

**INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
Jordan High School New Gymnasium & Aquatic
Center Project
LONG BEACH, CALIFORNIA**

Prepared for:

LONG BEACH UNIFIED SCHOOL DISTRICT
Facilities Development and Planning Branch
2425 Webster Avenue
Long Beach, CA 90810



Prepared by:



CHAMBERS GROUP, INC.
3151 Airway Avenue Suite F208
Costa Mesa, California 92626

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TABLE OF CONTENTS

	<u>Page</u>
SECTION 1.0 – PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING	1
1.1 PROJECT PURPOSE.....	1
1.2 PROJECT BACKGROUND.....	1
1.3 PROJECT LOCATION AND SITE CHARACTERISTICS	1
1.3.1 Location.....	1
1.3.2 General Plan Designation/Zoning	1
1.3.3 Surrounding Land Uses and Project Setting.....	1
1.3.4 Existing Conditions.....	2
1.4 PROJECT GOALS AND OBJECTIVES.....	2
1.5 PROJECT DESCRIPTION	2
1.5.1 Event Schedule.....	5
1.6 CONSTRUCTION SCHEDULE	6
1.6.1 Demolition, Excavation, and Earthwork	6
1.6.2 Staging Areas.....	7
1.7 REQUIRED PERMITS AND APPROVALS.....	7
1.7.1 Responsible Agencies.....	7
1.7.2 Reviewing Agencies.....	7
1.7.3 Permits and Approvals	7
SECTION 2.0 – ENVIRONMENTAL DETERMINATION	9
2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:	9
2.2 DETERMINATION	9
SECTION 3.0 – EVALUATION OF ENVIRONMENTAL IMPACTS.....	10
SECTION 4.0 – CHECKLIST OF ENVIRONMENTAL ISSUES	11
4.1 AESTHETICS.....	11
4.1.1 Environmental Setting	11
4.1.2 Impact Analysis	11
4.2 AGRICULTURE & FORESTRY RESOURCES	13
4.2.1 Environmental Setting	14
4.2.2 Impact Analysis	15
4.3 AIR QUALITY.....	16
4.3.1 Environmental Setting	16
4.3.2 Impact Analysis	19
4.4 BIOLOGICAL RESOURCES	25
4.4.1 Environmental Setting	26
4.4.2 Impact Analysis	26
4.5 CULTURAL RESOURCES.....	28

4.5.1	Environmental Setting	28
4.5.2	Impact Analysis	29
4.6	ENERGY	32
4.6.1	Environmental Setting	32
4.6.2	Impact Analysis	32
4.7	GEOLOGY AND SOILS	36
4.7.1	Environmental Setting	37
4.7.2	Impact Analysis	37
4.8	GREENHOUSE GAS EMISSIONS	40
4.8.1	Environmental Setting	40
4.8.2	Impact Analysis	40
4.9	HAZARDS AND HAZARDOUS MATERIALS.....	42
4.9.1	Environmental Setting	43
4.9.2	Impact Analysis	43
4.10	HYDROLOGY AND WATER QUALITY.....	46
4.10.1	Impact Analysis	47
4.11	LAND USE AND PLANNING	50
4.11.1	Impact Analysis	50
4.12	MINERAL RESOURCES	51
4.12.1	Environmental Setting	51
4.12.2	Impact Analysis	51
4.13	NOISE	52
4.13.1	Environmental Setting	52
4.13.2	Impact Analysis	52
4.14	POPULATION AND HOUSING	56
4.14.1	Environmental Setting	56
	Impact Analysis.....	57
4.15	PUBLIC SERVICES.....	57
4.15.1	Environmental Setting	58
4.15.2	Impact Analysis	58
4.16	RECREATION	60
4.16.1	Environmental Setting	60
4.16.2	Impact Analysis	60
4.17	TRANSPORTATION	61
4.17.1	Impact Analysis	61
4.18	TRIBAL CULTURAL RESOURCES.....	63
4.18.1	Environmental Setting	63
4.18.2	Impact Analysis	63
4.19	UTILITIES AND SERVICE SYSTEMS	65
4.19.1	Environmental Setting	66
4.19.2	Impact Analysis	66

4.20 WILDFIRE.....	68
4.20.1 Impact Analysis	69
4.21 MANDATORY FINDINGS OF SIGNIFICANCE.....	70
4.21.1 Impact Analysis	71
SECTION 5.0 – REFERENCES	75
 Appendix A: Air Quality, Energy and Greenhouse Gas Report	
Appendix B: Cultural Resources Survey Results Letter Report	
Appendix C: Noise Report	

LIST OF TABLES

	<u>Page</u>
Table 4-1– Local Area Air Quality Monitoring Summary	17
Table 4-2– Construction-Related Criteria Pollutant Emissions	21
Table 4-3– Operational Criteria Pollutant Emissions	21
Table 4-4– Project Related Greenhouse Gas Annual Emissions	41
Table 4-5: Consistency with the City of Long Beach Climate Action Plan.....	41
Table 4-6 - Construction Noise Levels at the Nearby Sensitive Receptors	53
Table 4-7– Operational Noise Levels at the Nearby Sensitive Receptors	55

LIST OF FIGURES

	<u>Page</u>
Figure 1 - Project Vicinity Map.....	3
Figure 2 – Site Plan.....	4

SECTION 1.0 – PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

1.1 PROJECT PURPOSE

This Initial Study analyzes the proposed Jordan High School (Jordan HS) New Gymnasium & Aquatic Center Project (Proposed Project). The Proposed Project would demolish the existing gymnasium, and build a new gymnasium and a new Aquatic Center for the Jordan HS campus. Long Beach Unified School District (District) is the lead agency for the Proposed Project. This Initial Study has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code §21000 et seq.) and the State CEQA Guidelines (Title 14, California Code of Regulations [CCR], §15000 et seq.) and has determined that preparation of a subsequent Mitigated Negative Declaration would be appropriate under CEQA.

1.2 PROJECT BACKGROUND

Jordan HS accommodates students from grades 9-12. The school was built over various phases between 1935 and 1990 and is approximately 26.9 acres in size. There are 13 permanent buildings and 53 interim housing relocatable/portable buildings. The campus is undergoing modernization, started in 2014, to implement the master plan, which includes replacing aging buildings with new ones and modernizing buildings when feasible. This project would be a modification of Phase 6 of the Jordan High School Major Renovation Project (Jordan HS Renovation). The Jordan HS Renovation was analyzed in an Environmental Impact Report (EIR) in 2013 (SCH #2013071013). The EIR analysis covered renovation and remodel of the Gymnasium and Natatorium (pool) buildings. This project is the demolition of the Gymnasium and construction of an aquatic center and a new gymnasium.

1.3 PROJECT LOCATION AND SITE CHARACTERISTICS

1.3.1 Location

Jordan High School is located at 6500 Atlantic Avenue, Long Beach, CA 90805 and is situated in a primarily residential area surrounded by housing on the north and east sides and Houghton Park directly south. The school accommodates students from grades 9-12. The school was built over various phases between 1935 and 2023 and is approximately 26.9 acres in size. There are 13 permanent buildings and 53 interim housing relocatable/portable buildings. The campus is undergoing modernization which started in 2014 to implement the master plan to replace aging buildings with new ones and modernize buildings when feasible. The Proposed Project site, where the Gymnasium and Aquatics center will be located, is in the southern portion of the campus.

1.3.2 General Plan Designation/Zoning

The Project site is zoned Institutional (I) and is surrounded by Residential (R), Residential Mixed Use (RMU), Commercial (C), and Park Zone (P). In addition, the Project site has a Placetype designation of Founding and Contemporary Neighborhood (FCN), with surrounding Placetypes including Neighborhood Serving Center (NCS) and Open Space (OS).

1.3.3 Surrounding Land Uses and Project Setting

Jordan HS is situated in a primarily residential area surrounded by housing on the north and east sides and Houghton Park directly south.

1.3.4 Existing Conditions

Jordan HS was originally built in 1935, but modifications and additional buildings were added to the site in 1949, 1952, 1962, 1974, and throughout 1990s and 2000s. The Cultural Resources Assessment for Long Beach Unified School District (LBUSD) Historical Resources Assessment, prepared in 2015, found that Jordan HS is ineligible for listing in the National Register and California Register. Although the campus was designed by prominent Long Beach architect Kenneth Wing, the buildings are program-based buildings and are not connected to his important other Moderne projects.

Jordan HS currently contains a one-story gymnasium with an attached parking lot, along Atlantic Avenue. This existing gymnasium will be demolished to make room for the new Gymnasium & Aquatic Center.

1.4 PROJECT GOALS AND OBJECTIVES

The following objectives would be met with development of the Proposed Project:

- Provide a new one-story gymnasium to accommodate a competition gymnasium, a practice gymnasium, and other athletic facilities and supportive spaces such as locker rooms, offices, storages, and restrooms.
- Develop a pool for competitive uses and events at the Jordan HS Campus.
- Develop a fully functioning aquatic center with offices, lockers, restrooms, a ticket stand, and other ancillary spaces and equipment.
- Site improvements including renovated play courts, fire access lane, fire alarm upgrades, surveillance camera, bleachers, and a shade structure.

1.5 PROJECT DESCRIPTION

In 2013, LBUSD prepared and adopted the EIR for the entire Jordan HS campus in conformance with its 2008 Facility Master Plan. The 2013 EIR has been incorporated by reference, as this document is intended to tier off of the previous analysis (AECOM 2013). The renovation identified in the 2013 EIR is considered the “Original Project.” However, the scope for the Gymnasium building has been changed since the adoption of the EIR from modernization of the existing gymnasium building to demolishing the existing 62,000 square-foot building, removing the existing basketball courts, and constructing a new gymnasium and an aquatic center (Proposed Project). The new gymnasium building would be located on the south side of the existing football and track fields and covers an area of approximately 65,000 square feet., including a wrestling room, dance room, fitness room, trainer room, offices, team rooms, locker rooms, ticket booth, concessions, restrooms, showers, and other ancillary spaces such as storage areas, laundry, and custodial rooms. After construction of the new gymnasium is complete, new basketball courts will be constructed to the north of the tennis courts. The building would include a competition gymnasium, practice gymnasium, a classroom, and a weight room.

The proposed aquatic center would be located immediately on the western side of the gymnasium building and would consist of an outdoor competition swimming pool, restrooms, a team room, one pool equipment building, a one-story ticket/storage building, and sport lighting. One set of new aluminum bleachers would be located in the most western portion of the aquatic center. Other improvements at the site would include a concrete pool deck, a scoreboard, four stadium lights, concrete and asphalt hardscaped areas, low site walls and new utility lines. The entire aquatic center would have CMU perimeter walls. A layout of the Proposed Project is shown in Figure 2: Site Plan.

Figure 1 - Project Vicinity Map



1.5.1 Event Schedule

The following pool users are expected to use the High School pools in LBUSD, which would include the new Jordan Aquatic Center:

- i. High School water polo and swimming
 1. 3 levels of girls' polo and swimming
 2. 3 levels of boys' polo and swimming
- ii. P.E. Classes range in size but can be as large as 54 students and a few instructors. The lessons will be held during school hours.
- iii. Parks and Recreation - Learn to swim programs
- iv. Special Olympics
- v. Private groups - Rentals
- vi. YMCA – Summer swim programs
- vii. Special needs programs for HS students

The Aquatic Center will be in use for the most part except for a few days in a year. Below is a sample schedule based on a normal school year with athletics and physical education:

School Days - Physical Education Classes

When school is in session (Sept - June), Physical Education (PE) Classes will typically use the pool Monday through Friday between the hours of 8 a.m. - 1 p.m. While it may not be every day, PE classes will be in the pool on at least 90% of the days school is in session.

Fall (Aug - Nov) – Boys' Water Polo Season

Practices or games will occur between the hours of 1 p.m. - 8 p.m. (Monday - Friday). There will be some occasional Saturday practices and games, but the majority of the practices and games will occur during the week. Jordan HS typically has 2-3 games each week during the season. In addition, during the Boys' season, the Girls' Water Polo team also practices in preparation for the upcoming season.

Winter (Nov - Feb) – Girls' Water Polo Season

Practices or games will occur between the hours of 1 p.m. - 8 p.m. (Monday - Friday). There will be some occasional Saturday practices and games, but the majority of the practices and games will occur during the week. Jordan HS typically has 2-3 games each week during the season. In addition, during the Girls' season, the Boys' Water Polo team also practices in preparation for the upcoming season.

Spring (Feb-May) - Boys/Girls Swim Season

Practices or Swim Meets will occur between the hours of 1 p.m. - 8 p.m. (Monday - Friday). There will be some occasional Saturday practices and meets, but the majority of the practices and meets will occur during the week. Jordan HS typically has 1-2 swim meets each week during the season.

Summer (June-Aug) - Water Polo Summer Camps

During the summer months, boys' and girls' water polo will run summer camps. The practices occur typically between the hours of 7 a.m. - 2 p.m. with some occasional off-season games conducted in the evenings between the hours of 4 p.m. - 8 p.m. The majority of the practices and games occur Monday through Friday.

Permitting outside groups activities will be accommodated when they do not conflict with the needs of the school water polo and swim teams. These typically happen on Saturday or Sunday. More local youth (age 5-13) club water polo and swim teams may reach out to use the facility once it is built, since there will be no other facility like it in the City, with the exception of Cabrillo and the Belmont Pool. When the District has permitted these groups in the past for weekend use, it has typically occurred between the hours of 8 a.m. - 6 p.m.

1.6 CONSTRUCTION SCHEDULE

The Proposed Project construction is expected to begin in September 2024 and be completed in January 2027.

Construction equipment to be used during construction of the Proposed Project upgrades may include the following items:

- Loaders
- Pick-up trucks
- Backhoes
- Water Truck
- Crane
- Asphalt paver
- Bulldozers
- Fork Lifts
- Concrete trucks/mixer
- Dump trucks

1.6.1 Demolition, Excavation, and Earthwork

Construction work includes approximately 10,000 cubic yards of soil export; however, no soil import would be required.

For the Gymnasium building, construction will include over excavating 3½ feet below the existing grade. The over excavation will extend at least 5 feet outside the building footprint. Additionally, the gymnasium building's foundation will be supported on vibro-stone columns that have a diameter of 3 feet and will be spaced 8 feet apart below footings. These stone columns will be approximately 27' deep.

For the Aquatic Center's pool, pool deck, and pool buildings, construction would include over excavating approximately 8 feet below grade. At the deep end of the pool, construction will include over excavating another two feet to a total depth of 10 feet.

All other pavement areas require 2-foot-deep earth work.

1.6.2 Staging Areas

Construction trailers and staging areas will be located within the existing campus.

1.7 REQUIRED PERMITS AND APPROVALS

Reviewing Agencies include those agencies that do not have discretionary powers but may review the Mitigated Negative Declaration (MND) for adequacy and accuracy. Responsible Agencies have discretionary approval authority for a project. Potential Reviewing Agencies and Responsible Agencies include the following:

1.7.1 Responsible Agencies

State of California

- Department of Toxic Substances Control (DTSC)
- Department of Education
 - School Facilities Planning Division
- Department of General Services
 - Office of Public-School Construction
 - Division of the State Architect
- Department of Public Health (DPH)
- Division of Occupational Safety and Health (Cal/OSHA)
- Southern California Edison (SCE)
- State Water Resources Control Board

Regional Agencies

- South Coast Air Quality Management District (SCAQMD)
- Los Angeles Regional Water Quality Control Board (RWQCB)

Local Agencies

- City of Long Beach Fire Department
- Los Angeles County Sanitation
- City of Long Beach Department of Health
- City of Long Beach Water Department
- City of Long Beach

1.7.2 Reviewing Agencies

- City of Long Beach
- Native American Heritage Commission, and tribes requesting consultation

1.7.3 Permits and Approvals

The following permits may be required prior to construction of the Project.

- Division of Occupational Safety and Health (DOSH) – lead work pre-job notification
- SCAQMD – Rule 201/203 Permit to Construct/Permit to Operate or Rule 222 registration for the natural gas fire pool water heaters

- SCAQMD – Rule 1466
- SCAQMD – Rule 403 dust control
- SCAQMD – Rule 1403 asbestos demolition and removal
- California State Water Resources Control Board (SWRCB) – Construction General Permit
- LA County – Conditional Use Permit (CUP) and Building Permit
- Division of the State Architect
- Los Angeles County Department of Public Health

SECTION 2.0 – ENVIRONMENTAL DETERMINATION

2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would potentially be affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklists on the following pages. For each of the potentially affected factors, mitigation measures are recommended that would reduce the impacts to less than significant levels.

<input type="checkbox"/> Aesthetics	<input type="checkbox"/> Agriculture and Forestry Resources	<input type="checkbox"/> Air Quality
<input type="checkbox"/> Biological Resources	<input checked="" type="checkbox"/> Cultural Resources	<input type="checkbox"/> Energy
<input type="checkbox"/> Geology /Soils	<input type="checkbox"/> Greenhouse Gas Emissions	<input type="checkbox"/> Hazards & Hazardous Materials
<input type="checkbox"/> Hydrology /Water Quality	<input type="checkbox"/> Land Use / Planning	<input type="checkbox"/> Mineral Resources
<input type="checkbox"/> Noise	<input type="checkbox"/> Population / Housing	<input type="checkbox"/> Public Services
<input type="checkbox"/> Recreation	<input type="checkbox"/> Transportation	<input checked="" type="checkbox"/> Tribal Cultural Resources
<input type="checkbox"/> Utilities /Service Systems	<input type="checkbox"/> Wildfire	<input type="checkbox"/> Mandatory Findings of Significance

2.2 DETERMINATION

On the basis of this initial evaluation:

1. I find that the project **could not** have a significant effect on the environment, and a **NEGATIVE DECLARATION** (ND) will be prepared. ☐
2. 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. ☒
3. I find the proposed project **may have a significant effect** on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required. ☐
4. 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. ☐
5. 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

Date

Name

Title

SECTION 3.0 – 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. 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 will 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 substantial evidence exists that an effect may be significant. If one or more “Potentially Significant Impact” entries are marked 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 (mitigation measures from earlier analyses may be cross-referenced).
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 Analysis 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.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. 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.

**Note: Instructions may be omitted from final document.*

SECTION 4.0 – CHECKLIST OF ENVIRONMENTAL ISSUES

4.1 AESTHETICS

1.	AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c)	Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.1.1 Environmental Setting

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area. Scenic quality can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area. Aesthetic resources include scenic resources, which include water forms, trees, rock outcroppings, historic buildings, and scenic highways. Impacts to aesthetic resources include obstruction and destruction of views to or from scenic resources, and/or the degradation of the visual character of the area.

The Proposed Project would be constructed within the existing campus, with the Gymnasium and Aquatic Center located on the southern portion of the Jordan HS campus, bordered by Artesia Boulevard to the north, Orange Avenue to the east, Harding Street to the south, and Atlantic Avenue to the west. The campus is located on an approximately 26.9-acre property and contains 13 permanent buildings and 53 portable buildings. The school is in a primarily residential area surrounded by housing on the north and east sides and Houghton Park directly south.

4.1.2 Impact Analysis

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

Less than Significant Impact. Potential scenic vistas in Long Beach include views along the coastline, mountain vistas, and other scenic features of the region that are a significant visual resource for residents and commercial uses. The Project site is relatively flat and is within an area containing primarily residential and commercial uses. The Original Project included the renovation and modernization of the David Starr Jordan High School campus, including the demolition of 10 permanent buildings and 32 portable buildings, in addition to the creation of a new parking lot. The existing Gymnasium and Natatorium buildings were planned to be renovated during the Original Project. The main goals of the Original Project were to retrofit for earthquake protection and

Americans with Disabilities Act (ADA) accessibility standards, remove lead-based paint and asbestos, upgrade and expand educational technology, and build smaller high school learning communities. According to the previously completed Initial Study for the EIR (EIR 2013) for the Original Project, it was determined that the Proposed Project would not have a substantial adverse effect on a scenic vista or substantially damage scenic resources within a state scenic highway. Views from the Project site and surrounding area do not include any potential scenic vistas. Although the demolition of the existing gymnasium and natatorium building is a different project than was analyzed in the Original Project EIR, and construction of the new gymnasium and aquatics center would change views in the area, no impact would occur to any designated scenic vistas. The implementation of the Proposed Project including the new buildings and facilities would not result in any new significant impacts and would not result in a change from the previous analysis completed.

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

Less than Significant Impact. The Proposed Project is not within or adjacent to a designated state scenic highway (Caltrans 2022). In the previous EIR completed for the Original Project, it was determined that none of the scenic routes identified by the City are located near the Project site. The nearest eligible state scenic highway is State Route 1 (SR 1, Pacific Coast Highway). This eligible state scenic highway is located approximately 6 miles southwest of the Project site. No rock outcroppings exist on the site. A District-wide Historic Resource Assessment report was prepared to assist the District with compliance with historic resource requirements of CEQA. Completed in 2015, the Assessment presents the results of a comprehensive survey of the District's school facilities as part of future project planning efforts. Based on a review of available Project plans and the scope of the Proposed Project, it does not appear that the Project would result in the significant modification or destruction of the character defining features of Jordan HS as the school has been under construction five times between 1935 and 1990 and is not associated with any specific architectural style. The previous report also states that the Original Project would not result in damage to a state resource within a state scenic highway. The nearest scenic route is Lakewood Boulevard, which is located 2.3 miles to the east. The implementation of the Proposed Project the new design would not result in any new significant impacts to scenic resources within a state scenic highway and would not change from previous analysis.

- c) *Would the project Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

Less than Significant Impact. The Proposed Project site is an urbanized residential, commercial, and institutional area with no designated scenic vistas existing in the immediate vicinity. In the City of Long Beach Land Use District Maps (City 2020), the Project site is zoned as FCN. The Project land use complies with the description provided in the Land Use Element of the General Plan, "Neighborhood-serving low-intensity commercial uses" (City 2019). In the Land Use Element, the Founding and Contemporary Neighborhood Place type, it describes that all new development will respect the height, massing, and open space characteristics of the neighborhood, as well as encourage enhancements to the public realm directed at improvements to visual aesthetics. The implementation of the Proposed Project would not alter the surrounding views due to pre-existing facilities and because the site's surroundings already contain development. No new significant impacts would occur and no change from previous analysis is expected.

- 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. The Project site currently contains adjacent lighting for the existing Gymnasium parking lot and lighting from Atlantic Avenue. The Original Project EIR noted that, with the implementation of applicable lighting specifications and LBUSD standards, the Original Project would result in less than significant impacts to lighting. For the Proposed Project, four stadium lights would be installed on the pool deck to both the east and west of the proposed pool. Lights would be hooded and faced downwards and would only be utilized during nighttime. Additionally, a LED scoreboard would be installed. Events would end no later than 10:00 p.m., at the latest, per an agreement with the community, and lights and the scoreboard would be turned off after event goes leave. The Project site is in an urban environment; therefore, the Project would not create a new source of substantial light or glare that would adversely affect the area. The new features associated with the Proposed Project include some new lighting in addition to what was analyzed as part of the Original Project, however the impacts would be minimal and consistent with the City's lighting ordinance. No new significant impacts would occur, and no significant change is anticipated from the previous analysis.

4.2 AGRICULTURE & FORESTRY RESOURCES

2.	AGRICULTURE & FOREST RESOURCES. (In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. 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:	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 nonagricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d)	Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	AGRICULTURE & FOREST RESOURCES. (In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. 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:				
2.		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or the conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.2.1 Environmental Setting

Agricultural resources include prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, and commercial grazing land as defined in the Guidelines for the Farmland Mapping and Monitoring Program, pursuant to Section 65570 of the Government Code, as well as land in a Williamson Act contract.

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor and without intolerable soil erosion (7 U.S.C. 4201(c)(1)(A)).

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops such as, citrus, tree nuts, olives, cranberries, fruits, and vegetables (7 U.S.C. 4201(c)(1)(B)).

Additional farmland of statewide or local importance is land identified by state or local agencies for agricultural use but not of national significance (7 U.S.C. 4201(c)(1)(C)).

The California Legislature passed the Williamson Act in 1965 to preserve agricultural and open-space lands by discouraging premature and unnecessary conversion to urban uses. The Williamson Act creates an arrangement whereby private landowners' contract with counties and cities to voluntarily restrict their land to agricultural and compatible open space uses.

The Williamson Act is a means to restrict the uses of agricultural and open-space lands to farming and ranching uses during the length of the contract period. The Williamson Act Program was also envisioned as a way for local governments to integrate the protection of open space and agricultural resources into their overall strategies for planning urban growth patterns.

4.2.2 Impact Analysis

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

No Impact. The Project site is zoned Institutional (I) and is surrounded by Residential (R), Residential Mixed Use (RMU), Commercial (C), and Park Zone (P). The Original Project EIR noted that the Project site is located within an area designated as Urban and Built-Up Land by the California Division of Land Resource Protection Farmland Mapping and Monitoring Program. No farmland, timberland, or forest land is located within the vicinity of the Project site and no impacts were anticipated. Further, the Project site is not identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) (California Department of Conservation [DOC] 2016a); therefore, the Proposed Project and its amendments would not result in an impact associated with the conversion of farmland to non-agricultural use. No new impacts would occur, and no significant change is expected from the previous analysis.

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

No Impact. The Project site is zoned I and is surrounded by areas zoned R, RMU, C, and P. There are no areas adjacent to the Proposed Project site that are zoned for agricultural uses. The conclusion from the Original Project EIR stated that the only Los Angeles County land under a Williamson Act contract is located on Santa Catalina Island, and no significant changes to agricultural resources in the City have occurred since the Original Project EIR was written. Therefore, the Proposed Project would not conflict with existing zoning for agricultural use or a Williamson Act contract. No new impacts would occur, and no change is expected from the previous analysis.

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

No Impact. Please refer to discussion in 4.2.2 b. The City does not have any designated forest lands or timberland. Although open space is present throughout the City, with Houghton Park just to the south of the campus, these portions of the City would not be significantly impacted by the Proposed Project. The Proposed Project would not take place within the forest lands. The Project is zoned as Institutional under the zoning code. The Proposed Project would be compatible with the existing uses in the surrounding area. The Project would not result in an impact associated with forest land or timberland, and no significant change is expected from the previous analysis.

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

No Impact. Implementation of the Proposed Project would not result in any change to land use on the Project Site. The Proposed Project does not contain forest lands, or lands for forest uses. Therefore, the Proposed Project would not result in an impact associated with forest land or the conversion of forest land to non-forest use. No new impacts would occur, and no significant change is anticipated from the previous analysis.

- e) *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or the conversion of forest land to non-forest use?*

No Impact. The Proposed Project is zoned for Institutional (I) and there are no agricultural uses surrounding the site. The Project Site is not within an area identified as Prime Farmland, Unique Farmland or Farmland of Statewide Importance (DOC 2016a). The Proposed Project involves modernization and demolition of portions of the existing campus through construction and renovation. Therefore, the Proposed Project does not include activities involving conversion of agricultural or forest lands; therefore, no impact would occur, and no significant change is expected from the previous analysis.

4.3 AIR QUALITY

3.	AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c)	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d)	Result in other emissions, such as those leading to odors adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.3.1 Environmental Setting

South Coast Air Basin

The Project site is located within south coastal Los Angeles County, which is part of the South Coast Air Basin (Air Basin) that includes the non-desert portions of Riverside, San Bernardino, and Los Angeles Counties and all of Orange County. The Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter.

Monitored Local Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Air Basin. Estimates of the existing emissions in the Air Basin provided in the 2012 Air Quality Management Plan (AQMP), indicate that collectively, mobile sources account for 59 percent of the volatile organic compounds (VOC), 88 percent of the NO_x emissions, and 40 percent of directly emitted PM_{2.5}, with another 10 percent of PM_{2.5} from road dust. The 2016 AQMP found that since 2012 AQMP projections were made, stationary source VOC

emissions have decreased by approximately 12 percent, but mobile VOC emissions have increased by 5 percent. The percentage of NOx emissions remain unchanged between the 2012 and 2016 projections.

SCAQMD has divided the Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The Project site is located in Air Monitoring Area 4, which covers south coastal Los Angeles County. Since not all air monitoring stations measure all the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the Project sites, have been used: Compton Monitoring Station (Compton Station) and South Long Beach Monitoring Station (South Long Beach Station).

The Compton Station is located approximately 2.2 miles northwest of the Project site at 700 North Bullis Road, Compton, and the South Long Beach Station is located approximately 5.6 miles south of the project site at 1305 East Pacific Coast Highway, Long Beach. Ozone, NOx, and PM2.5 were measured at the Compton Station and PM10 was measured at the South Long Beach Station. However, it should be noted that due to the air monitoring stations' distances from the Project site, recorded air pollution levels at the monitoring stations reflect with varying degrees of accuracy to local air quality conditions at the Project site. The monitoring data is presented in Table 4-1 and shows the most recent three years of monitoring data from the California Air Resources Board (CARB).

Table 4-1– Local Area Air Quality Monitoring Summary

Pollutant (Standard)	Year		
	2020	2021	2022
Ozone: ¹			
Maximum 1-Hour Concentration (ppm)	0.152	0.085	0.111
Days > CAAQS (0.09 ppm)	3	0	1
Maximum 8-Hour Concentration (ppm)	0.115	0.076	0.085
Days > NAAQS (0.070 ppm)	4	1	1
Days > CAAQs (0.070 ppm)	4	1	1
Nitrogen Dioxide: ¹			
Maximum 1-Hour Concentration (ppb)	72.3	68.2	64.9
Days > NAAQS (100 ppb)	0	0	0
Days > CAAQS (180 ppb)	0	0	0
Inhalable Particulates (PM10): ²			
Maximum 24-Hour National Measurement (ug/m ³)	68.3	48.7	48.9
Days > NAAQS (150 ug/m ³)	0	0	0
Days > CAAQS (50 ug/m ³)	3	0	0
Annual Arithmetic Mean (AAM) (ug/m ³)	26.9	23.2	18.5
Annual > NAAQS (50 ug/m ³)	No	No	No
Annual > CAAQS (20 ug/m ³)	Yes	Yes	No
Ultra-Fine Particulates (PM2.5): ¹			
Maximum 24-Hour National Measurement (ug/m ³)	67.5	102.1	52.8

Pollutant (Standard)	Year		
	2020	2021	2022
Days > NAAQS (35 ug/m ³)	19	12	6
Annual Arithmetic Mean (AAM) (ug/m ³)	14.7	14.4	14.0
Annual > NAAQS and CAAQS (12 ug/m ³)	Yes	Yes	Yes

Notes: Exceedances are listed in **bold**. CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion; ND = no data available.

¹ Data obtained from the Compton Station.

² Data obtained from the South Long Beach Station.

Source: <http://www.arb.ca.gov/adam/>

Ozone

During the last 3 years, the State 1-hour concentration standard for ozone has been exceeded between 0 and 3 days each year at the Compton Station. The State 8-hour ozone standard has been exceeded between 1 and 4 days each year over the last 3 years at the Compton Station. The Federal 8-hour ozone standard has been exceeded between 1 and 4 days each year over the last 3 years at the Compton Station. Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO₂, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of Southern California contribute to the ozone levels experienced at this monitoring station, with the more significant areas being those directly upwind.

Nitrogen Dioxide

The Compton Station did not record an exceedance of either the federal or state 1-hour NO₂ standards for the last 3 years.

Particulate Matter

The State 24-hour concentration standard for PM₁₀ has been exceeded between 0 and 3 days each year over the past 3 years at the South Long Beach Station. Over the past 3 years, the Federal 24-hour standard for PM₁₀ has not been exceeded at the South Long Beach Station. The annual PM₁₀ concentration at the South Long Beach Station has exceeded the state standard for two of the past 3 years and has not exceeded the federal standard for the past 3 years.

Over the past 3 years, the 24-hour concentration standard for PM_{2.5} has been exceeded between 6 and 19 days at the South Long Beach Station. The annual PM_{2.5} concentrations at the South Long Beach Station has exceeded both the state and federal standards for the past 3 years. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

According to the Environmental Protection Agency (EPA), some people are much more sensitive than others to breathing fine particles (PM₁₀ and PM_{2.5}). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM₁₀ and PM_{2.5}. Other groups considered sensitive are smokers and people who cannot breathe well

through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

4.3.2 **Impact Analysis**

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

Less Than Significant Impact. The original EIR found that the Original Project was consistent with the Institutional zoning designation, and long-term operational emissions associated with the Proposed Project are not anticipated to exceed the emissions budgeted for the Project site in the AQMP. Therefore, impacts would be less than significant. The following section discusses the Proposed Project's consistency with the SCAQMD AQMP.

SCAQMD Air Quality Management Plan

The CEQA requires a discussion of any inconsistencies between a proposed project and applicable General Plans and regional plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP, and discuss whether the proposed project would interfere with the region's ability to comply with federal and state air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

- (1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or interim emission reductions specified in the AQMP.
- (2) Whether the project will exceed the assumptions in the AQMP or increments based on the year of project buildout phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in this report, short-term regional construction air emissions would not result in significant impacts based on SCAQMD regional thresholds of significance discussed in Section 9.1 of Appendix A or local thresholds of significance discussed in Section 9.2 of Appendix A. The ongoing operation of the Proposed Project would generate air pollutant emissions that are inconsequential on a regional basis and would not result in significant impacts based on SCAQMD thresholds of significance discussed in Section 9.1 of Appendix A. The

analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the air quality standards. Therefore, a less than significant long-term impact would occur and no mitigation would be required.

Therefore, based on the information provided above, the Proposed Project would be consistent with the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the Proposed Project with the assumptions in the 2022 AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the Proposed Project are based on the same forecasts as the AQMP. The 2022 AQMP was developed through use of the planning forecasts provided in the Connect SoCal and 2019 FTIP. The Connect SoCal is a major planning document for the regional transportation and land use network within Southern California. The Connect SoCal is a long-range plan that is required by federal and state requirements placed on Southern California Association of Governments (SCAG) and is updated every 4 years. The 2019 FTIP provides long-range planning for future transportation improvement projects that are constructed with state and/or federal funds within Southern California. Local governments are required to use these plans as the basis of their plans for the purpose of consistency with applicable regional plans under CEQA. For this Project, the City of Long Beach General Plan's Land Use Plan defines the assumptions that are represented in AQMP.

The Project site is currently designated as FCN in the General Plan and is zoned I. The Proposed Project consists of development of a new gymnasium and aquatics center on the existing Jordan High School campus. The Proposed Project is an allowed use within the current land use designation and zoning. As such, the Proposed Project is not anticipated to exceed the AQMP assumptions for the Project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the Proposed Project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur in relation to implementation of the AQMP.

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

Less Than Significant Impact. The Original EIR found that the Original Project would not result in a cumulatively considerable net increase of a criteria pollutant based on the Project would not exceed any of the SCAQMD's project-level significant thresholds. The following section provides evidence that is consistent with the findings in the original EIR and calculates the potential air emissions associated with the construction and operations of the Proposed Project and compares the emissions to the SCAQMD standards.

Construction Emissions

The construction activities for the Proposed Project are anticipated to include demolition of the existing gymnasium and outdoor paved area, site preparation and grading of approximately 2.5 acres, building construction of a new gymnasium and aquatics facility, paving of the hardscape areas, and application of architectural coatings. The California Emissions Estimator Model® (CalEEMod) model has been utilized to calculate the construction-related regional emissions from the Proposed Project and the input parameters utilized in this analysis have been detailed in Section 8.1 of Appendix A. The

maximum daily construction emissions by season are shown below in Table 4-2 and the CalEEMod printouts are shown in Appendix A.

Table 4-2– Construction-Related Criteria Pollutant Emissions

Season and Year of Construction	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO ₂	PM10	PM2.5
Daily Summer Max						
2025	1.60	17.7	17.1	0.04	3.43	1.76
2026	1.31	10.7	14.1	0.03	0.91	0.47
2027	31.5	10.2	13.9	0.03	0.87	0.43
Daily Winter Max						
2025	1.56	16.9	16.9	0.04	3.22	1.04
2026	1.31	10.7	13.8	0.03	0.91	0.47
2027	1.25	10.3	13.6	0.03	0.87	0.43
Maximum Daily Construction Emissions	31.5	17.7	17.1	0.04	3.43	1.76
SCQAMD Regional Thresholds	75	100	550	150	150	55
SCAQMD Local Thresholds	--	84	1,423	--	30	11
Exceeds Thresholds?	No	No	No	No	No	No

Source: CalEEMod Version 2022.1.

Table 4-2 shows that none of the analyzed criteria pollutants would exceed either the regional or local emissions thresholds during construction of the Proposed Project. Therefore, less than significant regional and local air quality impacts would occur from construction of the Proposed Project.

Operational Emissions

The on-going operation of the Proposed Project would result in a long-term increase in air quality emissions. This increase would be due to emissions from on-site area sources, energy usage, and pool heater boiler emissions created from the on-going use of the Proposed Project. The operations-related regional criteria air quality impacts created by the Proposed Project have been analyzed through use of the CalEEMod model and the input parameters utilized in this analysis have been detailed in Section 8.1 of Appendix A. The worst-case summer or winter VOC, NOx, CO, SO₂, PM10, and PM2.5 daily emissions created from the Proposed Project's long-term operations have been calculated and are summarized below in Table 4-3 and the CalEEMod emissions printouts are shown in Appendix A.

Table 4-3– Operational Criteria Pollutant Emissions

Emissions Source	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO ₂	PM10	PM2.5
Area Sources ¹	2.10	0.02	2.93	<0.01	0.01	0.01
Energy Usage ²	0.02	0.37	0.31	<0.01	0.03	0.03
Pool Heater Boiler ³	0.09	<0.01	1.54	0.01	0.12	0.12
Total Emissions	2.21	0.39	4.78	0.01	0.16	0.16
SCQAMD Regional Thresholds	55	55	550	150	150	55
SCAQMD Local Thresholds	--	84	1,423	--	7	3
Exceeds Thresholds?	No	No	No	No	No	No

Notes:

¹ Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.

