaseEndDate	9/1/2016	8/11/2016
tblConstructionPhase	PhaseEndDate	9/1/2016	8/11/2016
tblConstructionPhase	PhaseEndDate	8/31/2017	7/31/2017
tblConstructionPhase	PhaseEndDate	9/1/2017	9/19/2017
tblConstructionPhase	PhaseEndDate	6/23/2016	7/21/2016
tblConstructionPhase	PhaseStartDate	6/15/2016	6/1/2016
tblConstructionPhase	PhaseStartDate	7/22/2016	7/1/2016
tblConstructionPhase	PhaseStartDate	8/12/2016	7/22/2016

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Winter

tblConstructionPhase	PhaseStartDate	8/17/2017	7/15/2017
tblConstructionPhase	PhaseStartDate	8/1/2017	8/17/2017
tblConstructionPhase	PhaseStartDate	6/3/2016	7/1/2016
tblGrading	MaterialExported	0.00	3,450.00
tblGrading	MaterialExported	0.00	300.00
tblGrading	MaterialImported	0.00	3,300.00
tblLandUse	LandUseSquareFeet	3,920.40	0.00
tblLandUse	LandUseSquareFeet	3,484.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblSolidWaste	SolidWasteGenerationRate	10.74	0.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	27.00	28.00
tblTripsAndVMT	HaulingTripNumber	38.00	60.00
tblTripsAndVMT	HaulingTripNumber	844.00	1,350.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	1.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00

tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	5.00
tblTripsAndVMT	WorkerTripNumber	3.00	38.00
tblTripsAndVMT	WorkerTripNumber	1.00	11.00
tblVehicleTrips	WD_TR	13.78	0.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	170,329.50	0.00
tblWater	OutdoorWaterUseRate	437,990.13	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	3.5735	33.3318	35.6989	0.0423	6.6588	1.5987	8.2575	3.4773	1.4985	4.9758	0.0000	4,225.2271	4,225.2271	0.5585	0.0000	4,236.9548
2017	2.1386	16.4284	12.6296	0.0228	0.4622	0.9331	1.3952	0.1233	0.8927	1.0160	0.0000	2,117.2289	2,117.2289	0.4637	0.0000	2,126.9665
Total	**5.7121**	**49.7602**	**48.3285**	**0.0651**	**7.1210**	**2.5317**	**9.6527**	**3.6006**	**2.3912**	**5.9917**	**0.0000**	**6,342.4560**	**6,342.4560**	**1.0222**	**0.0000**	**6,363.9212**

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Winter

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					
2016	3.5735	33.3318	35.6989	0.0423	3.1405	1.5987	4.7392	1.5676	1.4985	3.0661	0.0000	4,225.2271	4,225.2271	0.5585	0.0000	4,236.9548
2017	2.1386	16.4284	12.6296	0.0228	0.4265	0.9331	1.3595	0.1145	0.8927	1.0072	0.0000	2,117.2289	2,117.2289	0.4637	0.0000	2,126.9665
Total	**5.7121**	**49.7602**	**48.3285**	**0.0651**	**3.5670**	**2.5317**	**6.0987**	**1.6821**	**2.3912**	**4.0733**	**0.0000**	**6,342.4560**	**6,342.4560**	**1.0222**	**0.0000**	**6,363.9212**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**49.91**	**0.00**	**36.82**	**53.28**	**0.00**	**32.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1690	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003
Energy	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0400	33.0400	6.3000e-004	6.1000e-004	33.2411
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	**0.1720**	**0.0275**	**0.0240**	**1.7000e-004**	**0.0000**	**2.0900e-003**	**2.0900e-003**	**0.0000**	**2.0900e-003**	**2.0900e-003**		**33.0418**	**33.0418**	**6.4000e-004**	**6.1000e-004**	**33.2430**

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Winter

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	0.1690	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003
Energy	2.2000e-003	0.0200	0.0168	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003		23.9507	23.9507	4.6000e-004	4.4000e-004	24.0964
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	**0.1712**	**0.0200**	**0.0177**	**1.2000e-004**	**0.0000**	**1.5200e-003**	**1.5200e-003**	**0.0000**	**1.5200e-003**	**1.5200e-003**		**23.9525**	**23.9525**	**4.7000e-004**	**4.4000e-004**	**24.0984**

	ROG	NOx	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	**0.48**	**27.49**	**26.49**	**29.41**	**0.00**	**27.27**	**27.27**	**0.00**	**27.27**	**27.27**	**0.00**	**27.51**	**27.51**	**26.56**	**27.87**	**27.51**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Asphalt/PCC Demolition	Demolition	6/1/2016	6/14/2016	5	10	
2	Asphalt Demo Debris Haul	Demolition	6/1/2016	6/2/2016	5	2	
3	Haul 1 - Site Preparation	Site Preparation	7/1/2016	7/21/2016	5	15	
4	Site Preparation + Rough Grading	Grading	7/1/2016	8/11/2016	5	30	
5	Haul 2 - Rough Grading	Grading	7/22/2016	8/11/2016	5	15	
6	Utility Trenching	Trenching	8/12/2016	9/1/2016	5	15	
7	Fine Grading	Grading	9/2/2016	9/12/2016	5	7	
8	Building Construction	Building Construction	9/13/2016	7/3/2017	5	210	
9	Architectural Coating	Architectural Coating	7/4/2017	8/16/2017	5	32	
10	Asphalt Paving	Paving	7/15/2017	7/31/2017	5	11	
11	Finishing/Landscaping	Paving	8/17/2017	9/19/2017	5	24	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 11,151; Non-Residential Outdoor: 826 (Architectural Coating – sqft)

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OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Asphalt/PCC Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Asphalt/PCC Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Asphalt/PCC Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Asphalt Demo Debris Haul	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demo Debris Haul	Rubber Tired Dozers	0	1.00	255	0.40
Asphalt Demo Debris Haul	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Haul 1 - Site Preparation	Graders	0	8.00	174	0.41
Haul 1 - Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation + Rough Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation + Rough Grading	Graders	0		174	0.41
Site Preparation + Rough Grading	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation + Rough Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Haul 2 - Rough Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Haul 2 - Rough Grading	Rubber Tired Dozers	0	1.00	255	0.40
Haul 2 - Rough Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Utility Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Fine Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Fine Grading	Rubber Tired Dozers	0	1.00	255	0.40
Fine Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	0	6.00	78	0.48

Asphalt Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Asphalt Paving	Pavers	1	8.00	125	0.42
Asphalt Paving	Paving Equipment	1	8.00	130	0.36
Asphalt Paving	Rollers	1	8.00	80	0.38
Asphalt Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Finishing/Landscaping	Cement and Mortar Mixers	0	6.00	9	0.56
Finishing/Landscaping	Pavers	0	7.00	125	0.42
Finishing/Landscaping	Rollers	0	7.00	80	0.38
Finishing/Landscaping	Rubber Tired Loaders	1	8.00	199	0.36
Finishing/Landscaping	Tractors/Loaders/Backhoes	0	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
Asphalt/PCC Demolition	4	15.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demo Debris Haul	0	0.00	0.00	28.00	14.70	6.90	7.00	LD_Mix	HDT_Mix	HHDT
Haul 1 - Site Preparation	0	0.00	0.00	60.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Site Preparation + Rough Grading	4	15.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Haul 2 - Rough Grading	0	0.00	0.00	1,350.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	1	8.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	0	5.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	38.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	11.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	4	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	1	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Asphalt/PCC Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5660	25.0028	19.0854	0.0214		1.4939	1.4939		1.4022	1.4022		2,163.4523	2,163.4523	0.5312		2,174.6067
Total	**2.5660**	**25.0028**	**19.0854**	**0.0214**		**1.4939**	**1.4939**		**1.4022**	**1.4022**		**2,163.4523**	**2,163.4523**	**0.5312**		**2,174.6067**

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Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0372	0.3588	0.4951	8.7000e-004	0.0250	5.5300e-003	0.0305	7.1000e-003	5.0900e-003	0.0122		87.3568	87.3568	6.7000e-004		87.3708
Worker	0.0695	0.0932	0.9771	2.0600e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		174.0047	174.0047	0.0100		174.2154
Total	**0.1067**	**0.4521**	**1.4722**	**2.9300e-003**	**0.1926**	**7.1200e-003**	**0.1997**	**0.0516**	**6.5500e-003**	**0.0581**		**261.3615**	**261.3615**	**0.0107**		**261.5862**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	2.5660	25.0028	19.0854	0.0214		1.4939	1.4939		1.4022	1.4022	0.0000	2,163.4523	2,163.4523	0.5312		2,174.6067
Total	**2.5660**	**25.0028**	**19.0854**	**0.0214**		**1.4939**	**1.4939**		**1.4022**	**1.4022**	**0.0000**	**2,163.4523**	**2,163.4523**	**0.5312**		**2,174.6067**

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	0.0372	0.3588	0.4951	8.7000e-004	0.0233	5.5300e-003	0.0288	6.6900e-003	5.0900e-003	0.0118		87.3568	87.3568	6.7000e-004		87.3708
Worker	0.0695	0.0932	0.9771	2.0600e-003	0.1546	1.5900e-003	0.1561	0.0413	1.4600e-003	0.0427		174.0047	174.0047	0.0100		174.2154
Total	**0.1067**	**0.4521**	**1.4722**	**2.9300e-003**	**0.1779**	**7.1200e-003**	**0.1850**	**0.0479**	**6.5500e-003**	**0.0545**		**261.3615**	**261.3615**	**0.0107**		**261.5862**

3.3 Asphalt Demo Debris Haul - 2016

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					2.9424	0.0000	2.9424	0.4455	0.0000	0.4455			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.9424**	**0.0000**	**2.9424**	**0.4455**	**0.0000**	**0.4455**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	ROG	NOx	CO	SO2	Fugitive 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	0.1563	1.6036	2.4717	3.8200e-003	0.0855	0.0209	0.1065	0.0234	0.0192	0.0427		382.8936	382.8936	3.2900e-003		382.9627
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	0.0000	0.0000	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	**0.1563**	**1.6036**	**2.4717**	**3.8200e-003**	**0.0855**	**0.0209**	**0.1065**	**0.0234**	**0.0192**	**0.0427**		**382.8936**	**382.8936**	**3.2900e-003**		**382.9627**

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					1.2579	0.0000	1.2579	0.1905	0.0000	0.1905			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.2579**	**0.0000**	**1.2579**	**0.1905**	**0.0000**	**0.1905**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1563	1.6036	2.4717	3.8200e-003	0.0797	0.0209	0.1006	0.0220	0.0192	0.0413		382.8936	382.8936	3.2900e-003		382.9627
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	0.0000	0.0000	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	**0.1563**	**1.6036**	**2.4717**	**3.8200e-003**	**0.0797**	**0.0209**	**0.1006**	**0.0220**	**0.0192**	**0.0413**		**382.8936**	**382.8936**	**3.2900e-003**		**382.9627**

3.4 Haul 1 - Site Preparation - 2016

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					2.2600e-003	0.0000	2.2600e-003	3.4000e-004	0.0000	3.4000e-004			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.2600e-003**	**0.0000**	**2.2600e-003**	**3.4000e-004**	**0.0000**	**3.4000e-004**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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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	0.0400	0.3501	0.6730	8.0000e-004	0.0175	4.3400e-003	0.0218	4.7900e-003	3.9900e-003	8.7800e-003		80.0184	80.0184	7.4000e-004		80.0339
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	0.0000	0.0000	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	**0.0400**	**0.3501**	**0.6730**	**8.0000e-004**	**0.0175**	**4.3400e-003**	**0.0218**	**4.7900e-003**	**3.9900e-003**	**8.7800e-003**		**80.0184**	**80.0184**	**7.4000e-004**		**80.0339**

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					9.7000e-004	0.0000	9.7000e-004	1.5000e-004	0.0000	1.5000e-004			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**9.7000e-004**	**0.0000**	**9.7000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0400	0.3501	0.6730	8.0000e-004	0.0163	4.3400e-003	0.0206	4.5000e-003	3.9900e-003	8.4900e-003		80.0184	80.0184	7.4000e-004		80.0339
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	0.0000	0.0000	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	**0.0400**	**0.3501**	**0.6730**	**8.0000e-004**	**0.0163**	**4.3400e-003**	**0.0206**	**4.5000e-003**	**3.9900e-003**	**8.4900e-003**		**80.0184**	**80.0184**	**7.4000e-004**		**80.0339**

3.5 Site Preparation + Rough Grading - 2016

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.5660	25.0028	19.0854	0.0214		1.4939	1.4939		1.4022	1.4022		2,163.4523	2,163.4523	0.5312		2,174.6067
Total	**2.5660**	**25.0028**	**19.0854**	**0.0214**	**6.0221**	**1.4939**	**7.5160**	**3.3102**	**1.4022**	**4.7124**		**2,163.4523**	**2,163.4523**	**0.5312**		**2,174.6067**

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Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0372	0.3588	0.4951	8.7000e-004	0.0250	5.5300e-003	0.0305	7.1000e-003	5.0900e-003	0.0122		87.3568	87.3568	6.7000e-004		87.3708
Worker	0.0695	0.0932	0.9771	2.0600e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		174.0047	174.0047	0.0100		174.2154
Total	**0.1067**	**0.4521**	**1.4722**	**2.9300e-003**	**0.1926**	**7.1200e-003**	**0.1997**	**0.0516**	**6.5500e-003**	**0.0581**		**261.3615**	**261.3615**	**0.0107**		**261.5862**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					2.5744	0.0000	2.5744	1.4151	0.0000	1.4151			0.0000			0.0000
Off-Road	2.5660	25.0028	19.0854	0.0214		1.4939	1.4939		1.4022	1.4022	0.0000	2,163.4523	2,163.4523	0.5312		2,174.6067
Total	**2.5660**	**25.0028**	**19.0854**	**0.0214**	**2.5744**	**1.4939**	**4.0684**	**1.4151**	**1.4022**	**2.8173**	**0.0000**	**2,163.4523**	**2,163.4523**	**0.5312**		**2,174.6067**

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	0.0372	0.3588	0.4951	8.7000e-004	0.0233	5.5300e-003	0.0288	6.6900e-003	5.0900e-003	0.0118		87.3568	87.3568	6.7000e-004		87.3708
Worker	0.0695	0.0932	0.9771	2.0600e-003	0.1546	1.5900e-003	0.1561	0.0413	1.4600e-003	0.0427		174.0047	174.0047	0.0100		174.2154
Total	**0.1067**	**0.4521**	**1.4722**	**2.9300e-003**	**0.1779**	**7.1200e-003**	**0.1850**	**0.0479**	**6.5500e-003**	**0.0545**		**261.3615**	**261.3615**	**0.0107**		**261.5862**