² Energy usage consist of emissions from natural gas usage (does not include the pool heater boiler).

³ Pool heater boiler based on a 2.0 MBTU per hour boiler operating 8 hours per day.

Source: Calculated from CalEEMod Version 2022.1.

The data provided in Table 4-3 shows that none of the analyzed criteria pollutants would exceed either the regional or local emissions thresholds during operation of the Proposed Project. Therefore, less than significant regional and local air quality impacts would occur from the operation of the Proposed Project.

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

Less Than Significant Impact. The Original EIR found that the Original Project would not expose sensitive receptors to substantial pollutant concentrations. Diesel particulate matter (DPM) would be generated during construction; however, these emissions would only occur during construction hours and sensitive receptors would not be exposed to concentrations exceeding the applicable thresholds. The following section provides evidence that is consistent with the Original EIR's findings.

The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the Proposed Project, which may expose sensitive receptors to substantial concentrations, have been calculated in Section 10.3 of Appendix A for both construction and operations, which are discussed separately below. The discussion below also includes an analysis of the potential impacts from toxic air contaminant (TAC) emissions. The nearest sensitive receptors to the Project site are residents at the multi-family homes on the west side of Atlantic Avenue that are located as near as 260 feet west of the Project site. There are also single-family homes on the east side of Myrtle Avenue that are located as near as 440 feet east of the Project site.

Construction-Related Sensitive Receptor Impacts

The construction activities for the Proposed Project are anticipated to include demolition of the existing gymnasium and outdoor paved area, site preparation and grading of approximately 2.5 acres, building construction of a new gymnasium and aquatics facility, paving of the hardscape areas, and application of architectural coatings. Construction activities may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant concentrations and from TAC emissions created from on-site construction equipment, which are described below.

Local Criteria Pollutant Impacts from Construction

The local air quality impacts from construction of the Proposed Project have been analyzed in Section 10.3 of Appendix A, and show that the construction of the Proposed Project would not exceed the local NO_x, CO, PM₁₀, and PM_{2.5} thresholds of significance discussed in Section 9.2 of Appendix A. Therefore, construction of the Proposed Project would create a less than significant construction-related impact to local air quality and no mitigation would be required.

TAC Impacts from Construction

Construction activities are anticipated to generate TAC emissions from DPM associated with the operation of trucks and off-road equipment and from possible asbestos in the gymnasium to be demolished.

DPM Emissions

The greatest potential for TAC emissions would be related to DPM emissions, associated with heavy equipment operations during construction of the Proposed Project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of “individual cancer risk”. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of TAC over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. It should be noted that the most current cancer risk assessment methodology recommends analyzing a 30-year exposure period for the nearby sensitive receptors (Appendix A).

Given the relatively limited number of heavy-duty construction equipment, the varying distances that construction equipment would operate to the nearby sensitive receptors, and the short-term construction schedule, the Proposed Project would not result in a long-term (i.e., 30 or 70 years) substantial source of TAC emissions and corresponding individual cancer risk. In addition, CCR Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than 5 minutes, requires equipment operators to label each piece of equipment, and provide annual reports to CARB of their fleet’s usage and emissions. This regulation also requires systematic upgrading of the emission Tier level of each fleet, and currently no commercial operator is allowed to purchase Tier 0, Tier 1, or Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between years 2014 and 2023. Therefore, due to the limitations in off-road construction equipment DPM emissions from implementation of Section 2448, a less than significant short-term TAC impact would occur during construction of the Proposed Project from DPM emissions.

Asbestos Emissions

It is possible that the existing gymnasium to be demolished contains asbestos. According to SCAQMD Rule 1403 requirements, prior to the start of demolition activities, the existing gymnasium shall be thoroughly surveyed for the presence of asbestos by a person that is certified by Cal/OSHA for asbestos surveys. Rule 1403 requires that the SCAQMD be notified a minimum of 10 days before any demolition activities begin with specific details of all asbestos to be removed, start and completion dates of demolition, work practices and engineering controls to be used to contain the asbestos emissions, estimates on the amount of asbestos to be removed, the name of the waste disposal site where the asbestos will be taken, and names and addresses of all contractors and transporters that will be involved in the asbestos removal process. Therefore, through adherence to the asbestos removal requirements, detailed in SCAQMD Rule 1403, a less than significant asbestos impact would occur during construction of the Proposed Project.

Operations-Related Sensitive Receptor Impacts

The on-going operations of the Proposed Project may expose sensitive receptors to substantial pollutant concentrations from the potential local air quality impacts from on-site operations and from possible TAC impacts.

Local Criteria Pollutant Impacts from On-site Operations

The local air quality impacts from the operation of the Proposed Project would occur from on-site sources such as architectural coatings, landscaping equipment, and on-site usage of natural gas appliances. The analysis provided in Section 10.3 of Appendix A found that the operation of the Proposed Project would not exceed the local NO_x, CO, PM₁₀, and PM_{2.5} thresholds of significance discussed in Section 9.2 of Appendix A. Therefore, the on-going operations of the Proposed Project would create a less than significant operations-related impact to local air quality due to on-site emissions and no mitigation would be required.

Operations-Related TAC Impacts

DPM is the predominant TAC in most areas, and according to The California Almanac of Emissions and Air Quality 2013 Edition prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the nominal number of diesel truck trips that are anticipated to be generated by the Proposed Project, a less than significant TAC impact would occur during the on-going operations of the Proposed Project, and no mitigation would be required.

Therefore, operation of the Proposed Project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

- d) *Would the project result in other emissions, such as those leading to odors adversely affecting a substantial number of people?*

Less Than Significant Impact. The Original EIR found that the Original Project would not create objectionable odors affecting a substantial number of people. The following section provides evidence that is consistent with the findings of the Original EIR.

Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor. Potential odor impacts have been analyzed separately for construction and operations below.

Construction Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of coatings such as asphalt pavement, paints, and solvents and from emissions from diesel equipment. Standard construction requirements that limit the time of day when construction may occur as well as SCAQMD Rule 1108 that limits VOC content in asphalt and Rule 1113 that limits the VOC content in paints and solvents would minimize odor impacts from construction. As such, the objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site's boundaries. Through compliance

with the applicable regulations that reduce odors and due to the transitory nature of construction odors, a less than significant odor impact would occur and no mitigation would be required.

Operations-Related Odor Impacts

The Proposed Project would consist of the development of a gymnasium and aquatics center. Potential sources that may emit odors during the on-going operations of the Proposed Project would primarily occur from the trash storage areas and use and storage of pool chemicals. Pursuant to City regulations, permanent trash enclosures that protect trash bins from rain as well as limit air circulation would be required for the trash storage areas. As detailed in the Project design, all pool chemicals would be stored in a structure specifically designed for the storage of pool chemicals, and the pool chemicals will primarily be applied through mechanical systems that limit the chemical exposure to air.

Due to the distance of the nearest receptors from the Project site and through compliance with SCAQMD's Rule 402, City trash storage regulations and pool chemical regulations, a less than significant impact related to odors would occur during the on-going operations of the Proposed Project.

Therefore, a less than significant odor impact would occur and no mitigation would be required.

4.4 BIOLOGICAL RESOURCES

4.	BIOLOGICAL RESOURCES. Would the project:	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 U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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 U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.	BIOLOGICAL RESOURCES. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.4.1 Environmental Setting

Biological resources include habitats and vegetative communities, migratory corridors, plants, wildlife, fisheries, special status species (regulated by a law, regulation, or policy, such as threatened and endangered species), and waters of the United States. The Jordan HS campus is completely developed with school facilities and is located in an urbanized area in the City. The Project site does not contain any watercourse, greenbelt, or open space for wildlife movement and no native vegetation is present.

No native vegetation is present on the Project site; as such, candidate and special status species are not expected to occur. Additionally, no riparian habitat or other sensitive natural community or wetlands exist on the Project site. Implementation of the Proposed Project would not interfere with the movement of any native resident or migratory fish or wildlife species, or native wildlife nursery sites.

4.4.2 Impact Analysis

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

Less than Significant Impact. The Original Project included the demolition of approximately 10 permanent buildings and 32 portable buildings, renovation of approximately 213,000 square feet of existing space, and construction of approximately 240,000 square feet of new building space. The Original Project EIR noted that there were no known sensitive biological resources in the Project vicinity, and the Original Project would comply with existing regulations. The Project site is located in an urbanized area and is completely developed with school facilities. Landscaping on the Project site is limited to ornamental and street trees, and does not include any native vegetation. Jordan HS currently contains a one-story gymnasium with an attached parking lot, along Atlantic Avenue. This existing gymnasium would be demolished to make room for the new Gymnasium and Aquatic Center. No native vegetation is present on the Project site; therefore, candidate and special status species are not expected to occur. However, nesting birds are protected under the Migratory Bird Treaty Act (MBTA). During construction the Proposed Project would comply with the MBTA, which requires that nesting bird surveys be conducted prior to the start of vegetation clearance activities should they occur during nesting season: February 15 through September 15. In compliance with the MBTA requirements, should vegetation clearance occur during the nesting bird season, a qualified biologist would conduct a nest survey within 1 week of the start of these activities to ensure no active nests were lost. If an active nest is located, then the nest should be flagged and construction within an appropriate distance of the nest should be postponed until the biologist has confirmed that the nest is no longer active. Compliance with the MBTA would ensure a less than significant impact to protected species, and no change is expected from the previous analysis.

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

No Impact. The Project site is located in an urbanized area and is completely developed with school facilities. The Project site is not located within an area designated by the County of Los Angeles as being a Significant Ecological Area. The Project site does not contain any riparian habitat, wetlands, or other natural community. Therefore, no impacts to sensitive habitats would occur with implementation of the Proposed Project, and no change is expected from previous analysis.

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

No Impact. The Project Site is not located on or in the vicinity of a federally protected wetland (United States Fish and Wildlife Service [USFWS] 2022). The nearest body of water is the Los Angeles River, located 0.3 miles west of the Project site. No new significant impacts to wetlands would occur, and no significant changes are anticipated from the previous analysis.

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

No Impact. Implementation of the Proposed Project would not interfere with the movement of any native resident or migratory fish or wildlife species, or native wildlife nurseries. The Project site is currently urbanized and developed. The Project site does not contain any watercourse, greenbelt, or open space for wildlife movement. The Proposed Project may require removal of landscape trees from the Project site, which could potentially impact nesting bird species. However, as discussed above, the Proposed Project would comply with the MBTA during construction. Compliance with the MBTA would have no impact regarding wildlife corridors or nursery sites, and no change is expected from the previous analysis.

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

No Impact. The Proposed Project would not conflict with any local policies or ordinances protecting biological resources. The City of Long Beach Department of Public Works regulates the installation of trees along sidewalks and removal of trees and other vegetation in public areas. The Proposed Project may result in the removal of some existing on-site trees. The preservation of these trees is dependent on the location of their roots, and an arborist can be hired to assist with the process of preservation. None of these plant species are protected by local policies or ordinances protecting biological resources. The Proposed Project would be landscaped in accordance with the tree planting specifications of the City. As such, no impacts to local policies protecting biological resources would occur, and no significant change from the previous analysis is anticipated.

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

No Impact. The Project site is not within the area of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, Natural Community Conservation Plan, or other approved local,

regional, or state habitat conservation plan. Therefore, the Proposed Project would not conflict with any approved plans. No impact would occur and no change is anticipated from the previous analysis.

4.5 CULTURAL RESOURCES

5.	CULTURAL RESOURCES. Would the project:	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 pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.5.1 Environmental Setting

LBUSD prepared a districtwide Cultural Resources Assessment to assess all potential cultural resources, both historic and prehistoric, located within all District campuses and facilities. The Historic Resource Assessment report was prepared to assist the District with compliance with historic resource requirements of CEQA. Completed in 2015, the Assessment presents the results of a comprehensive survey of the District’s school facilities as part of future project planning efforts.

Jordan HS was originally built in 1935, but modifications and additional buildings were added to the site in 1949, 1952, 1962, 1974, and throughout the 1990s and 2000s. Although the campus was designed with some Moderne style detailing by prominent Long Beach architect Kenneth Wing, the buildings are “functional and program-based” buildings and are not connected to his important other Moderne projects. Jordan High School currently contains a one-story gymnasium with an attached parking lot, along Atlantic Avenue. This existing gymnasium will be demolished to make room for the new Gymnasium & Aquatic Center.

Chambers Group requested a records search from the California Historical Resources Information System (CHRIS) South-Central Coastal Information Center (SCCIC) at California State University, Fullerton on October 6, 2023. A half-mile study area was requested to provide additional context to the Project site and surrounding area, and more information on which to base this review. Resources consulted during the records search conducted by the SCCIC included the National Register of Historic Places (NRHP), California Historical Landmarks (CHL), California Points of Historical Interest (CPHI), California Department of Transportation (Caltrans) Historic Highway Bridge Inventory, the California Register of Historic Resources (CRHR) Inventory, local registries of historic properties, and a review of available Sanborn Fire Insurance maps as well as historic photographs, maps, and aerial imagery. The task also included a search for potential prehistoric and/or historic burials (human remains) evident in previous site records and/or historical maps. In addition, Chambers Group submitted a request to the Native American Heritage Commission (NAHC) for a review of the Sacred Land Files (SLF) for the Project site and surrounding vicinity.

Additionally, on October 6, 2023, Chambers Group requested a paleontological records search from the Natural History Museum of Los Angeles County (NHMLA). This information was requested with the intent

to provide further context related to the paleontological setting of the area based on known fossil locations identified within the Project site and surrounding study area. The paleontological records provide insight into which associated geological formations are more likely to contain fossils, as well as the associated depths and placement of the documented fossil localities relative to the geological formations mapped in the area.

In addition to the records search review, Chambers Group archaeologists completed background research to determine if any additional historic properties, landmarks, bridges, or other potentially significant or listed properties are located within the Project site or half-mile study area. This background research included, but was not limited to, the NRHP, California State Historic Property Data Files, CHL, CPHI, Office of Historic Preservation Archaeological Determinations of Eligibility, historic aerial imagery accessed via NETR Online, Historic U.S. Geological Survey topographic maps, Built Environment Resource Directory (BERD), and Caltrans State and Local Bridge Surveys. Additionally, Chambers Group archaeologists reviewed the City of Long Beach Historical Landmarks inventory, local historical newspaper clippings via Newspapers.com, ProQuest Historical Newspapers.com, and the California Digital Newspaper Collection.

4.5.2 Impact Analysis

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

Less than Significant Impact. The Original Project EIR noted that "Jordan High School does not possess sufficient historical or architectural significance for listing under any of the applicable federal, state, or local eligibility criteria. As it is not an exceptional or architecturally important example of the period revival or postwar modern styles, and is not a good example of Kenneth Wing's architecture, Jordan High School does not appear eligible for listing in the national or state registers as an exceptional, distinctive, outstanding, or singular example of its type or style" (AECOM 2013). Although the Proposed Project includes the demolition of the gymnasium instead of renovation, as well as construction of a new aquatic center, since the campus is not considered eligible for listing, then the Project would not result in the significant modification of any historical resources. The school has been under construction multiple times between 1935 and now, and is not associated with any specific architectural style. The District-wide Historic Assessment found that Jordan HS is ineligible for listing in the National Register and California Register. Although the campus was designed by prominent Long Beach architect Kenneth Wing, the buildings are program-based buildings and are not connected to his important other Moderne projects. Therefore, based on the details of the Proposed Project, the Project would not result in a substantial adverse change that would impair the historic significance of Jordan HS. Impacts would be less than significant.

- b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

Less than Significant with Mitigation. The Original Project EIR noted that the "Project site is completely developed and, thus, it is not expected that archaeological or paleontological resources, or human remains would be encountered during construction activities. However, in the event that subsurface resources are discovered during the course of grading and/or excavation, they would be handled pursuant to California Health and Safety Code Section 7050.5, and Public Resources Code (PRC) Sections 5097.94 and 5097.98. Adherence to existing regulations would ensure that impacts to archaeological and paleontological resources, and human remains would be less than significant" (AECOM 2013). Since the Proposed Project would include demolition of the existing gymnasium,

rebuilding of the gymnasium and the addition of the aquatics center, a Cultural Resources Survey Report was conducted for the Proposed Project (Appendix B). Based on the background research and SCCIC records search results, none of the previously recorded cultural resources are documented within the Proposed Project site.

Although background research has been completed with no new resources identified, as noted above, the historic age of the Jordan High School structures and the existence of previously recorded prehistoric and historic resources within the half-mile study area around the Proposed Project site, undocumented resources still have the potential to be discovered in or near the Project site. Due to the demonstrated overall sensitivity of the area, we recommend the following mitigation measures be implemented.

MM CUL-1 LBUSD shall retain the services of a qualified cultural resources consultant and require that all initial ground disturbing work be monitored by a cultural resources monitor (monitor). This includes all initial construction activities that will potentially expose or encounter intact subsurface sediments underlying the Project site. The cultural resources consultant shall provide a Qualified Archaeologist, meeting the Secretary of the Interior Standards (U.S. Department of the Interior, 2008), and require that all initial ground-disturbing work be monitored by a monitor proficient in artifact and feature identification in monitoring contexts. The Consultant (Qualified Archaeologist and/or monitor) shall be present at the Project construction phase kickoff meeting.

MM CUL-2 Prior to commencing construction activities and thus prior to any ground disturbance in the Proposed Project site, the Consultant shall conduct initial Worker Environmental Awareness Program (WEAP) training to all construction personnel, including supervisors, present at the outset of the Project construction work phase, for which the lead contractor and all subcontractors shall make their personnel available. This WEAP training will educate construction personnel on how to work with the monitor(s) to identify and minimize impacts to cultural resources and maintain environmental compliance and be performed periodically for new personnel coming on to the Project as needed.

MM CUL-3 The contractor shall provide the Consultant with a schedule of initial potential ground disturbing activities. A minimum of 48-hours' notice will be provided to the archaeological consultant of commencement of any initial ground disturbing activities that have potential to expose or encounter intact subsurface sediments underlying the Project site. These activities may include grading, trenching, and mass excavation.

As detailed in the schedule provided, a monitor shall be present on-site at the commencement of ground-disturbing activities related to the Project. The Consultant shall observe initial ground disturbing activities and, as they proceed, adjust the monitoring approach as needed to provide adequate observation and oversight. All monitors will have stop-work authority to allow for recordation and evaluation of finds during construction. The monitor will maintain a daily record of observations as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project.

The Consultant, the lead contractor, and subcontractors shall maintain a line of communication regarding schedule and activity such that the Consultant is aware of all ground-disturbing activities in advance, in order to provide appropriate oversight.

MM CUL-4 In addition to cultural resources monitoring, if formally requested during Native American Consultation under AB 52, a Native American monitor(s) selected by the tribe should be present at the Project kickoff meeting, be provided with a schedule of initial ground-disturbing activities, and be on-site at the commencement of ground-disturbing activities related to the Project, and as the Project proceeds adjusting personnel and schedule as needed to provide sufficient oversight. The Consultant, lead contractor, and all subcontractors shall routinely update the Native American monitor and their scheduling representative(s) regarding scheduling for ground-disturbing activities, and changes to said schedule, such that there is sufficient advance notice that a Native American monitor can be scheduled accordingly.

MM-CUL-5 If cultural resources are discovered, construction shall be halted within 50 feet of any cultural artifacts or features and within 100 feet of any potential human remains and shall not resume until the Qualified Archaeologist can determine the significance of the find and/or the find has been fully investigated, appropriately documented, and cleared.

MM CUL-6 At the completion of all ground disturbing activities, the Consultant shall prepare a Cultural Resources Monitoring Report summarizing all monitoring efforts and observations as performed, and any and all prehistoric or historic archaeological finds, as well as providing follow-up reports of any finds to the SCCIC, as required.

These mitigation measures are intended to reduce impacts associated with the soil disturbance, and were not included in the Original Project EIR. Therefore, these are new significant impacts that were identified as requiring mitigation.

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

Less than Significant. The Original Project EIR noted that, with adherence to existing regulations, impacts to human remains would be less than significant. Since the Proposed Project includes additional ground disturbance beyond what was analyzed in the Original Project EIR, Mitigation Measure CUL-5, above, was included to protect any potential human remains that are encountered. In addition, in the event that human remains are discovered during ground-disturbing activities, then the Proposed Project would be subject to California Health and Safety Code 7050.5, CEQA Section 15064.5, and California PRC Section 5097.98. If human remains are found during ground-disturbing activities, State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Los Angeles County Medical Examiner-Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the Los Angeles County Medical Examiner-Coroner shall be notified immediately. If the human remains are determined to be prehistoric, the Medical Examiner-Coroner shall notify the NAHC, which shall notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Therefore, the Proposed Project would not result in a significant impact to human remains, no new impacts are anticipated with the inclusion of MM CUL-5.

4.6 ENERGY

6.	ENERGY Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.6.1 Environmental Setting

An Air Quality, Energy, and Greenhouse Gas (GHG) Emissions Impact Analysis Report was prepared by Vista Environmental for the Proposed Project in January 2024 (Appendix A).

4.6.2 Impact Analysis

a) Would the project a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. The Proposed Project would impact energy resources during construction and operation. Energy resources that would be potentially impacted include electricity, natural gas, and petroleum-based fuel supplies and distribution systems. This analysis includes a discussion of the potential energy impacts of the Proposed Project, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. A general definition of each of these energy resources are provided below.

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands. In 2022, Los Angeles County consumed 68,485 Gigawatt-hours per year of electricity (Appendix A).

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network and, therefore, resource availability is typically not an issue. Natural gas satisfies almost one-third of the State's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel. In 2022, Los Angeles County consumed 2,820 Million Therms of natural gas (Appendix A).

Petroleum-based fuels currently account for a majority of the California's transportation energy sources and primarily consist of diesel and gasoline types of fuels. However, the state has been working on

developing strategies to reduce petroleum use. Over the last decade California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHG emissions from the transportation sector, and reduce vehicle miles traveled (VMT). In 2017, 3,659 million gallons of gasoline and 300 million gallons of diesel were sold in Los Angeles County (Appendix A).

The following section calculates the potential energy consumption associated with the construction and operations of the Proposed Project and provides a determination if any energy utilized by the Proposed Project is wasteful, inefficient, or unnecessary consumption of energy resources.

Construction Energy

The construction activities for the Proposed Project are anticipated to include demolition of the existing gymnasium and outdoor paved area, site preparation and grading of approximately 2.5 acres, building construction of a new gymnasium and aquatics facility, paving of the hardscape areas, and application of architectural coatings. The Proposed Project would consume energy resources during construction in three general forms:

1. Petroleum-based fuels used to power off-road construction vehicles and equipment on the Project Site, construction worker travel to and from the Project Site, as well as delivery and haul truck trips (e.g. hauling of demolition material to off-site reuse and disposal facilities);
2. Electricity associated with the conveyance of water that would be used during Project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power; and,
3. Energy used in the production of construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass.

Construction-Related Electricity

During construction, the Proposed Project would consume electricity to construct the new structures and infrastructure. Electricity would be supplied to the project site by Southern California Edison (SCE) and would be obtained from the existing electrical lines in the vicinity of the Project site. The use of electricity from existing power lines rather than temporary diesel or gasoline powered generators would minimize impacts on energy use. Electricity consumed during Project construction would vary throughout the construction period based on the construction activities being performed. Various construction activities include electricity associated with the conveyance of water that would be used during Project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power. Such electricity demand would be temporary, nominal, and would cease upon the completion of construction. Overall, construction activities associated with the Proposed Project would require limited electricity consumption that would not be expected to have an adverse impact on available electricity supplies and infrastructure. Therefore, the use of electricity during Project construction would not be wasteful, inefficient, or unnecessary.

Since SCE already provides power to the Project site, it is anticipated that only nominal improvements would be required to SCE distribution lines and equipment with development of the Proposed Project. Compliance with City's guidelines and requirements would ensure that the Proposed Project fulfills its

responsibilities relative to infrastructure installation, coordinates any electrical infrastructure removals or relocations, and limits any impacts associated with construction of the Project. Construction of the Project's electrical infrastructure is not anticipated to adversely affect the electrical infrastructure serving the surrounding uses or utility system capacity.

Construction-Related Natural Gas

Construction of the Proposed Project typically would not involve the consumption of natural gas. Natural gas would not be supplied to support construction activities, thus there would be no demand generated by construction. Since Long Beach Gas & Oil already provides natural gas to the Project site, construction-related activities would be limited to installation of new natural gas connections within the Project site. Development of the Proposed Project would not require extensive infrastructure improvements to serve the Project site. Construction-related energy usage impacts associated with the installation of natural gas connections are expected to be confined to trenching in order to place the lines below surface. In addition, prior to ground disturbance, the Proposed Project would notify and coordinate with Long Beach Gas & Oil to identify the locations and depth of all existing gas lines and avoid disruption of gas service. Therefore, construction-related impacts to natural gas supply and infrastructure would be less than significant.

Construction-Related Petroleum Fuel Use

Petroleum-based fuel usage represents the highest amount of transportation energy potentially consumed during construction, which would be utilized by both off-road equipment operating on the Project site and on-road automobiles transporting workers to and from the Project site and on-road trucks transporting equipment and supplies to the Project site.

The off-road construction equipment fuel usage was calculated through use of the off-road equipment assumptions and fuel use assumptions shown in Section 8.2 of Appendix A, which found that construction of the Proposed Project would consume 12,339 gallons of gasoline and 73,599 gallons of diesel fuel. This equates to 0.0003 percent of the gasoline and 0.024 percent of the diesel used annually in Los Angeles County. As such, the construction-related petroleum use would be nominal, when compared to current county-wide petroleum usage rates.

Construction activities associated with the Proposed Project would be required to adhere to all State and SCAQMD regulations for off-road equipment and on-road trucks, which provide minimum fuel efficiency standards. As such, construction activities for the Proposed Project would not result in the wasteful, inefficient, and unnecessary consumption of energy resources. Impacts regarding transportation energy would be less than significant. Development of the Proposed Project would not result in the need to manufacture construction materials or create new building material facilities specifically to supply the Proposed Project. It is difficult to measure the energy used in the production of construction materials such as asphalt, steel, and concrete, it is reasonable to assume that the production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest of minimizing the cost of doing business.

Operational Energy

The on-going operation of the Proposed Project would require the use of energy resources for multiple purposes including, but not limited to, pool heating, heating/ventilating/air conditioning (HVAC),

refrigeration, lighting, appliances, and electronics. Energy would also be consumed during operations related to water usage, solid waste disposal, and landscape equipment.

Operations-Related Electricity

Operation of the Proposed Project would result in consumption of electricity at the Project site. As detailed in Section 8.2 of Appendix A, the Proposed Project would consume 406,532 kilowatt-hours per year of electricity. This equates to 0.0006 percent of the electricity consumed annually in the County of Los Angeles. As such, the operations-related electricity use would be nominal, when compared to current electricity usage rates in the County.

It should be noted that, the Proposed Project would comply with all Federal, State, and City requirements related to the consumption of electricity, that includes CCR Title 24, Part 6 *Building Energy Efficiency Standards* and CCR Title 24, Part 11: *California Green Building Standards*. CCR Title 24, Part 6 and Part 11 standards require numerous energy efficiency measures to be incorporated into the proposed aquatics center, including enhanced insulation, use of energy efficient lighting and appliances, water and space heating systems, as well as requiring a variety of other energy-efficiency measures to be incorporated into the Proposed Project. Therefore, it is anticipated the Proposed Project will be designed and built to minimize electricity use and that existing and planned electricity capacity and electricity supplies would be sufficient to support the Proposed Project's electricity demand. Thus, the Project would not result in the wasteful or inefficient use of electricity and no mitigation measures would be required.

Operations-Related Natural Gas

Operation of the Proposed Project would result in increased consumption of natural gas at the Project site. As detailed in Section 8.3 of Appendix A, the Proposed Project would consume 1,363,693 MBTU per year of natural gas. This equates to 0.0005 percent of the natural gas consumed annually in Los Angeles County. As such, the operations-related natural gas use would be nominal, when compared to current natural gas usage rates in the County.

It should be noted that, the Proposed Project would comply with all Federal, State, and City requirements related to the consumption of natural gas, that includes CCR Title 24, Part 6 *Building Energy Efficiency Standards* and CCR Title 24, Part 11: *California Green Building Standards*. The CCR Title 24, Part 6 and Part 11 standards require numerous energy efficiency measures to be incorporated into the Proposed Project, including enhanced insulation as well as use of efficient natural gas appliances and HVAC units. Therefore, it is anticipated the Proposed Project will be designed and built to minimize natural gas use and that existing and planned natural gas capacity and natural gas supplies would be sufficient to support the proposed project's natural gas demand. Thus, impacts regarding natural gas supply and infrastructure capacity would be less than significant and no mitigation measures would be required.

Therefore, the Proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Impacts would be less than significant.

b) *Would the project Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

Less Than Significant Impact. The Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The City has adopted the following plans that address

energy efficiency and conservation: (1) Municipal Code Section 21.45.400 (Green building standards for public and private development), 2009; (2) *Sustainable City Action Plan* (SCAP), February 2, 2010; and (3) *Long Beach Climate Action Plan* (LB CAP), August 2022.

The only Project-specific energy conservation measures are provided in the City's Municipal Code Section 21.45.400 (Green building standards for public and private development, which requires new development projects to be designed and built to meet the Leadership in Energy and Environmental Design (LEED) Green Building standards. In addition, the Proposed Project will be required to be designed to meet the State's most current Title 24 Part 6 and Part 11 building energy efficiency standards. The SCAP provides City-wide sustainability goals to conserve electricity and natural gas. The LB CAP also provides City-wide energy conservation measures. As such, the Proposed Project would be designed to meet all applicable State building energy efficiency standards as well as to meet the City's energy efficiency standards. Therefore, the Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts would be less than significant.

4.7 GEOLOGY AND SOILS

7.	GEOLOGY AND SOILS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b)	Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.7.1 Environmental Setting

The California Geological Survey (CGS) provides technical information and advice about landslides, erosion, sedimentation, and other geologic hazards to the agencies that administer land-use decisions in California. Surface rupture is the breakage of ground along the surface trace of a fault caused by the intersection of the fault surface area ruptured in an earthquake. Liquefaction is a process by which water-saturated granular soils transform from a solid to a liquid state during strong ground-shaking. A seismically induced landslide is a general term for falling, sliding, or flowing mass of soil, rocks, water, and debris caused by an earthquake. Erosion is displacement of soil from moving water and wind.

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. This state law was a direct result of the 1971 San Fernando Earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures. The main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults.

4.7.2 Impact Analysis

- a) i) *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

No Impact. The Project Site is located in the seismically active region of Southern California and has the potential to be subjected to ground shaking hazards associated with earthquake events on active faults throughout the region. However, the Project Site is not located within an Alquist-Priolo Earthquake Fault Zone. The nearest Alquist-Priolo Earthquake Fault Zone is the Newport-Inglewood Fault Zone, located approximately 3.0 miles southwest of the Project Site (DOC 2021). The Original Project EIR noted that “the proposed project would be designed and constructed in accordance with the recommendations in the Geotechnical and Geological Engineering Investigation Reports” prepared for the Original Project. Although the Proposed Project includes a new gymnasium and aquatic center, which is different from what was analyzed in the Original EIR, the Proposed Project would still be required to comply with all applicable building codes and other applicable federal, state, and local codes related to seismic criteria. The Proposed Project would not result in risk of loss, injury, or death involving the rupture of a known earthquake fault. No new significant impacts would occur, and no significant change is expected from the previous analysis.

- ii) *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?*

Less than Significant Impact. As discussed in Section VI(a)(i) above, the Newport-Inglewood Fault is located approximately 3.0 miles southwest of the Project Site. A fault that may have an impact on the surrounding areas include the Los Alamitos Fault (located approximately 3 miles southwest of the Project Site). Due to the proximity of this fault, seismic ground shaking effects at the project site may occur during a strong earthquake along these faults. Similar to the Original Project, the Proposed Project construction activities would adhere to the latest version of the California Building Code, the Uniform Building Code, and all other applicable federal, state and local codes relative to seismic criteria. The Proposed Project would not directly or indirectly cause potential substantial adverse effects involving strong seismic ground shaking. No new significant impacts would occur. No significant change is expected from the previous analysis.

- iii) *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?*

Less than Significant Impact. Liquefaction can occur when soils lose cohesion and their ability to support structures when subjected to strong ground motion. The Project site is located in an area identified as a generalized liquefaction susceptibility zone on the State of California Seismic Hazard Zones Map. Based on the previous geotechnical investigation conducted at the Project site, the potential for liquefaction is considered moderate to high. As discussed in Section VI(a)(ii) above, and similar to what was discussed in the EIR for the Original Project, the Proposed Project would be designed and constructed in accordance with the recommendations from the previously completed geotechnical investigation and the latest version of the California Building Code, the Uniform Building Code, and all other applicable federal, state and local codes. No new significant impacts will occur, and no significant change is anticipated from the previous analysis. Impacts would be less than significant.

- iv) *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?*

No Impact. Similar to what was found in the Original Project EIR, the analysis for the Proposed Project found that the Project site is not located within an area identified as a Landslide Hazard Zone on the State of California Seismic Hazard Zones Map containing the Project site. The Proposed Project would not result in the risk of loss, injury, or death involving landslides. No new impacts would occur, and no significant change is anticipated from the previous analysis.

- b) *Would the project result in substantial soil erosion or the loss of topsoil?*

Less than Significant impact. Construction activities associated with the Proposed Project include demolition and construction installation, which would expose soil for a limited time, allowing for possible erosion. The previous recommendation for the Original Project includes the use of Best Management Practices (BMP). This entails an erosion control plan and a Storm Water Pollution Prevention Plan (SWPP) for construction activities. Similarly, for the Proposed Project, BMP including those listed above will be implemented in order to reduce the potential for erosion. Conformance with applicable erosion control regulations and the required construction BMP during construction activities will reduce impacts to a level of less than significant. Therefore, there would be no long-

term impacts to erosion and loss of topsoil, and no significant change is expected from the previous analysis.

- c) *Would the project 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. The Project site and surrounding areas are relatively flat with no dramatic sloping. However, the Proposed Project site is located in a liquefaction hazard zone; therefore, geotechnical measures will be incorporated into the Project design as required by the Seismic Hazards Mapping Act and in accordance with the updated California Building Code. Compliance with the existing regulations would ensure that impacts from unstable soils would be less than significant, and no significant change is anticipated from the previous analysis.

- d) *Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

Less than Significant Impact. According to the geotechnical report prepared for the Original Project, the potential for expansion of on-site materials is considered to be low. The Proposed Project would be designed and constructed in accordance with the recommendations in the geotechnical investigation and geological engineering reports, the latest version of the California Building Code, the Uniform Building Code, and all other applicable federal, state, and local codes. The Proposed Project would therefore not create a substantial risk to life or property and compliance with the recommendations in the reports and with existing regulations would ensure that impacts would be less than significant. No significant change is expected from the previous analysis.

- e) *Would the project 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. The Original Project included the connection to the municipal sewer system and storm drains, and septic tanks or alternative wastewater disposal systems were not used. Therefore, no new impacts would occur and no significant change is predicted from the previous analysis.

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

Less than Significant with Mitigation. The Original Project EIR found that “adherence to existing regulations would ensure that impacts to paleontological resources would be less than significant. However, for the Proposed Project with its additional impacts regarding soil disturbance, undocumented resources still have the potential to be discovered in or near the Project site. Due to the demonstrated overall sensitivity of the area, mitigation measures MM CUL-1 through MM CUL-5 are included to reduce potential impacts. These mitigation measures are intended to reduce impacts associated with the soil disturbance and were not included in the Original Project EIR. Therefore, these are new significant impacts that were identified as requiring mitigation.

4.8 GREENHOUSE GAS EMISSIONS

8.	GREENHOUSE GAS EMISSIONS. Would the project:	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b)	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.8.1 Environmental Setting

An Air Quality, Energy, and GHG Emissions Impact Analysis Report was prepared by Vista Environmental for the Proposed Project in January 2024 (Appendix A).

4.8.2 Impact Analysis

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

Less Than Significant. The Original EIR found that the Proposed Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The following section provides evidence that is consistent with the findings of the Original EIR.

The Proposed Project would consist of the development of a new gymnasium and aquatics center. The Proposed Project is anticipated to generate GHG emissions from area sources, energy usage, waste disposal, water usage, pool heater boiler, and construction equipment. Since the Proposed Project consists of the demolition and reconstruction of the gymnasium and relocation of an existing aquatic center on campus that would not result in an increase in student enrollment nor a new use on campus, the Proposed Project is not anticipated to generate any new vehicle trips to the school and no new mobile source emissions would be created from the Proposed Project.

The LB CAP (City of Long Beach 2022) is the applicable plan for the Project area for reducing GHG emissions. According to the LB CAP, if a project can show that the applicable GHG reduction measures in the LB CAP would be implemented as part of the Proposed Project, the Project would be considered consistent with the LB CAP and would result in a less than significant impact. As such, this analysis has quantified GHG emission for informational purposes only and determination of significance will be based on consistency with the applicable measures in the LB CAP. The Project's GHG emissions have been calculated with the CalEEMod model based on the construction and operational parameters detailed in Section 8.1 of Appendix A. A summary of the results is shown below in Table 4.4 and the CalEEMod model run is provided in Appendix A.

Table 4-4– Project Related Greenhouse Gas Annual Emissions

Category	Greenhouse Gas Emissions (Metric Tons per Year)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Area Sources ¹	1.37	<0.01	<0.01	1.37
Energy Usage ²	136	0.01	<0.01	137
Water and Wastewater ³	4.33	0.10	<0.01	7.44
Solid Waste ⁴	14.5	1.44	0.00	50.6
Refrigeration ⁵	--	--	--	0.05
Pool Heater Boiler ⁶	312	0.01	<0.01	313
Construction ⁷	27.93	<0.01	<0.01	28.27
Total GHG Emissions	496	1.56	<0.01	538

Notes:

¹ Area sources consist of GHG emissions from consumer products, architectural coatings, and landscaping equipment.

² Energy usage consists of GHG emissions from electricity and natural gas usage.

³ Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

⁴ Waste includes the CO₂ and CH₄ emissions created from the solid waste placed in landfills.

⁵ Refrigeration includes leakage of refrigerants used in HVAC units and vending machines.

⁶ Pool heater boiler based on a 2.0 MBTU per hour boiler operating 8 hours per day

⁷ Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.

Source: CalEEMod Version 2022.1.

The data provided in Table 4-4 shows that the Proposed Project would create 538 MTCO₂e per year. As detailed in Section 10.9 of Appendix A, the Proposed Project would implement the applicable measures in the LB CAP. Therefore, a less than significant generation of GHG emissions would occur from development of the Proposed Project. Impacts would be less than significant.

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

Less Than Significant. The Original EIR found that the Proposed Project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. The following section provides evidence that is consistent with the findings of the Original EIR. The applicable plan for the Proposed Project would be the LB CAP (City of Long Beach 2022). The Proposed Project's consistency with the Priority Mitigation Actions in the Climate Action and Adaptation Plan (CAAP) is shown in Table 4-5.

Table 4-5: Consistency with the City of Long Beach Climate Action Plan

Priority Mitigation Actions	Project Consistency
BE-1: Provide access to renewably generated electricity	Not Applicable. This policy is only applicable to Southern California Edison, which is the electrical provider for the City.
BE-2: Develop a home energy assessment program	Not Applicable. The policy is only applicable to the City to implement.
BE-3: Provide access to energy efficiency financing, rebates, and incentives for building owners	Not Applicable. The policy is only applicable to the City to implement.
BE-4: Promote community solar and microgrids	Not Applicable. The policy is only applicable to the City to implement.
BE-5: Perform municipal energy audits	Not Applicable. This policy is only applicable to the City to implement.
T-1: Increase frequency, connectivity, and safety of transit options.	Not Applicable. This action is applicable to Long Beach Transit.

Priority Mitigation Actions	Project Consistency
T-2: Increase employment and residential development along primary transit corridors	Not Applicable. The proposed project would not increase employment or residential development.
T-3: Implement the Port of Long Beach Clean Air Action Plan	Not Applicable. This action is applicable to the Port of Long Beach.
T-4: Increase bikeway infrastructure	Consistent. The proposed project would provide new bicycle parking areas that are connected to the nearby bike trails.
T-5: Expand/improve pedestrian infrastructure citywide	Consistent. The proposed project would improve on-site access routes.
T-6: Develop an Electric Vehicle Infrastructure Master Plan	Not Applicable. This action is only applicable to the City to implement.
T-7: Update the Transportation Demand Management Ordinance	Not Applicable. This action is only applicable to the City to implement.
T-8: Increase density and mixing of land uses	Not Applicable. This action is only applicable to the City to implement.
T-9: Integrate SB 743 planning with CAAP process	Not Applicable. This action is only applicable to the City to implement.
T-10: Identify and implement short-term measures to reduce emissions related to oil and gas extraction	Not Applicable. No oil and gas extraction is part of the proposed project.
W-1: Ensure compliance with state law recycling program requirements for multi-family residential and commercial property	Not Applicable. This policy is only applicable to the City to implement. However, the proposed project will commercial property recycling program.
W-2: Develop a residential organic waste collection program	Not Applicable. This policy is only applicable to the City to implement.
W-3: Ensure compliance with state law organic waste diversion requirements for multi-family residential and commercial	Not Applicable. This policy is only applicable to the City to implement.
W-4: Identify organic waste management options	Not Applicable. This policy is only applicable to the City to implement.

Source: City of Long Beach, LB CAP found at: <https://www.longbeach.gov/lbcd/planning/caap/>

As shown in Table 4-5 with implementation of statewide regulatory requirements including the CalGreen building standards, the Proposed Project would be consistent with all applicable policies of the CAAP. Therefore, implementation of the Proposed Project would not conflict with any applicable plan that reduces GHG emissions.

4.9 HAZARDS AND HAZARDOUS MATERIALS

9.	HAZARDS AND HAZARDOUS MATERIALS. Would the project:	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

9.	HAZARDS AND HAZARDOUS MATERIALS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(e)	For a project located within an airport land use plan or, where such a plan had not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.9.1 Environmental Setting

The Proposed Project and Project site were analyzed to determine the potential for hazards or hazardous materials to occur on-site. Background research included an evaluation of the Geotracker and Envirostor websites, operated by the SWRCB and the DTSC, respectively.

4.9.2 Impact Analysis

a) *Would the project 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 potential impacts from the route transport, use, or disposal of hazardous materials are outlined below for both the construction and operation phases.

Construction

Construction activities for the Original Project included excavation and grading, utilities, surface paving operations, and landscaping. Construction of the Original Project involved the use of hazardous materials that are typical for construction, including substances like paints, cleaners, fuel for construction equipment, etc. However, the Original EIR noted that the transport, use, and disposal of construction-related hazardous materials would occur in conformance with all applicable regulations governing such activities. During construction of the Proposed Project, the temporary storage and use of potentially hazardous petroleum hydrocarbon fuels and lubricants at the Project site would occur. Other potentially hazardous materials may also be used. The delivery of hazardous materials to the Project site would be made by carriers following 49 CFR Part 173. In addition, the transportation of hazardous materials would be subject to 49 CFR Part 172, which contains the hazardous materials

communication requirements, including shipping papers, marking, labeling, and placarding, in addition to emergency response requirements, training, and security plan. By following proper handling, health and safety practices, hazards communication, and emergency response procedures, any impact that would create a significant hazard to the public or the environment through the routine transport or use of hazardous materials at the Project site would be less than significant, and no significant change is expected from the previous analysis.

Operation

The Proposed Project includes operations and maintenance activities that would result in the periodic transport of hazardous materials to and from the Project site. Typical hazardous materials may potentially include chlorine, perlite, and muriatic acid for swimming pools and various potentially hazardous materials used for aquatic center and gymnasium maintenance. No other routine storage or use of hazardous materials is planned. The delivery of hazardous materials to or disposal from the Project site would be made by carriers following 49 CFR Part 173. In addition, the transportation of hazardous materials would be subject to 49 CFR Part 172 which contains the hazardous materials communication requirements including shipping papers, marking, labeling, and placarding, in addition to emergency response requirements, training, and security plan. By following proper handling, health and safety practices, hazards communication, and emergency response procedures, impacts that would create a significant hazard to the public or the environment through the routine transport or use of hazardous materials at the Project site would be less than significant, and no significant change is anticipated from the previous analysis.

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

Less than Significant Impact. A Hazardous and Non-Hazardous Materials Inspection Report was created for the Original Project in September 2012. The purpose of this inspection was to identify the potential for the presence of materials regulated by the EPA and/or the state. These materials would be abated in accordance with the procedures outlined in the Abatement Specifications Report prepared for the Original Project. Additionally, a Phase I Environmental Site Assessment was prepared for the Original Project in October 2011. Soil sampling was also performed to assess the potential impacts in shallow soils around the existing buildings from lead-based paint, organochlorine pesticides (OCPs) from termiticide application, VOCs, metals, and polynuclear aromatic hydrocarbons (PAHs). The Original Project concluded that best practice was following implementation of the RAW and removal of the impacted soil in accordance with state and federal standards, and application of the procedures outlined in the Abatement Specifications report. The Proposed Project would require the use of heavy equipment during demolition and construction of the proposed aquatic center and gymnasium. There is a potential for the release of fuels and/or lubricants during both demolition and construction. Hazardous materials associated with swimming pool maintenance, such as chlorine and other chemicals for filtration and water quality, and other potentially hazardous materials for facility maintenance could be subject to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. The contractor would, however, have an approved Spill Prevention Countermeasure and Control (SPCC) plan in place to address any releases that may occur during construction activities. Containment measures would also be implemented, as required in the Construction General Permit. The Preconstruction Due Diligence Assessment Report noted that the soil samples were of “acceptable quality” and no hazardous materials were found in

the soils. Proper handling, health and safety practices, hazard communication, and emergency response training would be provided to all construction and facility personnel responsible for using any hazardous materials. An SPCC would be prepared to address proper handling and emergency response to accidental releases. Therefore, the Proposed Project would have a less than significant impact with regard to creating 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, and no significant change is expected from the previous analysis.

- c) *Would the project 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 Project includes demolition of the existing gymnasium and construction of an aquatic facility and a new gymnasium. Demolition, construction, and operation of the Proposed Project would occur within the boundaries of the existing Jordan HS campus. Jordan HS is the only school located within one-quarter mile. The Original Project involved the use of hazardous materials in accordance with all regulations involving storage, use, and disposal. The Proposed Project would involve the use of heavy equipment during demolition and construction that would emit emissions associated with internal combustion engines (i.e., diesel and gasoline). Once operational, the Project would involve the use of chemicals associated with maintenance operations which would be subject to federal, state, and local health and safety requirements. As discussed above in Section 4.9.1 Impact (a), adherence to all local, county, state, and federal policies and regulations would reduce impacts to a level less than significant. Therefore, implementation of the Proposed Project would result in less than significant impacts associated with hazardous materials, substances, or waste within one-quarter mile of an existing school, and no significant impact is expected from the previous analysis.

- d) *Would the project 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?*

Less than Significant Impact. The following databases compiled pursuant to Government Code Section 65962.5 were checked for known hazardous materials contamination at the Project site:

- GeoTracker (SWRCB): list of leaking underground storage tank sites
- EnviroStor (California DTSC): list of hazardous waste and substances sites
- EnviroMapper (U.S. EPA)

During the Preliminary Environmental Assessment (PEA), the Site was investigated for lead from lead-based paint, OCPs from termiticide application, polychlorinated biphenyls, VOCs, metals, total petroleum hydrocarbons, and polycyclic aromatic hydrocarbons. On October 17, 2012, DTSC determined that a removal action is necessary based on the findings of the PEA. RAW was prepared for the school outlining measures for remediation of contaminated soils. On March 12, 2013, DTSC approved the RAW for implementation (DTSC 2023). As discussed previously, the Original Project includes application of the procedures outlined in the Abatement Specifications report, and implementation of the RAW, and removal of affected soils in accordance with state and federal standards. Following application of abatement procedures and implementation of the RAW, impacts would be less than significant, and no further study of this issue is required. For the Proposed Project, a Preconstruction Due Diligence Assessment Report and a Hazardous Materials Survey and Report were prepared in 2023. The Preconstruction Due Diligence Assessment Report noted that the soil

samples were of “acceptable quality” and no hazardous materials were found in the soils. The Hazardous Materials Survey and Report noted that asbestos containing materials (ACM), lead-based paint, polychlorinated biphenyls (PCBs), mercury in florescence light tubes/batteries, and refrigerants/gases were all found within the gymnasium. Therefore, to comply with existing regulations, an Operations and Maintenance (O&M) program will be conducted to properly manage these hazardous materials. All of these hazardous materials will need to be segregated, packaged, and disposed of in accordance with all federal, state, and local regulations. A less than significant impact would occur, and no significant change is anticipated from the previous analysis.

- e) *For a project located within an airport land use plan or, where such a plan had not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

No Impact. The Proposed Project is located more than 6 miles from the Long Beach Airport. The school is more than 2 miles from a public airport, airport land use plan, or a private airstrip, therefore there would be no impact associated with an airport, and no significant change is expected from the previous analysis.

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

No Impact. The Proposed Project would be designed to provide unobstructed access. Permitting requirements require the Division of State Architect (DSA) to perform an Access Compliance review and a Fire and Life Safety review prior to approval of the Proposed Project drawings and specification documents. Emergency access would be ensured, and the Proposed Project would not interfere with adopted emergency response or evacuation plans. Therefore, no impacts would occur and no significant change is anticipated from the previous analysis.

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

No Impact. The Project site is located in an urbanized area of the City of Long Beach that does not include wildlands or high fire hazard terrain or vegetation. The Proposed Project would not expose persons or structures to the risk of wildland fires during construction or operation. The Proposed Project is not located within a Very High Fire Severity Zone and its operations would be residential in nature and would not increase the risk of wildland fire. In addition, no roads would be permanently closed because of the construction or operation of the Proposed Project, and no structures would be developed that could impair or physically interfere with an adopted emergency response or evacuation plan. Therefore, no impacts would occur and no significant change is expected from the previous analysis.

4.10 HYDROLOGY AND WATER QUALITY

10.	HYDROLOGY AND WATER QUALITY. Would the project:	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 or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

10.	HYDROLOGY AND WATER QUALITY. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	i) Result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flood on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	iv) Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.10.1 Impact Analysis

a) *Would the project violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality?*

Less than Significant Impact. The Proposed Project includes the installation of a new aquatic facility and gymnasium. The Original Project construction would include the demolition, renovation/interior remodeling, and new construction of buildings over approximately six phases. In addition, the track and football field, and other athletic fields would be renovated with the Original Project. The Original Project EIR noted that “LBUSD would comply with all applicable requirements regulating drainage improvements and grading as they relate to construction of on-site improvements that affect off-site drainage. Implementation of all applicable water quality requirements, including preparation of a SWPPP, as well as obtaining a Stormwater Construction Activities General Permit and National Pollutant Discharge Elimination (NPDES) permit would ensure that impacts to hydrology and water quality, during construction and operation would be less than significant” (AECOM 2013). The Proposed Project site is located within the Los Angeles RWQCB jurisdiction, which is responsible for the preparation of the Los Angeles Region’s water quality control plan. The Project would be compliant with the NPDES Multiple Separate Storm Sewer System (MS4) Permit, which requires the implementation of BMPs. The Project site currently includes the existing gymnasium and natatorium, which offers little permeability. Installation of the proposed aquatic center and gymnasium would likely result in similar permeability to existing conditions. With implementation of BMPs, impacts to surface and/or ground water quality would remain less than significant, and there is no significant change expected from previous analyses.

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

Less Than Significant Impact. The Original Project EIR found that the Project site is currently developed with impervious surfaces and the Original Project would replace the existing uses with identical uses. The Proposed Project includes the installation of a new aquatic facility and gymnasium. The Proposed Project site is located in an urbanized area currently containing an operational school. The Proposed Project would not include the alteration of a stream or river. Water usage associated with the Proposed Project would be provided by the Long Beach Water Department which receives water from imports as well as groundwater from the central basin. The proposed swimming pool would contain slightly more water than the existing pools. Pool filters would recycle water, but pool levels would be lost daily due to evaporation. Additionally, showers and toilets would slightly increase water usage. However, the amount of water used by the Proposed Project in the long-term would result in a minor increase over the existing water use of Wilson High School as a whole. The pool building would be designed using Title 24 regulations. In addition, the Project goal will be to achieve 30-50% potable water use reduction for fixtures, toilets, and irrigation water, as well as meeting federal and California State Requirements. In addition, for the pool filtration system, the District will utilize filtration technology that is more water and energy efficient than the traditional sand filtration devices. This would ensure water use is greatly minimized. The Proposed Project would not physically interfere with any groundwater supplies. Impacts are therefore less than significant, and no significant change is anticipated from previous analysis.

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

Less than Significant Impact. The Original Project construction would require temporary disturbance of surface soils and removal of vegetative cover through grading and excavation. Activities associated with the construction of the Proposed Project could potentially result in erosion and sedimentation. However, as noted above, the Original Project EIR noted that, with compliance with applicable stormwater quality requirements, impacts would be less than significant. The Project site is relatively flat and includes replacing the existing gymnasium and natatorium with a new gymnasium and aquatic center, which may result in a small amount of erosion or siltation before the aquatic center is complete. BMPs would be implemented to reduce erosion, flooding, runoff, or polluted runoff. Therefore, the impacts would be less than significant, and no significant change is anticipated from the previous analysis.

- ii) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would 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. A Geotechnical Report was prepared for the Proposed Project by Koury Engineering and Testing. The Proposed Project would not involve alteration of a stream or river. The Los Angeles River passes approximately 1500 feet west of the site. The Project Site is located in an urban area and is almost entirely covered with impervious surfaces. Drainage patterns within the project area are already well-established, resulting in low potential for drainage alteration. The LBUSD should comply with the recommendations provided in the Geotechnical

Report. These include removal of the more susceptible material and re-compaction, preventing and repairing promptly utility line leaks, maintaining site drainage and drainage devices, and proper management of landscape watering to reduce the likelihood of water infiltrating deeper materials. A minimal amount of grading would be required during the construction of the Proposed Project. Compliance with existing regulations would ensure that the Proposed Project would not adversely affect the local drainage system in a manner that would result in substantial flooding on- or off- site. Less than significant impacts would occur, and no significant change is expected from the previous analysis.

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

Less than Significant Impact. As noted above, the Original Project EIR noted that, with compliance with applicable stormwater quality requirements, impacts would be less than significant. Similarly, the Proposed Project would not create or contribute runoff water which would exceed the capacity of existing runoff or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. The Proposed Project would not increase the coverage of impervious surfaces. The Proposed Project would include the demolition, remodeling, and construction of structures. The Project includes replacing existing paved areas with an aquatic center and would not create a substantial increase in runoff. Impacts would be less than significant and no significant change is anticipated from the previous analysis.

- iv) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?*

No Impact. The site is not located within a Federal Emergency Management Agency (FEMA) identified 100-year flood hazard (FEMA 2022) or other flood delineation map. As such, the structures included within the Proposed Project would not impede or redirect flood flows. No impact would occur, and no significant change is expected from the previous analysis.

- d) *Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*

No Impact. As discussed previously in section c) iv), the Proposed Project is not located within a flood hazard area. The Los Angeles River is located approximately 0.2 miles west of the Project Site, and is situated at a lower elevation. Also, the Project site is located at an average mean sea level elevation of approximately 55 feet, and there are no enclosed bodies of water in immediate vicinity of the Project site. Therefore, tsunamis and seiches are not considered to be potential hazards to the Project site. The Project site is located in an urbanized commercial and residential area, which is not adjacent to any hillside areas. As such, the Proposed Project would not be susceptible to mudflows. No impacts would occur and no significant change is expected from the previous analysis.

- e) *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

Less than Significant Impact. The Original Project EIR noted that “LBUSD would comply with all applicable requirements regulating drainage improvements and grading as they relate to construction of on-site improvements that affect off-site drainage... Implementation of all applicable water quality requirements, including preparation of a SWPP, as well as obtaining a Stormwater Construction Activities General Permit and NPDES permit would ensure that impacts to hydrology and water quality, during construction and operation would be less than significant” (AECOM 2013). The Proposed Project site is located within the Los Angeles RWQCB jurisdiction, which is responsible for the preparation of the Los Angeles Region’s water quality control plan. The Project would be compliant with the NPDES MS4 Permit, which requires the implementation of BMPs. With implementation of the BMPs, the Proposed Project would be compliant with the Los Angeles RWQCB’s water quality control plan. Therefore, a less than significant impact would occur, and no significant change is expected from the previous analysis.

4.11 LAND USE AND PLANNING

11.	LAND USE/PLANNING Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.11.1 Impact Analysis

- a) *Would the project physically divide an established community?*

No Impact. The Original Project EIR noted that the Original Project would include implementation of “the campus master plan, which involves modernization of the existing school campus through construction of new structures and renovation of existing structures and would not physically divide and established community” (AECOM 2013). The Proposed Project is located within an established institutional setting and is related to institutional uses. The Proposed Project would not increase the capacity or enrollment of the school as it involves modernization and renovation of new and existing facilities. Additionally, the Proposed Project would be located entirely within the existing boundaries of the Jordan HS campus. The Proposed Project would not physically divide an established community. Therefore, there Proposed Project would not result in any impacts related to dividing a community and no change is expected from the previous analysis.

- b) *Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

No Impact. The Original Project EIR noted that the Original Project would include implementation of “the campus master plan, which involves modernization of the existing school campus through construction of new and renovation of existing structures” and “would be consistent with the current land use and zoning designations for the Project site” (AECOM 2013). The Proposed Project is in

conformance with the City’s zoning designation of Institutional. The Proposed Project would not alter the general function of the existing site and would be compliant with the land use plan, policies, and regulations. The proposed uses would be consistent with the current land use and zoning designations for the Project site. No impact would occur and no change is anticipated from the previous analysis.

4.12 MINERAL RESOURCES

12.	MINERAL RESOURCES Would the project:	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 of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.12.1 Environmental Setting

Mineral resources are commercially viable mineral or aggregate deposits, such as sand, gravel, and other construction aggregate. The California Geological Survey provides objective geologic expertise and information about California’s diverse nonfuel mineral resources. Maps, reports, and other data products developed by the staff assist governmental agencies, mining companies, consultants, and the public in recognizing, developing, and protecting important mineral resources. The DOC protects mineral resources to ensure adequate supplies for future production. The California Surface Mining and Reclamation Act of 1975 (SMARA) was developed to encourage production and conservation of mineral resources, prevent, or minimize adverse effects to the environment, and protect public health and safety.

4.12.2 Impact Analysis

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

No Impact. The Original EIR noted that there are no known mineral deposits of regional or local importance underlying the Project site, and this remains unchanged. The Project site is an existing school, and land use changes would not be altered as a result of the Proposed Project. Implementation of the Proposed Project would not result in the loss of availability of any known mineral resource that would be of value to the region. Thus, no impacts would occur and no significant change is expected from the previous analysis.

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

No Impact. As noted above, the Original EIR noted that the Project site is not a mineral resource recovery site, and that has remain unchanged. In addition, the City of Long Beach’s General Plan does not specify any resource protection policies for mineral resources (City 2019). The Project site is not delineated as a locally important mineral resource recovery site on any land use plans. As discussed previously, the Project site is located within an urbanized area and is currently developed with school

facilities. Therefore, no impact to the loss of a known mineral resource would occur and no further discussion is required. No significant change is expected from the previous analysis.

4.13 NOISE

13.	NOISE Would the project result in:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b)	Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.13.1 Environmental Setting

As discussed in the 2013 EIR, the potential for cumulative noise effects is limited to temporary construction operations. Construction noise levels in the Proposed Project vicinity would fluctuate depending on the type, number, and duration of use of the varying equipment. The closest sensitive receptor are residences across Atlantic Avenue from the current Natatorium. Between the Natatorium and the residences is a parking lot, trees on the west side of Atlantic Boulevard (5 lanes and 2 medians), and trees on the east side of the residential property. The distance between the Project area and the residents is approximately 285 feet. Once the gymnasium and natatorium are removed, the aquatic center would be an outdoor facility while the new gymnasium would remain an enclosed facility. A Noise Impact Analysis Report was prepared by Vista Environmental for the Proposed Project in February 2024 (Appendix C)

4.13.2 Impact Analysis

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

Less Than Significant Impact. The Original Project EIR found that “Although project construction would adhere to the City’s permitted construction hours, the City’s General Plan Noise Element criteria of 70 and 75 dBA would be exceeded, which would not be consistent with the goals of the General Plan. The construction noise impact could be significant. As such, the implementation of mitigation measures NOISE-A through NOISE-F is necessary to reduce these construction noise impacts.” The mitigation measures contained in the Original EIR included providing a list of equipment and activities to LBUSD to ensure proper planning of the most intense construction activities, installing a sign with project contact information, not conducting noisy construction activities during testing periods, outfitting equipment with

mufflers and other devices to reduce noise, and limiting the use of pavement breakers and vibratory rollers near sensitive receptors, among others.

The Proposed Project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The following section calculates the potential noise emissions associated with the temporary construction activities and long-term operations of the Proposed Project and compares the noise levels to the City standards.

Construction-Related Noise

The construction activities for the Proposed Project are anticipated to include demolition of the existing gymnasium and outdoor paved area, site preparation and grading of approximately 2.5 acres, building construction of a new gymnasium and aquatic facility, paving of the hardscape areas, and application of architectural coatings. Noise impacts from construction activities associated with the Proposed Project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

Section 8.80.202 of the City's Noise Ordinance restricts construction activities from occurring between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between 6:00 p.m. and 9:00 a.m. on Saturdays, or anytime on Sundays or federal holidays. Through adherence to the construction-related noise requirements provided in the City's Noise Ordinance, construction-related noise levels would not exceed any noise standards established in the General Plan or Noise Ordinance. However, as detailed above in Section 4.1, the General Plan Noise Element details that the federal standards may be used when local criteria are not established. As such, the FTA construction noise level standard of 90 dBA at the nearby homes and daycare facility have been utilized in this analysis.

The nearest sensitive receptors to the Project site are residents at the multi-family homes on the west side of Atlantic Avenue that are located as near as 260 feet west of the Project site. There are also single-family homes on the east side of Myrtle Avenue that are located as near as 440 feet east of the Project site. In addition to the nearby homes, there is also a noise sensitive day care center at the Long Beach City Office, located in the northeast corner of Houghton Park, that is as near as 220 feet east of the Project site. Construction noise levels to the nearby sensitive receptors have been calculated through use of the RCNM and the parameters and assumptions detailed in Section 6.1 of Appendix C, including **Error! Reference source not found.** – Construction Equipment Noise Emissions and Usage Factors (Appendix C). The results are shown below in Table 4-6 and the RCNM printouts are provided in Appendix C.

Table 4-6 - Construction Noise Levels at the Nearby Sensitive Receptors

Construction Phase	Construction Noise Level (dBA Leq) at:		
	Multi-Family Homes to West ¹	Single-Family Homes to East ²	Daycare Facility to East ³
Demolition	66	63	66
Site Preparation	65	62	65
Grading	65	62	65
Building Construction	65	63	66
Paving	63	61	64
Painting	53	51	54

FTA Construction Noise Threshold⁴	90	90	90
Exceed Thresholds?	No	No	No

¹ The multi-family homes to the west are located as near as 527 feet from center of project site.

² The single-family homes to the east are located as near as 707 feet from center of project site.

³ The daycare facility to the east is located as near as 487 feet from center of project site.

⁴ The FTA Construction noise thresholds are detailed above in **Error! Reference source not found.**

Source: RCNM, Federal Highway Administration, 2006

Table 4-6 shows that the greatest noise impacts would occur during the demolition phase, with a noise level as high as 66 dBA Leq at the nearest multi-family homes to the west and at the daycare facility to the east. All calculated construction noise levels shown in Table 4-6 are within the FTA daytime construction noise standard of 90 dBA. Therefore, through adherence to allowable construction times provided in Section 8.80.202 of the Municipal Code, the construction activities for the Proposed Project would not create a substantial temporary increase in ambient noise levels that are in excess of applicable noise standards. Impacts would be less than significant.

Operational-Related Noise

The Proposed Project consists of the demolition and reconstruction of the gymnasium and relocation of an existing aquatic center on campus. The Proposed Project would not result in an increase in student enrollment and is not anticipated to generate any new vehicle trips to the school. As such, no roadway noise impacts are anticipated to be created from operation of the Proposed Project. In addition, the new gymnasium would be constructed at the same location as the existing gymnasium and would be constructed to the most current Title 24 building efficiency and insulation standards, which require new energy-efficient HVAC equipment that produce lower noise levels than the HVAC equipment on the existing gymnasium. Additionally, the roof and walls will be required to have enhanced insulation over what the existing gymnasium has, which would reduce the amount of interior noise being able to be transmitted outside of the building. For these reasons, operation of the new gymnasium would result in lower noise levels than what is currently occurring on-site with the existing gymnasium, and no further analysis is provided of the new gymnasium operational noise. Potential noise impacts associated with the operations of the Proposed Project would be limited to the on-site noise sources associated with the new aquatic center.

The operation of the Proposed Project may create an increase in on-site noise levels from the operation of pool area and rooftop mechanical equipment. Section 8.80.160 of the Municipal Code limits on-site noise sources at the property lines of the nearby homes (50 dBA between 7 a.m. and 10 p.m., and 45 dBA between 10 p.m. and 7 a.m.).

In order to determine the noise impacts from the operation of pool activities and rooftop mechanical equipment, reference noise measurements for similar operations were taken of each source and are shown in Table 4-7. The reference noise measurement printouts are provided in Appendix C. In order to account for the noise reduction provided by the proposed 8-foot high sound wall on the west side of the pool bleachers that is detailed in Project Design Feature 1, and the noise reduction provided by the approximately 30 foot high new gymnasium for the receptors to the east, the wall attenuation algorithm from the *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (TeNS), prepared by Caltrans in September 2013, was utilized. The sound wall noise reduction calculation spreadsheets are also provided in Appendix C.

Table 4-7– Operational Noise Levels at the Nearby Sensitive Receptors

Noise Source	Reference Noise Measurements ¹		Calculated Noise Levels (dBA Leq) at ² :		
	Distance Receptor to Source (feet)	Reference Noise Level (dBA Leq)	Multi-Family Homes to West	Single-Family Homes to East	Daycare Facility to East
Pool Activities ³	30	71.8	40	24	27
Rooftop Equipment	6	65.1	27	17	20
Noise Level from All Sources Combined			40	25	28
City Noise Standards (day/night)			50/45	50/45	50/45
Exceed City Noise Standards (day/night)?			No/No	No/No	No/No

Notes:

¹ The reference noise measurements printouts are provided in Appendix C.

² The calculated noise levels account for the proposed 8-foot high wall on the west side behind the bleachers and the approximately 30 foot high new gymnasium on the east side and the wall noise reduction calculation spreadsheets are provided in Appendix C.

³ The pool activities was based on a noise measurement 30 feet from Long Beach Community College Liberal Arts Campus pool hosting a swim meet.

Source: Noise calculation methodology from Caltrans, 2013 (see Appendix C).

Table 4-7 shows that the Proposed Project's worst-case (i.e., during a swim meet) operational noise from the simultaneous operation of all noise sources on the project site would create a noise level as high as 40 dBA Leq at the multi-family homes to the west. This would be within both the City's daytime noise standards (50 dBA between 7 a.m. and 10 p.m. and the City's nighttime noise standard of 45 dBA between 10 p.m. and 7 a.m.). Therefore, with implementation of Project Design Feature 1, the operational activities for the Proposed Project would not create a substantial temporary increase in ambient noise levels that are in excess of applicable noise standards. Impacts would be less than significant.

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

Less Than Significant Impact. The Proposed Project would not expose persons to, or cause generation of, excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the Proposed Project.

Construction-Related Vibration Impacts

The construction activities for the Proposed Project are anticipated to include demolition of the existing gymnasium and outdoor paved area, site preparation and grading of approximately 2.5 acres, building construction of a new gymnasium and aquatics facility, paving of the hardscape areas, and application of architectural coatings. Vibration impacts from construction activities associated with the Proposed Project would typically be created from the operation of heavy off-road equipment. The nearest vibration sensitive receptors, which would consist of a structure where a person would sit or lay down, making them more susceptible to vibration, include the Long Beach City Office located in the northeast corner of Houghton Park. This is located as near as 200 feet from the Proposed Project.

Section 8.80.200(G) of the City's Municipal Code limits vibration impacts to the nearby single-family homes to 0.001 g's in the frequency range of 0 to 30 hertz and 0.003 g's in the frequency range of 30 to 100 hertz. The acceleration of gravity (g), which is 32.2 feet per second, can be converted into peak particle velocity by multiplying 0.001 g's by 32.2 and then converting to inch per second, which results in a threshold of 0.386 inch per second PPV.

The primary source of vibration during construction would be from the operation of a bulldozer. From **Error! Reference source not found.** (Appendix C) a large bulldozer would create a vibration level of 0.089 inch per second PPV at 25 feet. Based on typical propagation rates, the vibration level at the nearest off-site structure (200 feet away) would be 0.009 inch per second PPV, which would be well below the 0.386 inch per second PPV threshold detailed above. Impacts would be less than significant.

Operations-Related Vibration Impacts

The Proposed Project would consist of the development and operation of a new gymnasium and aquatics center. The on-going operation of the Proposed Project would not include the operation of any known vibration sources. Therefore, a less than significant vibration impact is anticipated from the operation of the Proposed Project.

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

Less Than Significant Impact. The Proposed Project would not expose people residing or working in the Project area to excessive noise levels from aircraft. The nearest airport is Long Beach Airport, located approximately 3.2 miles southeast of the Project site. The Project site is located outside of the 60 dBA CNEL noise contours of Long Beach Airport. A less than significant impact would occur from aircraft noise.

4.14 POPULATION AND HOUSING

14.	POPULATION AND HOUSING. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.14.1 Environmental Setting

A project would have a significant adverse impact if it would induce substantial population growth in an area, either directly by proposing new homes and businesses or indirectly through the extension of roads or other infrastructure; displace housing units, causing the construction of replacement housing somewhere else; or displace people, causing the construction of replacement housing somewhere else. The project would not increase the capacity of the existing school.

Impact Analysis

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

No Impact. Construction and operation of the Proposed Project would not increase the capacity of the existing school; thus, no increase in enrollment would occur with implementation of the Proposed Project. The Project does not include any residential or commercial land uses that would induce population growth, and therefore, would not result in a direct population increase from construction of new homes or businesses. Additionally, the Proposed Project would not require the extension or the increase in capacity of existing off-site infrastructure. Neither the implementation of the Proposed Project or the Original Project are intended to increase the capacity of the existing school; thus, no increased enrollment would occur with implementation of the Proposed Project. Therefore, the Proposed Project would not induce substantial population growth in the area, either directly or indirectly. No impacts on population growth would occur as a result of the Proposed Project, and no significant change is expected from the previous analysis.

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

No Impact. No residential uses are present on the Project site; therefore, the development of the proposed project would not result in the displacement of existing housing, and no persons would be displaced. The Project site is designated for institutional uses and is currently developed with school facilities. Similar to the Original Project, no impacts to population and housing would occur, resulting in no need for construction of replacement housing. No significant change is anticipated from the previous analysis.

4.15 PUBLIC SERVICES

15.	PUBLIC SERVICES.	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	i) Fire Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	ii) Police Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.15.1 Environmental Setting

Public services include fire, police, schools, parks, and libraries. A project would impact a public service if it would result in an increased demand for that service or if the project would result in a hindrance to that service.

4.15.2 Impact Analysis

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

No Impact. Fire protection services for the Project site would be provided by the Long Beach Fire Department. The fire station nearest to the Project site is Fire Station 12, located at 1199 Artesia Blvd., Long Beach, CA 90805, approximately 0.7-mile northeast of the Proposed Project site. The current Fire Station 12 entered into operation in 2013, after the implementation of the Original Project. Fire protection service needs are generally related to the size of the population and geographic area served, the number and types of calls for service, and other community and physical characteristics. Because land uses at the Project site would remain the same as under current conditions, and no increase in students would result, an increase in the demand for fire services resulting from the Proposed Project is not anticipated. Similar to the Original Project, the implementation of the Proposed Project would, therefore, not result in an impact regarding fire protection services and no significant change is anticipated from the previous analysis.

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

No Impact. LBUSD maintains its own safety department to provide security for schools. The closest police station to the Project site is Long Beach Police North Division at 4891 Atlantic Ave., Long Beach, CA 90807, approximately 2 miles south of the Project site. The Long Beach Police Department provides police protection services within the City. Police units are continuously mobile and service calls are responded to from the nearest available mobile unit. Additionally, as discussed previously, development of the Proposed Project would not generate any new permanent residents, and the officer-to-population ratio would remain the same under the existing conditions. Similar to the Original Project, the Proposed Project would not induce an increase in population and, therefore, would not require additional police protection. No significant impacts are expected to occur and no significant change is expected from the previous analysis.

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

No Impact. The Proposed Project involves upgrades within the school property boundaries. During construction, the swimming and gymnasium uses would temporarily be relocated to off-site facilities owned by the District, or, if needed, through use of local parks and other similar facilities. Although the Proposed Project has the potential to increase use of parks, it would be temporary and only during construction of the new facilities. However, development of the Proposed Project would not increase the capacity of the existing school; thus, no increase in enrollment would occur with implementation. Similar to the Original Project, development of the Proposed Project would benefit the existing campus by providing new and renovated facilities. The implementation of the Proposed Project would, therefore, not result in an impact.

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

No Impact. The Project would not result in adverse physical impacts associated with the provision of new or physically altered facilities to maintain acceptable opportunities for parks. The closest park, Houghton Park, is the adjacent property to the Project site to the south. The school does not use this park for recreational purposes. The Proposed Project would not induce population growth and would not create new residents that would result in the need for new or expanded parks. In the Original Project, the school used some of the facilities at the adjacent park to hold practice for various athletic teams during construction of interim housing on the existing baseball and athletic practice fields. However, this did not increase the capacity of the existing school and did not generate any new permanent residents that increased the demand for local and regional park facilities. Therefore, implementation of the Proposed Project would not result in a significant impact associated with parks and no significant change is anticipated from the previous analysis.

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

No Impact. Similar to what was noted in the Original Project EIR, the Proposed Project is not expected to impact any other public facilities such as hospitals or libraries. The Proposed Project would not increase the capacity of the existing school or generate any new permanent residents. The Proposed Project does not include activities that would increase student enrollment and result in the need for expanded public services and facilities. No impact would occur, and no significant change is anticipated from the previous analysis.

4.16 RECREATION

16.	RECREATION. Would the project:	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.16.1 Environmental Setting

Recreational facilities include active and passive facilities. Active recreational facilities include parks, tennis and basketball courts, pools, golf courses, and various other facilities. Passive recreational facilities include plazas and other public places.

A project would result in a significant impact on recreational facilities if: it would increase the use of existing parks and facilities such that substantial physical deterioration of the facility would occur or be accelerated, or if the project included recreational facilities or required construction that might have an adverse physical effect on the environment.

4.16.2 Impact Analysis

- 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 Project includes construction of an aquatic center and gymnasium to replace the existing gymnasium and natatorium. The Project would not increase the use of existing surrounding recreational facilities.

Additionally, similar to what was found in the Original Project EIR, the Proposed Project would not directly or indirectly induce population that would increase the use of existing neighborhood, regional parks, or any other recreational facilities. During construction, the swimming and gymnasium uses would temporarily be relocated to off-site facilities owned by the District, or, if needed, through use of local parks and other similar facilities. Although the Proposed Project has the potential to increase use of parks, it would be temporary and only during construction of the new facilities. Houghton Park is adjacent to the school to the south of the Project site. Jordan HS does not use the nearby park because the school provides its own recreational facilities to fulfill students' recreational needs. No impact would occur and no significant change is anticipated from the previous analysis.