3.6 Haul 2 - Rough Grading - 2016

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					0.0509	0.0000	0.0509	7.7100e-003	0.0000	7.7100e-003			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0509**	**0.0000**	**0.0509**	**7.7100e-003**	**0.0000**	**7.7100e-003**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.9008	7.8769	15.1413	0.0180	0.3932	0.0976	0.4908	0.1078	0.0898	0.1975		1,800.4133	1,800.4133	0.0166		1,800.7618
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	0.0000	0.0000	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	**0.9008**	**7.8769**	**15.1413**	**0.0180**	**0.3932**	**0.0976**	**0.4908**	**0.1078**	**0.0898**	**0.1975**		**1,800.4133**	**1,800.4133**	**0.0166**		**1,800.7618**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					0.0218	0.0000	0.0218	3.2900e-003	0.0000	3.2900e-003			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0218**	**0.0000**	**0.0218**	**3.2900e-003**	**0.0000**	**3.2900e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9008	7.8769	15.1413	0.0180	0.3665	0.0976	0.4641	0.1012	0.0898	0.1910		1,800.4133	1,800.4133	0.0166		1,800.7618
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	0.0000	0.0000	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	**0.9008**	**7.8769**	**15.1413**	**0.0180**	**0.3665**	**0.0976**	**0.4641**	**0.1012**	**0.0898**	**0.1910**		**1,800.4133**	**1,800.4133**	**0.0166**		**1,800.7618**

3.7 Utility Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3406	3.2551	2.4126	3.1100e-003		0.2506	0.2506		0.2306	0.2306		323.6773	323.6773	0.0976		325.7276
Total	**0.3406**	**3.2551**	**2.4126**	**3.1100e-003**		**0.2506**	**0.2506**		**0.2306**	**0.2306**		**323.6773**	**323.6773**	**0.0976**		**325.7276**

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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	0.0372	0.3588	0.4951	8.7000e-004	0.0250	5.5300e-003	0.0305	7.1000e-003	5.0900e-003	0.0122		87.3568	87.3568	6.7000e-004		87.3708
Worker	0.0371	0.0497	0.5211	1.1000e-003	0.0894	8.5000e-004	0.0903	0.0237	7.8000e-004	0.0245		92.8025	92.8025	5.3500e-003		92.9149
Total	**0.0743**	**0.4086**	**1.0162**	**1.9700e-003**	**0.1144**	**6.3800e-003**	**0.1208**	**0.0308**	**5.8700e-003**	**0.0367**		**180.1593**	**180.1593**	**6.0200e-003**		**180.2857**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3406	3.2551	2.4126	3.1100e-003		0.2506	0.2506		0.2306	0.2306	0.0000	323.6773	323.6773	0.0976		325.7276
Total	**0.3406**	**3.2551**	**2.4126**	**3.1100e-003**		**0.2506**	**0.2506**		**0.2306**	**0.2306**	**0.0000**	**323.6773**	**323.6773**	**0.0976**		**325.7276**

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	0.0372	0.3588	0.4951	8.7000e-004	0.0233	5.5300e-003	0.0288	6.6900e-003	5.0900e-003	0.0118		87.3568	87.3568	6.7000e-004		87.3708
Worker	0.0371	0.0497	0.5211	1.1000e-003	0.0824	8.5000e-004	0.0833	0.0220	7.8000e-004	0.0228		92.8025	92.8025	5.3500e-003		92.9149
Total	**0.0743**	**0.4086**	**1.0162**	**1.9700e-003**	**0.1057**	**6.3800e-003**	**0.1121**	**0.0287**	**5.8700e-003**	**0.0346**		**180.1593**	**180.1593**	**6.0200e-003**		**180.2857**

3.8 Fine Grading - 2016

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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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	0.0372	0.3588	0.4951	8.7000e-004	0.0250	5.5300e-003	0.0305	7.1000e-003	5.0900e-003	0.0122		87.3568	87.3568	6.7000e-004		87.3708
Worker	0.0232	0.0311	0.3257	6.9000e-004	0.0559	5.3000e-004	0.0564	0.0148	4.9000e-004	0.0153		58.0016	58.0016	3.3500e-003		58.0718
Total	**0.0604**	**0.3899**	**0.8208**	**1.5600e-003**	**0.0808**	**6.0600e-003**	**0.0869**	**0.0219**	**5.5800e-003**	**0.0275**		**145.3584**	**145.3584**	**4.0200e-003**		**145.4426**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0372	0.3588	0.4951	8.7000e-004	0.0233	5.5300e-003	0.0288	6.6900e-003	5.0900e-003	0.0118		87.3568	87.3568	6.7000e-004		87.3708
Worker	0.0232	0.0311	0.3257	6.9000e-004	0.0515	5.3000e-004	0.0520	0.0138	4.9000e-004	0.0142		58.0016	58.0016	3.3500e-003		58.0718
Total	**0.0604**	**0.3899**	**0.8208**	**1.5600e-003**	**0.0748**	**6.0600e-003**	**0.0809**	**0.0204**	**5.5800e-003**	**0.0260**		**145.3584**	**145.3584**	**4.0200e-003**		**145.4426**

3.9 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1483	17.1216	10.0206	0.0163		1.0312	1.0312		0.9872	0.9872		1,575.4690	1,575.4690	0.3321		1,582.4430
Total	**2.1483**	**17.1216**	**10.0206**	**0.0163**		**1.0312**	**1.0312**		**0.9872**	**0.9872**		**1,575.4690**	**1,575.4690**	**0.3321**		**1,582.4430**

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Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0558	0.5382	0.7427	1.3100e-003	0.0374	8.3000e-003	0.0457	0.0107	7.6300e-003	0.0183		131.0353	131.0353	1.0000e-003		131.0562
Worker	0.1761	0.2362	2.4752	5.2100e-003	0.4248	4.0200e-003	0.4288	0.1127	3.6900e-003	0.1163		440.8118	440.8118	0.0254		441.3457
Total	**0.2318**	**0.7744**	**3.2179**	**6.5200e-003**	**0.4622**	**0.0123**	**0.4745**	**0.1233**	**0.0113**	**0.1346**		**571.8471**	**571.8471**	**0.0264**		**572.4019**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	2.1483	17.1216	10.0206	0.0163		1.0312	1.0312		0.9872	0.9872	0.0000	1,575.4690	1,575.4690	0.3321		1,582.4430
Total	**2.1483**	**17.1216**	**10.0206**	**0.0163**		**1.0312**	**1.0312**		**0.9872**	**0.9872**	**0.0000**	**1,575.4690**	**1,575.4690**	**0.3321**		**1,582.4430**

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	0.0558	0.5382	0.7427	1.3100e-003	0.0350	8.3000e-003	0.0433	0.0100	7.6300e-003	0.0177		131.0353	131.0353	1.0000e-003		131.0562
Worker	0.1761	0.2362	2.4752	5.2100e-003	0.3915	4.0200e-003	0.3955	0.1045	3.6900e-003	0.1082		440.8118	440.8118	0.0254		441.3457
Total	**0.2318**	**0.7744**	**3.2179**	**6.5200e-003**	**0.4265**	**0.0123**	**0.4388**	**0.1145**	**0.0113**	**0.1259**		**571.8471**	**571.8471**	**0.0264**		**572.4019**

3.9 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9299	15.7243	9.6916	0.0163		0.9218	0.9218		0.8823	0.8823		1,564.0051	1,564.0051	0.3201		1,570.7267
Total	**1.9299**	**15.7243**	**9.6916**	**0.0163**		**0.9218**	**0.9218**		**0.8823**	**0.8823**		**1,564.0051**	**1,564.0051**	**0.3201**		**1,570.7267**

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Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0508	0.4904	0.7044	1.3100e-003	0.0374	7.3900e-003	0.0448	0.0107	6.7900e-003	0.0175		128.9404	128.9404	9.7000e-004		128.9607
Worker	0.1579	0.2136	2.2335	5.2100e-003	0.4248	3.8500e-003	0.4286	0.1127	3.5500e-003	0.1162		424.2835	424.2835	0.0235		424.7769
Total	**0.2087**	**0.7040**	**2.9380**	**6.5200e-003**	**0.4622**	**0.0112**	**0.4734**	**0.1233**	**0.0103**	**0.1336**		**553.2238**	**553.2238**	**0.0245**		**553.7376**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.9299	15.7243	9.6916	0.0163		0.9218	0.9218		0.8823	0.8823	0.0000	1,564.0051	1,564.0051	0.3201		1,570.7267
Total	**1.9299**	**15.7243**	**9.6916**	**0.0163**		**0.9218**	**0.9218**		**0.8823**	**0.8823**	**0.0000**	**1,564.0051**	**1,564.0051**	**0.3201**		**1,570.7267**

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	0.0508	0.4904	0.7044	1.3100e-003	0.0350	7.3900e-003	0.0424	0.0101	6.7900e-003	0.0168		128.9404	128.9404	9.7000e-004		128.9607
Worker	0.1579	0.2136	2.2335	5.2100e-003	0.3915	3.8500e-003	0.3954	0.1045	3.5500e-003	0.1080		424.2835	424.2835	0.0235		424.7769
Total	**0.2087**	**0.7040**	**2.9380**	**6.5200e-003**	**0.4265**	**0.0112**	**0.4377**	**0.1145**	**0.0103**	**0.1249**		**553.2238**	**553.2238**	**0.0245**		**553.7376**

3.10 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.6132					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.6132**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0169	0.1635	0.2348	4.4000e-004	0.0125	2.4600e-003	0.0149	3.5500e-003	2.2600e-003	5.8200e-003		42.9801	42.9801	3.2000e-004		42.9869
Worker	0.0457	0.0618	0.6466	1.5100e-003	0.1230	1.1100e-003	0.1241	0.0326	1.0300e-003	0.0336		122.8189	122.8189	6.8000e-003		122.9617
Total	**0.0626**	**0.2253**	**0.8814**	**1.9500e-003**	**0.1354**	**3.5700e-003**	**0.1390**	**0.0362**	**3.2900e-003**	**0.0395**		**165.7990**	**165.7990**	**7.1200e-003**		**165.9486**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	0.6132					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.6132**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Winter

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0169	0.1635	0.2348	4.4000e-004	0.0117	2.4600e-003	0.0141	3.3500e-003	2.2600e-003	5.6100e-003		42.9801	42.9801	3.2000e-004		42.9869
Worker	0.0457	0.0618	0.6466	1.5100e-003	0.1133	1.1100e-003	0.1145	0.0303	1.0300e-003	0.0313		122.8189	122.8189	6.8000e-003		122.9617
Total	**0.0626**	**0.2253**	**0.8814**	**1.9500e-003**	**0.1250**	**3.5700e-003**	**0.1286**	**0.0336**	**3.2900e-003**	**0.0369**		**165.7990**	**165.7990**	**7.1200e-003**		**165.9486**

3.11 Asphalt Paving - 2017

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.2705	13.1921	9.7574	0.0143		0.7981	0.7981		0.7343	0.7343		1,458.7943	1,458.7943	0.4470		1,468.1808
Paving	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2919**	**13.1921**	**9.7574**	**0.0143**		**0.7981**	**0.7981**		**0.7343**	**0.7343**		**1,458.7943**	**1,458.7943**	**0.4470**		**1,468.1808**

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Winter

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0169	0.1635	0.2348	4.4000e-004	0.0125	2.4600e-003	0.0149	3.5500e-003	2.2600e-003	5.8200e-003		42.9801	42.9801	3.2000e-004		42.9869
Worker	0.0623	0.0843	0.8817	2.0600e-003	0.1677	1.5200e-003	0.1692	0.0445	1.4000e-003	0.0459		167.4803	167.4803	9.2800e-003		167.6751
Total	**0.0792**	**0.2478**	**1.1165**	**2.5000e-003**	**0.1801**	**3.9800e-003**	**0.1841**	**0.0480**	**3.6600e-003**	**0.0517**		**210.4604**	**210.4604**	**9.6000e-003**		**210.6620**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.2705	13.1921	9.7574	0.0143		0.7981	0.7981		0.7343	0.7343	0.0000	1,458.7943	1,458.7943	0.4470		1,468.1808
Paving	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2919**	**13.1921**	**9.7574**	**0.0143**		**0.7981**	**0.7981**		**0.7343**	**0.7343**	**0.0000**	**1,458.7943**	**1,458.7943**	**0.4470**		**1,468.1808**

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	0.0169	0.1635	0.2348	4.4000e-004	0.0117	2.4600e-003	0.0141	3.3500e-003	2.2600e-003	5.6100e-003		42.9801	42.9801	3.2000e-004		42.9869
Worker	0.0623	0.0843	0.8817	2.0600e-003	0.1546	1.5200e-003	0.1561	0.0413	1.4000e-003	0.0427		167.4803	167.4803	9.2800e-003		167.6751
Total	**0.0792**	**0.2478**	**1.1165**	**2.5000e-003**	**0.1662**	**3.9800e-003**	**0.1702**	**0.0446**	**3.6600e-003**	**0.0483**		**210.4604**	**210.4604**	**9.6000e-003**		**210.6620**

3.12 Finishing/Landscaping - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4709	6.0077	1.7907	6.1300e-003		0.2047	0.2047		0.1883	0.1883		626.6393	626.6393	0.1920		630.6713
Paving	9.8300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4807**	**6.0077**	**1.7907**	**6.1300e-003**		**0.2047**	**0.2047**		**0.1883**	**0.1883**		**626.6393**	**626.6393**	**0.1920**		**630.6713**

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Winter

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	0.0332	0.0450	0.4702	1.1000e-003	0.0894	8.1000e-004	0.0902	0.0237	7.5000e-004	0.0245		89.3228	89.3228	4.9500e-003		89.4267
Total	**0.0332**	**0.0450**	**0.4702**	**1.1000e-003**	**0.0894**	**8.1000e-004**	**0.0902**	**0.0237**	**7.5000e-004**	**0.0245**		**89.3228**	**89.3228**	**4.9500e-003**		**89.4267**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4709	6.0077	1.7907	6.1300e-003		0.2047	0.2047		0.1883	0.1883	0.0000	626.6393	626.6393	0.1920		630.6713
Paving	9.8300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4807**	**6.0077**	**1.7907**	**6.1300e-003**		**0.2047**	**0.2047**		**0.1883**	**0.1883**	**0.0000**	**626.6393**	**626.6393**	**0.1920**		**630.6713**

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	0.0332	0.0450	0.4702	1.1000e-003	0.0824	8.1000e-004	0.0832	0.0220	7.5000e-004	0.0227		89.3228	89.3228	4.9500e-003		89.4267
Total	**0.0332**	**0.0450**	**0.4702**	**1.1000e-003**	**0.0824**	**8.1000e-004**	**0.0832**	**0.0220**	**7.5000e-004**	**0.0227**		**89.3228**	**89.3228**	**4.9500e-003**		**89.4267**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Winter

4.2 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		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior High School	16.60	8.40	6.90	72.80	22.20	5.00	63	25	12
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.532559	0.058242	0.178229	0.125155	0.038934	0.006273	0.016761	0.032323	0.002478	0.003154	0.003685	0.000544	0.001663

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive 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	2.2000e-003	0.0200	0.0168	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003		23.9507	23.9507	4.6000e-004	4.4000e-004	24.0964
NaturalGas Unmitigated	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0400	33.0400	6.3000e-004	6.1000e-004	33.2411

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior High School	280.84	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0400	33.0400	6.3000e-004	6.1000e-004	33.2411
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.0300e-003**	**0.0275**	**0.0231**	**1.7000e-004**		**2.0900e-003**	**2.0900e-003**		**2.0900e-003**	**2.0900e-003**		**33.0400**	**33.0400**	**6.3000e-004**	**6.1000e-004**	**33.2411**

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					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Junior High School	0.203581	2.2000e-003	0.0200	0.0168	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003		23.9507	23.9507	4.6000e-004	4.4000e-004	24.0964
Total		**2.2000e-003**	**0.0200**	**0.0168**	**1.2000e-004**		**1.5200e-003**	**1.5200e-003**		**1.5200e-003**	**1.5200e-003**		**23.9507**	**23.9507**	**4.6000e-004**	**4.4000e-004**	**24.0964**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1690	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003
Unmitigated	0.1690	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.3800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1636					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.0000e-005	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003
Total	**0.1690**	**1.0000e-005**	**8.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.8400e-003**	**1.8400e-003**	**1.0000e-005**		**1.9500e-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	5.3800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1636					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.0000e-005	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003
Total	**0.1690**	**1.0000e-005**	**8.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.8400e-003**	**1.8400e-003**	**1.0000e-005**		**1.9500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	8.26	1000sqft	0.19	8,260.00	0
Other Asphalt Surfaces	0.09	Acre	0.09	0.00	0
Other Non-Asphalt Surfaces	0.08	Acre	0.08	0.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 33

Climate Zone 8 **Operational Year** 2017

Utility Company Southern California Edison

CO2 Intensity (lb/MWhr) 630.89 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 0 Land Use Square Feet to exclude striping

Construction Phase - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Placeholder only.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Placeholder only.