- 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?*

No Impact. The Project site is located at Jordan HS, which provides students with on-campus recreational facilities. Implementation of the Proposed Project would not require the construction or

expansion of off-site recreational facilities. Similar to the Original Project, the Proposed Project is intended to upgrade school facilities for an existing student population and would not burden any facility beyond capacity by generating additional recreational users. Therefore, implementation of the Proposed Project would not result in an impact associated with the construction or expansion of recreational facilities, and no significant change is anticipated from the previous analysis.

4.17 TRANSPORTATION

17.	TRANSPORTATION. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b)	Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c)	Substantially increase hazards due to a geometric design feature (e. g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d)	Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.17.1 Impact Analysis

- a) *Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?*

Less than Significant Impact. The Original Project, which analyzed renovation throughout the campus, noted that, “the construction contractor would coordinate with the City during construction to develop a traffic management plan for any temporary lane closures and would limit construction in these locations to outside peak travel hours. The traffic management plan would contain project-specific measures for noticing, signage, policy guidance, and the limitation of lane closures to off-peak hours. Implementation of the traffic management plan would ensure that construction impacts would be less than significant” (AECOM 2013). The Proposed Project would not change any existing roadways, bicycle lanes, or pedestrian paths. The Proposed Project activities would remain within the existing campus. The Proposed Project would generate minor increases in traffic associated with short-term construction activities due to the presence and use of construction equipment and vehicles. However, there would not be a significant and permanent increase in traffic after the completion of the Proposed Project. In addition, similar to what was analyzed in the Original EIR, as part of District Construction BMPs, the District would require its contractors to submit a worksite traffic control plan to the City of Long Beach for review prior to construction. The plan would show the location of any haul routes, construction hours, protective devices, warning signs, and access to abutting properties. The Proposed Project would not change the current local traffic levels. Impacts would be less than significant.

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

Less than Significant Impact. In 2013, the State Legislature adopted Senate Bill (SB) 743, a measure requiring all California cities to change long-standing methods for analyzing transportation-related

impacts of projects. The City of Long Beach has approved guidelines for analyzing the traffic and circulation impacts under SB 743 in June 2020 (City of Long Beach 2020). Due to timing of the analysis, VMT was not analyzed in the Original EIR, as it was not incorporated in the CEQA Guidelines at that time.

According to the guidelines, the County of Los Angeles Average VMT per Population is 13.9; the VMT per population for the Project site is between 11.8-16.0. Therefore, the average VMT per capita is similar or lower than the county average for the Project site, indicating that any office or residential type development in the area would have a less than significant impact. Additionally, the Project site is located within 0.5 mile of a well-served transit stop or High-Quality Transit Corridor (HQTC) and is therefore within a High-Quality Transit Area (HQTA; SCAG 2021). Development in close proximity to a HQTC or within a HQTA also typically results in a less than significant impacts.

Currently, members of various athletic teams practice and compete at the existing indoor pool and gymnasium on campus. The Proposed Project would develop an outdoor competition size pool and gymnasium at the existing school, which would not have any impact on VMT. Consequently, impacts to VMT would be less than significant.

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

No Impact. Similar to the Original Project, the Proposed Project would not change any design features of the existing transportation structures. There would be no change to the existing roadways and the Project would not involve any incompatible uses. Implementation of the Project would not result in an impact, and no significant change is anticipated from the previous analysis.

- d) *Would the project result in inadequate emergency access?*

Less than Significant Impact. Similar to the Original Project, the Proposed Project would occur entirely within the Jordan HS campus and does not include changes to nearby roadways or emergency access routes. As part of District Construction BMPs, the District will require its contractors to submit a worksite traffic control plan to the City for review prior to construction. The plan will show the location of any haul routes, construction hours, protective devices, warning signs, and access to abutting properties. After construction, all lanes in the vicinity of the Proposed Project would remain open for emergency use; therefore, implementation of the Proposed Project would not result in an impact associated with emergency access, and no significant change is anticipated from the previous analysis.

4.18 TRIBAL CULTURAL RESOURCES

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

4.18.1 Environmental Setting

Based on the list of tribes that had previously requested consultation with the District, the District sent out AB 42 letters to Torres Martinez Desert Cahuilla Indians, the Gabrieleño/Tongva San Gabriel Band of Mission Indians, and the Gabrieleño Band of Mission Indians-Kizh Nation on April 18th, 2024. On May 7th, 2024, the Gabrieleño Band of Mission Indians-Kizh Nation responded and requested formal consultation. A formal consultation phone call was conducted on June 11th, 2024 and these have been incorporated below. With the acceptance of the suggested mitigation measures, consultation was deemed concluded on June 17th 2024.

4.18.2 Impact Analysis

a) *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?*

Less Than Significant Impact. Based on information provided by the Gabrieleño Band of Mission Indians – Kizh Nation, including information discussed during the June 11th, 2024 consultation call, the District recognizes that potential subsurface tribal cultural resources may be present near of within the Project Site. As noted in Section 4.5.1, the California Historical Records Information System (CHRIS) records search identified that no recorded cultural resources are located within one-half mile of the Proposed Project. Since no resources on the Project site area listed or eligible for listing in the California Register of Historical Resources (CRHR), or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), impacts are considered less than significant.

- b) *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?*

Less than Significant Impact with Mitigation Incorporated. As noted above in 4.18.2 a), based on information provided by the Gabrieleño Band of Mission Indians – Kizh Nation, including information discussed during the June 11th, 2024 consultation call, the District recognizes that potential subsurface tribal cultural resources may be present near or within the Project site. Due to the amount of excavation and grading involved in the Proposed Project, the following mitigation measures will be implemented to reduce impacts to less than significant.

MM TCR-1: Retain a Native American Monitor/Consultant.

- A. The Project Applicant shall be required to retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians Kizh Nation. The monitor shall be retained prior to the commencement of any “ground-disturbing activity” for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work). “Ground-disturbing activity” shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching.
- B. A copy of the executed monitoring agreement shall be submitted to the lead agency prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity.
- C. The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and describe any discovered TCRs, including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or “TCR”), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of monitor logs will be provided to the project applicant/lead agency upon written request to the Tribe.
- D. On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the Kizh from a designated point of contact for the project applicant/lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Kizh to the project applicant/lead agency that no future, planned construction activity and/or development/construction phase at the project site possesses the potential to impact Kizh TCRs.

MM TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funery/Non-Ceremonial)

- A. Upon discovery of any TCRs, all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Kizh monitor and/or Kizh archaeologist. The Kizh will recover and retain all discovered TCRs in the form and/or manner the Tribe deems appropriate, in the Tribe's sole discretion, and for any purpose the Tribe deems appropriate, including for educational, cultural, and/or historic purposes.

MM TCR-3 Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects

- A. Native American human remains are defined in PCR 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code Section 5097.98, are also to be treated according to this statute.
- B. If Native American human remains and/or grave goods are discovered or recognized on the project site, then Public Resource code 5097.9 as well as Health and Safety Code Section 7050.5 shall be followed
- C. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2).
- D. Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods.
- E. Any discovered human remains/burial goods shall be kept confidential to prevent further disturbance.

4.19 UTILITIES AND SERVICE SYSTEMS

19.	UTILITIES/SERVICE SYSTEMS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b)	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

19.	UTILITIES/SERVICE SYSTEMS. Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(c)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d)	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(e)	Negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(f)	Comply with federal, state, and local management and reduction statutes and regulations related to solid wastes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.19.1 Environmental Setting

Utilities and service systems include potable water and wastewater treatment. The quantity of water consumed, and wastewater generated by a project is determined by several factors including the size, type, and characteristics of the project. The need for construction of new or replacement water and wastewater treatment facilities (e.g., reservoirs, storage tanks, water mains, filtration plants, pumps, wells, and other connections or distribution facilities) would depend on the existing capacity and anticipated demand for the project area.

4.19.2 Impact Analysis

- a) *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or expansion of which could cause significant environmental effects?*

Less than Significant Impact. Similar to the Original Project, implementation of the Proposed Project would not directly result in an increase in student or staff population. The proposed aquatic center and new gymnasium would replace the existing natatorium and pool, including pool equipment. Therefore, post construction, the generation of wastewater, water usage, and other electricity and gas usage on the Project site would not differ substantially from existing conditions. Therefore, implementation of the Proposed Project would result in less than significant impacts associated with water and/or wastewater facilities, or other utility facilities, and no significant changes are anticipated from the previous analysis.

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

Less than Significant Impact. The Original Project did not include an aquatic center, and for this portion of campus, was mostly focused on gymnasium renovation. The Proposed Project involves the construction of an aquatic facility, which will include a 51.5-meter-long by 25-yard-wide swimming pool, to replace the existing 75 feet by 65 feet indoor swimming pool. The new swimming pool would

contain slightly more water than the existing pool. Pool filters would recycle water; however, water levels in the pool would be lost daily due to evaporation. In addition, the new showers and toilets would slightly increase water usage. However, the amount of water used by the Proposed Project in the long-term would likely be similar to the existing water use of Lakewood High School as a whole due to the reasons outlined below. First, the Project is not anticipated to increase enrollment; therefore, same number of students use the fixtures regardless of the total number, and that the overall long-term use of water may only be minimally increased; in addition, the pool building would be designed using Title 24 regulations. All fixtures, faucets, shower heads and toilets would meet federal and California State Requirements including California Green Building Standards Code. Lastly, the pool filtration system is a regenerative media filtration system, utilizing technology that significantly reduces water use (20K gallons annually compared to sand's 500K to 1M gallons, resulting in 97% annual water saving) and is more energy efficient (21% annual electrical saving) than the traditional sand filtration devices. This would ensure water use is greatly minimized.

Overall, while the Proposed Project would result in a long-term use of water supplies, above that which was considered in the Original EIR, but it is a nominal increase compared to the overall water consumption of such an urban area, and a minor increase over the existing water use of Jordan HS. The Project is considered to have sufficient water supplies available and is not expected to significantly contribute to any water shortages during normal, dry, and multiple dry years. Impacts would be less than significant, and no significant changes are anticipated from the previous analysis.

- c) *Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Less than Significant Impact. The Original Project EIR noted that, "Compliance with existing regulations would ensure no construction impacts to wastewater treatment requirements. Newly constructed buildings would replace existing facilities with similar uses. Additionally, new structures would be designed to improve water efficiency. As such, a net increase in the generation of wastewater is not anticipated during project operation" (AECOM 2013). Users of the Proposed Project and on-site staff would generate wastewater via showers and toilets. The Proposed Project would replace the existing pool and gymnasium and would employ staff and serve patrons from the local area; therefore, the Project would not result in a net increase to the amount of wastewater generated in the community. Overall, the limited amount of wastewater generated by operation of the Proposed Project through sporting events and athletic practices would be less than significant, and no significant change from the previous analysis is anticipated.

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

Less than Significant Impact. Similar to the Original Project, the Proposed Project will not significantly affect the volume of solid waste. Construction of the Proposed Project would result in the generation of solid waste, including scrap lumber, concrete, residual waste, packaging material, plastics, and vegetation. To ensure optimal diversion of solid waste resources by the Proposed Project, the District will require contractors to recycle or salvage non-hazardous waste materials generated during demolition and/or construction, to foster material recovery and reuse, and to minimize disposal in landfills. Furthermore, impacts from construction activities will be short-term and intermittent, and will be mitigated by compliance with existing state solid waste reduction statutes. The Proposed Project would not cause an increase in student and staff population that would result in the

permanent and significant increase of solid waste. Therefore, impacts to solid waste would be less than significant, and no significant change is anticipated from the previous analysis.

- e) *Would the project negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goals?*

Less Than Significant. The City of Long Beach has developed a source reduction and recycling program to reduce the amount of waste to be managed and to reduce the consumption of natural resources. Solid waste is sent to the Southeast Resource Recovery Facility (SERRF), where it is processed through one of three boilers. In addition, SERRF performs "front-end" and "back-end" recycling by recovering such items as white goods prior to incineration and collection metals removed from the boilers after incineration (Long Beach 2023).

As stated in Long Beach Municipal Code Chapter 18.676, approximately 22% of the City's solid waste sent to landfills is from construction and demolition activities and the diversion of these materials would have a significant potential for waste reduction and recycling. Reusing and recycling construction demolition materials is essential to further the City's efforts to reduce waste and continue to comply with California Integrated Waste Management Act of 1989 (AB 939). The project is required to submit a Waste Management Plan (WMP) to divert 65% of all project-related construction and demolition materials. Similar to the Original Project, adherence to City ordinances associated with construction and demolition, as well as to the conditions of the WMP, would reduce impact related to solid waste services and decrease attainment of solid waste reduction goals to less than significant. Operations of the aquatic center and new gymnasium would not significantly increase the amount of solid waste currently generated, because the use of the facilities would be similar to existing conditions, resulting in a less than significant impact to solid waste services or reductions goals. No significant change is anticipated from the previous analysis.

- f) *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

Less than Significant Impact. Similar to the Original Project, construction of the Proposed Project would generate routine solid waste and, therefore, would require the consideration of waste reduction and recycling measures. The Project would be required to adhere to AB 939, which requires specific waste diversion goals. The Proposed Project would reuse and recycle construction material to the maximum extent feasible. The Proposed Project would not cause an increase in student and staff population that would result in the permanent and significant increase of solid waste. Therefore, the proposed Project is consistent with AB 939, resulting in less than significant impacts. No new impacts would occur, and no significant change is anticipated from the previous analysis.

4.20 WILDFIRE

20.	WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

20.	WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(b)	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c)	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d)	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4.20.1 Impact Analysis

a) *Would the project impair an adopted emergency response plan or emergency evacuation plan?*

Less than Significant Impact. The Project site is located outside of any Fire Hazard Severity Zones (CalFire 2007). Wildfire impact analysis was not included in the Original Project EIR, as this section was added after the Original Project EIR was certified. The Proposed Project will not impair an adopted emergency response plan or evacuation plan. The Proposed Project does not include any modifications of main roads that could be designated as emergency evacuation routes, nor does the Project include construction of facilities that would interfere with an emergency response or evacuation plan. Impacts would be less than significant, and no significant change is expected from the previous analysis.

b) *Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

Less than Significant Impact. The Proposed Project is not located within a very high fire hazard severity zone (CalFire 2007). The Project site is located on a relatively flat, urbanized location with little vegetation and, therefore, will not exacerbate wildfire risks. Due to the absence of significant sloping features or notable prevailing winds, and the fact that the area is highly developed, the Proposed Project would not exacerbate wildfire risks and expose sensitive receptors to pollutant concentrations. Impacts would be less than significant, and no significant change is anticipated from the previous analysis.

c) *Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

Less than Significant Impact. The Proposed Project does not include installation or maintenance of associated infrastructures that would exacerbate a fire risk. In addition, the Proposed Project is not located within a very high fire hazard severity zone. Impacts would be less than significant, and no significant change is expected from the previous analysis.

- d) *Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

Less than Significant Impact. The Project site does not include structures that would be exposed to downstream flooding or landslides. The Project site is absent of significant sloping features. The Project site is relatively flat and does not include activities that would change the drainage or slope of the Project site. The Proposed Project will implement the necessary BMPs to address potential increases in runoff. Impacts would be less than significant, and no significant change is anticipated from the previous analysis.

4.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

4.21.1 Impact Analysis

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

Less Than Significant Impact with Mitigation Incorporated. As discussed in Section 4.4 Biological Resources, the Project site is located in an urbanized setting within a fully developed and operational school. Vegetation is limited to ornamental landscaping. No native vegetation is present on the Project site; as such, candidate and special status species are not expected to occur. Additionally, no riparian habitat or other sensitive natural community or wetlands exist on the project site. Implementation of the Proposed Project would not interfere with the movement of any native resident or migratory fish or wildlife species, or native wildlife nursery sites. Therefore, impacts would be less than significant.

As discussed in Section 4.5 Cultural Resources, there are no anticipated substantial adverse impacts that would impair the historic significance of Jordan HS. However, with the historic age of the school structures and existence of previously recorded prehistoric and historic resources within the half-mile study area, undocumented resources have the potential to be discovered in or near the Project site. Due to the sensitivity of the area, the mitigation measures outlined in Section 4.5 and 4.18 shall be implemented to mitigated impacts associated with the soil disturbance, which were not included in the Original Project EIR and to address potential impacts to Tribal Cultural Resources. Impacts therefore would be less than significant with mitigation incorporated.

MM CUL-1 LBUUSD shall retain the services of a qualified cultural resources consultant and require that all initial ground disturbing work be monitored by a cultural resources monitor (monitor). This includes all initial construction activities that will potentially expose or encounter intact subsurface sediments underlying the Project site. The cultural resources consultant shall provide a Qualified Archaeologist, meeting the Secretary of the Interior Standards (U.S. Department of the Interior, 2008), and require that all initial ground-disturbing work be monitored by a monitor proficient in artifact and feature identification in monitoring contexts. The Consultant (Qualified Archaeologist and/or monitor) shall be present at the Project construction phase kickoff meeting.

MM CUL-2 Prior to commencing construction activities and thus prior to any ground disturbance in the Proposed Project site, the Consultant shall conduct initial Worker Environmental Awareness Program (WEAP) training to all construction personnel, including supervisors, present at the outset of the Project construction work phase, for which the lead contractor and all subcontractors shall make their personnel available. This WEAP training will educate construction personnel on how to work with the monitor(s) to identify and minimize impacts to cultural resources and maintain environmental compliance and be performed periodically for new personnel coming on to the Project as needed.

MM CUL-3 The contractor shall provide the Consultant with a schedule of initial potential ground disturbing activities. A minimum of 48-hours' notice will be provided to the archaeological consultant of commencement of any initial ground disturbing activities that have potential to expose or

encounter intact subsurface sediments underlying the Project site. These activities may include grading, trenching, and mass excavation.

As detailed in the schedule provided, a monitor shall be present on-site at the commencement of ground-disturbing activities related to the Project. The Consultant shall observe initial ground disturbing activities and, as they proceed, adjust the monitoring approach as needed to provide adequate observation and oversight. All monitors will have stop-work authority to allow for recordation and evaluation of finds during construction. The monitor will maintain a daily record of observations as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project.

The Consultant, the lead contractor, and subcontractors shall maintain a line of communication regarding schedule and activity such that the Consultant is aware of all ground-disturbing activities in advance, in order to provide appropriate oversight.

MM CUL-4 In addition to cultural resources monitoring, if formally requested during Native American Consultation under AB 52, a Native American monitor(s) selected by the tribe should be present at the Project kickoff meeting, be provided with a schedule of initial ground-disturbing activities, and be on-site at the commencement of ground-disturbing activities related to the Project, and as the Project proceeds adjusting personnel and schedule as needed to provide sufficient oversight. The Consultant, lead contractor, and all subcontractors shall routinely update the Native American monitor and their scheduling representative(s) regarding scheduling for ground-disturbing activities, and changes to said schedule, such that there is sufficient advance notice that a Native American monitor can be scheduled accordingly.

MM-CUL-5 If cultural resources are discovered, construction shall be halted within 50 feet of any cultural artifacts or features and within 100 feet of any potential human remains and shall not resume until the Qualified Archaeologist can determine the significance of the find and/or the find has been fully investigated, appropriately documented, and cleared.

MM CUL-6 At the completion of all ground disturbing activities, the Consultant shall prepare a Cultural Resources Monitoring Report summarizing all monitoring efforts and observations as performed, and any and all prehistoric or historic archaeological finds, as well as providing follow-up reports of any finds to the SCCIC, as required.

MM TCR-1: Retain a Native American Monitor/Consultant.

- A. The Project Applicant shall be required to retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians Kizh Nation. The monitor shall be retained prior to the commencement of any “ground-disturbing activity” for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work). “Ground-disturbing activity” shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching.

- B. A copy of the executed monitoring agreement shall be submitted to the lead agency prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity.
- C. The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and describe any discovered TCRs, including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of monitor logs will be provided to the project applicant/lead agency upon written request to the Tribe.
- D. On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the Kizh from a designated point of contact for the project applicant/lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Kizh to the project applicant/lead agency that no future, planned construction activity and/or development/construction phase at the project site possesses the potential to impact Kizh TCRs.

MM TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funery/Non-Ceremonial)

- A. Upon discovery of any TCRs, all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Kizh monitor and/or Kizh archaeologist. The Kizh will recover and retain all discovered TCRs in the form and/or manner the Tribe deems appropriate, in the Tribe's sole discretion, and for any purpose the Tribe deems appropriate, including for educational, cultural, and/or historic purposes.

MM TCR-3 Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects

- A. Native American human remains are defined in PCR 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code Section 5097.98, are also to be treated according to this statute.
- B. If Native American human remains and/or grave goods are discovered or recognized on the project site, then Public Resource code 5097.9 as well as Health and Safety Code Section 7050.5 shall be followed
- C. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2).

- D. Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods.
- E. Any discovered human remains/burial goods shall be kept confidential to prevent further disturbance.

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

Less Than Significant Impact. Jordan HS proposes additional renovations as part of LBUSD's District Wide improvements (LBUSD 2024). Future projects that may coincide with the construction of the Proposed Project, which is proposed to begin March 2025 and be completed in July 2027, include the following:

- Sports Field and Visitor Bleachers (Construction to begin 2026-2027)

The proposed District wide improvements will require their own standalone environmental analysis to determine the individual and cumulative impacts. These proposed improvements are not expected to occur within the Proposed Project site. Since there would be no overlap in the schedule of the projects, no cumulative impacts would result. Other projects occurring in the vicinity of the Project site within the City of Long Beach could have the potential to cumulatively increase impacts to air quality, GHG emissions, and noise. However, as discussed above in Section 4.3 Air Quality, Section 4.8 Greenhouse Gas Emissions, and Section 4.13 Noise, the proposed construction and operations would not result in exceeding local thresholds. Furthermore, the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant. Impacts would be less than significant.

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

Less Than Significant Impact. Effects to human beings are generally associated with air quality, noise, traffic safety, geology/soils, and hazards/hazardous materials. As noted in the sections above, the Proposed Project would not result in significant impacts to any of these impact categories.

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APPENDIX A – AIR QUALITY, ENERGY AND GREENHOUSE GAS REPORT

AIR QUALITY, ENERGY, AND GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

JORDAN HIGH SCHOOL NEW GYMNASIUM & AQUATIC CENTER PROJECT

CITY OF LONG BEACH

Lead Agency:

Long Beach Unified School District
Facilities and Planning Branch
2425 Webster Avenue
Long Beach, CA 90810

Prepared by:

Vista Environmental
1021 Didrickson Way
Laguna Beach, CA 92651
949 510 5355
Greg Tonkovich, AICP

Project No. 23010

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TABLE OF CONTENTS

1.0	Introduction	1
1.1	Purpose of Analysis and Study Objectives	1
1.2	Site Location and Study Area	1
1.3	Proposed Project Description	2
1.4	Executive Summary.....	2
1.5	Mitigation Measures for the Proposed Project	3
2.0	Air Pollutants.....	6
2.1	Criteria Pollutants and Ozone Precursors	6
2.2	Other Pollutants of Concern	8
3.0	Greenhouse Gases	10
3.1	Greenhouse Gases	10
3.2	Global Warming Potential.....	12
3.3	Greenhouse Gas Emissions Inventory.....	13
4.0	Air Quality Management	14
4.1	Federal – United States Environmental Protection Agency.....	14
4.2	State – California Air Resources Board	17
4.3	Regional – Southern California	18
4.4	Local – City of Long Beach.....	21
5.0	Energy Conservation Management	22
5.1	State	22
5.2	Local – City of Long Beach.....	24
6.0	Global Climate Change Management	26
6.1	International	26
6.2	Federal – United States Environmental Protection Agency.....	26
6.3	State	27
6.4	Regional – Southern California	32
6.5	Local – Long Beach	33
7.0	Atmospheric Setting	34
7.1	South Coast Air Basin	34
7.2	Local Climate	34
7.3	Monitored Local Air Quality	35
7.4	Toxic Air Contaminant Levels in the Air Basin	37
8.0	Modeling Parameters and Assumptions.....	39
8.1	CalEEMod Model Input Parameters	39
8.2	Energy Use Calculations.....	42

TABLE OF CONTENTS CONTINUED

9.0	Thresholds of Significance.....	46
	9.1 Regional Air Quality	46
	9.2 Local Air Quality	46
	9.3 Toxic Air Contaminants	47
	9.4 Odor Impacts.....	47
	9.5 Energy Conservation	47
	9.6 Greenhouse Gas Emissions	48
10.0	Impact Analysis	49
	10.1 CEQA Thresholds of Significance	49
	10.2 Air Quality Compliance	49
	10.3 Cumulative Net Increase in Non-Attainment Pollution	51
	10.4 Sensitive Receptors.....	53
	10.5 Odor Emissions	56
	10.6 Energy Consumption.....	57
	10.7 Energy Plan Consistency	60
	10.8 Generation of Greenhouse Gas Emissions.....	61
	10.9 Greenhouse Gas Plan Consistency.....	62
11.0	References.....	64

APPENDICES

Appendix A – CalEEMod Model Printouts

Appendix B – EMFAC2021 Model Printouts

LIST OF FIGURES

Figure 1 – Project Local Study Area	4
Figure 2 – Proposed Site Plan	5

LIST OF TABLES

Table A – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs	12
Table B – State and Federal Criteria Pollutant Standards.....	14
Table C – National Air Quality Standards Attainment Status – South Coast Air Basin	16
Table D – California Ambient Air Quality Standards Attainment Status – South Coast Air Basin	17
Table E – Monthly Climate Data	35
Table F – Local Area Air Quality Monitoring Summary.....	36
Table G – CalEEMod Land Use Parameters.....	39
Table H – Off-Road Equipment and Fuel Consumption from Construction of the Proposed Project	43
Table I – On-Road Vehicle Trips and Fuel Consumption from Construction of Proposed Project	44
Table J – SCAQMD Regional Criteria Pollutant Emission Thresholds of Significance	46
Table K – SCAQMD Local Air Quality Thresholds of Significance	47
Table L – Construction-Related Criteria Pollutant Emissions.....	51
Table M – Operational Criteria Pollutant Emissions	52
Table N – Project Related Greenhouse Gas Annual Emissions.....	61
Table O – Consistency with the City of Long Beach Climate Action Plan	62

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Air Basin	South Coast Air Basin
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
BSFC	Brake Specific Fuel Consumption
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
Cf ₄	tetrafluoromethane
C ₂ F ₆	hexafluoroethane
C ₂ H ₆	ethane
CH ₄	Methane
City	City of Long Beach
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
°F	Fahrenheit
FTIP	Federal Transportation Improvement Program
GHG	Greenhouse gas
GWP	Global warming potential
HAP	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change

kWhr	kilowatt-hour
LCFS	Low Carbon Fuel Standard
LST	Localized Significant Thresholds
MATES	Multiple Air Toxics Exposure Study
MMTCO ₂ e	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
MWh	Megawatt-hour
NAAQS	National Ambient Air Quality Standards
NO _x	Nitrogen oxides
NO ₂	Nitrogen dioxide
OPR	Office of Planning and Research
Pfc	Perfluorocarbons
PM	Particle matter
PM ₁₀	Particles that are less than 10 micrometers in diameter
PM _{2.5}	Particles that are less than 2.5 micrometers in diameter
PPM	Parts per million
PPB	Parts per billion
PPT	Parts per trillion
RTIP	Regional Transportation Improvement Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SF ₆	Sulfur Hexafluoride
SIP	State Implementation Plan
SO _x	Sulfur oxides
TAC	Toxic air contaminants
UNFCCC	United Nations' Framework Convention on Climate Change
VOC	Volatile organic compounds

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Air Quality, Energy, and Greenhouse Gas (GHG) Emissions Impact Analysis has been completed to determine the air quality, energy, and GHG emissions impacts associated with the proposed Jordan High School New Gymnasium and Aquatic Center project (proposed project). The following is provided in this report:

- A description of the proposed project;
- A description of the atmospheric setting;
- A description of the criteria pollutants and GHGs;
- A description of the air quality regulatory framework;
- A description of the energy conservation regulatory framework;
- A description of the GHG emissions regulatory framework;
- A description of the air quality, energy, and GHG emissions thresholds including the California Environmental Quality Act (CEQA) significance thresholds;
- An analysis of the conformity of the proposed project with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP);
- An analysis of the short-term construction related and long-term operational air quality, energy, and GHG emissions impacts; and
- An analysis of the conformity of the proposed project with all applicable energy and GHG emissions reduction plans and policies.

1.2 Site Location and Study Area

The project site is located in the northern portion of the City of Long Beach (City) at the existing Jordan High School campus (Campus) at 6500 Atlantic Avenue. The Campus currently contains 13 permanent buildings and 53 interim housing relocatable/portable buildings. The Campus is undergoing modernization that started in 2014 to implement the Master Plan to replace aging buildings with new ones and modernize buildings when feasible. The approximately 26.9-acre Campus is bordered by residential uses to the north, Myrtle Avenue and residential uses to the east, Houghton Park to the south, and Atlantic Avenue and residential uses to the west.

The project site, where the Gymnasium and Aquatics center will be located is in the southern portion of Campus and is bordered by Building 10000 and the football stadium to the north, tennis courts to the east, Houghton Park to the south and a staff parking lot to the west. The project local study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are residents at the multi-family homes on the west side of Atlantic Avenue that are located as near as 260 feet west of the project site. There are also single-family homes on the east side of Myrtle Avenue that are located as near as 440 feet east of the project

site. The nearest school structure used for classrooms are the interim house relocatable/portable buildings on the east side of the Football stadium that are located as near as 110 feet northeast of the project site.

1.3 Proposed Project Description

The proposed project includes demolition of the existing 62,000 square foot gymnasium and outdoor paved area that contains basketball and volleyball courts and construction of a new gymnasium and aquatic center. The new gymnasium building will be approximately 70,000 square feet and will include a competition gymnasium, practice gymnasium, a classroom, weight room, wrestling room, dance room, trainer room, offices, team rooms, locker rooms, ticket booth, concessions, restrooms, showers, and other ancillary spaces such as storage areas, laundry and custodial rooms. The Aquatic Center includes an outdoor pool (51.5 meter by 25 yard), 3,000 square feet of support building space, 500 person capacity bleachers and shade structures.

A layout of the proposed project is shown in Figure 2, Proposed Site Plan. Construction of the proposed project is expected to begin in October 2024 through January 2027. The Facility will be in use for the most part, with the exception of a few days in a year. Typical hours of operation would be from 7 a.m. to 8 p.m..

1.4 Executive Summary

Standard Air Quality, Energy, and GHG Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the SCAQMD and State of California (State).

South Coast Air Quality Management District Rules

The following lists the SCAQMD rules that are applicable, but not limited to the proposed project.

- Rule 402 Nuisance – Controls the emissions of odors and other air contaminants;
- Rule 403 Fugitive Dust – Controls the emissions of fugitive dust;
- Rules 1108 and 1108.1 Cutback and Emulsified Asphalt – Controls the VOC content in asphalt;
- Rule 1113 Architectural Coatings – Controls the VOC content in paints and solvents;
- Rule 1143 Paint Thinners – Controls the VOC content in paint thinners; and
- Rule 1403 Asbestos Removal – Regulates asbestos emissions from demolition activities.

State of California Rules

The following lists the State of California Code of Regulations (CCR) air quality emission rules that are applicable, but not limited to the proposed project.

- CCR Title 13, Article 4.8, Chapter 9, Section 2449 – In use Off-Road Diesel Vehicles;
- CCR Title 13, Section 2025 – On-Road Diesel Truck Fleets;
- CCR Title 24 Part 6 – California Building Energy Standards; and
- CCR Title 24 Part 11 – California Green Building Standards.

Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines air quality, energy, and GHG emissions checklist questions.

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

Less than significant impact.

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?

Less than significant impact.

Expose sensitive receptors to substantial pollutant concentrations?

Less than significant impact.

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

Less than significant impact.

Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation;

Less than significant impact.

Conflict with or obstruct a state or local plan for renewable energy;

Less than significant impact.

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

Less than significant impact.

Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Less than significant impact.

1.5 Mitigation Measures for the Proposed Project

This analysis found that implementation of the State and SCAQMD air quality, energy, and GHG emissions reductions regulations were adequate to limit criteria pollutants, toxic air contaminants, odors, and GHG emissions from the proposed project to less than significant levels. No mitigation measures are required for the proposed project with respect to air quality, energy, and GHG emissions.

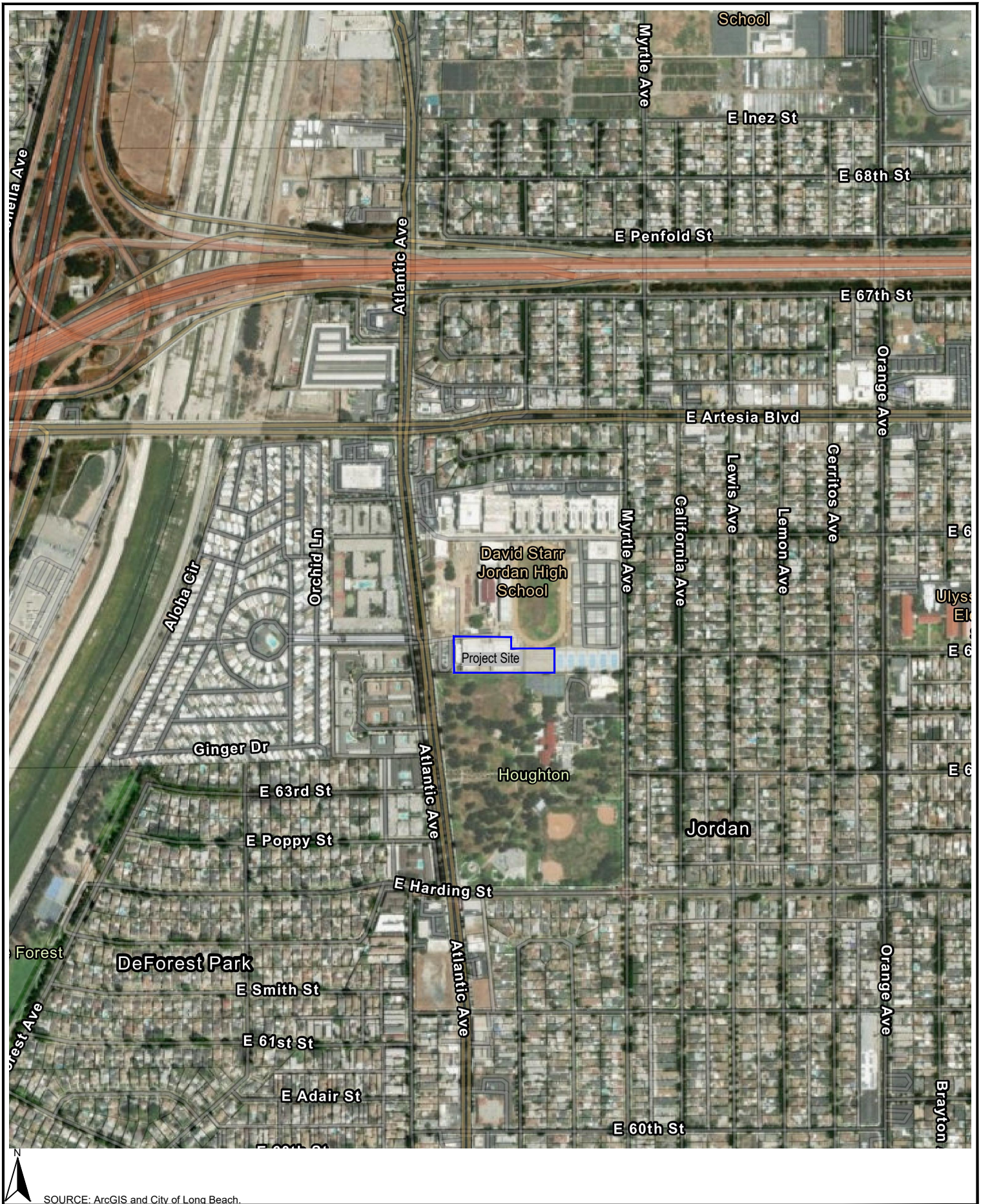
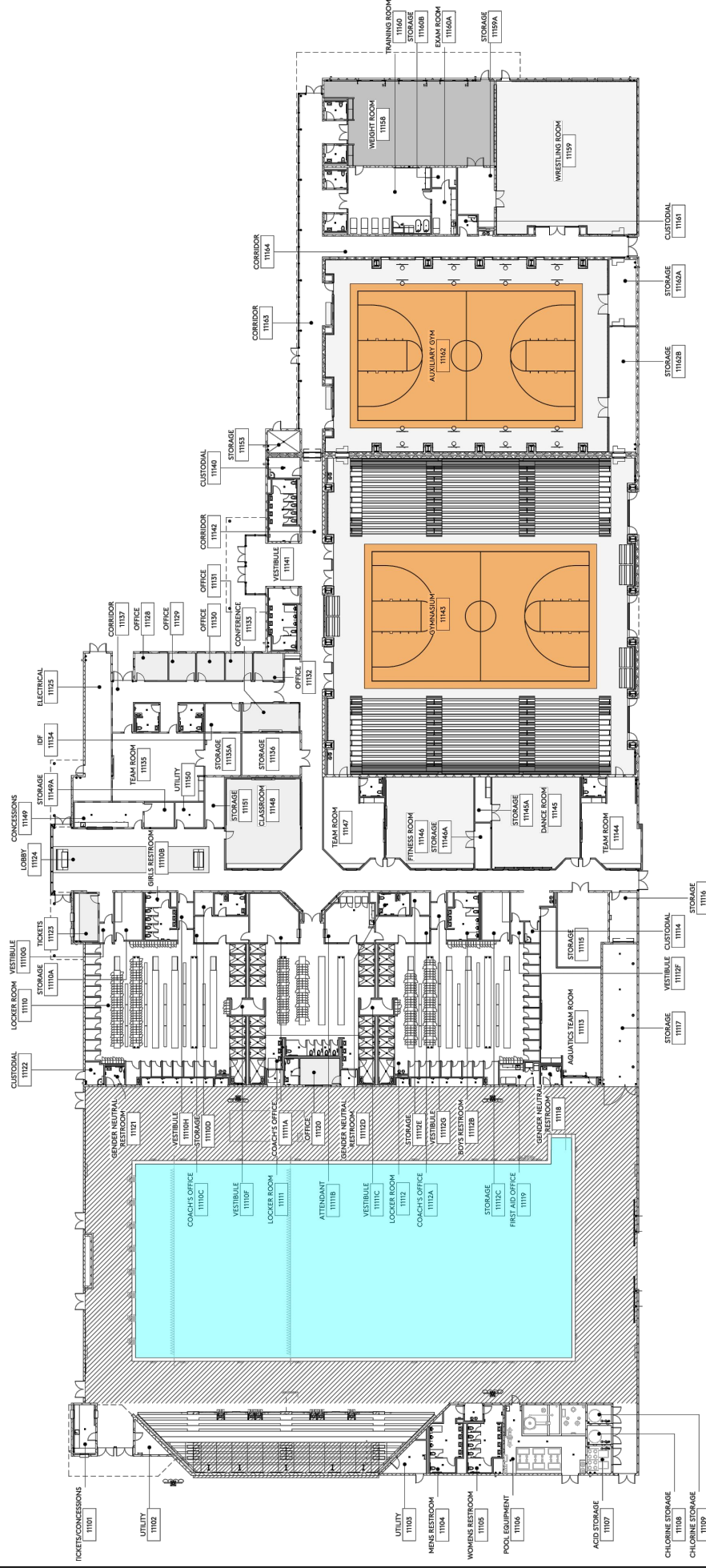


Figure 1
Project Local Study Area



SOURCE: PJHM Architects.