Off-road Equipment - Placeholder only.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Trips and VMT - Based on information provided and verified by the District.

Demolition -

Grading -

Architectural Coating - Based on CalEEMod methodology in calculating the paintable surface areas for a nonresidential building.

Vehicle Trips - Assume no new students.

Area Coating - Adjustment made due to modeling software limitation.

Water And Wastewater - Assumes the proposed gymnasium would not result in an overall increase in water and wastewater generation as no new events or an increase in student capacity would occur.

Solid Waste - Assumes the proposed gymnasium would not result in an overall increase in solid waste generation as no new events or an increase in student capacity would occur.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403 & 1186

Energy Mitigation -

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	4,130.00	826.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	12,390.00	11,151.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	40.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	35.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	8
tblAreaCoating	Area_Nonresidential_Interior	12390	1561
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	8	250
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstructionPhase	NumDays	5.00	32.00
tblConstructionPhase	NumDays	100.00	210.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	2.00	15.00
tblConstructionPhase	NumDays	2.00	7.00
tblConstructionPhase	NumDays	5.00	11.00
tblConstructionPhase	NumDays	5.00	24.00
tblConstructionPhase	NumDays	1.00	15.00
tblConstructionPhase	PhaseEndDate	6/16/2016	6/2/2016
tblConstructionPhase	PhaseEndDate	9/1/2016	8/11/2016
tblConstructionPhase	PhaseEndDate	9/1/2016	8/11/2016
tblConstructionPhase	PhaseEndDate	8/31/2017	7/31/2017
tblConstructionPhase	PhaseEndDate	9/1/2017	9/19/2017
tblConstructionPhase	PhaseEndDate	6/23/2016	7/21/2016
tblConstructionPhase	PhaseStartDate	6/15/2016	6/1/2016
tblConstructionPhase	PhaseStartDate	7/22/2016	7/1/2016
tblConstructionPhase	PhaseStartDate	8/12/2016	7/22/2016

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Summer

tblConstructionPhase	PhaseStartDate	8/17/2017	7/15/2017
tblConstructionPhase	PhaseStartDate	8/1/2017	8/17/2017
tblConstructionPhase	PhaseStartDate	6/3/2016	7/1/2016
tblGrading	MaterialExported	0.00	3,450.00
tblGrading	MaterialExported	0.00	300.00
tblGrading	MaterialImported	0.00	3,300.00
tblLandUse	LandUseSquareFeet	3,920.40	0.00
tblLandUse	LandUseSquareFeet	3,484.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblSolidWaste	SolidWasteGenerationRate	10.74	0.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	27.00	28.00
tblTripsAndVMT	HaulingTripNumber	38.00	60.00
tblTripsAndVMT	HaulingTripNumber	844.00	1,350.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	1.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00

tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	5.00
tblTripsAndVMT	WorkerTripNumber	3.00	38.00
tblTripsAndVMT	WorkerTripNumber	1.00	11.00
tblVehicleTrips	WD_TR	13.78	0.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	170,329.50	0.00
tblWater	OutdoorWaterUseRate	437,990.13	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	3.4728	33.1158	32.7792	0.0426	6.6588	1.5977	8.2565	3.4773	1.4976	4.9749	0.0000	4,252.2101	4,252.2101	0.5578	0.0000	4,263.9241
2017	2.1282	16.3956	12.6527	0.0231	0.4622	0.9330	1.3952	0.1233	0.8926	1.0159	0.0000	2,143.5779	2,143.5779	0.4637	0.0000	2,153.3151
Total	**5.6010**	**49.5115**	**45.4320**	**0.0657**	**7.1210**	**2.5307**	**9.6517**	**3.6006**	**2.3902**	**5.9908**	**0.0000**	**6,395.7880**	**6,395.7880**	**1.0215**	**0.0000**	**6,417.2392**

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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					
2016	3.4728	33.1158	32.7792	0.0426	3.1405	1.5977	4.7382	1.5676	1.4976	3.0652	0.0000	4,252.2101	4,252.2101	0.5578	0.0000	4,263.9241
2017	2.1282	16.3956	12.6527	0.0231	0.4265	0.9330	1.3595	0.1145	0.8926	1.0071	0.0000	2,143.5779	2,143.5779	0.4637	0.0000	2,153.3151
Total	**5.6010**	**49.5115**	**45.4320**	**0.0657**	**3.5670**	**2.5307**	**6.0977**	**1.6821**	**2.3902**	**4.0723**	**0.0000**	**6,395.7880**	**6,395.7880**	**1.0215**	**0.0000**	**6,417.2392**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**49.91**	**0.00**	**36.82**	**53.28**	**0.00**	**32.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1690	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003
Energy	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0400	33.0400	6.3000e-004	6.1000e-004	33.2411
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	**0.1720**	**0.0275**	**0.0240**	**1.7000e-004**	**0.0000**	**2.0900e-003**	**2.0900e-003**	**0.0000**	**2.0900e-003**	**2.0900e-003**		**33.0418**	**33.0418**	**6.4000e-004**	**6.1000e-004**	**33.2430**

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Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1690	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003
Energy	2.2000e-003	0.0200	0.0168	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003		23.9507	23.9507	4.6000e-004	4.4000e-004	24.0964
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	**0.1712**	**0.0200**	**0.0177**	**1.2000e-004**	**0.0000**	**1.5200e-003**	**1.5200e-003**	**0.0000**	**1.5200e-003**	**1.5200e-003**		**23.9525**	**23.9525**	**4.7000e-004**	**4.4000e-004**	**24.0984**

	ROG	NOx	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	**0.48**	**27.49**	**26.49**	**29.41**	**0.00**	**27.27**	**27.27**	**0.00**	**27.27**	**27.27**	**0.00**	**27.51**	**27.51**	**26.56**	**27.87**	**27.51**

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3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Asphalt/PCC Demolition	Demolition	6/1/2016	6/14/2016	5	10	
2	Asphalt Demo Debris Haul	Demolition	6/1/2016	6/2/2016	5	2	
3	Haul 1 - Site Preparation	Site Preparation	7/1/2016	7/21/2016	5	15	
4	Site Preparation + Rough Grading	Grading	7/1/2016	8/11/2016	5	30	
5	Haul 2 - Rough Grading	Grading	7/22/2016	8/11/2016	5	15	
6	Utility Trenching	Trenching	8/12/2016	9/1/2016	5	15	
7	Fine Grading	Grading	9/2/2016	9/12/2016	5	7	
8	Building Construction	Building Construction	9/13/2016	7/3/2017	5	210	
9	Architectural Coating	Architectural Coating	7/4/2017	8/16/2017	5	32	
10	Asphalt Paving	Paving	7/15/2017	7/31/2017	5	11	
11	Finishing/Landscaping	Paving	8/17/2017	9/19/2017	5	24	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 11,151; Non-Residential Outdoor: 826 (Architectural Coating – sqft)

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OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Asphalt/PCC Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Asphalt/PCC Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Asphalt/PCC Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Asphalt Demo Debris Haul	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demo Debris Haul	Rubber Tired Dozers	0	1.00	255	0.40
Asphalt Demo Debris Haul	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Haul 1 - Site Preparation	Graders	0	8.00	174	0.41
Haul 1 - Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation + Rough Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation + Rough Grading	Graders	0		174	0.41
Site Preparation + Rough Grading	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation + Rough Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Haul 2 - Rough Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Haul 2 - Rough Grading	Rubber Tired Dozers	0	1.00	255	0.40
Haul 2 - Rough Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Utility Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Fine Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Fine Grading	Rubber Tired Dozers	0	1.00	255	0.40
Fine Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	0	6.00	78	0.48

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Asphalt Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Asphalt Paving	Pavers	1	8.00	125	0.42
Asphalt Paving	Paving Equipment	1	8.00	130	0.36
Asphalt Paving	Rollers	1	8.00	80	0.38
Asphalt Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Finishing/Landscaping	Cement and Mortar Mixers	0	6.00	9	0.56
Finishing/Landscaping	Pavers	0	7.00	125	0.42
Finishing/Landscaping	Rollers	0	7.00	80	0.38
Finishing/Landscaping	Rubber Tired Loaders	1	8.00	199	0.36
Finishing/Landscaping	Tractors/Loaders/Backhoes	0	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
Asphalt/PCC Demolition	4	15.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demo Debris Haul	0	0.00	0.00	28.00	14.70	6.90	7.00	LD_Mix	HDT_Mix	HHDT
Haul 1 - Site Preparation	0	0.00	0.00	60.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Site Preparation + Rough Grading	4	15.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Haul 2 - Rough Grading	0	0.00	0.00	1,350.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	1	8.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	0	5.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	38.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	11.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	4	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	1	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Asphalt/PCC Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5660	25.0028	19.0854	0.0214		1.4939	1.4939		1.4022	1.4022		2,163.4523	2,163.4523	0.5312		2,174.6067
Total	**2.5660**	**25.0028**	**19.0854**	**0.0214**		**1.4939**	**1.4939**		**1.4022**	**1.4022**		**2,163.4523**	**2,163.4523**	**0.5312**		**2,174.6067**

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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	0.0337	0.3500	0.4067	8.8000e-004	0.0250	5.4700e-003	0.0304	7.1000e-003	5.0300e-003	0.0121		88.0883	88.0883	6.5000e-004		88.1018
Worker	0.0668	0.0841	1.0406	2.1800e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		184.3532	184.3532	0.0100		184.5639
Total	**0.1005**	**0.4341**	**1.4472**	**3.0600e-003**	**0.1926**	**7.0600e-003**	**0.1997**	**0.0516**	**6.4900e-003**	**0.0581**		**272.4414**	**272.4414**	**0.0107**		**272.6658**

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	2.5660	25.0028	19.0854	0.0214		1.4939	1.4939		1.4022	1.4022	0.0000	2,163.4523	2,163.4523	0.5312		2,174.6067
Total	**2.5660**	**25.0028**	**19.0854**	**0.0214**		**1.4939**	**1.4939**		**1.4022**	**1.4022**	**0.0000**	**2,163.4523**	**2,163.4523**	**0.5312**		**2,174.6067**

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	0.0337	0.3500	0.4067	8.8000e-004	0.0233	5.4700e-003	0.0288	6.6900e-003	5.0300e-003	0.0117		88.0883	88.0883	6.5000e-004		88.1018
Worker	0.0668	0.0841	1.0406	2.1800e-003	0.1546	1.5900e-003	0.1561	0.0413	1.4600e-003	0.0427		184.3532	184.3532	0.0100		184.5639
Total	**0.1005**	**0.4341**	**1.4472**	**3.0600e-003**	**0.1779**	**7.0600e-003**	**0.1849**	**0.0479**	**6.4900e-003**	**0.0544**		**272.4414**	**272.4414**	**0.0107**		**272.6658**

3.3 Asphalt Demo Debris Haul - 2016

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					2.9424	0.0000	2.9424	0.4455	0.0000	0.4455			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.9424**	**0.0000**	**2.9424**	**0.4455**	**0.0000**	**0.4455**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.1416	1.5585	2.0224	3.8400e-003	0.0855	0.0208	0.1063	0.0234	0.0191	0.0426		385.3675	385.3675	3.1900e-003		385.4345
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	0.0000	0.0000	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	**0.1416**	**1.5585**	**2.0224**	**3.8400e-003**	**0.0855**	**0.0208**	**0.1063**	**0.0234**	**0.0191**	**0.0426**		**385.3675**	**385.3675**	**3.1900e-003**		**385.4345**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					1.2579	0.0000	1.2579	0.1905	0.0000	0.1905			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.2579**	**0.0000**	**1.2579**	**0.1905**	**0.0000**	**0.1905**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.1416	1.5585	2.0224	3.8400e-003	0.0797	0.0208	0.1005	0.0220	0.0191	0.0411		385.3675	385.3675	3.1900e-003		385.4345
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	0.0000	0.0000	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	**0.1416**	**1.5585**	**2.0224**	**3.8400e-003**	**0.0797**	**0.0208**	**0.1005**	**0.0220**	**0.0191**	**0.0411**		**385.3675**	**385.3675**	**3.1900e-003**		**385.4345**

3.4 Haul 1 - Site Preparation - 2016

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					2.2600e-003	0.0000	2.2600e-003	3.4000e-004	0.0000	3.4000e-004			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.2600e-003**	**0.0000**	**2.2600e-003**	**3.4000e-004**	**0.0000**	**3.4000e-004**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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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	0.0358	0.3413	0.5443	8.1000e-004	0.0175	4.3000e-003	0.0218	4.7900e-003	3.9500e-003	8.7400e-003		80.7252	80.7252	7.1000e-004		80.7401
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	0.0000	0.0000	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	**0.0358**	**0.3413**	**0.5443**	**8.1000e-004**	**0.0175**	**4.3000e-003**	**0.0218**	**4.7900e-003**	**3.9500e-003**	**8.7400e-003**		**80.7252**	**80.7252**	**7.1000e-004**		**80.7401**

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					9.7000e-004	0.0000	9.7000e-004	1.5000e-004	0.0000	1.5000e-004			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**9.7000e-004**	**0.0000**	**9.7000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0358	0.3413	0.5443	8.1000e-004	0.0163	4.3000e-003	0.0206	4.5000e-003	3.9500e-003	8.4500e-003		80.7252	80.7252	7.1000e-004		80.7401
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	0.0000	0.0000	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	**0.0358**	**0.3413**	**0.5443**	**8.1000e-004**	**0.0163**	**4.3000e-003**	**0.0206**	**4.5000e-003**	**3.9500e-003**	**8.4500e-003**		**80.7252**	**80.7252**	**7.1000e-004**		**80.7401**

3.5 Site Preparation + Rough Grading - 2016

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.5660	25.0028	19.0854	0.0214		1.4939	1.4939		1.4022	1.4022		2,163.4523	2,163.4523	0.5312		2,174.6067
Total	**2.5660**	**25.0028**	**19.0854**	**0.0214**	**6.0221**	**1.4939**	**7.5160**	**3.3102**	**1.4022**	**4.7124**		**2,163.4523**	**2,163.4523**	**0.5312**		**2,174.6067**

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Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0337	0.3500	0.4067	8.8000e-004	0.0250	5.4700e-003	0.0304	7.1000e-003	5.0300e-003	0.0121		88.0883	88.0883	6.5000e-004		88.1018
Worker	0.0668	0.0841	1.0406	2.1800e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		184.3532	184.3532	0.0100		184.5639
Total	**0.1005**	**0.4341**	**1.4472**	**3.0600e-003**	**0.1926**	**7.0600e-003**	**0.1997**	**0.0516**	**6.4900e-003**	**0.0581**		**272.4414**	**272.4414**	**0.0107**		**272.6658**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					2.5744	0.0000	2.5744	1.4151	0.0000	1.4151			0.0000			0.0000
Off-Road	2.5660	25.0028	19.0854	0.0214		1.4939	1.4939		1.4022	1.4022	0.0000	2,163.4523	2,163.4523	0.5312		2,174.6067
Total	**2.5660**	**25.0028**	**19.0854**	**0.0214**	**2.5744**	**1.4939**	**4.0684**	**1.4151**	**1.4022**	**2.8173**	**0.0000**	**2,163.4523**	**2,163.4523**	**0.5312**		**2,174.6067**

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	0.0337	0.3500	0.4067	8.8000e-004	0.0233	5.4700e-003	0.0288	6.6900e-003	5.0300e-003	0.0117		88.0883	88.0883	6.5000e-004		88.1018
Worker	0.0668	0.0841	1.0406	2.1800e-003	0.1546	1.5900e-003	0.1561	0.0413	1.4600e-003	0.0427		184.3532	184.3532	0.0100		184.5639
Total	**0.1005**	**0.4341**	**1.4472**	**3.0600e-003**	**0.1779**	**7.0600e-003**	**0.1849**	**0.0479**	**6.4900e-003**	**0.0544**		**272.4414**	**272.4414**	**0.0107**		**272.6658**

3.6 Haul 2 - Rough Grading - 2016

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					0.0509	0.0000	0.0509	7.7100e-003	0.0000	7.7100e-003			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0509**	**0.0000**	**0.0509**	**7.7100e-003**	**0.0000**	**7.7100e-003**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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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	0.8063	7.6789	12.2467	0.0182	0.3932	0.0967	0.4899	0.1078	0.0889	0.1967		1,816.3164	1,816.3164	0.0160		1,816.6516
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	0.0000	0.0000	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	**0.8063**	**7.6789**	**12.2467**	**0.0182**	**0.3932**	**0.0967**	**0.4899**	**0.1078**	**0.0889**	**0.1967**		**1,816.3164**	**1,816.3164**	**0.0160**		**1,816.6516**

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					0.0218	0.0000	0.0218	3.2900e-003	0.0000	3.2900e-003			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0218**	**0.0000**	**0.0218**	**3.2900e-003**	**0.0000**	**3.2900e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8063	7.6789	12.2467	0.0182	0.3665	0.0967	0.4632	0.1012	0.0889	0.1901		1,816.3164	1,816.3164	0.0160		1,816.6516
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	0.0000	0.0000	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	**0.8063**	**7.6789**	**12.2467**	**0.0182**	**0.3665**	**0.0967**	**0.4632**	**0.1012**	**0.0889**	**0.1901**		**1,816.3164**	**1,816.3164**	**0.0160**		**1,816.6516**

3.7 Utility Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3406	3.2551	2.4126	3.1100e-003		0.2506	0.2506		0.2306	0.2306		323.6773	323.6773	0.0976		325.7276
Total	**0.3406**	**3.2551**	**2.4126**	**3.1100e-003**		**0.2506**	**0.2506**		**0.2306**	**0.2306**		**323.6773**	**323.6773**	**0.0976**		**325.7276**

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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	0.0337	0.3500	0.4067	8.8000e-004	0.0250	5.4700e-003	0.0304	7.1000e-003	5.0300e-003	0.0121		88.0883	88.0883	6.5000e-004		88.1018
Worker	0.0356	0.0448	0.5550	1.1600e-003	0.0894	8.5000e-004	0.0903	0.0237	7.8000e-004	0.0245		98.3217	98.3217	5.3500e-003		98.4341
Total	**0.0693**	**0.3949**	**0.9616**	**2.0400e-003**	**0.1144**	**6.3200e-003**	**0.1207**	**0.0308**	**5.8100e-003**	**0.0366**		**186.4100**	**186.4100**	**6.0000e-003**		**186.5359**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3406	3.2551	2.4126	3.1100e-003		0.2506	0.2506		0.2306	0.2306	0.0000	323.6773	323.6773	0.0976		325.7276
Total	**0.3406**	**3.2551**	**2.4126**	**3.1100e-003**		**0.2506**	**0.2506**		**0.2306**	**0.2306**	**0.0000**	**323.6773**	**323.6773**	**0.0976**		**325.7276**

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	0.0337	0.3500	0.4067	8.8000e-004	0.0233	5.4700e-003	0.0288	6.6900e-003	5.0300e-003	0.0117		88.0883	88.0883	6.5000e-004		88.1018
Worker	0.0356	0.0448	0.5550	1.1600e-003	0.0824	8.5000e-004	0.0833	0.0220	7.8000e-004	0.0228		98.3217	98.3217	5.3500e-003		98.4341
Total	**0.0693**	**0.3949**	**0.9616**	**2.0400e-003**	**0.1057**	**6.3200e-003**	**0.1121**	**0.0287**	**5.8100e-003**	**0.0345**		**186.4100**	**186.4100**	**6.0000e-003**		**186.5359**

3.8 Fine Grading - 2016

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0337	0.3500	0.4067	8.8000e-004	0.0250	5.4700e-003	0.0304	7.1000e-003	5.0300e-003	0.0121		88.0883	88.0883	6.5000e-004		88.1018
Worker	0.0223	0.0280	0.3469	7.3000e-004	0.0559	5.3000e-004	0.0564	0.0148	4.9000e-004	0.0153		61.4511	61.4511	3.3500e-003		61.5213
Total	**0.0560**	**0.3781**	**0.7535**	**1.6100e-003**	**0.0808**	**6.0000e-003**	**0.0868**	**0.0219**	**5.5200e-003**	**0.0274**		**149.5393**	**149.5393**	**4.0000e-003**		**149.6231**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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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	0.0337	0.3500	0.4067	8.8000e-004	0.0233	5.4700e-003	0.0288	6.6900e-003	5.0300e-003	0.0117		88.0883	88.0883	6.5000e-004		88.1018
Worker	0.0223	0.0280	0.3469	7.3000e-004	0.0515	5.3000e-004	0.0520	0.0138	4.9000e-004	0.0142		61.4511	61.4511	3.3500e-003		61.5213
Total	**0.0560**	**0.3781**	**0.7535**	**1.6100e-003**	**0.0748**	**6.0000e-003**	**0.0808**	**0.0204**	**5.5200e-003**	**0.0260**		**149.5393**	**149.5393**	**4.0000e-003**		**149.6231**

3.9 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1483	17.1216	10.0206	0.0163		1.0312	1.0312		0.9872	0.9872		1,575.4690	1,575.4690	0.3321		1,582.4430
Total	**2.1483**	**17.1216**	**10.0206**	**0.0163**		**1.0312**	**1.0312**		**0.9872**	**0.9872**		**1,575.4690**	**1,575.4690**	**0.3321**		**1,582.4430**

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Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0506	0.5251	0.6100	1.3200e-003	0.0374	8.2100e-003	0.0456	0.0107	7.5500e-003	0.0182		132.1324	132.1324	9.7000e-004		132.1527
Worker	0.1693	0.2130	2.6361	5.5300e-003	0.4248	4.0200e-003	0.4288	0.1127	3.6900e-003	0.1163		467.0281	467.0281	0.0254		467.5620
Total	**0.2198**	**0.7381**	**3.2461**	**6.8500e-003**	**0.4622**	**0.0122**	**0.4744**	**0.1233**	**0.0112**	**0.1345**		**599.1605**	**599.1605**	**0.0264**		**599.7147**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	2.1483	17.1216	10.0206	0.0163		1.0312	1.0312		0.9872	0.9872	0.0000	1,575.4690	1,575.4690	0.3321		1,582.4430
Total	**2.1483**	**17.1216**	**10.0206**	**0.0163**		**1.0312**	**1.0312**		**0.9872**	**0.9872**	**0.0000**	**1,575.4690**	**1,575.4690**	**0.3321**		**1,582.4430**

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	0.0506	0.5251	0.6100	1.3200e-003	0.0350	8.2100e-003	0.0432	0.0100	7.5500e-003	0.0176		132.1324	132.1324	9.7000e-004		132.1527
Worker	0.1693	0.2130	2.6361	5.5300e-003	0.3915	4.0200e-003	0.3955	0.1045	3.6900e-003	0.1082		467.0281	467.0281	0.0254		467.5620
Total	**0.2198**	**0.7381**	**3.2461**	**6.8500e-003**	**0.4265**	**0.0122**	**0.4387**	**0.1145**	**0.0112**	**0.1258**		**599.1605**	**599.1605**	**0.0264**		**599.7147**

3.9 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9299	15.7243	9.6916	0.0163		0.9218	0.9218		0.8823	0.8823		1,564.0051	1,564.0051	0.3201		1,570.7267
Total	**1.9299**	**15.7243**	**9.6916**	**0.0163**		**0.9218**	**0.9218**		**0.8823**	**0.8823**		**1,564.0051**	**1,564.0051**	**0.3201**		**1,570.7267**

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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	0.0462	0.4787	0.5727	1.3200e-003	0.0374	7.3100e-003	0.0448	0.0107	6.7300e-003	0.0174		130.0224	130.0224	9.4000e-004		130.0421
Worker	0.1521	0.1927	2.3884	5.5200e-003	0.4248	3.8500e-003	0.4286	0.1127	3.5500e-003	0.1162		449.5505	449.5505	0.0235		450.0439
Total	**0.1983**	**0.6713**	**2.9611**	**6.8400e-003**	**0.4622**	**0.0112**	**0.4734**	**0.1233**	**0.0103**	**0.1336**		**579.5728**	**579.5728**	**0.0244**		**580.0860**

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	1.9299	15.7243	9.6916	0.0163		0.9218	0.9218		0.8823	0.8823	0.0000	1,564.0051	1,564.0051	0.3201		1,570.7267
Total	**1.9299**	**15.7243**	**9.6916**	**0.0163**		**0.9218**	**0.9218**		**0.8823**	**0.8823**	**0.0000**	**1,564.0051**	**1,564.0051**	**0.3201**		**1,570.7267**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0462	0.4787	0.5727	1.3200e-003	0.0350	7.3100e-003	0.0423	0.0101	6.7300e-003	0.0168		130.0224	130.0224	9.4000e-004		130.0421
Worker	0.1521	0.1927	2.3884	5.5200e-003	0.3915	3.8500e-003	0.3954	0.1045	3.5500e-003	0.1080		449.5505	449.5505	0.0235		450.0439
Total	**0.1983**	**0.6713**	**2.9611**	**6.8400e-003**	**0.4265**	**0.0112**	**0.4376**	**0.1145**	**0.0103**	**0.1248**		**579.5728**	**579.5728**	**0.0244**		**580.0860**

3.10 Architectural Coating - 2017

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	0.6132					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.6132**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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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	0.0154	0.1596	0.1909	4.4000e-004	0.0125	2.4400e-003	0.0149	3.5500e-003	2.2400e-003	5.7900e-003		43.3408	43.3408	3.1000e-004		43.3474
Worker	0.0440	0.0558	0.6914	1.6000e-003	0.1230	1.1100e-003	0.1241	0.0326	1.0300e-003	0.0336		130.1330	130.1330	6.8000e-003		130.2759
Total	**0.0594**	**0.2153**	**0.8823**	**2.0400e-003**	**0.1354**	**3.5500e-003**	**0.1390**	**0.0362**	**3.2700e-003**	**0.0394**		**173.4738**	**173.4738**	**7.1100e-003**		**173.6232**

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	0.6132					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.6132**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.0154	0.1596	0.1909	4.4000e-004	0.0117	2.4400e-003	0.0141	3.3500e-003	2.2400e-003	5.5900e-003		43.3408	43.3408	3.1000e-004		43.3474
Worker	0.0440	0.0558	0.6914	1.6000e-003	0.1133	1.1100e-003	0.1145	0.0303	1.0300e-003	0.0313		130.1330	130.1330	6.8000e-003		130.2759
Total	**0.0594**	**0.2153**	**0.8823**	**2.0400e-003**	**0.1250**	**3.5500e-003**	**0.1285**	**0.0336**	**3.2700e-003**	**0.0369**		**173.4738**	**173.4738**	**7.1100e-003**		**173.6232**

3.11 Asphalt Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2705	13.1921	9.7574	0.0143		0.7981	0.7981		0.7343	0.7343		1,458.7943	1,458.7943	0.4470		1,468.1808
Paving	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2919**	**13.1921**	**9.7574**	**0.0143**		**0.7981**	**0.7981**		**0.7343**	**0.7343**		**1,458.7943**	**1,458.7943**	**0.4470**		**1,468.1808**

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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	0.0154	0.1596	0.1909	4.4000e-004	0.0125	2.4400e-003	0.0149	3.5500e-003	2.2400e-003	5.7900e-003		43.3408	43.3408	3.1000e-004		43.3474
Worker	0.0600	0.0761	0.9428	2.1800e-003	0.1677	1.5200e-003	0.1692	0.0445	1.4000e-003	0.0459		177.4541	177.4541	9.2800e-003		177.6489
Total	**0.0755**	**0.2356**	**1.1337**	**2.6200e-003**	**0.1801**	**3.9600e-003**	**0.1841**	**0.0480**	**3.6400e-003**	**0.0517**		**220.7949**	**220.7949**	**9.5900e-003**		**220.9963**

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	1.2705	13.1921	9.7574	0.0143		0.7981	0.7981		0.7343	0.7343	0.0000	1,458.7943	1,458.7943	0.4470		1,468.1808
Paving	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2919**	**13.1921**	**9.7574**	**0.0143**		**0.7981**	**0.7981**		**0.7343**	**0.7343**	**0.0000**	**1,458.7943**	**1,458.7943**	**0.4470**		**1,468.1808**