Figure 2
Proposed Site Plan

2.0 AIR POLLUTANTS

Air pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

2.1 Criteria Pollutants and Ozone Precursors

The criteria pollutants consist of: ozone, nitrogen oxides (NO_x), CO, sulfur oxides (SO_x), lead, and particulate matter (PM). The ozone precursors consist of NO_x and VOC. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants “criteria” air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants and ozone precursors.

Nitrogen Oxides

NO_x is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NO_x are colorless and odorless, concentrations of nitrogen dioxide (NO₂) can often be seen as a reddish-brown layer over many urban areas. NO_x form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NO_x reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO₂, which cause respiratory problems. NO_x and the pollutants formed from NO_x can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NO_x is often most effective if done from a regional perspective, rather than focusing on the nearest sources

Ozone

Ozone is not usually emitted directly into the air, instead it is created by a chemical reaction between NO_x and VOCs in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NO_x and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NO_x and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NO_x and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes approximately 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves,

gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Oxides

SOx gases are formed when fuel containing sulfur, such as coal and oil is burned, as well as from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment

Lead

Lead is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

PM is the term for a mixture of solid particles and liquid droplets found in the air. PM is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) that are also known as *Respirable Particulate Matter* are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) that are also known as *Fine Particulate Matter* have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

Volatile Organic Compounds

Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of ozone are referred to and regulated as VOCs (also

referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

VOC is not classified as a criteria pollutant, since VOCs by themselves are not a known source of adverse health effects. The primary health effects of VOCs result from the formation of ozone and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for VOCs as a group.

2.2 Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, TACs are another group of pollutants of concern. TACs is a term that is defined under the California Clean Air Act and consists of the same substances that are defined as Hazardous Air Pollutants (HAPs) in the Federal Clean Air Act. There are over 700 hundred different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different toxic air contaminants. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to *The California Almanac of Emissions and Air Quality 2013 Edition*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is DPM. DPM is a subset of PM_{2.5} because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a TAC in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in DPM by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by CARB and as a HAP by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release

asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. The nearest likely locations of naturally occurring asbestos, as identified in the *General Location Guide for Ultramafic Rocks in California*, prepared by the California Division of Mines and Geology, is located in Santa Barbara County. The nearest historic asbestos mine to the project site, as identified in the *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California*, prepared by U.S. Geological Survey, is located at Asbestos Mountain, which is approximately 100 miles east of the project site in the San Jacinto Mountains. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

In addition to naturally occurring asbestos, asbestos was used extensively in building construction from the early 1940s through the 1970s as highly-effective and inexpensive fire-retardant material and thermal and acoustic insulator. Asbestos is most commonly found as thermal insulation on pipes, but also may be found in certain types of floor and ceiling tiles. There are two types of asbestos: "friable" and "non-friable." Friable asbestos generally contains more than 1 percent asbestos by weight or area, and can be crumbled, pulverized, or reduced to powder by the pressure of an ordinary human hand, which releases fibers. Non friable asbestos generally contains more than 1 percent asbestos but cannot be pulverized under hand pressure and generally does not release asbestos fibers. Due to the age of the existing onsite buildings, the project site has a potential to contain asbestos, which is analyzed below in Section 10.4 of this Report.

3.0 GREENHOUSE GASES

3.1 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric GHGs, play a critical role in the Earth's radiation amount by trapping infrared radiation from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO₂), methane (CH₄), ozone, water vapor, nitrous oxide (N₂O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Emissions of CO₂ and N₂O are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO₂, where CO₂ is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide

The natural production and absorption of CO₂ is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700s, each of these activities has increased in scale and distribution. CO₂ was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This

could result in an average global temperature rise of at least two degrees Celsius or 3.6 degrees Fahrenheit.

Methane

CH₄ is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO₂. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO₂, N₂O, and CFCs). CH₄ has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropogenic sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide

Concentrations of N₂O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N₂O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N₂O is also commonly used as an aerosol spray propellant (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and race cars).

Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C₂H₆) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons

Hydrofluorocarbons (HFCs) are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF₃), HFC-134a (CF₃CH₂F), and HFC-152a (CH₃CHF₂). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF₄) and hexafluoroethane (C₂F₆).

Concentrations of CF₄ in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

Sulfur Hexafluoride (SF₆) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF₆ has the highest global warming potential of any gas evaluated; 23,900 times that of CO₂. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

3.2 Global Warming Potential

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO₂. The GHGs listed by the IPCC and the CEQA Guidelines are discussed in this section in order of abundance in the atmosphere. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. To simplify reporting and analysis, GHGs are commonly defined in terms of their GWP. The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO₂e. As such, the GWP of CO₂ is equal to 1. The GWP values used in this analysis are based on the 2007 IPCC Fourth Assessment Report, which are used in the CalEEMod Model Version 2022.1 and are detailed in Table A. The IPCC has updated the Global Warming Potentials of some gases in their Sixth Assessment Report, however the new values have not yet been incorporated into the CalEEMod model that has been utilized in this analysis.

Table A – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs

Gas	Atmospheric Lifetime (years) ¹	Global Warming Potential (100 Year Horizon) ²	Atmospheric Abundance
Carbon Dioxide (CO ₂)	50-200	1	379 ppm
Methane (CH ₄)	9-15	25	1,774 ppb
Nitrous Oxide (N ₂ O)	114	298	319 ppb
HFC-23	270	14,800	18 ppt
HFC-134a	14	1,430	35 ppt
HFC-152a	1.4	124	3.9 ppt
PFC: Tetrafluoromethane (CF ₄)	50,000	7,390	74 ppt
PFC: Hexafluoroethane (C ₂ F ₆)	10,000	12,200	2.9 ppt
Sulfur Hexafluoride (SF ₆)	3,200	22,800	5.6 ppt

Notes:

¹ Defined as the half-life of the gas.

² Compared to the same quantity of CO₂ emissions and is based on the Intergovernmental Panel On Climate Change (IPCC) 2007 standard, which is utilized in CalEEMod (Version 2022.1), that is used in this report (CalEEMod user guide, April 2022).
Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion
Source: IPCC 2007, EPA 2015

3.3 Greenhouse Gas Emissions Inventory

According to the Carbon Dioxide Information Analysis Center¹, 9,855 million metric tons (MMT) of CO₂e emissions were created globally in the year 2014. According to the Environmental Protection Agency (EPA), the breakdown of global GHG emissions by sector consists of: 25 percent from electricity and heat production; 21 percent from industry; 24 percent from agriculture, forestry and other land use activities; 14 percent from transportation; 6 percent from building energy use; and 10 percent from all other sources of energy use².

According to *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2021*, prepared by EPA, April 2023, total U.S. GHG emissions were 6,340.2 million metric tons (MMT) of CO₂e emissions. Total U.S. emissions have decreased by 2.3 percent between 1990 and 2021, which is down from a high of 15.8 percent above 1990 levels in 2007. Emissions increased from 2020 to 2021 by 5.2 percent. There was a decline in 2020 emission due to the impacts of the COVID-19 pandemic on travel and other economic activity. Between 2020 and 2021, the increase in GHG emissions were driven largely by an increase in fossil fuel combustion due to economic activity rebounding after the height of the COVID-19 pandemic.

According to *California Greenhouse Gas Emissions for 2000 to 2020 Trends of Emissions and Other Indicators*, prepared by the CARB, October 26, 2022, the State of California created 369.2 million metric tons of carbon dioxide equivalent (MMTCO₂e) in 2020. The 2020 emissions were 35.3 MMTCO₂e lower than 2019 levels and almost 61.8 MMTCO₂e below the State adopted year 2020 GHG limit of 431 MMTCO₂e. The 2019 to 2020 decrease in emissions is likely an anomaly as it was due in large part to the impacts of the COVID-19 pandemic. The transportation sector showed the largest decline in emissions of 27 MMTCO₂e (16 percent) compared to 2019. Between 2019 and 2020, California's Gross Domestic Product (GDP) contracted 2.8 percent, while GHG intensity of California's economy decreased 6.2 percent.

1 Obtained from: https://cdiac.ess-dive.lbl.gov/trends/emis/tre_glob_2014.html

2 Obtained from: <https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>

4.0 AIR QUALITY MANAGEMENT

The air quality at the project site is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

4.1 Federal – United States Environmental Protection Agency

The Clean Air Act, first passed in 1963 with major amendments in 1970, 1977 and 1990, is the overarching legislation covering regulation of air pollution in the United States. The Clean Air Act has established the mandate for requiring regulation of both mobile and stationary sources of air pollution at the state and federal level. The EPA was created in 1970 in order to consolidate research, monitoring, standard-setting and enforcement authority into a single agency.

The EPA is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. NAAQS pollutants were identified using medical evidence and are shown below in Table B.

Table B – State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone	0.09 ppm / 1-hour	0.070 ppm, / 8-hour	a) Pulmonary function decrements and localized lung injury in humans and animals; (b) asthma exacerbation; (c) chronic obstructive pulmonary disease (COPD) exacerbation; (d) respiratory infection; (e) increased school absences, and hospital admissions and emergency department (ED) visits for combined respiratory diseases; (e) increased mortality; (f) possible metabolic effects. Vegetation damage; property damage
	0.07 ppm / 8-hour		
Carbon Monoxide (CO)	20.0 ppm / 1-hour	35.0 ppm / 1-hour	Visibility reduction (a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) possible impairment of central nervous system functions; (d) possible increased risk to fetuses; (f) possible increased risk of pulmonary disease; (g) possible emergency department visits for respiratory diseases overall and visits for asthma.
	9.0 ppm / 8-hour	9.0 ppm / 8-hour	
Nitrogen Dioxide (NO ₂)	0.18 ppm / 1-hour	100 ppb / 1-hour	Short-term (a) asthma exacerbations (“asthma attacks”) Long-term (a) asthma development; (b) higher risk of all-cause, cardiovascular, and respiratory mortality. Both short and long term NO ₂ exposure is also associated with chronic obstructive pulmonary disease (COPD) risk. Potential impacts on cardiovascular health, mortality and cancer, aggravate chronic respiratory disease. Contribution to atmospheric discoloration
	0.030 ppm / annual	0.053 ppm / annual	

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Sulfur Dioxide (SO ₂)	0.25 ppm / 1-hour 0.04 ppm / 24-hour	75 ppb / 1-hour	Respiratory symptoms (bronchoconstriction, possible wheezing or shortness of breath) during exercise or physical activity in persons with asthma. Possible allergic sensitization, airway inflammation, asthma development.
Respirable Particulate Matter (PM ₁₀)	50 µg/m ³ / 24-hour 20 µg/m ³ / annual	150 µg/m ³ / 24-hour	Short -term (a) increase in mortality rates; (b) increase in respiratory infections; (c) increase in number and severity of asthma attacks; (d) COPD exacerbation; (e) increase in combined respiratory-diseases and number of hospital admissions; (f) increased mortality due to cardiovascular or respiratory diseases; (g) increase in hospital admissions for acute respiratory conditions; (h) increase in school absences; (i) increase in lost work days; (j) decrease in respiratory function in children; (k) increase medication use in children and adults with asthma.
Suspended Particulate Matter (PM _{2.5})	12 µg/m ³ / annual	35 µg/m ³ / 24-hour 12 µg/m ³ / annual	Long-term (a) reduced lung function growth in children; (b) changes in lung development; (c) development of asthma in children; (d) increased risk of cardiovascular diseases; (e) increased total mortality from lung cancer; (f) increased risk of premature death. Possible link to metabolic, nervous system, and reproductive and developmental effects for short-term and long-term exposure to PM _{2.5} .
Sulfates	25 µg/m ³ / 24-hour	No Federal Standards	(a) Decrease in lung function; (b) aggravation of asthmatic symptoms; (c) vegetation damage; (d) Degradation of visibility; (e) property damage
Lead	1.5 µg/m ³ / 30-day	0.15 µg/m ³ / 3-month rolling	(a) Learning disabilities; (b) impairment of blood formation and nerve function; (c) cardiovascular effects, including coronary heart disease and hypertension Possible male reproductive system effects
Hydrogen Sulfide	0.03 ppm / 1-hour	No Federal Standards	Exposure to lower ambient concentrations above the standard may result in objectionable odor and may be accompanied by symptoms such as headaches, nausea, dizziness, nasal irritation, cough, and shortness of breath

Source: 2022 AQMP, SCAQMD, 2022.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP. The CARB defines attainment as the category given to an area with no violations in the past three years. As indicated below in Table C, the Air Basin has been designated by EPA for the national standards as a non-attainment area for ozone and PM_{2.5} and partial non-attainment for lead. Currently, the Air Basin is in attainment with the national ambient air quality standards for CO, PM₁₀, SO₂, and NO₂.

Table C – National Air Quality Standards Attainment Status – South Coast Air Basin

Criteria Pollutant	Averaging Time	Designation ^a	Attainment Date ^b
Ozone	1979 1-Hour (0.12 ppm)	Nonattainment (Extreme)	2/6/2023 (revised deadline)
	2015 8-Hour (0.07 ppm) ^d	Nonattainment (Extreme)	8/3/2038
	2008 8-Hour (0.075 ppm) ^d	Nonattainment (Extreme)	7/20/2032
	1997 8-Hour (0.08 ppm) ^d	Nonattainment (Extreme)	6/15/2024
PM2.5 ^e	2006 24-Hour (35 µg/m ³)	Nonattainment (Serious)	12/31/2019
	2012 Annual (12 µg/m ³)	Nonattainment (Serious)	12/31/2021
	1997 Annual (15 µg/m ³)	Attainment (final determination pending)	4/5/2015 (attained 2013)
PM10 ^f	1987 24-Hour (150 µg/m ³)	Attainment (Maintenance)	7/26/2013 (attained)
Lead ^g	2008 3-Months Rolling (0.15 µg/m ³)	Nonattainment (Partial) (Attainment determination requested)	12/31/2015
CO	1971 1-Hour (35 ppm)	Attainment (Maintenance)	6/11/2007
	1971 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007
NO ₂ ^h	2010 1-Hour (100 ppb)	Unclassifiable/Attainment	N/A (attained)
	1971 Annual (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (attained)
SO ₂ ⁱ	2010 1-Hour (75 ppb)	Unclassifiable/Attainment	1/9/2018
	1971 24-Hour (0.14 ppm)	Unclassifiable/Attainment	3/19/1979

Source: SCAQMD, 2022

Notes:

a) U.S. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassifiable/Attainment or Unclassifiable.

b) A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for attainment demonstration.

c) The 1979 1-hour ozone NAAQS (0.12 ppm) was revoked, effective June 15, 2005; however, the Basin has not attained this standard and therefore has some continuing obligations with respect to the revoked standard; original attainment date was 11/15/2010; the revised attainment date is 2/6/2023.

d) The 2008 8-hour ozone NAAQS (0.075 ppm) was revised to 0.070 ppm, effective 12/28/2015 with classifications and implementation goals to be finalized by 10/1/2017; the 1997 8-hour ozone NAAQS (0.08 ppm) was revoked in the 2008 ozone implementation rule, effective 4/6/2015; there are continuing obligations under the revoked 1997 and revised 2008 ozone NAAQS until they are attained.

e) The attainment deadline for the 2006 24-Hour PM2.5 NAAQS was 12/31/15 for the former “moderate” classification; the EPA approved reclassification to “serious”, effective 2/12/16 with an attainment deadline of 12/31/2019; the 2012 (proposal year) annual PM2.5 NAAQS was revised on 1/15/2013, effective 3/18/2013, from 15 to 12 µg/m³; new annual designations were final 1/15/2015, effective 4/15/2015; on 7/25/2016 the EPA finalized a determination that the Basin attained the 1997 annual (15.0 µg/m³) and 24-hour PM2.5 (65 µg/m³) NAAQS, effective 8/24/2016.

f) The annual PM10 standard was revoked, effective 12/18/2006; the 24-hour PM10 NAAQS deadline was 12/31/2006; the Basin’s Attainment Re-designation Request and PM10 Maintenance Plan was approved by the EPA on 6/26/2103, effective 7/26/2013.

g) Partial Nonattainment designation – Los Angeles County portion of the Basin only for near-source monitors; expect to remain in attainment based on current monitoring data; attainment re-designation request pending.

h) New 1-hour NO₂ NAAQS became effective 8/2/2010, with attainment designations 1/20/2012; annual NO₂ NAAQS retained.

i) The 1971 annual and 24-hour SO₂ NAAQS were revoked, effective 8/23/2010.

Despite substantial improvements in air quality over the past few decades, some air monitoring stations in the Air Basin still exceed the NAAQS and frequently record the highest ozone levels in the United States. In 2020, monitoring stations in the Air Basin exceeded the most current federal standards on a total of 181 days (49 percent of the year), including: 8-hour ozone (157 days over the 2015 ozone NAAQS), 24-hour PM2.5 (39 days), PM10 (3 days), and NO₂ (1 day). Nine of the top 10 stations in the nation most frequently exceeding the 2015 8-hour ozone NAAQS in 2020 were located within the Air Basin, including stations in San Bernardino, Riverside, and Los Angeles Counties (SCAQMD, 2022).

PM2.5 levels in the Air Basin have improved significantly in recent years. Since 2015, none of the monitoring stations in the Air Basin have recorded violations of the former 1997 annual PM2.5 NAAQS (15.0 µg/m³). On July 25, 2016 the U.S. EPA finalized a determination that the Air Basin attained the 1997 annual (15.0 µg/m³) and 24-hour PM2.5 (65 µg/m³) NAAQS, effective August 24, 2016. However, the Air Basin does not meet the 2012 annual PM2.5 NAAQS (12.0 µg/m³), with six monitoring stations having design values above the standard for the 2018-2020 period (SCAQMD, 2022).

4.2 State – California Air Resources Board

The CARB, which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The CAAQS for criteria pollutants in the Air Basin are shown in Table D. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

Table D – California Ambient Air Quality Standards Attainment Status – South Coast Air Basin

Criteria Pollutant	Averaging Time	Level ^a	Designation ^b
Ozone	1-Hour	0.09 ppm	Nonattainment
	8-Hour	0.070 ppm	Nonattainment
PM2.5	Annual	12 µg/m ³	Nonattainment
PM10	24-Hour	50 µg/m ³	Nonattainment
	Annual	20 µg/m ³	Nonattainment
Lead	30-Day Average	1.5 µg/m ³	Attainment
CO	1-Hour	20 ppm	Attainment
	8-Hour	9.0 ppm	Attainment
NO ₂	1-Hour	0.18 ppm	Attainment
	Annual	0.030	Attainment ^c
SO ₂	1-Hour	0.25 ppm	Attainment
	24-Hour	0.04 ppm	Attainment
Sulfates	24-Hour	25 µg/m ³	Attainment
Hydrogen Sulfide	1-Hour	0.03 ppm	Unclassified

Source: SCAQMD, 2022

Notes:

a) CA State standards, or CAAQS, for ozone, SO₂, NO₂, PM10 and PM2.5 are values not to be exceeded; lead, sulfates and H₂S standards are values not to be equaled or exceeded; CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b) CA State designations shown were updated by CARB in 2019, based on the 2016-2018 3-year period; stated designations are based on a 3-year data period after consideration of outliers and exceptional events.

c) The CA-60 near road portion of San Bernardino, Riverside and Los Angeles Counties has recently been redesignated as an attainment area based on data collected between 2018 and 2020

As shown in Table D, the Air Basin has been designated by the CARB as a non-attainment area for ozone, PM10 and PM2.5 and partial nonattainment for NO₂. Currently, the Air Basin is in attainment with the ambient air quality standards for lead, CO, SO₂ and sulfates, and is unclassified for Hydrogen Sulfide.

The following lists the State of California Code of Regulations (CCR) air quality emission rules that are applicable, but not limited to school projects in the State.

Assembly Bill 2588

The Air Toxics “Hot Spots” Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release in California. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

CARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the CARB adopted California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 to reduce DPM and NOx emissions from in-use off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. Performance requirements of the rule are based on a fleet’s average NOx emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirement making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less). As of January 1, 2023, no commercial operation is allowed to add Tier 0, Tier 1, or Tier 2 engines to their fleets. It should be noted that commercial fleets may continue to use their existing Tiers 0, 1, and 2 equipment, if they can demonstrate that the average emissions from their entire fleet emissions meet the NOx emissions targets.

CARB Resolution 08-43 for On-Road Diesel Truck Fleets

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4 Final) or latter emission standards. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California. All on-road diesel trucks utilized during construction of the proposed project will be required to comply with Resolution 08-43.

4.3 Regional – Southern California

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. The *Final 2022 Air Quality Management Plan* (2022 AQMP) and has been submitted to the ARB for adoption before submittal to the U.S. EPA for final approval, which are anticipated to occur sometime this year. After the 2022

AQMP has been adopted by ARB and U.S. EPA, the 2022 AQMP will be incorporated into the State Implementation Plan (SIP). The 2022 AQMP establishes actions and strategies to reduce ozone levels to the U.S. EPA 2015 ozone standard of 70 ppb by 2037. The 2022 AQMP promotes extensive use of zero-emission technologies across all stationary and mobile sources coupled with rules and regulations, investment strategies, and incentives.

Although SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the Air Basin. Instead, this is controlled through local jurisdictions in accordance to the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the *CEQA Air Quality Handbook* (SCAQMD CEQA Handbook), prepared by SCAQMD, 1993, with the most current updates found at <http://www.aqmd.gov/ceqa/hdbk.html>, was developed in accordance with the projections and programs detailed in the AQMPs. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Air Basin, and adverse impacts will be minimized.

The following lists the SCAQMD rules that are applicable but not limited to school development projects in the Air Basin.

Rule 402 - Nuisance

Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which causes 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. Compliance with Rule 402 will reduce local air quality and odor impacts to nearby sensitive receptors.

Rule 403- Fugitive Dust

Rule 403 governs emissions of fugitive dust during construction activities and requires that no person shall cause or allow the emissions of fugitive dust such that dust remains visible in the atmosphere beyond the property line or the dust emission exceeds 20 percent opacity, if the dust is from the operation of a motorized vehicle. Compliance with this rule is achieved through application of standard Best Available Control Measures, which include but are not limited to the measures below. Compliance with these rules would reduce local air quality impacts to nearby sensitive receptors.

- Utilize either a pad of washed gravel 50 feet long, 100 feet of paved surface, a wheel shaker, or a wheel washing device to remove material from vehicle tires and undercarriages before leaving project site.
- Do not allow any track out of material to extend more than 25 feet onto a public roadway and remove all track out at the end of each workday.

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- Water all exposed areas on active sites at least three times per day and pre-water all areas prior to clearing and soil moving activities.
 - Apply nontoxic chemical stabilizers according to manufacturer specifications to all construction areas that will remain inactive for 10 days or longer.
 - Pre-water all material to be exported prior to loading, and either cover all loads or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114.
 - Replant all disturbed area as soon as practical.
 - Suspend all grading activities when wind speeds (including wind gusts) exceed 25 miles per hour.
 - Restrict traffic speeds on all unpaved roads to 15 miles per hour or less.

Rules 1108 and 1108.1 – Cutback and Emulsified Asphalt

Rules 1108 and 1108.1 govern the sale, use, and manufacturing of asphalt and limits the VOC content in asphalt. This rule regulates the VOC contents of asphalt used during construction as well as any on-going maintenance during operations. Therefore, all asphalt used during construction and operation of the proposed project must comply with SCAQMD Rules 1108 and 1108.1.

Rule 1113 – Architectural Coatings

Rule 1113 governs the sale, use, and manufacturing of architectural coatings and limits the VOC content in sealers, coatings, paints and solvents. This rule regulates the VOC contents of paints available during construction. Therefore, all paints and solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1113.

Rule 1143 – Paint Thinners

Rule 1143 governs the sale, use, and manufacturing of paint thinners and multi-purpose solvents that are used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations. This rule regulates the VOC content of solvents used during construction. Solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1143.

Rule 1403 – Asbestos Removal

Rule 1403 governs asbestos emissions from demolition and renovation activities. The existing structures on the project site shall be surveyed for asbestos prior to demolition activities. If asbestos is found within the existing structures, the asbestos shall be removed through utilization of the removal procedures detailed in Rule 1403.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (Connect SoCal), adopted September 3, 2020 and the *2019 Federal Transportation Improvement Program* (2019 FTIP), adopted September 2018, which addresses regional development and

growth forecasts. Although the Connect SoCal and 2019 FTIP are primarily planning documents for future transportation projects a key component of these plans are to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The Connect SoCal, 2019 FTIP, and AQMP are based on projections originating within the City and County General Plans.

4.4 Local – City of Long Beach

Local jurisdictions, such as the City of Long Beach, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the AQMPs. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with the CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

5.0 ENERGY CONSERVATION MANAGEMENT

The regulatory setting related to energy conservation is primarily addressed through State and City regulations, which are discussed below.

5.1 State

Energy conservation management in the State was initiated by the 1974 Warren-Alquist State Energy Resources Conservation and Development Act that created the California Energy Resource Conservation and Development Commission (currently named California Energy Commission [CEC]), which was originally tasked with certifying new electric generating plants based on the need for the plant and the suitability of the site of the plant. In 1976 the Warren-Alquist Act was expanded to include new restrictions on nuclear generating plants, that effectively resulted in a moratorium of any new nuclear generating plants in the State. The following details specific regulations adopted by the State in order to reduce the consumption of energy.

California Code of Regulations (CCR) Title 20

On November 3, 1976 the CEC adopted the *Regulations for Appliance Efficiency Standards Relating to Refrigerators, Refrigerator-Freezers and Freezers and Air Conditioners*, which were the first energy-efficiency standards for appliances. The appliance efficiency regulations have been updated several times by the Commission and the most current version is the *2016 Appliance Efficiency Regulations*, adopted January 2017 and now includes almost all types of appliances and lamps that use electricity, natural gas as well as plumbing fixtures. The authority for the CEC to control the energy-efficiency of appliances is detailed in California Code of Regulations (CCR), Title 20, Division 2, Chapter 4, Article 4, Sections 1601-1609.

California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The California Energy Commission (CEC) is the agency responsible for the standards that are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. In 2008 the State set an energy-use reduction goal of zero-net-energy use of all new homes by 2020 and the CEC was mandated to meet this goal through revisions to the Title 24, Part 6 regulations.

The Title 24 standards are updated on a three-year schedule and since 2008 the standards have been incrementally moving to the 2020 goal of the zero-net-energy use. The 2022 Title 24 standards are the current standards that went into effect on January 1, 2023.

According to the Title 24 Part 6 Fact Sheet, the CEC estimates that over 30 years the 2022 Title 24 standards will reduce GHG emissions by 16,230 MMTCO₂e per year, when compared to the 2019 Title 24 standards, which is equivalent of taking 3,641 gas cars off the road each year. The 2022 Title 24 standards will: (1) Increase onsite renewable energy generation; (2) Increases electric load flexibility to support grid reliability; (3) Reduces emissions from newly constructed buildings; (4) Reduces air pollution for improved public health; and (5) Encourages adoption of environmentally beneficial efficient electric technologies.

California Code of Regulations (CCR) Title 24, Part 11

CCR Title 24, Part 11: *California Green Building Standards* (CalGreen Code) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The CalGreen Code is also updated every three years and the current version is the 2022 CalGreen Code that went into effect on January 1, 2023.

The CALGreen Code contains requirements for construction site selection; storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

The CALGreen Code provides standards for bicycle parking, carpool/vanpool/electric vehicle spaces, light and glare reduction, grading and paving, energy efficient appliances, renewable energy, graywater systems, water efficient plumbing fixtures, recycling and recycled materials, pollutant controls (including moisture control and indoor air quality), acoustical controls, storm water management, building design, insulation, flooring, and framing, among others. Implementation of the CALGreen Code measures reduces energy consumption and vehicle trips and encourages the use of alternative-fuel vehicles, which reduces pollutant emissions.

Senate Bill 1020

Senate Bill 1020 (SB 1020) was adopted September 16, 2022 and would speed up the timeline retail electricity is supplied by renewable energy sources over the prior adoption timelines provided in SB 100, SB 350, SB 1078, SB 107, and SB X1-2. SB 1020 requires that retail sales of electricity are from renewable energy resources and zero-carbon resources supply 90 percent by December 31, 2035, 95 percent by December 31, 2040, and 100 percent by December 31, 2045.

Executive Order N-79-20

The California Governor issued Executive Order N-79-20 on September 23, 2020 that requires all new passenger cars and trucks and commercial drayage trucks sold in California to be zero-emissions by the year 2035 and all medium- heavy-duty vehicles (commercial trucks) sold in the state to be zero-emission by 2045 for all operations where feasible. Executive Order N-79-20 also requires all off-road vehicles and equipment to transition to 100 percent zero-emission equipment, where feasible by 2035.

Executive Order B-48-18 and Assembly Bill 2127

The California Governor issued Executive Order B-48-18 on January 26, 2018 that orders all state entities to work with the private sector to put at least five million zero-emission vehicles on California roads by 2030 and to install 200 hydrogen fueling stations and 250,000 electric vehicle chargers by 2025. Currently there are approximately 350,000 electric vehicles operating in California, which represents approximately 1.5 percent of the 24 million vehicles total currently operating in California. Implementation of Executive Order B-48-18 would result in approximately 20 percent of all vehicles in California to be zero emission electric vehicles. Assembly Bill 2127 (AB 2127) was codified into statute on September 13, 2018 and requires that the California Energy Commission working with the State Air Resources Board prepare biannual assessments of the statewide electric vehicle charging infrastructure needed to support the levels of zero emission vehicle adoption required for the State to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030.

Assembly Bill 1109

California Assembly Bill 1109 (AB 1109) was adopted October 2007, also known as the Lighting Efficiency and Toxics Reduction Act, prohibits the manufacturing of lights after January 1, 2010 that contain levels of hazardous substances prohibited by the European Union pursuant to the RoHS Directive. AB 1109 also requires reductions in energy usage for lighting and is structured to reduce lighting electrical consumption by: (1) At least 50 percent reduction from 2007 levels for indoor residential lighting; and (2) At least 25 percent reduction from 2007 levels for indoor commercial and all outdoor lighting by 2018. AB 1109 would reduce GHG emissions through reducing the amount of electricity required to be generated by fossil fuels in California.

Assembly Bill 1493

California Assembly Bill 1493 (also known as the Pavley Bill, in reference to its author Fran Pavley) was enacted on July 22, 2002 and required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2004, CARB approved the “Pavley I” regulations limiting the amount of GHGs that may be released from new passenger automobiles that are being phased in between model years 2009 through 2016. These regulations will reduce GHG emissions by 30 percent from 2002 levels by 2016. In June 2009, the EPA granted California the authority to implement GHG emission reduction standards for light duty vehicles, in September 2009, amendments to the Pavley I regulations were adopted by CARB and implementation of the “Pavley I” regulations started in 2009.

The second set of regulations “Pavley II” was developed in 2010, and is being phased in between model years 2017 through 2025 with the goal of reducing GHG emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards were developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the “LEV III” (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars as well as promote zero-emissions auto technologies such as electricity and hydrogen, and through increasing the infrastructure for fueling hydrogen vehicles. In 2009, the U.S. EPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks and sport utility vehicles and these GHG emissions standards are currently being implemented nationwide.

The EPA has performed a midterm evaluation of the longer-term standards for model years 2022-2025, and based on the findings of this midterm evaluation, the EPA proposed The Safer Affordable Fuel Efficient (SAFE) Vehicles Proposed Rule for Model Years 2021-2026 that amends the corporate average fuel economy (CAFE) and GHG emissions standards for light vehicles for model years 2021 through 2026. The SAFE Vehicles Rule were made effective on June 29, 2020.

5.2 Local – City of Long Beach

Sustainable City Action Plan

The City adopted the Sustainable City Action Plan (SCAP) on February 2, 2010, with the purpose of moving the City towards becoming a more sustainable City. Sustainability is defined in this plan as maximizing individual benefits and minimizing negative environmental impacts to ensure the long-term health of the environment for the enjoyment and use of current and future generations. The SCAP includes initiatives, goals, and actions that are meant to guide City decision-makers in striving towards achieving a sustainable City. The following goals, initiatives, and actions are applicable to the Proposed Project (City of Long Beach 2010):

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- Sustainability Goal 5: Reduce community electricity use by 15% by 2020.
 - Sustainability Goal 6: Reduce community natural gas use by 10% by 2020.
 - Sustainability Goal 7: Facilitate the development of at least 8 megawatts of solar energy within the community (private rooftops) by 2020.

Climate Action Plan

The City of Long Beach adopted the *Long Beach Climate Action Plan* (LB CAP), August 2022. The goal of the LB CAP is to reduce future GHG emissions and to prepare the City for the impacts of climate change, specifically rising sea levels, extreme heat, and poor air quality. The LB CAP contains three subsections, for each sector area that describes the reduction actions to achieve the GHG targets, the LB CAP then includes City leadership, funding and financing strategies, and the City's process for monitoring, evaluating, and revising the LB CAP to ensure that the estimated strategy reductions do occur so that the targets are achieved. As part of the LB CAP, the City has included an adaption plan that identifies strategies the City will pursue to adapt to and protect against major anticipated climate change impacts.

Municipal Code

The City Council adopted Municipal Code Section 21.45.400 (Green building standards for public and private development.) in 2009, which includes categories of projects that require specified green building features, which includes provisions for compliance with the Leadership in Energy and Environmental Design (LEED) Green Building Rating System. In addition to the categories of projects requiring LEED compliance, green development standards, such as canopy trees in parking lots, bicycle parking, solar ready roofs, and recycling collection apply to all projects requiring Site Plan Review (SPR) entitlements.

6.0 GLOBAL CLIMATE CHANGE MANAGEMENT

The regulatory setting related to global climate change is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to reduce GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for global climate change regulations are discussed below.

6.1 International

In 1988, the United Nations established the IPCC to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. The parties of the UNFCCC adopted the Kyoto Protocol, which set binding GHG reduction targets for 37 industrialized countries, the objective of reducing their collective GHG emissions by five percent below 1990 levels by 2012. The Kyoto Protocol has been ratified by 182 countries, but has not been ratified by the United States. It should be noted that Japan and Canada opted out of the Kyoto Protocol and the remaining developed countries that ratified the Kyoto Protocol have not met their Kyoto targets. The Kyoto Protocol expired in 2012 and the amendment for the second commitment period from 2013 to 2020 has not yet entered into legal force. The Parties to the Kyoto Protocol negotiated the Paris Agreement in December 2015, agreeing to set a goal of limiting global warming to less than 2 degrees Celsius compared with pre-industrial levels. The Paris Agreement has been adopted by 195 nations with 147 ratifying it, including the United States by President Obama, who ratified it by Executive Order on September 3, 2016. On June 1, 2017, President Trump announced that the United States is withdrawing from the Paris Agreement and on January 21, 2021 President Biden signed an executive order rejoining the Paris Agreement.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

6.2 Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for implementing federal policy to address global climate change. The Federal government administers a wide array of public-private partnerships to reduce U.S. GHG intensity. These programs focus on energy efficiency, renewable energy, methane, and other non-CO₂ gases, agricultural practices and implementation of technologies to achieve GHG reductions. EPA implements several voluntary programs that substantially contribute to the reduction of GHG emissions.

In *Massachusetts v. Environmental Protection Agency* (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO₂ and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions did not impose any requirements on industry or other entities, however, since 2009 the EPA has been providing GHG emission standards for vehicles and other stationary sources of GHG emissions that are regulated by the EPA. On September 13, 2013 the EPA Administrator signed 40 CFR Part 60, that limits emissions from new sources to 1,100 pounds of CO₂ per mega-watt hour (MWh) for fossil fuel-fired utility boilers and 1,000 pounds of CO₂ per MWh for large natural gas-fired combustion units.

On August 3, 2015, the EPA announced the Clean Power Plan, emissions guidelines for U.S. states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired power plants (Federal Register Vol. 80, No. 205, October 23 2015). On October 11, 2017, the EPA issued a formal proposal to repeal the Clean Power Plan and on June 19, 2019 the EPA replaced the Clean Power Plan with the Affordable Clean Energy rule that is anticipated to lower power sector GHG emissions by 11 million tons by the year 2030.