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	0.0154	0.1596	0.1909	4.4000e-004	0.0117	2.4400e-003	0.0141	3.3500e-003	2.2400e-003	5.5900e-003		43.3408	43.3408	3.1000e-004		43.3474
Worker	0.0600	0.0761	0.9428	2.1800e-003	0.1546	1.5200e-003	0.1561	0.0413	1.4000e-003	0.0427		177.4541	177.4541	9.2800e-003		177.6489
Total	**0.0755**	**0.2356**	**1.1337**	**2.6200e-003**	**0.1662**	**3.9600e-003**	**0.1702**	**0.0446**	**3.6400e-003**	**0.0482**		**220.7949**	**220.7949**	**9.5900e-003**		**220.9963**

3.12 Finishing/Landscaping - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4709	6.0077	1.7907	6.1300e-003		0.2047	0.2047		0.1883	0.1883		626.6393	626.6393	0.1920		630.6713
Paving	9.8300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4807**	**6.0077**	**1.7907**	**6.1300e-003**		**0.2047**	**0.2047**		**0.1883**	**0.1883**		**626.6393**	**626.6393**	**0.1920**		**630.6713**

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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	0.0320	0.0406	0.5028	1.1600e-003	0.0894	8.1000e-004	0.0902	0.0237	7.5000e-004	0.0245		94.6422	94.6422	4.9500e-003		94.7461
Total	**0.0320**	**0.0406**	**0.5028**	**1.1600e-003**	**0.0894**	**8.1000e-004**	**0.0902**	**0.0237**	**7.5000e-004**	**0.0245**		**94.6422**	**94.6422**	**4.9500e-003**		**94.7461**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4709	6.0077	1.7907	6.1300e-003		0.2047	0.2047		0.1883	0.1883	0.0000	626.6393	626.6393	0.1920		630.6713
Paving	9.8300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4807**	**6.0077**	**1.7907**	**6.1300e-003**		**0.2047**	**0.2047**		**0.1883**	**0.1883**	**0.0000**	**626.6393**	**626.6393**	**0.1920**		**630.6713**

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	0.0320	0.0406	0.5028	1.1600e-003	0.0824	8.1000e-004	0.0832	0.0220	7.5000e-004	0.0227		94.6422	94.6422	4.9500e-003		94.7461
Total	**0.0320**	**0.0406**	**0.5028**	**1.1600e-003**	**0.0824**	**8.1000e-004**	**0.0832**	**0.0220**	**7.5000e-004**	**0.0227**		**94.6422**	**94.6422**	**4.9500e-003**		**94.7461**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Summer

4.2 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		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior High School	16.60	8.40	6.90	72.80	22.20	5.00	63	25	12
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.532559	0.058242	0.178229	0.125155	0.038934	0.006273	0.016761	0.032323	0.002478	0.003154	0.003685	0.000544	0.001663

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive 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	2.2000e-003	0.0200	0.0168	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003		23.9507	23.9507	4.6000e-004	4.4000e-004	24.0964
NaturalGas Unmitigated	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0400	33.0400	6.3000e-004	6.1000e-004	33.2411

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior High School	280.84	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0400	33.0400	6.3000e-004	6.1000e-004	33.2411
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.0300e-003**	**0.0275**	**0.0231**	**1.7000e-004**		**2.0900e-003**	**2.0900e-003**		**2.0900e-003**	**2.0900e-003**		**33.0400**	**33.0400**	**6.3000e-004**	**6.1000e-004**	**33.2411**

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					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Junior High School	0.203581	2.2000e-003	0.0200	0.0168	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003		23.9507	23.9507	4.6000e-004	4.4000e-004	24.0964
Total		**2.2000e-003**	**0.0200**	**0.0168**	**1.2000e-004**		**1.5200e-003**	**1.5200e-003**		**1.5200e-003**	**1.5200e-003**		**23.9507**	**23.9507**	**4.6000e-004**	**4.4000e-004**	**24.0964**

6.0 Area Detail

6.1 Mitigation Measures Area

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	0.1690	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003
Unmitigated	0.1690	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003

6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Architectural Coating	5.3800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1636					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.0000e-005	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003
Total	**0.1690**	**1.0000e-005**	**8.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.8400e-003**	**1.8400e-003**	**1.0000e-005**		**1.9500e-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	5.3800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1636					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.0000e-005	1.0000e-005	8.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.8400e-003	1.8400e-003	1.0000e-005		1.9500e-003
Total	**0.1690**	**1.0000e-005**	**8.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.8400e-003**	**1.8400e-003**	**1.0000e-005**		**1.9500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	8.26	1000sqft	0.19	8,260.00	0
Other Asphalt Surfaces	0.09	Acre	0.09	0.00	0
Other Non-Asphalt Surfaces	0.08	Acre	0.08	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 0 Land Use Square Feet to exclude striping

Construction Phase - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Placeholder only.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Placeholder only.

Off-road Equipment - Placeholder only.

Off-road Equipment - Based on information provided and verified by the District.

Off-road Equipment - Based on information provided and verified by the District.

Trips and VMT - Based on information provided and verified by the District.

Demolition -

Grading -

Architectural Coating - Based on CalEEMod methodology in calculating the paintable surface areas for a nonresidential building.

Vehicle Trips - Assume no new students.

Area Coating - Adjustment made due to modeling software limitation.

Water And Wastewater - Assumes the proposed gymnasium would not result in an overall increase in water and wastewater generation as no new events or an increase in student capacity would occur.

Solid Waste - Assumes the proposed gymnasium would not result in an overall increase in solid waste generation as no new events or an increase in student capacity would occur.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403 & 1186

Energy Mitigation -

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Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	4,130.00	826.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	12,390.00	11,151.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	40.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	35.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	8
tblAreaCoating	Area_Nonresidential_Interior	12390	1561
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	8	250
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstructionPhase	NumDays	5.00	32.00
tblConstructionPhase	NumDays	100.00	210.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	2.00	15.00
tblConstructionPhase	NumDays	2.00	7.00
tblConstructionPhase	NumDays	5.00	11.00
tblConstructionPhase	NumDays	5.00	24.00
tblConstructionPhase	NumDays	1.00	15.00
tblConstructionPhase	PhaseEndDate	6/16/2016	6/2/2016
tblConstructionPhase	PhaseEndDate	9/1/2016	8/11/2016
tblConstructionPhase	PhaseEndDate	9/1/2016	8/11/2016
tblConstructionPhase	PhaseEndDate	8/31/2017	7/31/2017
tblConstructionPhase	PhaseEndDate	9/1/2017	9/19/2017
tblConstructionPhase	PhaseEndDate	6/23/2016	7/21/2016
tblConstructionPhase	PhaseStartDate	6/15/2016	6/1/2016
tblConstructionPhase	PhaseStartDate	7/22/2016	7/1/2016
tblConstructionPhase	PhaseStartDate	8/12/2016	7/22/2016

tblConstructionPhase	PhaseStartDate	8/17/2017	7/15/2017
tblConstructionPhase	PhaseStartDate	8/1/2017	8/17/2017
tblConstructionPhase	PhaseStartDate	6/3/2016	7/1/2016
tblGrading	MaterialExported	0.00	3,450.00
tblGrading	MaterialExported	0.00	300.00
tblGrading	MaterialImported	0.00	3,300.00
tblLandUse	LandUseSquareFeet	3,920.40	0.00
tblLandUse	LandUseSquareFeet	3,484.80	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
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tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblSolidWaste	SolidWasteGenerationRate	10.74	0.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	27.00	28.00
tblTripsAndVMT	HaulingTripNumber	38.00	60.00
tblTripsAndVMT	HaulingTripNumber	844.00	1,350.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	1.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00

tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	5.00
tblTripsAndVMT	WorkerTripNumber	3.00	38.00
tblTripsAndVMT	WorkerTripNumber	1.00	11.00
tblVehicleTrips	WD_TR	13.78	0.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	170,329.50	0.00
tblWater	OutdoorWaterUseRate	437,990.13	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.1572	1.3103	1.0796	1.5800e-003	0.1196	0.0740	0.1936	0.0571	0.0701	0.1272	0.0000	138.3921	138.3921	0.0235	0.0000	138.8859
2017	0.1638	1.2274	0.9298	1.7100e-003	0.0338	0.0681	0.1019	9.0400e-003	0.0649	0.0739	0.0000	144.8415	144.8415	0.0250	0.0000	145.3664
Total	**0.3209**	**2.5376**	**2.0094**	**3.2900e-003**	**0.1534**	**0.1420**	**0.2954**	**0.0662**	**0.1350**	**0.2011**	**0.0000**	**283.2336**	**283.2336**	**0.0485**	**0.0000**	**284.2523**

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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					
2016	0.1572	1.3103	1.0796	1.5800e-003	0.0640	0.0740	0.1380	0.0279	0.0701	0.0980	0.0000	138.3920	138.3920	0.0235	0.0000	138.8858
2017	0.1638	1.2274	0.9298	1.7100e-003	0.0312	0.0681	0.0993	8.4000e-003	0.0649	0.0733	0.0000	144.8413	144.8413	0.0250	0.0000	145.3663
Total	**0.3209**	**2.5376**	**2.0094**	**3.2900e-003**	**0.0952**	**0.1420**	**0.2372**	**0.0363**	**0.1350**	**0.1713**	**0.0000**	**283.2333**	**283.2333**	**0.0485**	**0.0000**	**284.2521**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**37.93**	**0.00**	**19.70**	**45.11**	**0.00**	**14.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0308	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.2000e-004
Energy	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	21.8036	21.8036	8.6000e-004	2.6000e-004	21.9008
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0314**	**5.0200e-003**	**4.3300e-003**	**3.0000e-005**	**0.0000**	**3.8000e-004**	**3.8000e-004**	**0.0000**	**3.8000e-004**	**3.8000e-004**	**0.0000**	**21.8038**	**21.8038**	**8.6000e-004**	**2.6000e-004**	**21.9010**

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Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0308	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.2000e-004
Energy	4.0000e-004	3.6400e-003	3.0600e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	18.6607	18.6607	7.5000e-004	2.1000e-004	18.7423
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0312**	**3.6400e-003**	**3.1700e-003**	**2.0000e-005**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**18.6609**	**18.6609**	**7.5000e-004**	**2.1000e-004**	**18.7425**

	ROG	NOx	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	**0.48**	**27.49**	**26.79**	**33.33**	**0.00**	**26.32**	**26.32**	**0.00**	**26.32**	**26.32**	**0.00**	**14.41**	**14.41**	**12.79**	**19.23**	**14.42**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Asphalt/PCC Demolition	Demolition	6/1/2016	6/14/2016	5	10	
2	Asphalt Demo Debris Haul	Demolition	6/1/2016	6/2/2016	5	2	
3	Haul 1 - Site Preparation	Site Preparation	7/1/2016	7/21/2016	5	15	
4	Site Preparation + Rough Grading	Grading	7/1/2016	8/11/2016	5	30	
5	Haul 2 - Rough Grading	Grading	7/22/2016	8/11/2016	5	15	
6	Utility Trenching	Trenching	8/12/2016	9/1/2016	5	15	
7	Fine Grading	Grading	9/2/2016	9/12/2016	5	7	
8	Building Construction	Building Construction	9/13/2016	7/3/2017	5	210	
9	Architectural Coating	Architectural Coating	7/4/2017	8/16/2017	5	32	
10	Asphalt Paving	Paving	7/15/2017	7/31/2017	5	11	
11	Finishing/Landscaping	Paving	8/17/2017	9/19/2017	5	24	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 11,151; Non-Residential Outdoor: 826 (Architectural Coating – sqft)

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OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Asphalt/PCC Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Asphalt/PCC Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Asphalt/PCC Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Asphalt Demo Debris Haul	Concrete/Industrial Saws	0	8.00	81	0.73
Asphalt Demo Debris Haul	Rubber Tired Dozers	0	1.00	255	0.40
Asphalt Demo Debris Haul	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Haul 1 - Site Preparation	Graders	0	8.00	174	0.41
Haul 1 - Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Site Preparation + Rough Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation + Rough Grading	Graders	0		174	0.41
Site Preparation + Rough Grading	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation + Rough Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Haul 2 - Rough Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Haul 2 - Rough Grading	Rubber Tired Dozers	0	1.00	255	0.40
Haul 2 - Rough Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Utility Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Fine Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Fine Grading	Rubber Tired Dozers	0	1.00	255	0.40
Fine Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	0	6.00	78	0.48

Asphalt Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Asphalt Paving	Pavers	1	8.00	125	0.42
Asphalt Paving	Paving Equipment	1	8.00	130	0.36
Asphalt Paving	Rollers	1	8.00	80	0.38
Asphalt Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Finishing/Landscaping	Cement and Mortar Mixers	0	6.00	9	0.56
Finishing/Landscaping	Pavers	0	7.00	125	0.42
Finishing/Landscaping	Rollers	0	7.00	80	0.38
Finishing/Landscaping	Rubber Tired Loaders	1	8.00	199	0.36
Finishing/Landscaping	Tractors/Loaders/Backhoes	0	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
Asphalt/PCC Demolition	4	15.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demo Debris Haul	0	0.00	0.00	28.00	14.70	6.90	7.00	LD_Mix	HDT_Mix	HHDT
Haul 1 - Site Preparation	0	0.00	0.00	60.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Site Preparation + Rough Grading	4	15.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Haul 2 - Rough Grading	0	0.00	0.00	1,350.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	1	8.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	0	5.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	38.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	11.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	4	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	1	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Asphalt/PCC Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0128	0.1250	0.0954	1.1000e-004		7.4700e-003	7.4700e-003		7.0100e-003	7.0100e-003	0.0000	9.8133	9.8133	2.4100e-003	0.0000	9.8639
Total	**0.0128**	**0.1250**	**0.0954**	**1.1000e-004**		**7.4700e-003**	**7.4700e-003**		**7.0100e-003**	**7.0100e-003**	**0.0000**	**9.8133**	**9.8133**	**2.4100e-003**	**0.0000**	**9.8639**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8000e-004	1.8300e-003	2.3800e-003	0.0000	1.2000e-004	3.0000e-005	1.5000e-004	3.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.3982	0.3982	0.0000	0.0000	0.3982
Worker	3.3000e-004	4.8000e-004	4.9900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.8020	0.8020	5.0000e-005	0.0000	0.8029
Total	**5.1000e-004**	**2.3100e-003**	**7.3700e-003**	**1.0000e-005**	**9.4000e-004**	**4.0000e-005**	**9.8000e-004**	**2.5000e-004**	**4.0000e-005**	**2.9000e-004**	**0.0000**	**1.2001**	**1.2001**	**5.0000e-005**	**0.0000**	**1.2012**

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	0.0128	0.1250	0.0954	1.1000e-004		7.4700e-003	7.4700e-003		7.0100e-003	7.0100e-003	0.0000	9.8132	9.8132	2.4100e-003	0.0000	9.8638
Total	**0.0128**	**0.1250**	**0.0954**	**1.1000e-004**		**7.4700e-003**	**7.4700e-003**		**7.0100e-003**	**7.0100e-003**	**0.0000**	**9.8132**	**9.8132**	**2.4100e-003**	**0.0000**	**9.8638**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8000e-004	1.8300e-003	2.3800e-003	0.0000	1.1000e-004	3.0000e-005	1.4000e-004	3.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.3982	0.3982	0.0000	0.0000	0.3982
Worker	3.3000e-004	4.8000e-004	4.9900e-003	1.0000e-005	7.6000e-004	1.0000e-005	7.7000e-004	2.0000e-004	1.0000e-005	2.1000e-004	0.0000	0.8020	0.8020	5.0000e-005	0.0000	0.8029
Total	**5.1000e-004**	**2.3100e-003**	**7.3700e-003**	**1.0000e-005**	**8.7000e-004**	**4.0000e-005**	**9.1000e-004**	**2.3000e-004**	**4.0000e-005**	**2.7000e-004**	**0.0000**	**1.2001**	**1.2001**	**5.0000e-005**	**0.0000**	**1.2012**

3.3 Asphalt Demo Debris Haul - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9400e-003	0.0000	2.9400e-003	4.5000e-004	0.0000	4.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.9400e-003**	**0.0000**	**2.9400e-003**	**4.5000e-004**	**0.0000**	**4.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5000e-004	1.6300e-003	2.3800e-003	0.0000	8.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3487	0.3487	0.0000	0.0000	0.3487
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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.5000e-004**	**1.6300e-003**	**2.3800e-003**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**1.0000e-004**	**2.0000e-005**	**2.0000e-005**	**4.0000e-005**	**0.0000**	**0.3487**	**0.3487**	**0.0000**	**0.0000**	**0.3487**

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					1.2600e-003	0.0000	1.2600e-003	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.2600e-003**	**0.0000**	**1.2600e-003**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5000e-004	1.6300e-003	2.3800e-003	0.0000	8.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3487	0.3487	0.0000	0.0000	0.3487
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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.5000e-004**	**1.6300e-003**	**2.3800e-003**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**1.0000e-004**	**2.0000e-005**	**2.0000e-005**	**4.0000e-005**	**0.0000**	**0.3487**	**0.3487**	**0.0000**	**0.0000**	**0.3487**

3.4 Haul 1 - Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	2.9000e-004	2.6700e-003	4.8400e-003	1.0000e-005	1.3000e-004	3.0000e-005	1.6000e-004	4.0000e-005	3.0000e-005	7.0000e-005	0.0000	0.5472	0.5472	0.0000	0.0000	0.5473
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	0.0000	0.0000	0.0000	0.0000	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	**2.9000e-004**	**2.6700e-003**	**4.8400e-003**	**1.0000e-005**	**1.3000e-004**	**3.0000e-005**	**1.6000e-004**	**4.0000e-005**	**3.0000e-005**	**7.0000e-005**	**0.0000**	**0.5472**	**0.5472**	**0.0000**	**0.0000**	**0.5473**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	2.6700e-003	4.8400e-003	1.0000e-005	1.2000e-004	3.0000e-005	1.5000e-004	3.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.5472	0.5472	0.0000	0.0000	0.5473
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	0.0000	0.0000	0.0000	0.0000	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	**2.9000e-004**	**2.6700e-003**	**4.8400e-003**	**1.0000e-005**	**1.2000e-004**	**3.0000e-005**	**1.5000e-004**	**3.0000e-005**	**3.0000e-005**	**6.0000e-005**	**0.0000**	**0.5472**	**0.5472**	**0.0000**	**0.0000**	**0.5473**

3.5 Site Preparation + Rough Grading - 2016

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0385	0.3750	0.2863	3.2000e-004		0.0224	0.0224		0.0210	0.0210	0.0000	29.4398	29.4398	7.2300e-003	0.0000	29.5916
Total	**0.0385**	**0.3750**	**0.2863**	**3.2000e-004**	**0.0903**	**0.0224**	**0.1127**	**0.0497**	**0.0210**	**0.0707**	**0.0000**	**29.4398**	**29.4398**	**7.2300e-003**	**0.0000**	**29.5916**

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	5.4000e-004	5.4900e-003	7.1300e-003	1.0000e-005	3.7000e-004	8.0000e-005	4.5000e-004	1.0000e-004	8.0000e-005	1.8000e-004	0.0000	1.1945	1.1945	1.0000e-005	0.0000	1.1947
Worker	9.8000e-004	1.4400e-003	0.0150	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.5000e-004	2.0000e-005	6.8000e-004	0.0000	2.4059	2.4059	1.4000e-004	0.0000	2.4088
Total	**1.5200e-003**	**6.9300e-003**	**0.0221**	**4.0000e-005**	**2.8400e-003**	**1.0000e-004**	**2.9400e-003**	**7.5000e-004**	**1.0000e-004**	**8.6000e-004**	**0.0000**	**3.6004**	**3.6004**	**1.5000e-004**	**0.0000**	**3.6034**

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					0.0386	0.0000	0.0386	0.0212	0.0000	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0385	0.3750	0.2863	3.2000e-004		0.0224	0.0224		0.0210	0.0210	0.0000	29.4397	29.4397	7.2300e-003	0.0000	29.5915
Total	**0.0385**	**0.3750**	**0.2863**	**3.2000e-004**	**0.0386**	**0.0224**	**0.0610**	**0.0212**	**0.0210**	**0.0423**	**0.0000**	**29.4397**	**29.4397**	**7.2300e-003**	**0.0000**	**29.5915**

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	5.4000e-004	5.4900e-003	7.1300e-003	1.0000e-005	3.4000e-004	8.0000e-005	4.3000e-004	1.0000e-004	8.0000e-005	1.7000e-004	0.0000	1.1945	1.1945	1.0000e-005	0.0000	1.1947
Worker	9.8000e-004	1.4400e-003	0.0150	3.0000e-005	2.2700e-003	2.0000e-005	2.3000e-003	6.1000e-004	2.0000e-005	6.3000e-004	0.0000	2.4059	2.4059	1.4000e-004	0.0000	2.4088
Total	**1.5200e-003**	**6.9300e-003**	**0.0221**	**4.0000e-005**	**2.6100e-003**	**1.0000e-004**	**2.7300e-003**	**7.1000e-004**	**1.0000e-004**	**8.0000e-004**	**0.0000**	**3.6004**	**3.6004**	**1.5000e-004**	**0.0000**	**3.6034**

3.6 Haul 2 - Rough Grading - 2016

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					3.8000e-004	0.0000	3.8000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.8000e-004**	**0.0000**	**3.8000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.5300e-003	0.0602	0.1089	1.4000e-004	2.9000e-003	7.3000e-004	3.6300e-003	8.0000e-004	6.7000e-004	1.4700e-003	0.0000	12.3126	12.3126	1.1000e-004	0.0000	12.3149
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	0.0000	0.0000	0.0000	0.0000	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	**6.5300e-003**	**0.0602**	**0.1089**	**1.4000e-004**	**2.9000e-003**	**7.3000e-004**	**3.6300e-003**	**8.0000e-004**	**6.7000e-004**	**1.4700e-003**	**0.0000**	**12.3126**	**12.3126**	**1.1000e-004**	**0.0000**	**12.3149**

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					1.6000e-004	0.0000	1.6000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.5300e-003	0.0602	0.1089	1.4000e-004	2.7000e-003	7.3000e-004	3.4300e-003	7.5000e-004	6.7000e-004	1.4200e-003	0.0000	12.3126	12.3126	1.1000e-004	0.0000	12.3149
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	0.0000	0.0000	0.0000	0.0000	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	**6.5300e-003**	**0.0602**	**0.1089**	**1.4000e-004**	**2.7000e-003**	**7.3000e-004**	**3.4300e-003**	**7.5000e-004**	**6.7000e-004**	**1.4200e-003**	**0.0000**	**12.3126**	**12.3126**	**1.1000e-004**	**0.0000**	**12.3149**

3.7 Utility Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5500e-003	0.0244	0.0181	2.0000e-005		1.8800e-003	1.8800e-003		1.7300e-003	1.7300e-003	0.0000	2.2023	2.2023	6.6000e-004	0.0000	2.2162
Total	**2.5500e-003**	**0.0244**	**0.0181**	**2.0000e-005**		**1.8800e-003**	**1.8800e-003**		**1.7300e-003**	**1.7300e-003**	**0.0000**	**2.2023**	**2.2023**	**6.6000e-004**	**0.0000**	**2.2162**

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Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-004	2.7400e-003	3.5700e-003	1.0000e-005	1.8000e-004	4.0000e-005	2.3000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.5973	0.5973	0.0000	0.0000	0.5974
Worker	2.6000e-004	3.8000e-004	3.9900e-003	1.0000e-005	6.6000e-004	1.0000e-005	6.6000e-004	1.7000e-004	1.0000e-005	1.8000e-004	0.0000	0.6416	0.6416	4.0000e-005	0.0000	0.6423
Total	**5.3000e-004**	**3.1200e-003**	**7.5600e-003**	**2.0000e-005**	**8.4000e-004**	**5.0000e-005**	**8.9000e-004**	**2.2000e-004**	**5.0000e-005**	**2.7000e-004**	**0.0000**	**1.2388**	**1.2388**	**4.0000e-005**	**0.0000**	**1.2397**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	2.5500e-003	0.0244	0.0181	2.0000e-005		1.8800e-003	1.8800e-003		1.7300e-003	1.7300e-003	0.0000	2.2023	2.2023	6.6000e-004	0.0000	2.2162
Total	**2.5500e-003**	**0.0244**	**0.0181**	**2.0000e-005**		**1.8800e-003**	**1.8800e-003**		**1.7300e-003**	**1.7300e-003**	**0.0000**	**2.2023**	**2.2023**	**6.6000e-004**	**0.0000**	**2.2162**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-004	2.7400e-003	3.5700e-003	1.0000e-005	1.7000e-004	4.0000e-005	2.1000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.5973	0.5973	0.0000	0.0000	0.5974
Worker	2.6000e-004	3.8000e-004	3.9900e-003	1.0000e-005	6.1000e-004	1.0000e-005	6.1000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.6416	0.6416	4.0000e-005	0.0000	0.6423
Total	**5.3000e-004**	**3.1200e-003**	**7.5600e-003**	**2.0000e-005**	**7.8000e-004**	**5.0000e-005**	**8.2000e-004**	**2.1000e-004**	**5.0000e-005**	**2.6000e-004**	**0.0000**	**1.2388**	**1.2388**	**4.0000e-005**	**0.0000**	**1.2397**

3.8 Fine Grading - 2016

Unmitigated Construction On-Site

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

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3000e-004	1.2800e-003	1.6600e-003	0.0000	9.0000e-005	2.0000e-005	1.1000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.2787	0.2787	0.0000	0.0000	0.2788
Worker	8.0000e-005	1.1000e-004	1.1600e-003	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1871	0.1871	1.0000e-005	0.0000	0.1874
Total	**2.1000e-004**	**1.3900e-003**	**2.8200e-003**	**0.0000**	**2.8000e-004**	**2.0000e-005**	**3.0000e-004**	**7.0000e-005**	**2.0000e-005**	**9.0000e-005**	**0.0000**	**0.4658**	**0.4658**	**1.0000e-005**	**0.0000**	**0.4661**

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3000e-004	1.2800e-003	1.6600e-003	0.0000	8.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.2787	0.2787	0.0000	0.0000	0.2788
Worker	8.0000e-005	1.1000e-004	1.1600e-003	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1871	0.1871	1.0000e-005	0.0000	0.1874
Total	**2.1000e-004**	**1.3900e-003**	**2.8200e-003**	**0.0000**	**2.6000e-004**	**2.0000e-005**	**2.8000e-004**	**7.0000e-005**	**2.0000e-005**	**9.0000e-005**	**0.0000**	**0.4658**	**0.4658**	**1.0000e-005**	**0.0000**	**0.4661**

3.9 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0849	0.6763	0.3958	6.4000e-004		0.0407	0.0407		0.0390	0.0390	0.0000	56.4550	56.4550	0.0119	0.0000	56.7049
Total	**0.0849**	**0.6763**	**0.3958**	**6.4000e-004**		**0.0407**	**0.0407**		**0.0390**	**0.0390**	**0.0000**	**56.4550**	**56.4550**	**0.0119**	**0.0000**	**56.7049**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1300e-003	0.0217	0.0282	5.0000e-005	1.4500e-003	3.3000e-004	1.7800e-003	4.1000e-004	3.0000e-004	7.1000e-004	0.0000	4.7183	4.7183	4.0000e-005	0.0000	4.7190
Worker	6.5600e-003	9.5800e-003	0.0998	2.1000e-004	0.0165	1.6000e-004	0.0166	4.3700e-003	1.5000e-004	4.5100e-003	0.0000	16.0499	16.0499	9.1000e-004	0.0000	16.0690
Total	**8.6900e-003**	**0.0313**	**0.1280**	**2.6000e-004**	**0.0179**	**4.9000e-004**	**0.0184**	**4.7800e-003**	**4.5000e-004**	**5.2200e-003**	**0.0000**	**20.7682**	**20.7682**	**9.5000e-004**	**0.0000**	**20.7880**

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	0.0849	0.6763	0.3958	6.4000e-004		0.0407	0.0407		0.0390	0.0390	0.0000	56.4550	56.4550	0.0119	0.0000	56.7049
Total	**0.0849**	**0.6763**	**0.3958**	**6.4000e-004**		**0.0407**	**0.0407**		**0.0390**	**0.0390**	**0.0000**	**56.4550**	**56.4550**	**0.0119**	**0.0000**	**56.7049**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1300e-003	0.0217	0.0282	5.0000e-005	1.3600e-003	3.3000e-004	1.6800e-003	3.9000e-004	3.0000e-004	6.9000e-004	0.0000	4.7183	4.7183	4.0000e-005	0.0000	4.7190
Worker	6.5600e-003	9.5800e-003	0.0998	2.1000e-004	0.0152	1.6000e-004	0.0153	4.0500e-003	1.5000e-004	4.2000e-003	0.0000	16.0499	16.0499	9.1000e-004	0.0000	16.0690
Total	**8.6900e-003**	**0.0313**	**0.1280**	**2.6000e-004**	**0.0165**	**4.9000e-004**	**0.0170**	**4.4400e-003**	**4.5000e-004**	**4.8900e-003**	**0.0000**	**20.7682**	**20.7682**	**9.5000e-004**	**0.0000**	**20.7880**