On April 30, 2020, the EPA and the National Highway Safety Administration published the Final Rule for the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks* (SAFE Vehicles Rule). Part One of the Rule revokes California's authority to set its own GHG emissions standards and zero-emission vehicle mandates in California, which results in one emission standard to be used nationally for all passenger cars and light trucks that is set by the EPA.

6.3 State

The CARB has the primary responsible for implementing state policy to address global climate change, however there are State regulations related to global climate change that affect a variety of State agencies. CARB, which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both the federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2008, CARB approved a Climate Change Scoping Plan that proposes a "comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (CARB 2008). The Climate Change Scoping Plan has a range of GHG reduction actions which include direct

regulations; alternative compliance mechanisms; monetary and non-monetary incentives; voluntary actions; market-based mechanisms such as a cap-and-trade system. In 2014, CARB approved the First Update to the Climate Change Scoping Plan (CARB, 2014) that identifies additional strategies moving beyond the 2020 targets to the year 2050. On December 14, 2017 CARB adopted the California's 2017 Climate Change Scoping Plan, November 2017 (CARB, 2017) that provides specific statewide policies and measures to achieve the 2030 GHG reduction target of 40 percent below 1990 levels by 2030 and the aspirational 2050 GHG reduction target of 80 percent below 1990 levels by 2050. On December 15, 2022, CARB adopted the *2022 Scoping Plan for Achieving Carbon Neutrality*, November 16, 2022 (CARB, 2022) that lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279.

In addition to the Scoping Plans, the State has passed the following laws directing CARB to develop actions to reduce GHG emissions, which are listed below in chronological order, with the most current first.

California Code of Regulations (CCR) Title 24, Part 6

The Title 24 Part 6 standards have been developed by the CEC primarily for energy conservation and is described in more detail above in Section 5.1 under Energy Conservation Management. It should be noted that implementation of the Title 24 Part 6 building standards would also reduce GHG emissions, since energy usage is the primary source of human generated GHG emissions.

California Code of Regulations (CCR) Title 24, Part 11

The CalGreen Building standards have been developed by the CEC primarily for energy conservation and is described in more detail above in Section 5.1 under Energy Conservation Management. It should be noted that implementation of the CalGreen Building standards would also reduce GHG emissions, since energy usage is the primary source of human generated GHG emissions.

Senate Bill 1020

SB 1020 requires that by December 1, 2045 that 100 percent of retail sales of electricity to be generated from renewable or zero-carbon emission sources of electricity and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order B-55-18 and Assembly Bill 1279

The California Governor issued Executive Order B-55-18 in September 2018 that establishes a new statewide goal to achieve carbon neutrality as soon as possible, but no later than 2045. This executive order directs CARB to work with relevant State agencies to develop a framework for implementation and accounting that tracks progress toward this goal as well as ensuring future scoping plans identify and recommend measures to achieve this carbon neutrality goal. Assembly Bill 1279 was passed by the legislature in September 2022 that codifies the carbon neutrality targets provided in Executive Order B-55-18. The *2022 Scoping Plan for Achieving Carbon Neutrality*, adopted by CARB on December 16, 2022, was prepared in order to meet the carbon neutrality goal targets developed in Executive Order B-55-18 and codified in Assembly Bill 1279.

Executive Order N-79-20

EO N-79-20 establish targets for when all new vehicles and equipment are zero-emission and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order B-48-18 and Assembly Bill 2127

Executive Order B-48-18 and AB 2127 provides measures to put at least five million zero-emission vehicles on California roads by 2030 and to install 200 hydrogen fueling stations and 250,000 electric vehicle chargers by 2025 and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order B-30-15, Senate Bill 32 and Assembly Bill 197

The California Governor issued Executive Order B-30-15 on April 29, 2015 that aims to reduce California's GHG emissions 40 percent below 1990 levels by 2030. This executive order aligns California's GHG reduction targets with those of other international governments, such as the European Union that set the same target for 2030 in October, 2014. This target will make it possible to reach the ultimate goal of reducing GHG emissions 80 percent under 1990 levels by 2050 that is based on scientifically established levels needed in the U.S.A to limit global warming below 2 degrees Celsius – the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels. Assembly Bill 197 (AB 197) (September 8, 2016) and Senate Bill 32 (SB 32) (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40 percent below 1990 levels by 2030 as detailed in Executive Order B-30-15. AB 197 also requires additional GHG emissions reporting that is broken down to sub-county levels and requires CARB to consider the social costs of emissions impacting disadvantaged communities.

Executive Order B-29-15

The California Governor issued Executive Order B-29-15 on April 1, 2015 and directed the State Water Resources Control Board to impose restrictions to achieve a statewide 25% reduction in urban water usage and directed the Department of Water Resources to replace 50 million square feet of lawn with drought tolerant landscaping through an update to the State's Model Water Efficient Landscape Ordinance. The Ordinance also requires installation of more efficient irrigation systems, promotion of greywater usage and onsite stormwater capture, and limits the turf planted in new residential landscapes to 25 percent of the total area and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip and a flat surface is required to enter and exit vehicles. Executive Order B-29-15 would reduce GHG emissions associated with the energy used to transport and filter water.

Assembly Bill 341 and Senate Bills 939 and 1374

Senate Bill 939 (SB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004 suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills. Assembly Bill 341 (AB 341) was adopted in 2011 and builds upon the waste reduction measures of SB 939 and 1374, and sets a new target of a 75 percent reduction in solid waste generated by the year 2020.

Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 in order to support the State's climate action goals to reduce GHG emissions through coordinated regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires CARB to set regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established targets for 2020 and 2035 for each Metropolitan Planning Organizations (MPO) within the State. It was up to each

MPO to adopt a sustainable communities strategy (SCS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP) to meet CARB's 2020 and 2035 GHG emission reduction targets. These reduction targets are required to be updated every eight years and the most current targets are detailed at: <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets>, which provides GHG emissions reduction targets for SCAG of 8 percent by 2020 and 19 percent by 2035.

The Connect SoCal (SCAG, 2020) provides a 2035 GHG emission reduction target of 19 percent reduction over the 2005 per capita emissions levels. The Connect SoCal include new initiatives of land use, transportation and technology to meet the 2035 new 19 percent GHG emission reduction target for 2035. CARB is also charged with reviewing SCAG's RTP/SCS for consistency with its assigned targets.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS. However, new provisions of CEQA incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS and categorized as "transit priority projects."

Assembly Bill 1109

AB 1109 requires reductions in energy usage for lighting and is described in more detail above in Section 5.1 under Energy Conservation Management.

Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Executive Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

In 2009 CARB approved the proposed regulation to implement the LCFS. The standard was challenged in the courts, but has been in effect since 2011 and was re-approved by the CARB in 2015. The LCFS is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The LCFS is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet annually. Reformulated gasoline mixed with corn-derived ethanol and low-sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel. Compressed natural gas and liquefied natural gas also may be low-carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles, are also considered as low-carbon fuels.

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the State CEQA guidelines that addresses GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporated GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

- Climate Action Plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the GHG emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of GHG emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that “to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation.”
- OPR’s emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports must specifically consider a project's energy use and energy efficiency potential.

Assembly Bill 32

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and utilize best management practices that are technologically feasible and cost effective.

In 2007 CARB released the calculated Year 1990 GHG emissions of 431 MMTCO₂e. The 2020 target of 431 MMTCO₂e requires the reduction of 78 MMTCO₂e, or approximately 16 percent from the State’s projected 2020 business as usual emissions of 509 MMTCO₂e (CARB, 2014). Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO₂ in a calendar year to submit verification of GHG emissions by

December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources, all of which became enforceable on or before January 1, 2010.

Assembly Bill 1493

AB 1493 or the Pavley Bill sets tailpipe GHG emissions limits for passenger vehicles in California as well as fuel economy standards and is described in more detail above in Section 5.1 under Energy Conservation Management.

6.4 Regional – Southern California

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Air Basin. To that end, as a regional agency, the SCAQMD works directly with SCAG, county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. The SCAQMD is also responsible for GHG emissions for projects where it is the lead agency. However, for other projects in the SCAB where it is not the lead agency, it is limited to providing resources to other lead agencies in order to assist them in determining GHG emission thresholds and GHG reduction measures. In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group, which is described below.

SCAQMD Working Group

Since neither CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that either provides a quantitative annual thresholds of 3,500 MTCO₂e for residential uses, 1,400 MTCO₂e for commercial uses, and 3,000 MTCO₂e for mixed uses. An alternative annual threshold of 3,000 MTCO₂e for all land use types is also proposed.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Connect SoCal and 2019 FTIP addresses regional development and growth forecasts. Although the Connect SoCal and 2019 FTIP are primarily planning documents for future transportation projects a key component of these plans are to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The Connect SoCal, 2019 FTIP, and AQMP are based on projections originating within the City and County General Plans.

6.5 Local – Long Beach

Local jurisdictions, such as the City of Long Beach, have the authority and responsibility to reduce GHG emissions through their police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of GHG emissions resulting from its land use decisions. In accordance with CEQA requirements and the CEQA review process, the City assesses the global climate change potential of new development projects, requires mitigation of potentially significant global climate change impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

The City of Long Beach has adopted the *Long Beach Climate Action Plan* (LB CAP), August 2022. The LB CAP has been included as a mitigation measure in the General Plan Land Use Element Update and the LB CAP has been prepared to use as the basis future assessments of consistency with this Plan in lieu of a project-specific GHG CEQA analysis for projects in the City. A project-specific environmental document that relies on this plan for its cumulative impacts analysis would identify specific reduction measures applicable to the project that are consistent with the LB CAP; it would also describe how the project incorporates those measures. If the measures are not otherwise binding and enforceable, they must be incorporated as mitigation measures or project conditions of approval, or some other mechanism to ensure implementation.

7.0 ATMOSPHERIC SETTING

7.1 South Coast Air Basin

The project site is located within south coastal Los Angeles County, which is part of the South Coast Air Basin (Air Basin) that includes the non-desert portions of Riverside, San Bernardino, and Los Angeles Counties and all of Orange County. The Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter.

7.2 Local Climate

The climate of south coastal Los Angeles County is characterized by hot dry summers, mild moist winters with infrequent rainfall, moderate afternoon breezes, and generally fair weather. Occasional periods of strong Santa Ana winds and winter storms interrupt the otherwise mild weather pattern. Although the Air Basin is semi-arid, the air near the surface in south coastal Los Angeles County is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry air is brought into the Air Basin by offshore winds, the ocean effect is dominant. Periods of heavy fog are frequent and low stratus clouds, often referred to as “high fog” are a characteristic feature.

Winds are an important parameter in characterizing the air quality environment of a project site because they both determine the regional pattern of air pollution transport and control the rate of dispersion near a source. Daytime winds in south coastal Los Angeles County are usually light breezes from off the coast as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert interior of Southern California. These winds allow for good local mixing, but as discussed above, these coastal winds carry significant amounts of industrial and automobile air pollutants from the densely urbanized western portion of the Air Basin into the interior valleys which become trapped by the mountains that border the eastern and northern edges of the Air Basin.

In the summer, strong temperature inversions may occur that limit the vertical depth through which air pollution can be dispersed. Air pollutants concentrate because they cannot rise through the inversion layer and disperse. These inversions are more common and persistent during the summer months. Over time, sunlight produces photochemical reactions within this inversion layer that creates ozone, a particularly harmful air pollutant. Occasionally, strong thermal convections occur which allows the air pollutants to rise high enough to pass over the mountains and ultimately dilute the smog cloud.

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution “hot spots” in heavily developed coastal areas of the Air Basin, there is not enough traffic in inland valleys to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the Long Beach Daugherty Field Monitoring station, which is the nearest weather station to the project site with historical data are shown below in Table E. Table E shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from

the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table E – Monthly Climate Data

Month	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Total Precipitation (inches)
January	67.1	45.6	2.63
February	67.2	47.3	2.90
March	68.4	49.7	1.83
April	71.7	52.4	0.70
May	73.5	56.8	0.20
June	76.9	60.3	0.06
July	82.2	63.7	0.02
August	83.9	64.9	0.06
September	82.3	62.9	0.19
October	77.9	57.9	0.42
November	72.2	50.5	1.21
December	67.0	45.3	1.80
Annual	74.2	54.8	12.01

Source: <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5085>

7.3 Monitored Local Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Air Basin. Estimates of the existing emissions in the Air Basin provided in the 2012 AQMP, indicate that collectively, mobile sources account for 59 percent of the VOC, 88 percent of the NO_x emissions and 40 percent of directly emitted PM_{2.5}, with another 10 percent of PM_{2.5} from road dust. The 2016 AQMP found that since 2012 AQMP projections were made stationary source VOC emissions have decreased by approximately 12 percent, but mobile VOC emissions have increased by 5 percent. The percentage of NO_x emissions remain unchanged between the 2012 and 2016 projections.

SCAQMD has divided the Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in Air Monitoring Area 4, which covers the south coastal Los Angeles County. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the project sites have been used: Compton Monitoring Station (Compton Station) and South Long Beach Monitoring Station (South Long Beach Station).

The Compton Station is located approximately 2.2 miles northwest of the project site at 700 North Bullis Road, Compton and the South Long Beach Station is located approximately 5.6 miles south of the project site at 1305 East Pacific Coast Highway, Long Beach. Ozone, NO_x and PM_{2.5} were measured at the Compton Station and PM₁₀ was measured at the South Long Beach Station. However, it should be noted that due to the air monitoring stations distances from the project site, recorded air pollution levels at the monitoring stations reflect with varying degrees of accuracy, local air quality conditions at the project site.

The monitoring data is presented in Table F and shows the most recent three years of monitoring data from CARB.

Table F – Local Area Air Quality Monitoring Summary

Pollutant (Standard)	Year		
	2020	2021	2022
Ozone: ¹			
Maximum 1-Hour Concentration (ppm)	0.152	0.085	0.111
Days > CAAQS (0.09 ppm)	3	0	1
Maximum 8-Hour Concentration (ppm)	0.115	0.076	0.085
Days > NAAQS (0.070 ppm)	4	1	1
Days > CAAQS (0.070 ppm)	4	1	1
Nitrogen Dioxide: ¹			
Maximum 1-Hour Concentration (ppb)	72.3	68.2	64.9
Days > NAAQS (100 ppb)	0	0	0
Days > CAAQS (180 ppb)	0	0	0
Inhalable Particulates (PM10): ²			
Maximum 24-Hour National Measurement (ug/m ³)	68.3	48.7	48.9
Days > NAAQS (150 ug/m ³)	0	0	0
Days > CAAQS (50 ug/m ³)	3	0	0
Annual Arithmetic Mean (AAM) (ug/m ³)	26.9	23.2	18.5
Annual > NAAQS (50 ug/m ³)	No	No	No
Annual > CAAQS (20 ug/m ³)	Yes	Yes	No
Ultra-Fine Particulates (PM2.5): ¹			
Maximum 24-Hour National Measurement (ug/m ³)	67.5	102.1	52.8
Days > NAAQS (35 ug/m ³)	19	12	6
Annual Arithmetic Mean (AAM) (ug/m ³)	14.7	14.4	14.0
Annual > NAAQS and CAAQS (12 ug/m ³)	Yes	Yes	Yes

Notes: Exceedances are listed in **bold**. CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion; ND = no data available.

¹ Data obtained from the Compton Station.

² Data obtained from the South Long Beach Station.

Source: <http://www.arb.ca.gov/adam/>

Ozone

During the last three years, the State 1-hour concentration standard for ozone has been exceeded between 0 and 3 days each year at the Compton Station. The State 8-hour ozone standard has been exceeded between 1 and 4 days each year over the last three years at the Compton Station. The Federal 8-hour ozone standard has been exceeded between 1 and 4 days each year over the last three years at the Compton Station. Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO₂, which occur only

in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of Southern California contribute to the ozone levels experienced at this monitoring station, with the more significant areas being those directly upwind.

Nitrogen Dioxide

The Compton Station did not record an exceedance of either the Federal or State 1-hour NO₂ standards for the last three years.

Particulate Matter

The State 24-hour concentration standard for PM₁₀ has been exceeded between 0 and 3 days each year over the past three years at the South Long Beach Station. Over the past three years the Federal 24-hour standard for PM₁₀ has not been exceeded at the South Long Beach Station. The annual PM₁₀ concentration at the South Long Beach Station has exceeded the State standard for two of the past three years and has not exceeded the Federal standard for the past three years.

Over the past three years the 24-hour concentration standard for PM_{2.5} has been exceeded between 6 and 19 days over the past three years at the South Long Beach Station. The annual PM_{2.5} concentrations at the South Long Beach Station has exceeded both the State and Federal standards for the past three years. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM₁₀ and PM_{2.5}). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM₁₀ and PM_{2.5}. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

7.4 Toxic Air Contaminant Levels in the Air Basin

In order to determine the Air Basin-wide risks associated with major airborne carcinogens, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES) studies. According to the MATES V study (SCAQMD, 2021), the northern portion of the Campus has an estimated cancer risk of 569 per million persons chance of cancer and the southern portion of the Campus has an estimated cancer risk of 491 per million persons chance of cancer. In comparison, the average cancer risk for the Air Basin is 455 per million persons. The MATES V study monitored air toxins between May 1, 2018 to April 30, 2019, found that cancer risk from air toxics has declined significantly in the Air Basin with a 40 percent decrease in cancer risk since the monitoring for the MATES IV study that occurred between July 1, 2012 and June 30, 2013 and an 84 percent decrease in cancer risk since the monitoring for the MATES II study that occurred between April 1, 1998 and March 31, 1999.

The MATES V study also analyzed impacts specific to the communities experiencing environmental injustices (EJ communities) that were evaluated using the Senate Bill 535 definition of disadvantaged communities, which found that between MATES IV and MATES V, the cancer risk from air toxics decreased by 57 percent in EJ communities overall, compared to a 53 percent reduction in non-EJ communities.

In order to provide a perspective of risk, it is often estimated that the incidence in cancer over a lifetime for the U.S. population ranges between 1 in 3 to 4 and 1 in 3, or a risk of about 300,000 per million persons. The MATES-III study referenced a Harvard Report on Cancer Prevention, which estimated that of cancers associated with known risk factors, about 30 percent were related to tobacco, about 30 percent were related to diet and obesity, and about 2 percent were associated with environmental pollution related exposures that includes hazardous air pollutants.

8.0 MODELING PARAMETERS AND ASSUMPTIONS

8.1 CalEEMod Model Input Parameters

The criteria air pollution and GHG emissions impacts created by the proposed project have been analyzed through use of the California Emissions Estimator Model (CalEEMod) Version 2022.1.1.21 (see Appendix A). CalEEMod Version 2022.1 is a computer model published by the California Air Pollution Control Officers Association (CAPCOA) for estimating air pollutant and GHG emissions. The CalEEMod 2022.1 program uses the EMFAC2021 computer program to calculate the emission rates specific for the South Coast Air Basin portion of Los Angeles County for employee, vendor and haul truck vehicle trips and the OFFROAD2007 and OFFROAD2011 computer programs to calculate emission rates for heavy equipment operations. EMFAC2021, OFFROAD2007 and OFFROAD2011 are computer programs generated by the CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour.

The project characteristics in the CalEEMod model were set to a project location of South Coast Air Basin portion of Los Angeles County, utility companies of Southern California Edison and Long Beach Gas & Oil (with 2027 forecast factors), and project opening year of 2027.

Land Use Parameters

The proposed project would consist of demolition of the existing 62,000 square foot gymnasium and outdoor paved area that contains basketball and volleyball courts and construction of a new gymnasium and aquatic center on approximately a 2.5 acre area of the Campus. The proposed project's land use parameters that were entered into the CalEEMod model are shown in Table G.

Table G – CalEEMod Land Use Parameters

Proposed Land Use	Land Use Subtype in CalEEMod	Land Use Size ¹	Lot Acreage ²	Building Area (square feet)	Landscaped Area ³ (square feet)
New Gymnasium	High School	70 TSF	1.49	70,000	6,500
Pool Area	Recreational Swimming Pool	14 TSF	0.76	3,000 ⁽⁴⁾	3,300
Paved Hardscaped Areas	Other Paved Surfaces	10.9 TSF	0.25	10,031	1,090

Notes:

¹ TSF = Thousand Square Feet

² Lot acreage calculated based on the total area disturbed of 2.5-acres.

³ Landscaped Area based on 10% of area landscaped.

⁴ The Pool Area Building Area includes the Pool Equipment Room, Pool Restrooms, and Tickets/Concession Room.

Construction Parameters

The proposed project construction is expected to begin October 2024 through January 2027. As such, the CalEEMod construction schedule was extended so that the duration will be extended to a duration of 2 years and 2 months. The construction-related GHG emissions were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The phases of construction activities that have been analyzed are detailed below and include: 1) Demolition; 2) Site Preparation; 3) Grading that includes deep soil mixing, 4) Building Construction, 5) Paving; and 6) Application of architectural coatings.

The CalEEMod model provides the selection of “mitigation” to account for project conditions that would result in less emissions than a project without these conditions, however it should be noted that this

“mitigation” may represent regulatory requirements. This includes the required to adherence to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions. It should also be noted that due to the small area that will be disturbed and the close proximity of fire hydrants, it is anticipated that all watering will be provided with fire hoses and no water trucks will be utilized during construction of the project.

Demolition

The demolition phase would consist of demolishing the existing 62,000 square foot gymnasium and outdoor paved area that contains basketball and volleyball courts that has been estimated to cover 48,000 square feet. The pavement was assumed to be an average of 4-inches thick and weigh 145 pounds per square foot, which results in 1,160 tons of pavement that would be removed from the project site. For the existing gymnasium to be demolished, CalEEMod utilizes a factor of 0.046 tons of debris of building material per building square foot. This results in 2,852 tons of debris that would be generated from demolition of the existing gymnasium. Therefore, the combined demolition of the gymnasium and pavement area would require the removal of 4,012 tons of debris that would be exported from the site and would generate an average 33.4 haul truck trips per day over duration of demolition phase.

The demolition phase has been modeled as starting in October 2024 and would occur over ten weeks. The demolition activities would require an average of 15 worker trips per day. The onsite equipment would consist of one concrete/industrial saw, one rubber-tired dozer, and three of either tractors, loaders, or backhoes, which is based on the CalEEMod default equipment mix. Due to the large size of the existing gymnasium one excavator was added to the equipment mix in CalEEMod.

Site Preparation

The site preparation phase would consist of removing any vegetation, tree stumps, and stones onsite prior to grading. The site preparation phase is anticipated to start after completion of the demolition phase and was modeled as occurring over one week. The site preparation activities would generate an average of 7.5 worker trips per day. The onsite equipment would consist of one grader, one scraper, and one of either a tractor, loader, or backhoe, which is based on the CalEEMod default equipment.

Grading

The grading phase that includes deep soil mixing was modeled as starting after the site preparation phase and was modeled over four weeks. The proposed grading is anticipated to include export of 10,000 cubic yards of dirt. The export of material would generate an average of 41.7 haul truck trips per day over duration of the grading phase. The grading activities would generate an average of 10 trips per day for the workers. The onsite grading equipment would consist of one grader, one rubber tired dozer, and two of either tractors, loaders, or backhoes, which is based on the CalEEMod default equipment mix. In order to account for the deep soil mixing, one excavator was added to the equipment mix.

Building Construction

The building construction would occur after the completion of the grading phase and was modeled as occurring over one year and 10 months. The building construction phase would generate an average of 33 worker trips and 12.9 vendor trips per day. The onsite equipment would consist of the simultaneous operation of one crane, two forklifts, one generator, three welders, and one of either a tractor, a loader, or a backhoe, which is based on the CalEEMod default equipment mix.

Paving

The paving phase would consist of paving the pool deck and flat work. The paving phase was modeled as occurring over four weeks and starting after completion of the building construction phase. The paving phase would generate an average of 15 worker trips per day. The onsite equipment would consist of the simultaneous operation of one cement and mortar mixer, two pavers, two paving equipment, two rollers, and one of either a tractor, loader or backhoe, which is based on the CalEEMod default equipment mix.

Architectural Coating

The application of architectural coatings was modeled as occurring after the paving phase and occurring over four weeks. The architectural coating phase was modeled based on covering 101,123 square feet of non-residential interior area, 33,708 square feet of non-residential exterior area, and 654 square feet of paved area. The architectural coating phase would generate an average of 6.6 worker trips per day. The onsite equipment would consist of three air compressor, which includes an additional two air compressors over the CalEEMod default equipment mix in order to account for the multiple areas of the project that have the potential to be painted simultaneously.

Operational Emissions Modeling

The operations-related criteria air pollutant emissions and GHG emissions created by the proposed project have been analyzed through use of the CalEEMod model. The proposed project was analyzed in the CalEEMod model based on the land use parameters provided above and the parameters entered for each operational source is described below.

Mobile Sources

Mobile sources include emissions the additional vehicle miles generated from the proposed project. Since the proposed project consists of the demolition and reconstruction of the gymnasium and relocation of an existing aquatic center on campus that would not result in an increase in student enrollment nor would it result in a new use on campus, the proposed project is not anticipated to generate any new vehicle trips to the School. As such, the trip generation rate in CalEEMod was set to zero and no further analysis of mobile source emissions is provided in this Report.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. The area source emissions were based on the on-going use of the proposed project in the CalEEMod model. No changes were made to the default area source parameters in the CalEEMod model.

Energy Usage

Energy usage includes emissions from electricity and natural gas used onsite. The energy usage was based on the ongoing use of the proposed project in the CalEEMod Model. In addition, the primary source of natural gas usage from the proposed project would be from the pool heater boiler, which has been analyzed as a separate emission source that is described below. No changes were made to the default energy usage parameters in the CalEEMod model.

Solid Waste

Waste includes the GHG emissions associated with the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. The analysis was based on the

default CalEEMod solid waste generating rate of 162 tons of solid waste per year. No changes were made to the default solid waste parameters in the CalEEMod model.

Water and Wastewater

Water includes the water used for the interior of the buildings as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. The analysis was based on the default CalEEMod water usage rate of 2,962,649 gallons per year of indoor water use and 264,145 gallons per year of outdoor water use. No changes were made to the default water and wastewater parameters in the CalEEMod model.

Pool Heater Boiler

The proposed pool is anticipated to use a Lochinvar Aquas indirect gas fired pool boiler to heat the pool. Although the exact pool heater has not yet been selected, since the Lochinvar Aquas commercial boilers range between 750,000 and 2,000,000 BTU per hour, this analysis has utilized the worst-case 2.0 million BTU per hour boiler. It is anticipated that the boiler will operate an average of 8 hours per day over the year, which would result in 16 million BTU per day and 5,840 million BTU per year.

8.2 Energy Use Calculations

The proposed project is anticipated to consume energy during both construction and operation of the proposed project and the parameters utilized to calculate energy use from construction and operation of the proposed project are detailed separately below.

Construction-Related Energy Use

Construction of the proposed project is anticipated to use energy in the forms of petroleum fuel for both off-road equipment as well as from the transport of workers and materials to and from the project site and the calculations for each source are described below.

Off-Road Construction Equipment

The off-road construction equipment fuel usage was calculated through use of the CalEEMod model's default off-road equipment assumptions detailed above in Section 8.1. For each piece of off-road equipment, the fuel usage was calculated through use of the *2017 Off-road Diesel Emission Factors* spreadsheet, prepared by CARB (<https://ww3.arb.ca.gov/msei/ordiesel.htm>). The Spreadsheet provides the following formula to calculate fuel usage from off-road equipment:

Fuel Used = Load Factor x Horsepower x Total Operational Hours x BSFC / Unit Conversion

Where:

Load Factor - Obtained from CalEEMod default values

Horsepower – Obtained from CalEEMod default values

Total Operational Hours – Calculated by multiplying CalEEMod default daily hours by CalEEMod default number of working days for each phase of construction

BSFC – Brake Specific Fuel Consumption (pounds per horsepower-hour) – If less than 100 Horsepower = 0.408, if greater than 100 Horsepower = 0.367

Unit Conversion – Converts pounds to gallons = 7.109

Table H shows the off-road construction equipment fuel calculations based on the above formula. Table H shows that the off-road equipment utilized during construction of the proposed project would consume 58,874 gallons of diesel fuel.

Table H – Off-Road Equipment and Fuel Consumption from Construction of the Proposed Project

Equipment Type	Equipment Quantity	Horse-power	Load Factor	Operating Hours per Day	Total Operational Hours ¹	Fuel Used (gallons)
Demolition						
Concrete/Industrial Saw	1	33	0.73	8	400	553
Excavator	1	36	0.38	8	400	314
Tractors/Loaders/Backhoes	3	84	0.37	8	1,200	2,140
Rubber Tired Dozers	1	367	0.4	8	400	3,031
Site Preparation						
Grader	1	148	0.41	8	40	125
Scraper	1	423	0.48	8	40	419
Tractors/Loaders/Backhoes	1	84	0.37	7	35	62
Grading						
Grader	1	148	0.41	8	160	501
Excavator	1	36	0.38	8	160	126
Rubber Tired Dozer	1	367	0.4	8	160	1,213
Tractors/Loaders/Backhoes	2	84	0.37	7	280	499
Building Construction						
Crane	1	367	0.29	8	3,824	21,011
Forklifts	2	82	0.2	7	6,692	6,299
Generator Set	1	14	0.74	8	3,824	2,274
Tractors/Loaders/Backhoes	1	84	0.37	6	2,868	5,116
Welder	3	46	0.45	8	11,472	13,629
Paving						
Cement and Mortar Mixer	1	10	0.56	8	160	51
Paver	1	81	0.42	8	160	312
Paving Equipment	1	89	0.36	8	160	294
Rollers	2	36	0.38	8	320	251
Tractors/Loaders/Backhoes	1	84	0.37	8	160	285
Architectural Coating						
Air Compressors	3	37	0.48	6	360	367
Total Off-Road Equipment Diesel Fuel Used during Construction (gallons)						58,874

Notes:

¹ Based on: 50 days for Demolition, 5 days for Site Preparation, 20 days for Grading; 478 days for Building Construction; 20 days for Paving; and 20 days for Architectural Coating.

Source: CalEEMod Version 2022.1 (see Appendix A); CARB, 2017.

On-Road Construction-Related Vehicle Trips

The on-road construction-related vehicle trips fuel usage was calculated through use of the construction vehicle trip assumptions from the CalEEMod model run as detailed above in Section 8.1. The calculated total construction miles was then divided by the fleet average for the South Coast Air Basin portion of Los Angeles County miles per gallon rates for the year 2025 calculated through use of the EMFAC2021 model

and the EMFAC2021 model printouts are shown in Appendix B. The worker trips were based on the combined fleet average miles per gallon rates for gasoline powered automobiles, SUVs and pickup trucks and the vendor and haul truck trips were based on the combined T6 and T7 diesel trucks fleet average miles per gallon rate. Table I shows the on-road construction vehicle trips modeled in CalEEMod and the fuel usage calculations.

Table I – On-Road Vehicle Trips and Fuel Consumption from Construction of Proposed Project

Vehicle Trip Types / Fuel Type	Daily Trips	Trip Length (miles)	Total Miles per Day	Total Miles per Phase¹	Fleet Average Miles per Gallon²	Fuel Used (gallons)
Demolition						
Worker (Gasoline)	15	18.5	278	13,875	26.0	534
Haul (Diesel)	20.1	20	402	20,100	7.4	2,711
Site Preparation						
Worker (Gasoline)	7.5	18.5	139	694	26.0	27
Grading						
Worker (Gasoline)	12.5	18.5	231	4,625	26.0	178
Haul (Diesel)	62.5	20	1,250	25,000	7.4	3,372
Building Construction						
Worker (Gasoline)	35.1	18.5	649	310,389	26.0	11,956
Vendor (Diesel)	13.7	10.2	140	66,796	7.4	9,008
Paving						
Worker (Gasoline)	15	18.5	278	5,550	26.0	214
Architectural Coating						
Worker (Gasoline)	7.02	18.5	130	2,597	26.0	100
Total Gasoline Fuel Used from On-Road Construction Vehicles (gallons)						13,009
Total Diesel Fuel Used from On-Road Construction Vehicles (gallons)						15,091

Notes:

¹ Based on: 50 days for Demolition; 5 days for Site Preparation, 20 days for Grading; 478 days for Building Construction; 20 days for Paving; and 20 days for Architectural Coating.

² From EMFAC 2021 model (see Appendix D).

Source: CalEEMod Version 2022.1; CARB, 2021.

Table I shows that the on-road construction-related vehicle trips would consume 13,009 gallons of gasoline and 15,091 gallons of diesel fuel. As detailed above, Table H shows that the off-road construction equipment would consume 58,874 gallons of diesel fuel. This would result in the total consumption of 13,009 gallons of gasoline and 73,965 gallons of diesel fuel from construction of the proposed project.

Operations-Related Energy Use

The operation of the proposed project is anticipated to use energy in the forms of petroleum fuel, electricity, and natural gas, and the calculations for each source are described below.

Operational Petroleum Fuel

Operational petroleum fuel would be consumed by the additional vehicle miles generated from the proposed project. Since the proposed project consists of the relocation of an existing aquatic center on campus that would not result in an increase in student enrollment nor would it result in a new use on campus, the proposed project is not anticipated to generate any new vehicle trips to the School. As such,

the trip generation rate in CalEEMod was set to zero and no further analysis of operational petroleum fuel usage is provided in this Report.

Operational Electricity Use

The operations-related electricity usage was calculated in the CalEEMod model run that is detailed above in Section 8.1 that found the operation of the proposed project would consume 437,804 kilowatt hours (kWh) per year with implementation of Title 24 part 6 requirements that require the implementation of building energy efficiency standards that include the use of LED lighting.

Operational Natural Gas Use

The operations-related natural gas usage was calculated in the CalEEMod model run that is detailed above in Section 8.1 that found the proposed project will use 1,468,592 kilo British Thermal Units (kBTU) per year. In addition, operation of the pool heater, would utilize natural gas. According to the project applicant, the proposed pool is anticipated to use a Lochinvar Aquas indirect gas fired pool boiler to heat the pool. Although the exact pool heater has not yet been selected, since the Lochinvar Aquas commercial boilers range between 750,000 and 2,000,000 BTU per hour, this analysis has utilized the worst-case 2.0 million BTU per hour boiler. It is anticipated that the boiler will operate an average of 8 hours per day over the year, which would result in 16 million BTU per day and 5,840 million BTU per year. As such, operation of the proposed project would consume 7,309 million BTU per year of natural gas.

9.0 THRESHOLDS OF SIGNIFICANCE

9.1 Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the Air Basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table J.

Table J – SCAQMD Regional Criteria Pollutant Emission Thresholds of Significance

	Pollutant Emissions (pounds/day)						
	VOC	NOx	CO	SOx	PM10	PM2.5	Lead
Construction	75	100	550	150	150	55	3
Operation	55	55	550	150	150	55	3

Source: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>

9.2 Local Air Quality

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. SCAQMD has also provided *Final Localized Significance Threshold Methodology* (LST Methodology), July 2008, which details the methodology to analyze local air emission impacts. The LST Methodology found that the primary emissions of concern are NO₂, CO, PM10, and PM2.5.

The LST Methodology provides Look-Up Tables with different thresholds based on the location and size of the project site and distance to the nearest sensitive receptors. As detailed above in Section 6.3, the project site is located in Air Monitoring Area 4, which covers the south coastal Los Angeles County. The Look-Up Tables provided in the LST Methodology include project site acreage sizes of 1-acre, 2-acres and 5-acres. Since the area disturbed as part of the project is approximately 2.5 acres, the 2-acre thresholds were utilized in order to provide a conservative analysis. The nearest sensitive receptors are residents at the multi-family homes on the west side of Atlantic Avenue that are located as near as 260 feet (79 meters) west of the project site. As such, the 50 meter and 100 meter thresholds were interpolated to develop the thresholds for 79 meters. Table K below shows the LSTs for NOx, CO, PM10 and PM2.5 for both construction and operational activities.

Table K – SCAQMD Local Air Quality Thresholds of Significance

Activity	Allowable Emissions (pounds/day) ¹			
	NOx	CO	PM10	PM2.5
Construction	84	1,423	30	11
Operation	84	1,423	7	3

Notes:

¹ The nearest sensitive receptor to the project site are multi-family homes located as near as 260 feet (79 meters) south of the project site. The 50 meter and 100 meter thresholds were interpolated to find the 79 meter thresholds.

Source: Calculated from SCAQMD's Mass Rate Look-up Tables for 2 acres in Air Monitoring Area 4, South Coastal Los Angeles County.

9.3 Toxic Air Contaminants

According to the SCAQMD CEQA Handbook, any project that has the potential to expose the public to toxic air contaminants in excess of the following thresholds would be considered to have a significant air quality impact:

- If the Maximum Incremental Cancer Risk is 10 in one million or greater; or
- Toxic air contaminants from the proposed project would result in a Hazard Index increase of 1 or greater.

In order to determine if the proposed project may have a significant impact related to toxic air contaminants (TACs), the *Health Risk Assessment Guidance for analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, (Diesel Analysis) prepared by SCAQMD, August 2003, recommends that if the proposed project is anticipated to create TACs through stationary sources or regular operations of diesel trucks on the project site, then the proximity of the nearest receptors to the source of the TAC and the toxicity of the hazardous air pollutant (HAP) should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

9.4 Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, 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 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.”

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

9.5 Energy Conservation

The 2022 *CEQA California Environmental Quality Act Statutes & Guidelines* (2022 CEQA Guideline) include an Energy Section that analyzes the proposed project's energy consumption in order to avoid or reduce

inefficient, wasteful or unnecessary consumption of energy. Appendix F of the 2022 CEQA Statute and Guidelines, states the following:

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

- (1) Decreasing overall per capita energy consumption,
- (2) Decreasing reliance on fossil fuels such as coal, natural gas and oil, and
- (3) Increasing reliance on renewable energy sources.

Since the Energy Section was recently added, no state or local agencies have adopted specific criteria or thresholds to be utilized in an energy impact analysis. However, Appendix F, Subsection II.C of the 2022 CEQA Guidelines provides the following criteria for determining significance.