3.9 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1264	1.0299	0.6348	1.0700e-003		0.0604	0.0604		0.0578	0.0578	0.0000	92.9341	92.9341	0.0190	0.0000	93.3335
Total	**0.1264**	**1.0299**	**0.6348**	**1.0700e-003**		**0.0604**	**0.0604**		**0.0578**	**0.0578**	**0.0000**	**92.9341**	**92.9341**	**0.0190**	**0.0000**	**93.3335**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	3.2200e-003	0.0328	0.0442	9.0000e-005	2.4100e-003	4.8000e-004	2.8900e-003	6.9000e-004	4.4000e-004	1.1300e-003	0.0000	7.6990	7.6990	6.0000e-005	0.0000	7.7002
Worker	9.7400e-003	0.0144	0.1495	3.5000e-004	0.0273	2.5000e-004	0.0275	7.2400e-003	2.3000e-004	7.4800e-003	0.0000	25.6170	25.6170	1.4000e-003	0.0000	25.6463
Total	**0.0130**	**0.0471**	**0.1937**	**4.4000e-004**	**0.0297**	**7.3000e-004**	**0.0304**	**7.9300e-003**	**6.7000e-004**	**8.6100e-003**	**0.0000**	**33.3160**	**33.3160**	**1.4600e-003**	**0.0000**	**33.3465**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.1264	1.0299	0.6348	1.0700e-003		0.0604	0.0604		0.0578	0.0578	0.0000	92.9340	92.9340	0.0190	0.0000	93.3334
Total	**0.1264**	**1.0299**	**0.6348**	**1.0700e-003**		**0.0604**	**0.0604**		**0.0578**	**0.0578**	**0.0000**	**92.9340**	**92.9340**	**0.0190**	**0.0000**	**93.3334**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	3.2200e-003	0.0328	0.0442	9.0000e-005	2.2500e-003	4.8000e-004	2.7300e-003	6.5000e-004	4.4000e-004	1.0900e-003	0.0000	7.6990	7.6990	6.0000e-005	0.0000	7.7002
Worker	9.7400e-003	0.0144	0.1495	3.5000e-004	0.0252	2.5000e-004	0.0254	6.7200e-003	2.3000e-004	6.9500e-003	0.0000	25.6170	25.6170	1.4000e-003	0.0000	25.6463
Total	**0.0130**	**0.0471**	**0.1937**	**4.4000e-004**	**0.0274**	**7.3000e-004**	**0.0281**	**7.3700e-003**	**6.7000e-004**	**8.0400e-003**	**0.0000**	**33.3160**	**33.3160**	**1.4600e-003**	**0.0000**	**33.3465**

3.10 Architectural Coating - 2017

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Archit. Coating	9.8100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8100e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6000e-004	2.6700e-003	3.6000e-003	1.0000e-005	2.0000e-004	4.0000e-005	2.4000e-004	6.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6269	0.6269	0.0000	0.0000	0.6270
Worker	6.9000e-004	1.0200e-003	0.0106	2.0000e-005	1.9300e-003	2.0000e-005	1.9500e-003	5.1000e-004	2.0000e-005	5.3000e-004	0.0000	1.8114	1.8114	1.0000e-004	0.0000	1.8135
Total	**9.5000e-004**	**3.6900e-003**	**0.0142**	**3.0000e-005**	**2.1300e-003**	**6.0000e-005**	**2.1900e-003**	**5.7000e-004**	**6.0000e-005**	**6.2000e-004**	**0.0000**	**2.4383**	**2.4383**	**1.0000e-004**	**0.0000**	**2.4405**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Archit. Coating	9.8100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8100e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6000e-004	2.6700e-003	3.6000e-003	1.0000e-005	1.8000e-004	4.0000e-005	2.2000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6269	0.6269	0.0000	0.0000	0.6270
Worker	6.9000e-004	1.0200e-003	0.0106	2.0000e-005	1.7800e-003	2.0000e-005	1.8000e-003	4.8000e-004	2.0000e-005	4.9000e-004	0.0000	1.8114	1.8114	1.0000e-004	0.0000	1.8135
Total	**9.5000e-004**	**3.6900e-003**	**0.0142**	**3.0000e-005**	**1.9600e-003**	**6.0000e-005**	**2.0200e-003**	**5.3000e-004**	**6.0000e-005**	**5.8000e-004**	**0.0000**	**2.4383**	**2.4383**	**1.0000e-004**	**0.0000**	**2.4405**

3.11 Asphalt Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.9900e-003	0.0726	0.0537	8.0000e-005		4.3900e-003	4.3900e-003		4.0400e-003	4.0400e-003	0.0000	7.2787	7.2787	2.2300e-003	0.0000	7.3255
Paving	1.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1100e-003**	**0.0726**	**0.0537**	**8.0000e-005**		**4.3900e-003**	**4.3900e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**7.2787**	**7.2787**	**2.2300e-003**	**0.0000**	**7.3255**

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	ROG	NOx	CO	SO2	Fugitive 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	9.0000e-005	9.2000e-004	1.2400e-003	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2155	0.2155	0.0000	0.0000	0.2155
Worker	3.2000e-004	4.8000e-004	4.9600e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8491	0.8491	5.0000e-005	0.0000	0.8501
Total	**4.1000e-004**	**1.4000e-003**	**6.2000e-003**	**1.0000e-005**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**2.6000e-004**	**2.0000e-005**	**2.8000e-004**	**0.0000**	**1.0646**	**1.0646**	**5.0000e-005**	**0.0000**	**1.0656**

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	6.9900e-003	0.0726	0.0537	8.0000e-005		4.3900e-003	4.3900e-003		4.0400e-003	4.0400e-003	0.0000	7.2787	7.2787	2.2300e-003	0.0000	7.3255
Paving	1.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1100e-003**	**0.0726**	**0.0537**	**8.0000e-005**		**4.3900e-003**	**4.3900e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**7.2787**	**7.2787**	**2.2300e-003**	**0.0000**	**7.3255**

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	9.0000e-005	9.2000e-004	1.2400e-003	0.0000	6.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2155	0.2155	0.0000	0.0000	0.2155
Worker	3.2000e-004	4.8000e-004	4.9600e-003	1.0000e-005	8.3000e-004	1.0000e-005	8.4000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.8491	0.8491	5.0000e-005	0.0000	0.8501
Total	**4.1000e-004**	**1.4000e-003**	**6.2000e-003**	**1.0000e-005**	**8.9000e-004**	**2.0000e-005**	**9.2000e-004**	**2.4000e-004**	**2.0000e-005**	**2.6000e-004**	**0.0000**	**1.0646**	**1.0646**	**5.0000e-005**	**0.0000**	**1.0656**

3.12 Finishing/Landscaping - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.6500e-003	0.0721	0.0215	7.0000e-005		2.4600e-003	2.4600e-003		2.2600e-003	2.2600e-003	0.0000	6.8217	6.8217	2.0900e-003	0.0000	6.8656
Paving	1.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.7700e-003**	**0.0721**	**0.0215**	**7.0000e-005**		**2.4600e-003**	**2.4600e-003**		**2.2600e-003**	**2.2600e-003**	**0.0000**	**6.8217**	**6.8217**	**2.0900e-003**	**0.0000**	**6.8656**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	5.5000e-004	5.7700e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0600e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9880	0.9880	5.0000e-005	0.0000	0.9892
Total	**3.8000e-004**	**5.5000e-004**	**5.7700e-003**	**1.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0600e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9880**	**0.9880**	**5.0000e-005**	**0.0000**	**0.9892**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.6500e-003	0.0721	0.0215	7.0000e-005		2.4600e-003	2.4600e-003		2.2600e-003	2.2600e-003	0.0000	6.8217	6.8217	2.0900e-003	0.0000	6.8656
Paving	1.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.7700e-003**	**0.0721**	**0.0215**	**7.0000e-005**		**2.4600e-003**	**2.4600e-003**		**2.2600e-003**	**2.2600e-003**	**0.0000**	**6.8217**	**6.8217**	**2.0900e-003**	**0.0000**	**6.8656**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	5.5000e-004	5.7700e-003	1.0000e-005	9.7000e-004	1.0000e-005	9.8000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9880	0.9880	5.0000e-005	0.0000	0.9892
Total	**3.8000e-004**	**5.5000e-004**	**5.7700e-003**	**1.0000e-005**	**9.7000e-004**	**1.0000e-005**	**9.8000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.9880**	**0.9880**	**5.0000e-005**	**0.0000**	**0.9892**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior High School	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior High School	16.60	8.40	6.90	72.80	22.20	5.00	63	25	12
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.532559	0.058242	0.178229	0.125155	0.038934	0.006273	0.016761	0.032323	0.002478	0.003154	0.003685	0.000544	0.001663

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive 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	14.6954	14.6954	6.8000e-004	1.4000e-004	14.7529
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	16.3334	16.3334	7.5000e-004	1.6000e-004	16.3974
NaturalGas Mitigated	4.0000e-004	3.6400e-003	3.0600e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	3.9653	3.9653	8.0000e-005	7.0000e-005	3.9894
NaturalGas Unmitigated	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4701	5.4701	1.0000e-004	1.0000e-004	5.5034

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Junior High School	102507	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4701	5.4701	1.0000e-004	1.0000e-004	5.5034
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**5.5000e-004**	**5.0200e-003**	**4.2200e-003**	**3.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**5.4701**	**5.4701**	**1.0000e-004**	**1.0000e-004**	**5.5034**

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	74307	4.0000e-004	3.6400e-003	3.0600e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	3.9653	3.9653	8.0000e-005	7.0000e-005	3.9894
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.0000e-004**	**3.6400e-003**	**3.0600e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**3.9653**	**3.9653**	**8.0000e-005**	**7.0000e-005**	**3.9894**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior High School	57076.6	16.3334	7.5000e-004	1.6000e-004	16.3974
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**16.3334**	**7.5000e-004**	**1.6000e-004**	**16.3974**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior High School	51352.4	14.6954	6.8000e-004	1.4000e-004	14.7529
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**14.6954**	**6.8000e-004**	**1.4000e-004**	**14.7529**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0308	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.2000e-004
Unmitigated	0.0308	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.2000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0299					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.2000e-004
Total	**0.0308**	**0.0000**	**1.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.1000e-004**	**2.1000e-004**	**0.0000**	**0.0000**	**2.2000e-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	9.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0299					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-004	2.1000e-004	0.0000	0.0000	2.2000e-004
Total	**0.0308**	**0.0000**	**1.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.1000e-004**	**2.1000e-004**	**0.0000**	**0.0000**	**2.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior High School	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior High School	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior High School	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior High School	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

CalEEMod Version: CalEEMod.2013.2.2

Date: 2/26/2016 11:25 AM

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Demo Debris Haul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt/PCC Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Finishing/Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Haul 1 - Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Haul 2 - Rough Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation + Rough Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Utility Trenching	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Mitigation Report

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	0	No Change	0.00
Cement and Mortar Mixers	Diesel	No Change	0	0	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	2	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Forklifts	Diesel	No Change	0	1	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	0	No Change	0.00
Pavers	Diesel	No Change	0	1	No Change	0.00
Paving Equipment	Diesel	No Change	0	1	No Change	0.00
Rollers	Diesel	No Change	0	1	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Loaders	Diesel	No Change	0	1	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	6	No Change	0.00
Welders	Diesel	No Change	0	1	No Change	0.00

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Mitigation Report

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	1.29300E-002	9.24400E-002	7.55000E-002	1.30000E-004	6.95000E-003	6.95000E-003	0.00000E+000	1.07532E+001	1.07532E+001	1.04000E-003	0.00000E+000	1.07750E+001
Cranes	7.08800E-002	8.40890E-001	2.98440E-001	5.90000E-004	3.77600E-002	3.47400E-002	0.00000E+000	5.53069E+001	5.53069E+001	1.68500E-002	0.00000E+000	5.56606E+001
Forklifts	2.27800E-002	1.96780E-001	1.31700E-001	1.60000E-004	1.63200E-002	1.50200E-002	0.00000E+000	1.49724E+001	1.49724E+001	4.56000E-003	0.00000E+000	1.50681E+001
Generator Sets	6.25900E-002	4.83380E-001	3.97390E-001	6.90000E-004	3.30600E-002	3.30600E-002	0.00000E+000	5.93468E+001	5.93468E+001	5.04000E-003	0.00000E+000	5.94526E+001
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Pavers	1.98000E-003	2.21700E-002	1.56000E-002	2.00000E-005	1.09000E-003	1.00000E-003	0.00000E+000	2.30523E+000	2.30523E+000	7.10000E-004	0.00000E+000	2.32006E+000
Paving Equipment	1.55000E-003	1.76900E-002	1.39500E-002	2.00000E-005	8.80000E-004	8.10000E-004	0.00000E+000	2.04745E+000	2.04745E+000	6.30000E-004	0.00000E+000	2.06063E+000
Rollers	1.71000E-003	1.59600E-002	1.09500E-002	1.00000E-005	1.16000E-003	1.06000E-003	0.00000E+000	1.33801E+000	1.33801E+000	4.10000E-004	0.00000E+000	1.34662E+000
Rubber Tired Dozers	2.47700E-002	2.77410E-001	2.09700E-001	1.80000E-004	1.29100E-002	1.18800E-002	0.00000E+000	1.67545E+001	1.67545E+001	5.05000E-003	0.00000E+000	1.68606E+001
Rubber Tired Loaders	5.65000E-003	7.20900E-002	2.14900E-002	7.00000E-005	2.46000E-003	2.26000E-003	0.00000E+000	6.82173E+000	6.82173E+000	2.09000E-003	0.00000E+000	6.86562E+000
Tractors/Loaders/Backhoes	1.79200E-002	1.71360E-001	1.27770E-001	1.60000E-004	1.31600E-002	1.21100E-002	0.00000E+000	1.55357E+001	1.55357E+001	4.69000E-003	0.00000E+000	1.56342E+001
Welders	5.50200E-002	1.85200E-001	2.03080E-001	2.70000E-004	1.39800E-002	1.39800E-002	0.00000E+000	1.97632E+001	1.97632E+001	4.47000E-003	0.00000E+000	1.98571E+001