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project life cycle including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
2. The effects of the project on local and regional energy supplies and on requirement for additional capacity.
3. The effects of the project on peak and base period demands for electricity and other forms of energy.
4. The degree to which the project complies with existing energy standards.
5. The effects of the project on energy resources.
6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

If the proposed project creates inefficient, wasteful or unnecessary consumption of energy during construction or operation activities or conflicts with a state or local plan for renewable energy or energy efficiency, then the proposed project would create a significant energy impact.

9.6 Greenhouse Gas Emissions

The City of Long Beach has adopted the *Long Beach Climate Action Plan* (LB CAP), August 2022. The LB CAP has been included as a mitigation measure in the General Plan Land Use Element Update and the LB CAP has been prepared to use as the basis future assessments of consistency with this Plan in lieu of a project-specific GHG CEQA analysis for projects in the City. A project-specific environmental document that relies on this plan for its cumulative impacts analysis would identify specific reduction measures applicable to the project that are consistent with the LB CAP; it would also describe how the project incorporates those measures. If the measures are not otherwise binding and enforceable, they must be incorporated as mitigation measures or project conditions of approval, or some other mechanism to ensure implementation.

As such, this analysis has quantified GHG emission for informational purposes only and determination of significance will be based on consistency with the applicable measures in the LB CAP. The GHG emissions analysis for both construction and operation of the proposed project can be found below in Sections 10.8 and 10.9.

10.0 IMPACT ANALYSIS

10.1 CEQA Thresholds of Significance

Consistent with CEQA and the State CEQA Guidelines, a significant impact related to air quality, energy, and GHG emissions would occur if the proposed project is determined to:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people;
- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation;
- Conflict with or obstruct a state or local plan for renewable energy;
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

10.2 Air Quality Compliance

The proposed project would not conflict with or obstruct implementation of the SCAQMD Air Quality Management Plan (AQMP). The following section discusses the proposed project's consistency with the SCAQMD AQMP.

SCAQMD Air Quality Management Plan

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and regional plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

-
- (1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
 - (2) Whether the project will exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in this report, short-term regional construction air emissions would not result in significant impacts based on SCAQMD regional thresholds of significance discussed above in Section 9.1 or local thresholds of significance discussed above in Section 9.2. The ongoing operation of the proposed project would generate air pollutant emissions that are inconsequential on a regional basis and would not result in significant impacts based on SCAQMD thresholds of significance discussed above in Section 9.1. The analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the air quality standards. Therefore, a less than significant long-term impact would occur and no mitigation would be required.

Therefore, based on the information provided above, the proposed project would be consistent with the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the 2022 AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The 2022 AQMP was developed through use of the planning forecasts provided in the Connect SoCal and 2019 FTIP. The Connect SoCal is a major planning document for the regional transportation and land use network within Southern California. The Connect SoCal is a long-range plan that is required by federal and state requirements placed on SCAG and is updated every four years. The 2019 FTIP provides long-range planning for future transportation improvement projects that are constructed with state and/or federal funds within Southern California. Local governments are required to use these plans as the basis of their plans for the purpose of consistency with applicable regional plans under CEQA. For this project, the City of Long Beach General Plan's Land Use Plan defines the assumptions that are represented in AQMP.

The project site is currently designated as Founding and Contemporary Neighborhoods (N) in the General Plan and is zoned Institutional (I). The proposed project consists of development of a new gymnasium and aquatics center on the existing Jordan High School campus. The proposed project is an allowed use within the current land use designation and zoning. As such, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur in relation to implementation of the AQMP.

Level of Significance

Less than significant impact.

10.3 Cumulative Net Increase in Non-Attainment Pollution

The proposed project would not 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. The following section calculates the potential air emissions associated with the construction and operations of the proposed project and compares the emissions to the SCAQMD standards.

Construction Emissions

The construction activities for the proposed project are anticipated to include demolition of the existing gymnasium and outdoor paved area, site preparation and grading that includes deep soil mixing on approximately 2.5 acres, building construction of a new gymnasium and aquatics facility, paving of the pool deck and flat work, and application of architectural coatings. The CalEEMod model has been utilized to calculate the construction-related regional emissions from the proposed project and the input parameters utilized in this analysis have been detailed in Section 8.1. The maximum daily construction emissions by season are shown below in Table L and the CalEEMod printouts are shown in Appendix A.

Table L – Construction-Related Criteria Pollutant Emissions

Season and Year of Construction	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO ₂	PM10	PM2.5
Daily Summer Max						
2025	1.40	11.2	14.5	0.03	0.99	0.52
2026	1.32	10.7	14.3	0.03	0.94	0.47
Daily Winter Max						
2024	1.81	18.3	18.7	0.03	2.39	0.98
2025	1.72	20.5	18.4	0.05	3.89	1.92
2026	1.32	10.8	13.9	0.03	0.94	0.47
2027	34.4	5.81	8.96	0.01	0.43	0.26
Maximum Daily Construction Emissions	34.4	20.5	18.7	0.05	3.89	1.92
SCQAMD Regional Thresholds	75	100	550	150	150	55
SCAQMD Local Thresholds	--	84	1,423	--	30	11
Exceeds Thresholds?	No	No	No	No	No	No

Source: CalEEMod Version 2022.1.

Table L shows that none of the analyzed criteria pollutants would exceed either the regional or local emissions thresholds during construction of the proposed project. Therefore, less than significant regional and local air quality impacts would occur from construction of the proposed project.

Operational Emissions

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from onsite area sources, energy usage, and pool heater boiler emissions created from the on-going use of the proposed project. The operations-related regional criteria air quality impacts created by the proposed project have been analyzed through use of the CalEEMod model and the input parameters utilized in this analysis have been detailed in Section 8.1. The worst-case summer or winter VOC, NOx, CO, SO₂, PM10, and PM2.5 daily emissions created from the proposed project's long-term operations have been calculated and are summarized below in Table M and the CalEEMod emissions printouts are shown in Appendix A.

Table M – Operational Criteria Pollutant Emissions

Emissions Source	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO ₂	PM10	PM2.5
Area Sources ¹	2.27	0.03	3.17	<0.01	0.01	0.01
Energy Usage ²	0.02	0.39	0.33	<0.01	0.03	0.03
Pool Heater Boiler ³	0.09	<0.01	1.54	0.01	0.12	0.12
Total Emissions	2.38	0.42	5.04	0.01	0.16	0.16
SCQAMD Regional Thresholds	55	55	550	150	150	55
SCAQMD Local Thresholds	--	84	1,423	--	7	3
Exceeds Thresholds?	No	No	No	No	No	No

Notes:

¹ Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.

² Energy usage consist of emissions from natural gas usage (does not include the pool heater boiler).

³ Pool heater boiler based on a 2.0 MBTU per hour boiler operating 8 hours per day.

Source: Calculated from CalEEMod Version 2022.1.

The data provided in Table M shows that none of the analyzed criteria pollutants would exceed either the regional or local emissions thresholds during operation of the proposed project. Therefore, less than significant regional and local air quality impacts would occur from operation of the proposed project.

Friant Ranch Case

The operations-related regional criteria air quality impacts in *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502 (also referred to as “*Friant Ranch*”), the California Supreme Court held that when an EIR concluded that when a project would have significant impacts to air quality impacts, an EIR should “make a reasonable effort to substantively connect a project’s air quality impacts to likely health consequences.” In order to determine compliance with this Case, the Court developed a multi-part test that includes the following:

- 1) The air quality discussion shall describe the specific health risks created from each criteria pollutant, including diesel particulate matter.

This Analysis details the specific health risks created from each criteria pollutant above in Section 4.1 and specifically in Table B. In addition, the specific health risks created from diesel particulate matter is detailed above in Section 2.2 of this analysis. As such, this analysis meets the part 1 requirements of the Friant Ranch Case.

- 2) The analysis shall identify the magnitude of the health risks created from the Project. The Ruling details how to identify the magnitude of the health risks. Specifically, on page 24 of the ruling it states “The Court of Appeal identified several ways in which the EIR could have framed the analysis so as to adequately inform the public and decision makers of possible adverse health effects. The County could have, for example, identified the Project’s impact on the days of nonattainment per year.”

The Friant Ranch Case found that an EIR’s air quality analysis must meaningfully connect the identified air quality impacts to the human health consequences of those impacts, or meaningfully explain why that analysis cannot be provided. As noted in the Brief of Amicus Curiae by the SCAQMD in the Friant Ranch case (<https://www.courts.ca.gov/documents/9-s219783-ac-south-coast-air-quality-mgt-dist-041315.pdf>)

(Brief), SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, and thus it is uniquely situated to express an opinion on how lead agencies should correlate air quality impacts with specific health outcomes. The SCAQMD discusses that it may be infeasible to quantify health risks caused by projects similar to the proposed Project, due to many factors. It is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence). The Brief states that it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic industrial building that was built on "speculation" (i.e., without knowing the future tenant(s)). Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk, it does not necessarily mean anyone will contract cancer as a result of the Project. The Brief also cites the author of the CARB methodology, which reported that a PM_{2.5} methodology is not suited for small projects and may yield unreliable results. Similarly, SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NO_x or VOC emissions from relatively small projects, due to photochemistry and regional model limitations. The Brief concludes, with respect to the Friant Ranch EIR, that although it may have been technically possible to plug the data into a methodology, the results would not have been reliable or meaningful.

On the other hand, for extremely large regional projects (unlike the proposed project), the SCAQMD states that it has been able to correlate potential health outcomes for very large emissions sources – as part of their rulemaking activity, specifically 6,620 pounds per day of NO_x and 89,180 pounds per day of VOC were expected to result in approximately 20 premature deaths per year and 89,947 school absences due to ozone. As shown above in Table L, project-related construction activities would generate a maximum of 31.5 pounds per day of VOC and 17.7 pounds per day of NO_x and as shown above in Table M, operation of the proposed project would generate 2.21 pounds per day of VOC and 0.39 pounds per day NO_x. The proposed Project would not generate anywhere near these levels of 6,620 pounds per day of NO_x or 89,190 pounds per day of VOC emissions. Therefore, the proposed project's emissions are not sufficiently high enough to use a regional modeling program to correlate health effects on a basin-wide level.

Notwithstanding, this analysis does evaluate the proposed project's localized impact to air quality for emissions of CO, NO_x, PM₁₀, and PM_{2.5} by comparing the proposed project's onsite emissions to the SCAQMD's applicable LST thresholds. As evaluated in this analysis, the proposed project would not result in emissions that exceeded the SCAQMD's LSTs. Therefore, the proposed project would not be expected to exceed the most stringent applicable federal or state ambient air quality standards for emissions of CO, NO_x, PM₁₀, and PM_{2.5}.

Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant.

Level of Significance

Less than significant impact.

10.4 Sensitive Receptors

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the proposed project, which may expose sensitive receptors to substantial concentrations have been calculated above

in Section 10.3 for both construction and operations, which are discussed separately below. The discussion below also includes an analysis of the potential impacts from toxic air contaminant emissions. The nearest sensitive receptors to the project site are residents at the multi-family homes on the west side of Atlantic Avenue that are located as near as 260 feet west of the project site. There are also single-family homes on the east side of Myrtle Avenue that are located as near as 440 feet east of the project site.

Construction-Related Sensitive Receptor Impacts

The construction activities for the proposed project are anticipated to include demolition of the existing gymnasium and outdoor paved area, site preparation and grading that includes deep soil mixing on approximately 2.5 acres, building construction of a new gymnasium and aquatics facility, paving of the pool deck and flat work, and application of architectural coatings. Construction activities may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant concentrations and from toxic air contaminant emissions created from onsite construction equipment, which are described below.

Local Criteria Pollutant Impacts from Construction

The local air quality impacts from construction of the proposed project has been analyzed above in Section 10.3 and found that the construction of the proposed project would not exceed the local NO_x, CO, PM₁₀ and PM_{2.5} thresholds of significance discussed above in Section 9.2. Therefore, construction of the proposed project would create a less than significant construction-related impact to local air quality and no mitigation would be required.

Toxic Air Contaminants Impacts from Construction

Construction activities are anticipated to generate TAC emissions from diesel particulate matter (DPM) associated with the operation of trucks and off-road equipment and from possible asbestos in the gymnasium to be demolished.

Diesel Particulate Matter Emissions

The greatest potential for toxic air contaminant emissions would be related to diesel particulate matter (DPM) emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of “individual cancer risk”. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. It should be noted that the most current cancer risk assessment methodology recommends analyzing a 30 year exposure period for the nearby sensitive receptors (OEHHA, 2015).

Given the relatively limited number of heavy-duty construction equipment, the varying distances that construction equipment would operate to the nearby sensitive receptors, and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 30 or 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. In addition, California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than five minutes, requires equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet’s usage and emissions. This regulation also requires systematic upgrading of the emission Tier level of each

fleet, and currently no commercial operator is allowed to purchase Tier 0, Tier 1 or Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between years 2014 and 2023. Therefore, due to the limitations in off-road construction equipment DPM emissions from implementation of Section 2448, a less than significant short-term TAC impacts would occur during construction of the proposed project from DPM emissions.

Asbestos Emissions

It is possible that the existing gymnasium to be demolished contains asbestos. According to SCAQMD Rule 1403 requirements, prior to the start of demolition activities, the existing gymnasium shall be thoroughly surveyed for the presence of asbestos by a person that is certified by Cal/OSHA for asbestos surveys. Rule 1403 requires that the SCAQMD be notified a minimum of 10 days before any demolition activities begin with specific details of all asbestos to be removed, start and completion dates of demolition, work practices and engineering controls to be used to contain the asbestos emissions, estimates on the amount of asbestos to be removed, the name of the waste disposal site where the asbestos will be taken, and names and addresses of all contractors and transporters that will be involved in the asbestos removal process. Therefore, through adherence to the asbestos removal requirements, detailed in SCAQMD Rule 1403, a less than significant asbestos impact would occur during construction of the proposed project

Operations-Related Sensitive Receptor Impacts

The on-going operations of the proposed project may expose sensitive receptors to substantial pollutant concentrations from the potential local air quality impacts from onsite operations and from possible toxic air contaminant impacts.

Local Criteria Pollutant Impacts from Onsite Operations

The local air quality impacts from the operation of the proposed project would occur from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances. The analysis provided above in Section 10.3 found that the operation of the proposed project would not exceed the local NO_x, CO, PM₁₀ and PM_{2.5} thresholds of significance discussed above in Section 9.2. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to on-site emissions and no mitigation would be required.

Operations-Related Toxic Air Contaminant Impacts

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas and according to *The California Almanac of Emissions and Air Quality 2013 Edition*, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the nominal number of diesel truck trips that are anticipated to be generated by the proposed project, a less than significant TAC impact would occur during the on-going operations of the proposed project and no mitigation would be required.

Therefore, operation of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Level of Significance

Less than significant impact.

10.5 Odor Emissions

The proposed project would not create objectionable odors affecting a substantial number of people. Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor.

Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two types of thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the people that live and work in the immediate vicinity of the project site and is typically presented as the mean (or 50 percent of the population). The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality, this is typically represented by recognition by 50 percent of the population. The intensity refers to the perceived strength of the odor. The odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration. Potential odor impacts have been analyzed separately for construction and operations below.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of coatings such as asphalt pavement, paints and solvents and from emissions from diesel equipment. Standard construction requirements that limit the time of day when construction may occur as well as SCAQMD Rule 1108 that limits VOC content in asphalt and Rule 1113 that limits the VOC content in paints and solvents would minimize odor impacts from construction. As such, the objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site's boundaries. Through compliance with the applicable regulations that reduce odors and due to the transitory nature of construction odors, a less than significant odor impact would occur and no mitigation would be required.

Operations-Related Odor Impacts

The proposed project would consist of the development of a gymnasium and aquatics center. Potential sources that may emit odors during the on-going operations of the proposed project would primarily occur from the trash storage areas and use and storage of pool chemicals. Pursuant to City regulations, permanent trash enclosures that protect trash bins from rain as well as limit air circulation would be required for the trash storage areas. As detailed in the project design, all of pool chemicals would be stored in a structure, specifically designed for the storage of pool chemicals and the pool chemicals will primarily be applied through mechanical systems that limit the chemical exposure to air.

Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402, City trash storage regulations and pool chemical regulations, a less than significant impact related to odors would occur during the on-going operations of the proposed project.

Therefore, a less than significant odor impact would occur and no mitigation would be required.

Level of Significance

Less than significant impact.

10.6 Energy Consumption

The proposed project would impact energy resources during construction and operation. Energy resources that would be potentially impacted include electricity, natural gas, and petroleum based fuel supplies and distribution systems. This analysis includes a discussion of the potential energy impacts of the proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. A general definition of each of these energy resources are provided below.

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands. According to <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>, in 2022, Los Angeles County consumed 68,485 Gigawatt-hours per year of electricity.

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network and, therefore, resource availability is typically not an issue. Natural gas satisfies almost one-third of the State's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel. Natural gas is measured in terms of cubic feet. According to <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>, in 2022, Los Angeles County consumed 2,820 Million Therms of natural gas.

Petroleum-based fuels currently account for a majority of the California's transportation energy sources and primarily consist of diesel and gasoline types of fuels. However, the state has been working on developing strategies to reduce petroleum use. Over the last decade California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHG emissions from the transportation sector, and reduce vehicle miles traveled (VMT). Accordingly, petroleum-based fuel consumption in California has declined. According to "2010-2017_A15_Results.xlsx" obtained from: https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/, in 2017, 3,659 million gallons of gasoline and 300 million gallons of diesel was sold in Los Angeles County.

The following section calculates the potential energy consumption associated with the construction and operations of the proposed project and provides a determination if any energy utilized by the proposed project is wasteful, inefficient, or unnecessary consumption of energy resources.

Construction Energy

The construction activities for the proposed project are anticipated to include demolition of the existing gymnasium and outdoor paved area, site preparation and grading that includes deep soil mixing on approximately 2.5 acres, building construction of a new gymnasium and aquatics facility, paving of the pool deck and flat work, and application of architectural coatings. The proposed project would consume energy resources during construction in three (3) general forms:

1. Petroleum-based fuels used to power off-road construction vehicles and equipment on the Project Site, construction worker travel to and from the Project Site, as well as delivery and haul truck trips (e.g. hauling of demolition material to off-site reuse and disposal facilities);
2. Electricity associated with the conveyance of water that would be used during Project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power; and,
3. Energy used in the production of construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass.

Construction-Related Electricity

During construction the proposed project would consume electricity to construct the new structures and infrastructure. Electricity would be supplied to the project site by Southern California Edison (SCE) and would be obtained from the existing electrical lines in the vicinity of the project site. The use of electricity from existing power lines rather than temporary diesel or gasoline powered generators would minimize impacts on energy use. Electricity consumed during project construction would vary throughout the construction period based on the construction activities being performed. Various construction activities include electricity associated with the conveyance of water that would be used during project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power. Such electricity demand would be temporary, nominal, and would cease upon the completion of construction. Overall, construction activities associated with the proposed project would require limited electricity consumption that would not be expected to have an adverse impact on available electricity supplies and infrastructure. Therefore, the use of electricity during project construction would not be wasteful, inefficient, or unnecessary.

Since SCE already provides power to the project site, it is anticipated that only nominal improvements would be required to SCE distribution lines and equipment with development of the proposed project. Compliance with City's guidelines and requirements would ensure that the proposed project fulfills its responsibilities relative to infrastructure installation, coordinates any electrical infrastructure removals or relocations, and limits any impacts associated with construction of the project. Construction of the project's electrical infrastructure is not anticipated to adversely affect the electrical infrastructure serving the surrounding uses or utility system capacity.

Construction-Related Natural Gas

Construction of the proposed project typically would not involve the consumption of natural gas. Natural gas would not be supplied to support construction activities, thus there would be no demand generated by construction. Since Long Beach Gas & Oil already provides natural gas to the project site, construction-related activities would be limited to installation of new natural gas connections within the project site. Development of the proposed project would not require extensive infrastructure improvements to serve the project site. Construction-related energy usage impacts associated with the installation of natural gas connections are expected to be confined to trenching in order to place the lines below surface. In addition, prior to ground disturbance, the proposed project would notify and coordinate with Long Beach Gas & Oil to identify the locations and depth of all existing gas lines and avoid disruption of gas service. Therefore, construction-related impacts to natural gas supply and infrastructure would be less than significant.

Construction-Related Petroleum Fuel Use

Petroleum-based fuel usage represents the highest amount of transportation energy potentially consumed during construction, which would be utilized by both off-road equipment operating on the project site and on-road automobiles transporting workers to and from the project site and on-road trucks transporting equipment and supplies to the project site.

The off-road construction equipment fuel usage was calculated through use of the off-road equipment assumptions and fuel use assumptions shown above in Section 8.2, which found that construction of the proposed project would consume 13,009 gallons of gasoline and 73,965 gallons of diesel fuel. This equates to 0.0004 percent of the gasoline and 0.024 percent of the diesel used annually in Los Angeles County. As such, the construction-related petroleum use would be nominal, when compared to current county-wide petroleum usage rates.

Construction activities associated with the proposed project would be required to adhere to all State and SCAQMD regulations for off-road equipment and on-road trucks, which provide minimum fuel efficiency standards. As such, construction activities for the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of energy resources. Impacts regarding transportation energy would be less than significant. Development of the proposed project would not result in the need to manufacture construction materials or create new building material facilities specifically to supply the proposed project. It is difficult to measure the energy used in the production of construction materials such as asphalt, steel, and concrete, it is reasonable to assume that the production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest of minimizing the cost of doing business.

Operational Energy

The on-going operation of the proposed project would require the use of energy resources for multiple purposes including, but not limited to, pool heating, heating/ventilating/air conditioning (HVAC), refrigeration, lighting, appliances, and electronics. Energy would also be consumed during operations related to water usage, solid waste disposal, and landscape equipment.

Operations-Related Electricity

Operation of the proposed project would result in consumption of electricity at the project site. As detailed above in Section 8.2 the proposed project would consume 437,804 kilowatt-hours per year of

electricity. This equates to 0.0006 percent of the electricity consumed annually in the County of Los Angeles. As such, the operations-related electricity use would be nominal, when compared to current electricity usage rates in the County.

It should be noted that, the proposed project would comply with all Federal, State, and City requirements related to the consumption of electricity, that includes CCR Title 24, Part 6 *Building Energy Efficiency Standards* and CCR Title 24, Part 11: *California Green Building Standards*. The CCR Title 24, Part 6 and Part 11 standards require numerous energy efficiency measures to be incorporated into the proposed aquatics center, including enhanced insulation, use of energy efficient lighting and appliances, water and space heating systems, as well as requiring a variety of other energy-efficiency measures to be incorporated into the proposed project. Therefore, it is anticipated the proposed project will be designed and built to minimize electricity use and that existing and planned electricity capacity and electricity supplies would be sufficient to support the proposed project's electricity demand. Thus, the project would not result in the wasteful or inefficient use of electricity and no mitigation measures would be required.

Operations-Related Natural Gas

Operation of the proposed project would result in increased consumption of natural gas at the project site. As detailed above in Section 8.3 the proposed project would consume 7,309 MBTU per year of natural gas. This equates to 0.0026 percent of the natural gas consumed annually in Los Angeles County. As such, the operations-related natural gas use would be nominal, when compared to current natural gas usage rates in the County.

It should be noted that, the proposed project would comply with all Federal, State, and City requirements related to the consumption of natural gas, that includes CCR Title 24, Part 6 *Building Energy Efficiency Standards* and CCR Title 24, Part 11: *California Green Building Standards*. The CCR Title 24, Part 6 and Part 11 standards require numerous energy efficiency measures to be incorporated into the proposed project, including enhanced insulation as well as use of efficient natural gas appliances and HVAC units. Therefore, it is anticipated the proposed project will be designed and built to minimize natural gas use and that existing and planned natural gas capacity and natural gas supplies would be sufficient to support the proposed project's natural gas demand. Thus, impacts with regard to natural gas supply and infrastructure capacity would be less than significant and no mitigation measures would be required.

Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.7 Energy Plan Consistency

The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The City has adopted the following plans that address energy efficiency and conservation: (1) Municipal Code Section 21.45.400 (Green building standards for public and private development), 2009; (2) *Sustainable City Action Plan* (SCAP), February 2, 2010; and (3) *Long Beach Climate Action Plan* (LB CAP), August 2022.

The only project-specific energy conservation measures are provided in the City's Municipal Code Section 21.45.400 (Green building standards for public and private development, which requires new

development projects to be designed and built to meet the Leadership in Energy and Environmental Design (LEED) Green Building standards. In addition, the proposed project will be required to be designed to meet the State's most current Title 24 Part 6 and Part 11 building energy efficiency standards. The SCAP provides City-wide sustainability goals to conserve electricity and natural gas. The LB CAP also provides City-wide energy conservation measures. As such, the proposed project would be designed to meet all applicable State building energy efficiency standards as well as to meet the City's energy efficiency standards. Therefore, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.8 Generation of Greenhouse Gas Emissions

The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The proposed project would consist of development of a new gymnasium and aquatics center. The proposed project is anticipated to generate GHG emissions from area sources, energy usage, waste disposal, water usage, pool heater boiler and construction equipment. Since the proposed project consists of the demolition and reconstruction of the gymnasium and relocation of an existing aquatic center on campus that would not result in an increase in student enrollment nor would it result in a new use on campus, the proposed project is not anticipated to generate any new vehicle trips to the School and no new mobile source emissions would be created from the proposed project.

The LB CAP (City of Long Beach, 2022) is the applicable plan for the project area for reducing GHG emissions. According to the LB CAP, if a project can show that the applicable GHG reduction measures in the LB CAP would be implemented as part of the proposed project, the project would be considered consistent with the LB CAP and would result in a less than significant. As such, this analysis has quantified GHG emission for informational purposes only and determination of significance will be based on consistency with the applicable measures in the LB CAP. The project's GHG emissions have been calculated with the CalEEMod model based on the construction and operational parameters detailed above in Section 8.1. A summary of the results is shown below in Table N and the CalEEMod model run is provided in Appendix A.

Table N – Project Related Greenhouse Gas Annual Emissions

Category	Greenhouse Gas Emissions (Metric Tons per Year)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Area Sources ¹	1.48	<0.01	<0.01	1.49
Energy Usage ²	147	0.01	<0.01	147
Water and Wastewater ³	4.56	0.10	<0.01	7.84
Solid Waste ⁴	15.0	1.50	0.00	52.6
Refrigeration ⁵	--	--	--	0.06
Pool Heater Boiler ⁶	312	0.01	<0.01	313
Construction ⁷	28.58	<0.01	<0.01	28.91
Total GHG Emissions	509	1.62	<0.01	551

Notes:

¹ Area sources consist of GHG emissions from consumer products, architectural coatings, and landscaping equipment.

² Energy usage consists of GHG emissions from electricity and natural gas usage.

³ Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

⁴ Waste includes the CO₂ and CH₄ emissions created from the solid waste placed in landfills.

⁵ Refrigeration includes leakage of refrigerants used in HVAC units and vending machines.

⁶ Pool heater boiler based on a 2.0 MBTU per hour boiler operating 8 hours per day

⁷ Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.

Source: CalEEMod Version 2022.1.

The data provided in Table N shows that the proposed project would create 551 MTCO₂e per year. As detailed below in Section 10.9, the proposed project would implement the applicable measures in the LB CAP. Therefore, a less than significant generation of greenhouse gas emissions would occur from development of the proposed project. Impacts would be less than significant.

Level of Significance

Less than significant impact.

10.9 Greenhouse Gas Plan Consistency

The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. The applicable plan for the proposed project would be the LB CAP (City of Long Beach, 2022). The proposed project's consistency with the Priority Mitigation Actions in the CAAP is shown in Table O.

Table O – Consistency with the City of Long Beach Climate Action Plan

Priority Mitigation Actions	Project Consistency
BE-1: Provide access to renewably generated electricity	Not Applicable. This policy is only applicable to Southern California Edison, which is the electrical provider for the City.
BE-2: Develop a home energy assessment program	Not Applicable. The policy is only applicable to the City to implement.
BE-3: Provide access to energy efficiency financing, rebates, and incentives for building owners	Not Applicable. The policy is only applicable to the City to implement.
BE-4: Promote community solar and microgrids	Not Applicable. The policy is only applicable to the City to implement.
BE-5: Perform municipal energy audits	Not Applicable. This policy is only applicable to the City to implement.
T-1: Increase frequency, connectivity, and safety of transit options.	Not Applicable. This action is applicable to Long Beach Transit.
T-2: Increase employment and residential development along primary transit corridors	Not Applicable. The proposed project would not increase employment or residential development.
T-3: Implement the Port of Long Beach Clean Air Action Plan	Not Applicable. This action is applicable to the Port of Long Beach.
T-4: Increase bikeway infrastructure	Consistent. The proposed project would provide new bicycle parking areas that are connected to the nearby bike trails.
T-5: Expand/improve pedestrian infrastructure citywide	Consistent. The proposed project would improve onsite access routes.
T-6: Develop an Electric Vehicle Infrastructure Master Plan	Not Applicable. This action is only applicable to the City to implement.
T-7: Update the Transportation Demand Management Ordinance	Not Applicable. This action is only applicable to the City to implement.
T-8: Increase density and mixing of land uses	Not Applicable. This action is only applicable to the City to implement.

Priority Mitigation Actions	Project Consistency
T-9: Integrate SB 743 planning with CAAP process	Not Applicable. This action is only applicable to the City to implement.
T-10: Identify and implement short-term measures to reduce emissions related to oil and gas extraction	Not Applicable. No oil and gas extraction is part of the proposed project.
W-1: Ensure compliance with state law recycling program requirements for multi-family residential and commercial property	Not Applicable. This policy is only applicable to the City to implement. However, the proposed project will commercial property recycling program.
W-2: Develop a residential organic waste collection program	Not Applicable. This policy is only applicable to the City to implement.
W-3: Ensure compliance with state law organic waste diversion requirements for multi-family residential and commercial	Not Applicable. This policy is only applicable to the City to implement.
W-4: Identify organic waste management options	Not Applicable. This policy is only applicable to the City to implement.

Source: City of Long Beach, LB CAP found at: <https://www.longbeach.gov/lbcd/planning/caap/>

As shown in Table O with implementation of statewide regulatory requirements including the CalGreen building standards, the proposed project would be consistent with all applicable policies of the CAAP. Therefore, implementation of the proposed project would not conflict with any applicable plan that reduces GHG emissions.

Level of Significance

Less than significant impact.

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APPENDIX A

CalEEMod Model Printouts

Jordan High School New Gym & Aquatics Center Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
 - 2.4. Operations Emissions Compared Against Thresholds
 - 2.5. Operations Emissions by Sector, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Demolition (2024) - Unmitigated
 - 3.3. Site Preparation (2025) - Unmitigated
 - 3.5. Grading (2025) - Unmitigated
 - 3.7. Building Construction (2025) - Unmitigated

3.9. Building Construction (2026) - Unmitigated

3.11. Paving (2026) - Unmitigated

3.13. Paving (2027) - Unmitigated

3.15. Architectural Coating (2027) - Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles	
5.4.1. Construction Vehicle Control Strategies	
5.5. Architectural Coatings	
5.6. Dust Mitigation	
5.6.1. Construction Earthmoving Activities	
5.6.2. Construction Earthmoving Control Strategies	
5.7. Construction Paving	
5.8. Construction Electricity Consumption and Emissions Factors	
5.9. Operational Mobile Sources	
5.9.1. Unmitigated	
5.10. Operational Area Sources	
5.10.1. Hearths	
5.10.1.1. Unmitigated	
5.10.2. Architectural Coatings	
5.10.3. Landscape Equipment	
5.11. Operational Energy Consumption	
5.11.1. Unmitigated	

5.12. Operational Water and Wastewater Consumption	
5.12.1. Unmitigated	
5.13. Operational Waste Generation	
5.13.1. Unmitigated	
5.14. Operational Refrigeration and Air Conditioning Equipment	
5.14.1. Unmitigated	
5.15. Operational Off-Road Equipment	
5.15.1. Unmitigated	
5.16. Stationary Sources	
5.16.1. Emergency Generators and Fire Pumps	
5.16.2. Process Boilers	
5.17. User Defined	
5.18. Vegetation	
5.18.1. Land Use Change	
5.18.1.1. Unmitigated	
5.18.1. Biomass Cover Type	
5.18.1.1. Unmitigated	

- 5.18.2. Sequestration
 - 5.18.2.1. Unmitigated
- 6. Climate Risk Detailed Report
 - 6.1. Climate Risk Summary
 - 6.2. Initial Climate Risk Scores
 - 6.3. Adjusted Climate Risk Scores
 - 6.4. Climate Risk Reduction Measures
- 7. Health and Equity Details
 - 7.1. CalEnviroScreen 4.0 Scores
 - 7.2. Healthy Places Index Scores
 - 7.3. Overall Health & Equity Scores
 - 7.4. Health & Equity Measures
 - 7.5. Evaluation Scorecard
 - 7.6. Health & Equity Custom Measures
- 8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Jordan High School New Gym & Aquatics Center
Construction Start Date	10/21/2024
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.30
Precipitation (days)	17.4
Location	33.87160311055305, -118.18506847053624
County	Los Angeles-South Coast
City	Long Beach
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4718
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Long Beach Gas & Oil
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
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High School	70.0	1000sqft	1.49	70,000	6,500	6,500	—	—
Recreational Swimming Pool	13.6	1000sqft	0.76	13,600	3,300	—	—	—
Other Non-Asphalt Surfaces	10.9	1000sqft	0.25	0.00	1,090	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.40	11.2	14.5	0.03	0.41	0.58	0.99	0.38	0.14	0.52	3,121	0.13	0.10	2.97	3,156
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	34.4	20.5	18.7	0.05	0.72	3.17	3.89	0.67	1.25	1.92	7,092	0.35	0.71	0.28	7,311
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.89	8.57	10.4	0.02	0.31	0.55	0.86	0.28	0.16	0.44	2,431	0.10	0.10	1.08	2,465
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.34	1.56	1.89	< 0.005	0.06	0.10	0.16	0.05	0.03	0.08	403	0.02	0.02	0.18	408
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	—

Unmit.	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	—	—	—	—	150	—	—	—	55.0	—	—	—	—	—	—
Unmit.	No	No	No	No	—	—	—	—	No	—	—	—	No	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.40	11.2	14.5	0.03	0.41	0.58	0.99	0.38	0.14	0.52	3,121	0.13	0.10	2.97	3,156
2026	1.32	10.7	14.3	0.03	0.37	0.58	0.94	0.33	0.14	0.47	3,104	0.13	0.10	2.76	3,138
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.81	18.3	18.7	0.03	0.72	1.67	2.39	0.66	0.31	0.98	4,251	0.19	0.26	0.11	4,332
2025	1.72	20.5	18.4	0.05	0.72	3.17	3.89	0.67	1.25	1.92	7,092	0.35	0.71	0.28	7,311
2026	1.32	10.8	13.9	0.03	0.37	0.58	0.94	0.33	0.14	0.47	3,079	0.13	0.10	0.07	3,111
2027	34.4	5.81	8.96	0.01	0.23	0.20	0.43	0.21	0.05	0.26	1,433	0.05	0.02	0.02	1,439
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.25	2.52	2.56	< 0.005	0.10	0.23	0.33	0.09	0.04	0.13	583	0.03	0.04	0.24	594
2025	1.02	8.57	10.4	0.02	0.31	0.55	0.86	0.28	0.16	0.44	2,431	0.10	0.10	1.08	2,465
2026	0.91	7.46	9.77	0.02	0.26	0.39	0.64	0.23	0.09	0.33	2,124	0.09	0.06	0.81	2,146
2027	1.89	0.17	0.26	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	35.3	< 0.005	< 0.005	0.01	35.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.05	0.46	0.47	< 0.005	0.02	0.04	0.06	0.02	0.01	0.02	96.5	< 0.005	0.01	0.04	98.3

2025	0.19	1.56	1.89	< 0.005	0.06	0.10	0.16	0.05	0.03	0.08	403	0.02	0.02	0.18	408
2026	0.17	1.36	1.78	< 0.005	0.05	0.07	0.12	0.04	0.02	0.06	352	0.01	0.01	0.13	355
2027	0.34	0.03	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	5.84	< 0.005	< 0.005	< 0.005	5.87

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.38	0.42	5.04	0.01	0.15	0.00	0.15	0.15	0.00	0.15	2,900	9.81	0.04	0.34	3,158
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.86	0.39	1.87	0.01	0.15	0.00	0.15	0.15	0.00	0.15	2,887	9.81	0.04	0.34	3,145
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.13	0.41	2.51	0.01	0.12	0.00	0.12	0.12	0.00	0.12	1,882	9.78	0.02	0.34	1,890
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.39	0.08	0.46	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	312	1.62	< 0.005	0.06	313
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	—	—	150	—	—	55.0	—	—	—	—	—
Unmit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	—	—	150	—	—	55.0	—	—	—	—	—
Unmit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00
Area	2.27	0.03	3.17	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	13.1	< 0.005	< 0.005	—	13.1
Energy	0.02	0.39	0.33	< 0.005	0.03	—	0.03	0.03	—	0.03	886	0.08	0.01	—	890
Water	—	—	—	—	—	—	—	—	—	—	27.5	0.62	0.01	—	47.4
Waste	—	—	—	—	—	—	—	—	—	—	90.8	9.08	0.00	—	318
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	0.34	0.34
Stationary	0.09	0.00	1.54	0.01	0.12	0.00	0.12	0.12	0.00	0.12	1,882	0.04	0.02	0.00	1,890
Total	2.38	0.42	5.04	0.01	0.15	0.00	0.15	0.15	0.00	0.15	2,900	9.81	0.04	0.34	3,158
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00
Area	1.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.02	0.39	0.33	< 0.005	0.03	—	0.03	0.03	—	0.03	886	0.08	0.01	—	890
Water	—	—	—	—	—	—	—	—	—	—	27.5	0.62	0.01	—	47.4
Waste	—	—	—	—	—	—	—	—	—	—	90.8	9.08	0.00	—	318
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	0.34	0.34
Stationary	0.09	0.00	1.54	0.01	0.12	0.00	0.12	0.12	0.00	0.12	1,882	0.04	0.02	0.00	1,890
Total	1.86	0.39	1.87	0.01	0.15	0.00	0.15	0.15	0.00	0.15	2,887	9.81	0.04	0.34	3,145
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00
Area	2.11	0.02	2.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	8.94	< 0.005	< 0.005	—	8.97

Energy	0.02	0.39	0.33	< 0.005	0.03	—	0.03	0.03	—	0.03	886	0.08	0.01	—	890
Water	—	—	—	—	—	—	—	—	—	—	27.5	0.62	0.01	—	47.4
Waste	—	—	—	—	—	—	—	—	—	—	90.8	9.08	0.00	—	318
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	0.34	0.34
Stationary	0.09	0.00	1.54	0.01	0.12	0.00	0.12	0.12	0.00	0.12	1,882	0.04	0.02	0.00	1,890
Total	2.21	0.41	4.04	0.01	0.15	0.00	0.15	0.15	0.00	0.15	2,896	9.81	0.04	0.34	3,154
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.00	0.00	0.00
Area	0.38	< 0.005	0.40	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.48	< 0.005	< 0.005	—	1.49
Energy	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	147	0.01	< 0.005	—	147
Water	—	—	—	—	—	—	—	—	—	—	4.56	0.10	< 0.005	—	7.84
Waste	—	—	—	—	—	—	—	—	—	—	15.0	1.50	0.00	—	52.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	0.06	0.06
Stationary	0.02	0.00	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	312	0.01	< 0.005	0.00	313
Total	0.40	0.08	0.74	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	479	1.62	0.01	0.06	522

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.71	16.4	17.0	0.03	0.70	—	0.70	0.64	—	0.64	2,635	0.11	0.02	—	2,644
Demolition	—	—	—	—	—	1.10	1.10	—	0.17	0.17	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.25	2.33	< 0.005	0.10	—	0.10	0.09	—	0.09	361	0.01	< 0.005	—	362
Demolition	—	—	—	—	—	0.15	0.15	—	0.02	0.02	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.41	0.43	< 0.005	0.02	—	0.02	0.02	—	0.02	59.8	< 0.005	< 0.005	—	60.0
Demolition	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.08	0.96	0.00	0.00	0.20	0.20	0.00	0.05	0.05	201	0.01	0.01	0.02	203
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	1.84	0.68	0.01	0.02	0.37	0.39	0.02	0.10	0.12	1,415	0.08	0.23	0.08	1,484
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	27.9	< 0.005	< 0.005	0.05	28.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	< 0.005	0.26	0.09	< 0.005	< 0.005	0.05	0.05	0.05	< 0.005	0.01	0.02	194	0.01	0.03	0.19	203
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.62	< 0.005	< 0.005	0.01	4.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	32.1	< 0.005	0.01	0.03	33.7

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	10.9	11.0	0.03	0.47	—	0.47	0.43	—	0.43	2,717	0.11	0.02	—	2,726
Dust From Material Movement	—	—	—	—	—	0.41	0.41	—	0.04	0.04	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.15	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	37.2	< 0.005	< 0.005	—	37.3
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.16	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.18
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.00	0.02	0.02	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	99.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.38
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.61	14.9	15.5	0.02	0.67	—	0.67	0.62	—	0.62	2,596	0.11	0.02	—	2,605
Dust From Material Movement	—	—	—	—	—	1.85	1.85	—	0.89	0.89	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.82	0.85	< 0.005	0.04	—	0.04	0.03	—	0.03	142	0.01	< 0.005	—	143
Dust From Material Movement	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.15	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	23.6	< 0.005	< 0.005	—	23.6
Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.06	0.74	0.00	0.00	0.16	0.16	0.00	0.00	0.04	0.16	0.04	0.04	0.04	0.01	164	0.01	0.02	0.02	166
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	5.52	2.09	0.03	0.06	1.16	1.16	0.06	0.06	0.37	4,332	0.32	0.24	0.24	0.68	0.26	0.26	0.26	0.26	4,540
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.11	< 0.005	< 0.005	0.01	9.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.31	0.11	< 0.005	< 0.005	0.06	0.06	< 0.005	< 0.005	0.02	0.07	0.02	0.02	0.02	0.04	237	0.01	0.24	0.24	249
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.51	< 0.005	< 0.005	< 0.005	1.53
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.01	39.3	< 0.005	0.04	0.04	41.2

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)															
Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.24	10.6	11.9	0.02	0.40	—	0.40	0.37	—	0.37	2,201	0.09	0.02	—	2,209
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.24	10.6	11.9	0.02	0.40	—	0.40	0.37	—	0.37	2,201	0.09	0.02	—	—	2,209								
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—								
Off-Road Equipment	0.80	6.84	7.66	0.01	0.26	—	0.26	0.24	—	0.24	1,422	0.06	0.01	—	—	1,426								
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—								
Off-Road Equipment	0.15	1.25	1.40	< 0.005	0.05	—	0.05	0.04	—	0.04	235	0.01	< 0.005	—	—	236								
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—								
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—								
Worker	0.15	0.15	2.44	0.00	0.46	0.46	0.46	0.00	0.11	0.11	485	0.02	0.02	1.78	493									
Vendor	0.01	0.49	0.24	< 0.005	0.12	0.12	0.12	< 0.005	0.03	0.04	435	0.02	0.06	1.19	455									
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—								
Worker	0.15	0.17	2.07	0.00	0.46	0.46	0.46	0.00	0.11	0.11	460	0.02	0.02	0.05	466									
Vendor	0.01	0.52	0.24	< 0.005	0.12	0.12	0.12	< 0.005	0.03	0.04	435	0.02	0.06	0.03	454									
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—								

Worker	0.10	0.12	1.40	0.00	0.00	0.29	0.29	0.00	0.07	0.07	302	0.01	0.01	0.50	306
Vendor	0.01	0.33	0.16	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	281	0.01	0.01	0.33	293
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	49.9	< 0.005	< 0.005	0.08	50.6
Vendor	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	46.5	< 0.005	< 0.005	0.06	48.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	10.1	11.8	0.02	0.36	—	0.36	0.33	—	0.33	2,201	0.09	0.02	—	2,208
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	10.1	11.8	0.02	0.36	—	0.36	0.33	—	0.33	2,201	0.09	0.02	—	2,208
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	6.73	7.82	0.02	0.24	—	0.24	0.22	—	0.22	1,464	0.06	0.01	—	1,469

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.23	1.43	< 0.005	0.04	—	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	243
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0.13	0.14	2.27	0.00	0.00	0.46	0.46	0.00	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.02	483
Worker	0.01	0.47	0.23	< 0.005	0.01	0.12	0.12	< 0.005	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.06	447
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0.13	0.15	1.94	0.00	0.00	0.46	0.46	0.00	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.02	457
Vendor	0.01	0.49	0.23	< 0.005	0.01	0.12	0.12	< 0.005	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.06	446
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.11	1.35	0.00	0.00	0.30	0.30	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.01	309
Vendor	0.01	0.33	0.15	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	297
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.25	0.00	0.00	0.06	0.06	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	< 0.005	51.1
Vendor	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	49.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	5.88	8.19	0.01	0.25	—	0.25	0.23	—	0.23	1,244	0.05	0.01	—	1,248
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.29	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	60.8	< 0.005	< 0.005	—	61.0
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	10.1	< 0.005	< 0.005	—	10.1
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.07	0.83	0.00	0.00	0.20	0.20	0.00	0.05	0.05	193	0.01	0.01	0.02	195					
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—					
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	9.56	< 0.005	< 0.005	0.01	9.69					
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—					
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.58	< 0.005	< 0.005	< 0.005	1.60					
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—					
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.58	< 0.005	< 0.005	< 0.005	1.60					
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					

3.13. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	5.74	8.20	0.01	0.23	—	0.23	0.21	—	0.21	1,244	0.05	0.01	—	1,248
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.05	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	7.30	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	7.33
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	1.21	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.21
Paving	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.06	0.76	0.00	0.20	0.20	0.00	0.00	0.05	189	< 0.005	< 0.005	0.01	0.02	< 0.005	0.02	< 0.005	< 0.005	191
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.13	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	0.00	< 0.005	0.19	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.19

3.15. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	2.49	3.38	0.01	0.06	—	0.06	0.05	—	0.05	401	0.02	< 0.005	—	402
Architectural Coatings	34.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.14	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	21.9	< 0.005	< 0.005	—	22.0
Architectural Coatings	1.86	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.63	< 0.005	< 0.005	—	3.65

Architectur Coatings	0.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.03	0.36	0.00	0.00	0.09	0.09	0.09	0.09	0.00	0.02	0.02	0.02	0.02	88.5	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	89.5	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	< 0.005	4.92	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	4.98	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	< 0.005	< 0.005	0.81	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.82	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	415	0.04	< 0.005	—	418
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	415	0.04	< 0.005	—	418
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	415	0.04	< 0.005	—	418
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	—	418
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	—	69.1
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	—	69.1

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.02	0.39	0.33	< 0.005	0.03	—	0.03	0.03	—	0.03	471	0.04	< 0.005	—	472
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	0.39	0.33	< 0.005	0.03	—	0.03	0.03	—	0.03	471	0.04	< 0.005	—	472

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.02	0.39	0.33	< 0.005	0.03	—	0.03	0.03	0.03	—	0.03	471	0.04	< 0.005	—	—	—	472	
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	—	—	—	0.00	
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	—	—	—	0.00	
Total	0.02	0.39	0.33	< 0.005	0.03	—	0.03	0.03	0.03	—	0.03	471	0.04	< 0.005	—	—	—	472	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
High School	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	0.01	—	0.01	77.9	0.01	< 0.005	—	—	—	78.1	
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	—	—	—	0.00	
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	—	—	—	0.00	
Total	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	0.01	—	0.01	77.9	0.01	< 0.005	—	—	—	78.1	

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer Products	1.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.52	0.03	3.17	< 0.005	0.01	—	—	0.01	< 0.005	—	—	< 0.005	13.1	< 0.005	< 0.005	< 0.005	—	13.1
Total	2.27	0.03	3.17	< 0.005	0.01	—	—	0.01	< 0.005	—	—	< 0.005	13.1	< 0.005	< 0.005	< 0.005	—	13.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.07	< 0.005	0.40	< 0.005	< 0.005	—	—	< 0.005	< 0.005	—	—	< 0.005	1.48	< 0.005	< 0.005	< 0.005	—	1.49
Total	0.38	< 0.005	0.40	< 0.005	< 0.005	—	—	< 0.005	< 0.005	—	—	< 0.005	1.48	< 0.005	< 0.005	< 0.005	—	1.49

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

[illegible]

[illegible]

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	49.0	4.90	0.00	—	172
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	41.8	4.18	0.00	—	146
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	90.8	9.08	0.00	—	318
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	49.0	4.90	0.00	—	172
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	41.8	4.18	0.00	—	146
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	90.8	9.08	0.00	—	318

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	8.12	0.81	0.00	—	—	—	28.4	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	6.92	0.69	0.00	—	—	—	24.2	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	—	—	—	0.00	—
Total	—	—	—	—	—	—	—	—	—	—	—	15.0	1.50	0.00	—	—	—	52.6	—

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	0.27	0.27
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	0.34	0.34
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	0.27	0.27

Recreational	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.34	0.34
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.06	0.06

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Process Boiler	0.09	0.00	1.54	0.01	0.12	0.00	0.12	0.12	0.00	0.12	1,882	0.04	0.02	0.00	1,890
Total	0.09	0.00	1.54	0.01	0.12	0.00	0.12	0.12	0.00	0.12	1,882	0.04	0.02	0.00	1,890
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Process Boiler	0.09	0.00	1.54	0.01	0.12	0.00	0.12	0.12	0.00	0.12	1,882	0.04	0.02	0.00	1,890
Total	0.09	0.00	1.54	0.01	0.12	0.00	0.12	0.12	0.00	0.12	1,882	0.04	0.02	0.00	1,890
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Process Boiler	0.02	0.00	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	312	0.01	< 0.005	0.00	313
Total	0.02	0.00	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	312	0.01	< 0.005	0.00	313

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	10/21/2024	12/27/2024	5.00	50.0	—
Site Preparation	Site Preparation	1/1/2025	1/7/2025	5.00	5.00	—
Grading	Grading	1/8/2025	2/4/2025	5.00	20.0	—
Building Construction	Building Construction	2/5/2025	12/6/2026	5.00	478	—
Paving	Paving	12/7/2026	1/3/2027	5.00	20.0	—
Architectural Coating	Architectural Coating	1/4/2027	1/31/2027	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	3.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	20.1	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	62.5	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	35.1	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	13.7	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT

Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	7.02	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	109,500	36,500	654

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	4,012	—
Site Preparation	—	—	7.50	0.00	—
Grading	—	10,000	30.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.25

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied		Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area		3	74%	74%
Water Demolished Area		2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
High School	0.00	0%
Recreational Swimming Pool	0.00	0%
Other Non-Asphalt Surfaces	0.25	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005
2027	0.00	532	0.03	< 0.005
2024	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
High School	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	109,500	36,500	654

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
High School	437,804	346	0.0330	0.0040	1,468,592
Recreational Swimming Pool	0.00	346	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High School	2,324,325	202,577
Recreational Swimming Pool	804,347	46,281
Other Non-Asphalt Surfaces	0.00	15,287

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
High School	91.0	—
Recreational Swimming Pool	77.5	—
Other Non-Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
High School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
High School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
High School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

Recreational Swimming Pool	Other commercial A/C and heat pumps	R-410A	2,088		< 0.005	4.00	4.00	18.0
Recreational Swimming Pool	Stand-alone retail refrigerators and freezers	R-134a	1,430		0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
----------------	-----------	----------------	---------------	----------------	------------	-------------

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
Boiler - CNG (0–2 MMBTU)	CNG	1.00	2.00	16.0	5,840

5.17. User Defined

Equipment Type	Fuel Type
----------------	-----------

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	6.75	annual days of extreme heat
Extreme Precipitation	4.10	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi. Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi. Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	1	1	1	2
-------------------------	---	---	---	---

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract			
Exposure Indicators	—			
AQ-Ozone	29.9			
AQ-PM	89.3			
AQ-DPM	67.4			
Drinking Water	34.7			
Lead Risk Housing	95.8			
Pesticides	51.0			
Toxic Releases	96.2			
Traffic	39.8			
Effect Indicators	—			
CleanUp Sites	58.2			
Groundwater	78.6			
Haz Waste Facilities/Generators	87.7			
Impaired Water Bodies	66.7			
Solid Waste	22.1			

Sensitive Population	—
Asthma	91.1
Cardio-vascular	89.0
Low Birth Weights	89.3
Socioeconomic Factor Indicators	—
Education	74.8
Housing	48.5
Linguistic	46.5
Poverty	82.5
Unemployment	97.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	43.68022584
Employed	55.33170794
Median HI	55.90914924
Education	—
Bachelor's or higher	27.90966252
High school enrollment	11.61298601
Preschool enrollment	45.81034262
Transportation	—
Auto Access	92.6344155
Active commuting	68.51020146
Social	—
2-parent households	69.83190042

Voting	8.250994482
Neighborhood	—
Alcohol availability	16.92544591
Park access	6.646990889
Retail density	43.16694469
Supermarket access	81.9196715
Tree canopy	29.37251379
Housing	—
Homeownership	63.76235083
Housing habitability	49.81393558
Low-inc homeowner severe housing cost burden	47.5426665
Low-inc renter severe housing cost burden	66.09778006
Uncrowded housing	16.43782882
Health Outcomes	—
Insured adults	28.58976004
Arthritis	74.6
Asthma ER Admissions	11.6
High Blood Pressure	70.1
Cancer (excluding skin)	71.8
Asthma	43.1
Coronary Heart Disease	69.4
Chronic Obstructive Pulmonary Disease	59.8
Diagnosed Diabetes	40.6
Life Expectancy at Birth	14.1
Cognitively Disabled	43.0
Physically Disabled	46.5
Heart Attack ER Admissions	19.5

Mental Health Not Good	36.5
Chronic Kidney Disease	55.3
Obesity	34.3
Pedestrian Injuries	54.3
Physical Health Not Good	39.9
Stroke	51.7
Health Risk Behaviors	—
Binge Drinking	47.1
Current Smoker	37.8
No Leisure Time for Physical Activity	41.3
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	35.2
Elderly	84.9
English Speaking	26.2
Foreign-born	63.9
Outdoor Workers	77.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	23.3
Traffic Density	36.6
Traffic Access	60.0
Other Indices	—
Hardship	61.3
Other Decision Support	—
2016 Voting	7.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	97.0
Healthy Places Index Score for Project Location (b)	41.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Healthy Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Total Area Disturbed set to 2.5 acres. 10% of area landscaped
Construction: Construction Phases	Construction schedule extended to match schedule provided by applicant
Operations: Vehicle Data	Project will not generate any additional trips over existing conditions
Construction: Off-Road Equipment	one excavator added to Demolition and Grading phases and two compressors added to painting phase
Construction: Dust From Material Movement	10,000 cu yards export

APPENDIX B

EMFAC2021 Model Printouts

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: Sub-Area

Region: Los Angeles (SC)

Calendar Year: 2025

Season: Annual

Vehicle Classification: EMFAC202x Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Trips	Fuel Consumption
Los Angeles	2025	LDA	Aggregate	Aggregate	Gasoline	3261718	128067965	15146578	4327
Los Angeles	2025	LDT1	Aggregate	Aggregate	Gasoline	307304	11174164	1354475	453
Los Angeles	2025	LDT2	Aggregate	Aggregate	Gasoline	1598847	65845214	7529127	2702
Los Angeles	2025	MCY	Aggregate	Aggregate	Gasoline	150473	988231	300947	24
Los Angeles	2025	MDV	Aggregate	Aggregate	Gasoline	952283	36302116	4421639	1831
Los Angeles	2025	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	3872	130019	55255	15
Los Angeles	2025	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	3985	135182	56869	15
Los Angeles	2025	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	12226	413384	174471	47
Los Angeles	2025	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	3046	166110	43459	18
Los Angeles	2025	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	4794	197687	55418	22
Los Angeles	2025	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	10759	462373	124380	52
Los Angeles	2025	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	9653	409529	111589	46
Los Angeles	2025	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	4446	205369	51401	23
Los Angeles	2025	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	132	6896	1531	1
Los Angeles	2025	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	1694	99835	19584	10
Los Angeles	2025	T6 Public Class 4	Aggregate	Aggregate	Diesel	700	24612	3592	3
Los Angeles	2025	T7 Single Concrete/Transit Mix C	Aggregate	Aggregate	Diesel	713	48585	6720	8
Los Angeles	2025	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	2007	113315	18902	19
Los Angeles	2025	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	1035	67162	4760	26
Los Angeles	2025	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	15143	1117498	220025	180
Worker (Autos) vehicle miles per day						242,377,690	9,336 1,000 gall per day		
Workers (Autos) Avg Miles per gallon						26.0	9,336,434 gallons per day		
Diesel Truck vehicle miles per day						3,597,556	485 1,000 gall per day		
Diesel Truck Fleet Avg Miles per gallon						7.4	485,182 gallons per day		

APPENDIX B – CULTURAL RESOURCES SURVEY RESULTS LETTER REPORT



NOISE IMPACT ANALYSIS

**JORDAN HIGH SCHOOL NEW GYMNASIUM &
AQUATICS CENTER PROJECT**

CITY OF LONG BEACH

Lead Agency:

Long Beach Unified School District
Facilities and Planning Branch
2425 Webster Avenue
Long Beach, CA 90810

Prepared by:

Vista Environmental
1021 Didrickson Way
Laguna Beach, California 92651
949 510 5355
Greg Tonkovich, INCE

Project No. 23010

February 29, 2024

TABLE OF CONTENTS

1.0	Introduction	1
	1.1 Purpose of Analysis and Study Objectives	1
	1.2 Site Location and Study Area	1
	1.3 Proposed Project Description	1
	1.4 Standard Noise Regulatory Conditions	2
	1.5 Summary of Analysis Results	2
	1.6 Project Design Features Incorporated into the Proposed Project.....	3
	1.7 Mitigation Measures for the Proposed Project	3
2.0	Noise Fundamentals	6
	2.1 Noise Descriptors	6
	2.2 Tone Noise	6
	2.3 Noise Propagation.....	6
	2.4 Ground Absorption	7
3.0	Ground-Borne Vibration Fundamentals	8
	3.1 Vibration Descriptors	8
	3.2 Vibration Perception	8
	3.3 Vibration Propagation.....	8
4.0	Regulatory Setting	9
	4.1 Federal Regulations	9
	4.2 State Regulations	10
	4.3 Local Regulations	12
5.0	Existing Noise Conditions.....	16
	5.1 Noise Measurements taken in Project Vicinity.....	16
6.0	Modeling Parameters and Assumptions.....	19
	6.1 Construction Noise.....	19
	6.2 Vibration	20
7.0	Impact Analysis	21
	7.1 CEQA Thresholds of Significance.....	21
	7.2 Generation of Noise Levels in Excess of Standards	21
	7.3 Generation of Excessive Groundborne Vibration	23
	7.4 Aircraft Noise	24
8.0	References.....	25

TABLE OF CONTENTS CONTINUED

APPENDICES

Appendix A – Field Noise Measurements Photo Index

Appendix B – Field Noise Measurements Printouts

Appendix C – RCNM Model Construction Noise Calculations

Appendix D – Operational Reference Noise Measurements and Sound Wall Calculations

LIST OF FIGURES

Figure 1 – Project Location Map	4
Figure 2 – Proposed Site Plan	5
Figure 3 – City of Long Beach Land Use Compatibility Matrix	11
Figure 4 – Field Noise Monitoring Locations	18

LIST OF TABLES

Table A – FTA General Assessment Construction Noise Criteria	10
Table B – City of Long Beach Municipal Code Exterior Noise Standards	15
Table C – Existing (Ambient) Noise Measurement Results	17
Table D – Construction Equipment Noise Emissions and Usage Factors	19
Table E – Vibration Source Levels for Construction Equipment	20
Table F – Construction Noise Levels at the Nearby Sensitive Receptors	22
Table G – Operational Noise Levels at the Nearby Sensitive Receptors	23

ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of Long Beach
CMU	Concrete Masonry Unit
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	A-weighted decibels
DOT	Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
EPA	Environmental Protection Agency
FTES	Full Time Equivalent Students
HVAC	Heating Ventilation & Air Conditioning System
Hz	Hertz
Ldn	Day-night average noise level
Leq	Equivalent sound level
Lmax	Maximum noise level
ONAC	Federal Office of Noise Abatement and Control
OSHA	Occupational Safety and Health Administration
PPV	Peak particle velocity
RMS	Root mean square
SEL	Single Event Level or Sound Exposure Level
STC	Sound Transmission Class
VdB	Vibration velocity level in decibels

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Noise Impact Analysis has been prepared to determine the noise impacts associated with the proposed Jordan High School New Gymnasium and Aquatic Center project (proposed project). The following is provided in this report:

- A description of the study area and the proposed project;
- Information regarding the fundamentals of noise;
- Information regarding the fundamentals of vibration;
- A description of the local noise guidelines and standards;
- An evaluation of the current noise environment;
- An analysis of the potential short-term construction-related noise impacts from the proposed project; and,
- An analysis of long-term operations-related noise impacts from the proposed project.

1.2 Site Location and Study Area

The project site is located in the northern portion of the City of Long Beach (City) at the existing Jordan High School campus (Campus) at 6500 Atlantic Avenue. The Campus currently contains 13 permanent buildings and 53 interim housing relocatable/portable buildings. The Campus is undergoing modernization that started in 2014 to implement the Master Plan to replace aging buildings with new ones and modernize buildings when feasible. The approximately 26.9-acre Campus is bordered by residential uses to the north, Myrtle Avenue and residential uses to the east, Houghton Park to the south, and Atlantic Avenue and residential uses to the west.

The project site, where the Gymnasium and Aquatics center will be located is in the southern portion of Campus and is bordered by Building 10000 and the football stadium to the north, tennis courts to the east, Houghton Park to the south and a staff parking lot to the west. The project study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are residents at the multi-family homes on the west side of Atlantic Avenue that are located as near as 260 feet west of the project site. There are also single-family homes on the east side of Myrtle Avenue that are located as near as 440 feet east of the project site. In addition to the nearby homes, there is also a noise sensitive day care center at the Long Beach City Office, located in the northeast corner of Houghton Park, that is as near as 220 feet east of the project site.

1.3 Proposed Project Description

The proposed project includes demolition of the existing 62,000 square foot gymnasium and outdoor paved area that contains basketball and volleyball courts and construction of a new gymnasium and aquatic center. The new gymnasium building will be approximately 70,000 square feet and will include a competition gymnasium, practice gymnasium, a classroom, weight room, wrestling room, dance room, trainer room, offices, team rooms, locker rooms, ticket booth, concessions, restrooms, showers, and other

ancillary spaces such as storage areas, laundry and custodial rooms. The Aquatic Center includes an outdoor pool (51.5 meter by 25 yard), 3,000 square feet of support building space, 500 person capacity bleachers and shade structures.

A layout of the proposed project is shown in Figure 2, Proposed Site Plan. Construction of the proposed project is expected to begin in October 2024 through January 2027. The Facility will be in use for the most part, with the exception of a few days in a year. Typical hours of operation would be from 7 a.m. to 8 p.m..

1.4 Standard Noise Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the City of Long Beach and State of California.

City of Long Beach Municipal Code

The following lists the noise and vibration regulations from the Municipal Code that are applicable, but not limited to the proposed project.

- Section 8.80.160 Exterior Noise Standards at Nearby Residential Uses
- Section 8.80.202 Construction activities
- Section 8.80.200(G) Vibration

State of California Rules

The following lists the State of California noise regulations that are applicable, but not limited to the proposed project.

- California Vehicle Code Section 2700-27207 – On Road Vehicle Noise Limits
- California Vehicle Code Section 38365-38350 – Off-Road Vehicle Noise Limits

1.5 Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines noise checklist questions.

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

Less than significant impact.

Generation of excessive groundborne vibration or groundborne noise levels?

Less than significant impact.

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

Less than significant impact.

1.6 Project Design Features Incorporated into the Proposed Project

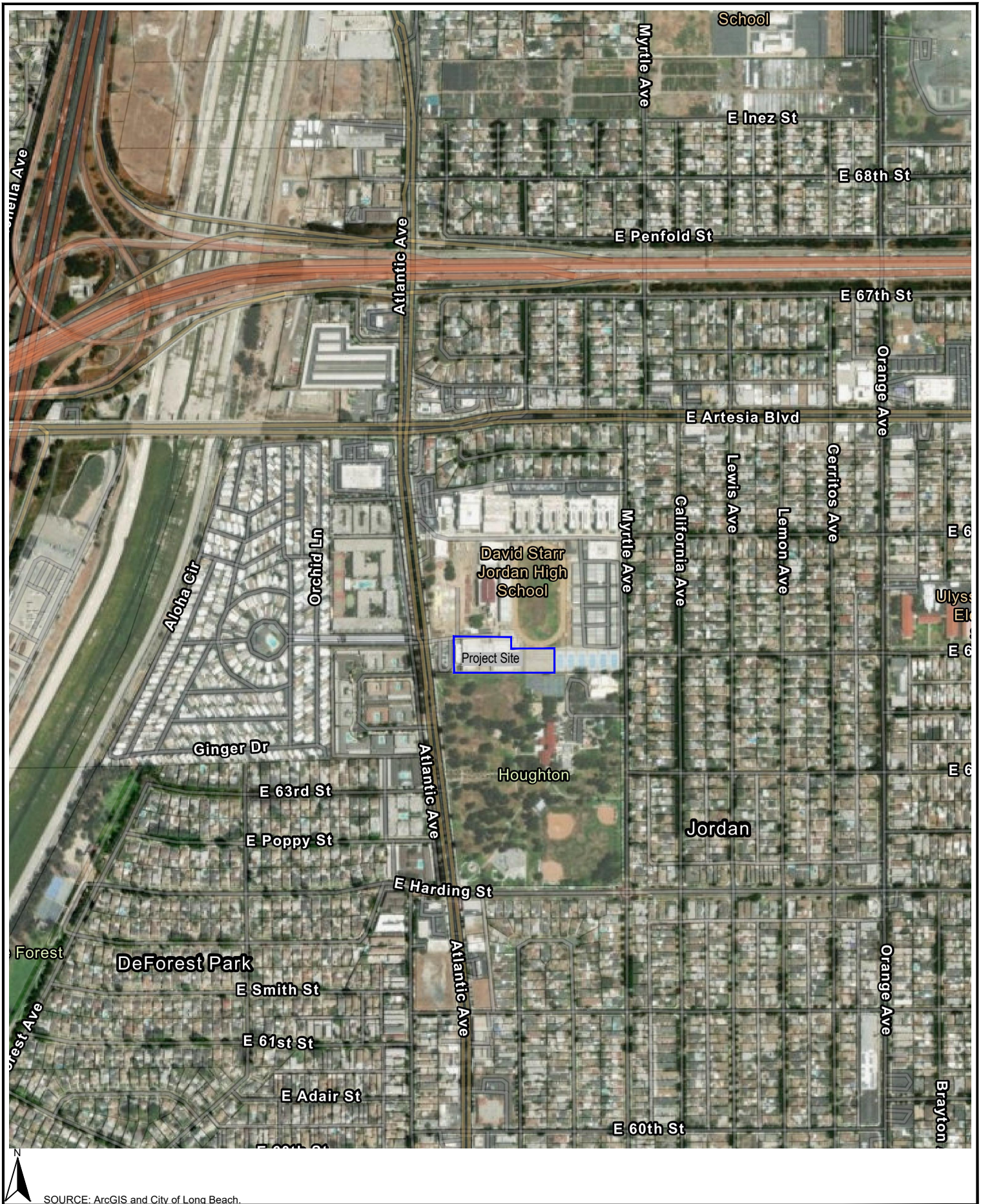
This analysis was based on implementation of the following project design features that are either already depicted on the proposed project site plan and architectural plans.

Project Design Feature 1:

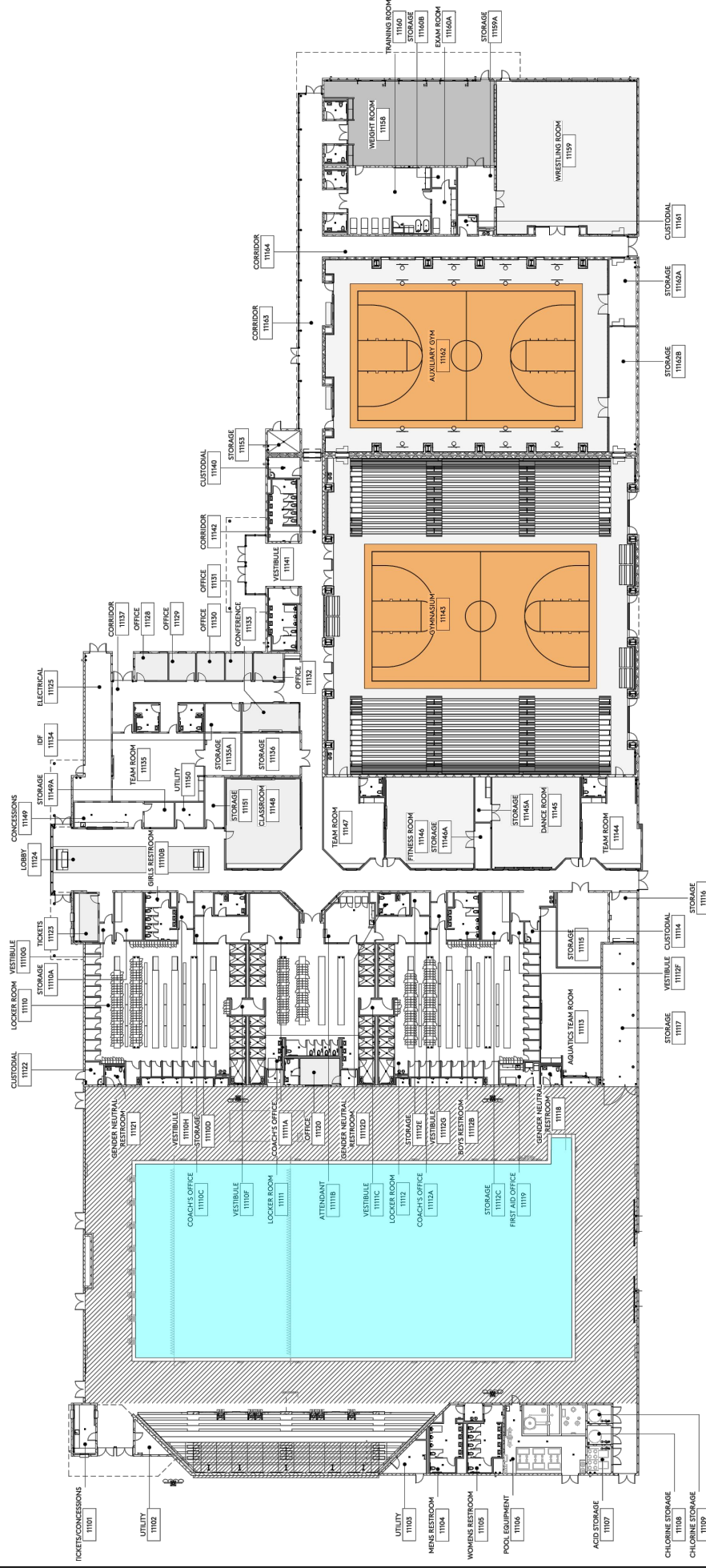
The project applicant shall construct a minimum 8-foot high concrete masonry unit (CMU) wall along the west side of the bleachers, between the restrooms on the north side and pool equipment room on the south side. The CMU wall shall be free of any cut-outs or openings.

1.7 Mitigation Measures for the Proposed Project

This analysis found that through adherence to the noise and vibration regulations detailed in Section 1.4 above were adequate to limit all noise and vibration impacts to less than significant levels. No mitigation measures are required for the proposed project with respect to noise and vibration impacts.



SOURCE: ArcGIS and City of Long Beach.



SOURCE: PJHM Architects.

Figure 2
Proposed Site Plan

2.0 NOISE FUNDAMENTALS

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit which expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

2.1 Noise Descriptors

Noise Equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The peak traffic hour Leq is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Level (Ldn) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the Ldn, except that it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason, the sound appears louder in the evening and nighttime hours and is weighted accordingly. The City of Long Beach relies on the CNEL noise standard to assess transportation-related impacts on noise sensitive land uses.

2.2 Tone Noise

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown that humans are more perceptible to changes in noise levels of a pure tone. For a noise source to contain a “pure tone,” there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to “stand out” against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contiguous one-third octave bands by:

- 5 dB for center frequencies of 500 hertz (Hz) and above
- 8 dB for center frequencies between 160 and 400 Hz
- 15 dB for center frequencies of 125 Hz or less

2.3 Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features. Sound

from point sources, such as air conditioning condensers, radiate uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

2.4 Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3.0 dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

3.0 GROUND-BORNE VIBRATION FUNDAMENTALS

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

3.1 *Vibration Descriptors*

There are several different methods that are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Due to the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is “VdB”, which in this text, is when L_v is based on the reference quantity of 1 micro inch per second.

3.2 *Vibration Perception*

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration.

3.3 *Vibration Propagation*

The propagation of ground-borne vibration is not as simple to model as airborne noise. This is due to the fact that noise in the air travels through a relatively uniform median, while ground-borne vibrations travel through the earth which may contain significant geological differences. There are three main types of vibration propagation; surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground’s surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a “push-pull” fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or “side-to-side and perpendicular to the direction of propagation.”

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 REGULATORY SETTING

The project site is located in the City of Long Beach. Noise regulations are addressed through the efforts of various federal, state, and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the FTA, while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being sited adjacent to a highway or, alternately that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Although the proposed project is not under the jurisdiction of the FTA, the *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual), prepared by the FTA, September 2018, is a guidance document from a government agency that provides specific guidance for construction noise and is referenced in the *City of Long Beach General Plan Noise Element*, June 2023, which details that the federal standards may be used when local criteria are not established. The FTA recommends developing construction noise criteria on a project-specific basis that utilizes local noise ordinances if possible. However, local noise ordinances usually relates to nuisance and hours of allowed activity and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the noise impacts of a construction project. Project construction noise criteria should take into account the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land uses. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings for a general construction noise assessment are provided below in Table A.

Table A – FTA General Assessment Construction Noise Criteria

Land Use	Day (dBA Leq_(1-hour))	Night (dBA Leq_(1-hour))
Residential	90	80
Commercial	100	100
Industrial	100	100

Source: Federal Transit Administration, 2018.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Noise Standards

California Department of Health Services Office of Noise Control

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix,” which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise. The Land Use Compatibility Matrix that was adopted by the City is shown in Figure 4.

California Noise Insulation Standards

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle.

Table N-2: Land Use Compatibility Guidelines for Noise Exposure

Land Use Type	Community Noise Exposure L _{dn} or CNEL, dB													
	55		60		65		70		75		80		85	
Residential - Low Density Single Family Duplex, Mobile Homes														
Residential - Multi-Family														
Transient Lodging - Hotels, Motels														
Schools, Libraries, Churches, Hospitals, Nursing Homes														
Auditoriums, Concert Halls, Amphitheaters														
Sports Arena, Outdoor Spectator Sports														
Playgrounds, Neighborhood Parks														
Golf Courses, Riding Stables, Water Recreation, Cemeteries														
Office Buildings - Business, Commercial & Professional														
Industrial, Manufacturing, Utilities, Agriculture														
Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.													
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.													
Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.													
Clearly Unacceptable	New construction or development should generally not be undertaken.													
Source: California Office of Planning and Research, General Plan Guidelines (2017), Appendix