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Mitigation Report

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	1.29300E-002	9.24400E-002	7.55000E-002	1.30000E-004	6.95000E-003	6.95000E-003	0.00000E+000	1.07531E+001	1.07531E+001	1.04000E-003	0.00000E+000	1.07750E+001
Cranes	7.08800E-002	8.40890E-001	2.98440E-001	5.90000E-004	3.77600E-002	3.47400E-002	0.00000E+000	5.53068E+001	5.53068E+001	1.68500E-002	0.00000E+000	5.56605E+001
Forklifts	2.27800E-002	1.96780E-001	1.31700E-001	1.60000E-004	1.63200E-002	1.50200E-002	0.00000E+000	1.49723E+001	1.49723E+001	4.56000E-003	0.00000E+000	1.50681E+001
Generator Sets	6.25900E-002	4.83380E-001	3.97390E-001	6.90000E-004	3.30600E-002	3.30600E-002	0.00000E+000	5.93467E+001	5.93467E+001	5.04000E-003	0.00000E+000	5.94525E+001
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Pavers	1.98000E-003	2.21700E-002	1.56000E-002	2.00000E-005	1.09000E-003	1.00000E-003	0.00000E+000	2.30522E+000	2.30522E+000	7.10000E-004	0.00000E+000	2.32006E+000
Paving Equipment	1.55000E-003	1.76900E-002	1.39500E-002	2.00000E-005	8.80000E-004	8.10000E-004	0.00000E+000	2.04745E+000	2.04745E+000	6.30000E-004	0.00000E+000	2.06063E+000
Rollers	1.71000E-003	1.59600E-002	1.09500E-002	1.00000E-005	1.16000E-003	1.06000E-003	0.00000E+000	1.33801E+000	1.33801E+000	4.10000E-004	0.00000E+000	1.34662E+000
Rubber Tired Dozers	2.47600E-002	2.77410E-001	2.09700E-001	1.80000E-004	1.29100E-002	1.18800E-002	0.00000E+000	1.67545E+001	1.67545E+001	5.05000E-003	0.00000E+000	1.68606E+001
Rubber Tired Loaders	5.65000E-003	7.20900E-002	2.14900E-002	7.00000E-005	2.46000E-003	2.26000E-003	0.00000E+000	6.82172E+000	6.82172E+000	2.09000E-003	0.00000E+000	6.86562E+000
Tractors/Loaders/Backhoes	1.79200E-002	1.71360E-001	1.27770E-001	1.60000E-004	1.31600E-002	1.21100E-002	0.00000E+000	1.55356E+001	1.55356E+001	4.69000E-003	0.00000E+000	1.56342E+001
Welders	5.50200E-002	1.85200E-001	2.03080E-001	2.70000E-004	1.39800E-002	1.39800E-002	0.00000E+000	1.97631E+001	1.97631E+001	4.47000E-003	0.00000E+000	1.98571E+001

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Mitigation Report

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.85992E-006	1.85992E-006	0.00000E+000	0.00000E+000	9.28074E-007
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.26567E-006	1.26567E-006	0.00000E+000	0.00000E+000	1.25762E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.33579E-006	1.33579E-006	0.00000E+000	0.00000E+000	1.32730E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.17741E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	4.33796E-006	4.33796E-006	0.00000E+000	0.00000E+000	0.00000E+000
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rubber Tired Dozers	4.03714E-004	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19371E-006	1.19371E-006	0.00000E+000	0.00000E+000	1.18620E-006
Rubber Tired Loaders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.46590E-006	1.46590E-006	0.00000E+000	0.00000E+000	0.00000E+000
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	6.43681E-007	6.43681E-007	0.00000E+000	0.00000E+000	1.27925E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.51798E-006	1.51798E-006	0.00000E+000	0.00000E+000	1.00720E-006

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Mitigation Report

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Replace Ground Cover of Area Disturbed	PM10 Reduction	5.00	PM2.5 Reduction	5.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	15.00		
Yes	Clean Paved Road	% PM Reduction	9.00				

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Los Angeles-South Coast County, Mitigation Report

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.08	0.07
Asphalt Demo Debris Haul	Fugitive Dust	0.00	0.00	0.00	0.00	0.57	0.58
Asphalt Demo Debris Haul	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Paving	Roads	0.00	0.00	0.00	0.00	0.08	0.08
Asphalt/PCC Demolition	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt/PCC Demolition	Roads	0.00	0.00	0.00	0.00	0.07	0.08
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.05	0.01	0.04	0.01	0.08	0.07
Fine Grading	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading	Roads	0.00	0.00	0.00	0.00	0.07	0.00
Finishing/Landscaping	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Finishing/Landscaping	Roads	0.00	0.00	0.00	0.00	0.08	0.07
Haul 1 - Site Preparation	Fugitive Dust	0.00	0.00	0.00	0.00	0.50	0.00
Haul 1 - Site Preparation	Roads	0.00	0.00	0.00	0.00	0.08	0.25
Haul 2 - Rough Grading	Fugitive Dust	0.00	0.00	0.00	0.00	0.58	0.67
Haul 2 - Rough Grading	Roads	0.00	0.00	0.00	0.00	0.07	0.06
Site Preparation + Rough Grading	Fugitive Dust	0.09	0.05	0.04	0.02	0.57	0.57
Site Preparation + Rough Grading	Roads	0.00	0.00	0.00	0.00	0.08	0.05
Utility Trenching	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00

Utility Trenching	Roads	0.00	0.00	0.00	0.00	0.07	0.05

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.03	10.03	9.33	12.50	10.03
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	27.27	27.49	27.49	33.33	26.32	26.32	0.00	27.51	27.51	20.00	30.00	27.51
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Mitigation Report

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value 3
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			
No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Mitigation Report

	Transit Improvements	Transit Improvements Subtotal	0.00				
		Land Use and Site Enhancement Subtotal	0.00				
No	Commute	Implement Trip Reduction Program					
No	Commute	Transit Subsidy					
No	Commute	Implement Employee Parking "Cash Out"					
No	Commute	Workplace Parking Charge					
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00				
No	Commute	Market Commute Trip Reduction Option	0.00				
No	Commute	Employee Vanpool/Shuttle	0.00		2.00		
No	Commute	Provide Ride Sharing Program					
	Commute	Commute Subtotal	0.00				
No	School Trip	Implement School Bus Program	0.00				
		Total VMT Reduction	0.00				

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Mitigation Report

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	50.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Mitigation Report

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	30.00	
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Richardson Middle School Gymnasium

Los Angeles-South Coast County, Mitigation Report

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Construction Localized Significance Thresholds: Asphalt/PCC Demolition

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)
3	1.50	25	82

Source Receptor	Southwest Coastal LA County
Distance (meters)	25
NOx	**111**
CO	**815**
PM10	**6.50**
PM2.5	**4.00**

Equipment	Acres/8-hr Day	Acres/Hr	Equipment Used	Number of Hrs	Acres
Tractors	0.5	0.0625	2	8	1
Graders	0.5	0.0625			0
Dozers	0.5	0.0625	1	8	0.5
Scrapers	1	0.125			0
				Acres	1.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	2	131	128	139	165	233
		111	111	123	152	226
CO	1	664	785	1156	2228	7269
	2	967	1158	1597	2783	7950
		816	972	1377	2506	7610
PM10	1	5	14	28	56	140
	2	8	23	37	65	148
		7	19	33	61	144
PM2.5	1	3	5	9	21	75
	2	5	7	12	25	81
		4	6	11	23	78

Southwest Coastal LA County

1.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	111	111	123	152	226
CO	816	972	1377	2506	7610
PM10	7	19	33	61	144
PM2.5	4	6	11	23	78

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Site Preparation & Rough Grading

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)
3	1.50	25	82

Source Receptor	Southwest Coastal LA County	Equipment	Acres/8-hr Day	Acres/Hr	Equipment Used	Number of Hrs	Acres
Distance (meters)	25	Tractors	0.5	0.0625	2	8	1
NOx	**111**	Graders	0.5	0.0625			0
CO	**815**	Dozers	0.5	0.0625	1	8	0.5
PM10	**6.50**	Scrapers	1	0.125			0
PM2.5	**4.00**					**Acres**	1.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	2	131	128	139	165	233
		111	111	123	152	226
CO	1	664	785	1156	2228	7269
	2	967	1158	1597	2783	7950
		816	972	1377	2506	7610
PM10	1	5	14	28	56	140
	2	8	23	37	65	148
		7	19	33	61	144
PM2.5	1	3	5	9	21	75
	2	5	7	12	25	81
		4	6	11	23	78

Southwest Coastal LA County
1.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	111	111	123	152	226
CO	816	972	1377	2506	7610
PM10	7	19	33	61	144
PM2.5	4	6	11	23	78

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Utility Trenching

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)
3	0.50	25	82

Source Receptor	**Southwest Coastal LA County**	**Equipment**	**Acres/8-hr Day**	**Acres/Hr**	**Equipment Used**	**Number of Hrs**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	1	8	0.5
NOx	**91**	Graders	0.5	0.0625			0
CO	**664**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**3.00**					**Acres**	0.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	1	91	93	107	139	218
		91	93	107	139	218
CO	1	664	785	1156	2228	7269
	1	664	785	1156	2228	7269
		664	785	1156	2228	7269
PM10	1	5	14	28	56	140
	1	5	14	28	56	140
		5	14	28	56	140
PM2.5	1	3	5	9	21	75
	1	3	5	9	21	75
		3	5	9	21	75

Southwest Coastal LA County

0.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	107	139	218
CO	664	785	1156	2228	7269
PM10	5	14	28	56	140
PM2.5	3	5	9	21	75

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Fine Grading

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)
3	0.00	25	82

Source Receptor	Southwest Coastal LA County	Equipment	Acres/8-hr Day	Acres/Hr	Equipment Used	Number of Hrs	Acres
Distance (meters)	25	Tractors	0.5	0.0625			0
NOx	**91**	Graders	0.5	0.0625			0
CO	**664**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**3.00**					**Acres**	0.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	1	91	93	107	139	218
		91	93	107	139	218
CO	1	664	785	1156	2228	7269
	1	664	785	1156	2228	7269
		664	785	1156	2228	7269
PM10	1	5	14	28	56	140
	1	5	14	28	56	140
		5	14	28	56	140
PM2.5	1	3	5	9	21	75
	1	3	5	9	21	75
		3	5	9	21	75

Southwest Coastal LA County

0.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	107	139	218
CO	664	785	1156	2228	7269
PM10	5	14	28	56	140
PM2.5	3	5	9	21	75

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Building Construction

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)
3	0.00	25	82

Source Receptor	Southwest Coastal LA County	Equipment	Acres/8-hr Day	Acres/Hr	Equipment Used	Number of Hrs	Acres
Distance (meters)	25	Tractors	0.5	0.0625			0
NOx	**91**	Graders	0.5	0.0625			0
CO	**664**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**3.00**					**Acres**	0.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	1	91	93	107	139	218
		91	93	107	139	218
CO	1	664	785	1156	2228	7269
	1	664	785	1156	2228	7269
		664	785	1156	2228	7269
PM10	1	5	14	28	56	140
	1	5	14	28	56	140
		5	14	28	56	140
PM2.5	1	3	5	9	21	75
	1	3	5	9	21	75
		3	5	9	21	75

Southwest Coastal LA County

0.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	107	139	218
CO	664	785	1156	2228	7269
PM10	5	14	28	56	140
PM2.5	3	5	9	21	75

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Architectural Coating

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)
3	0.00	25	82

Source Receptor	Southwest Coastal LA County	Equipment	Acres/8-hr Day	Acres/Hr	Equipment Used	Number of Hrs	Acres
Distance (meters)	25	Tractors	0.5	0.0625			0
NOx	**91**	Graders	0.5	0.0625			0
CO	**664**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**3.00**					**Acres**	0.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	1	91	93	107	139	218
		91	93	107	139	218
CO	1	664	785	1156	2228	7269
	1	664	785	1156	2228	7269
		664	785	1156	2228	7269
PM10	1	5	14	28	56	140
	1	5	14	28	56	140
		5	14	28	56	140
PM2.5	1	3	5	9	21	75
	1	3	5	9	21	75
		3	5	9	21	75

Southwest Coastal LA County

0.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	107	139	218
CO	664	785	1156	2228	7269
PM10	5	14	28	56	140
PM2.5	3	5	9	21	75

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Architectural Coating + Asphalt Paving

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)
3	0.50	25	82

Source Receptor	**Southwest Coastal LA County**	**Equipment**	**Acres/8-hr Day**	**Acres/Hr**	**Equipment Used**	**Number of Hrs**	**Acres**
Distance (meters)	25	Tractors	0.5	0.0625	1	8	0.5
NOx	**91**	Graders	0.5	0.0625			0
CO	**664**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**3.00**					**Acres**	0.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	91	93	107	139	218
	1	91	93	107	139	218
		91	93	107	139	218
CO	1	664	785	1156	2228	7269
	1	664	785	1156	2228	7269
		664	785	1156	2228	7269
PM10	1	5	14	28	56	140
	1	5	14	28	56	140
		5	14	28	56	140
PM2.5	1	3	5	9	21	75
	1	3	5	9	21	75
		3	5	9	21	75

Southwest Coastal LA County

0.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	107	139	218
CO	664	785	1156	2228	7269
PM10	5	14	28	56	140
PM2.5	3	5	9	21	75

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Finishing/Landscaping

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)
3	0.50	25	82

Source Receptor	Southwest Coastal LA County	Equipment	Acres/8-hr Day	Acres/Hr	Equipment Used	Number of Hrs	Acres
Distance (meters)	25	Tractors	0.5	0.0625	1	8	0.5
NOx	**91**	Graders	0.5	0.0625			0
CO	**664**	Dozers	0.5	0.0625			0
PM10	**5.00**	Scrapers	1	0.125			0
PM2.5	**3.00**					**Acres**	0.50

	Acres	25	50	100	200	500
NOx	1	91	93	107	139	218
	1	91	93	107	139	218
		91	93	107	139	218
CO	1	664	785	1156	2228	7269
	1	664	785	1156	2228	7269
		664	785	1156	2228	7269
PM10	1	5	14	28	56	140
	1	5	14	28	56	140
		5	14	28	56	140
PM2.5	1	3	5	9	21	75
	1	3	5	9	21	75
		3	5	9	21	75

Southwest Coastal LA County

0.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	91	93	107	139	218
CO	664	785	1156	2228	7269
PM10	5	14	28	56	140
PM2.5	3	5	9	21	75

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	1	3	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Operation Localized Significance Thresholds

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)
3	5.00	25	82

Source Receptor	**Southwest Coastal LA County**
Distance (meters)	25
NOx	**197**
CO	**1,769**
PM10	**4.00**
PM2.5	**2.00**

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	5	197	189	202	222	277
	5	197	189	202	222	277
		197	189	202	222	277
CO	5	1769	1984	2608	4119	9852
	5	1769	1984	2608	4119	9852
		1769	1984	2608	4119	9852
PM10	5	4	12	15	21	41
	5	4	12	15	21	41
		4	12	15	21	41
PM2.5	5	2	3	5	9	24
	5	2	3	5	9	24
		2	3	5	9	24

Southwest Coastal LA County

5.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	197	189	202	222	277
CO	1769	1984	2608	4119	9852
PM10	4	12	15	21	41
PM2.5	2	3	5	9	24

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
3	5	3	5
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2010 - Table C-1. 2006 – 2008

TORRANCE AP, CALIFORNIA (048973)

Period of Record Monthly Climate Summary

Period of Record : 01/01/1932 to 01/19/2015

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	65.9	66.5	67.4	69.6	71.6	73.8	77.6	78.6	78.0	75.4	71.5	66.9	71.9
Average Min. Temperature (F)	44.3	45.8	47.4	49.9	53.5	56.7	60.2	61.1	59.5	55.4	48.9	45.0	52.3
Average Total Precipitation (in.)	3.04	3.23	2.03	0.84	0.18	0.06	0.02	0.06	0.22	0.42	1.31	2.15	13.55
Average Total SnowFall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.
Max. Temp.: 98.5% Min. Temp.: 98.4% Precipitation: 99.2% Snowfall: 99.4% Snow Depth: 99.4%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu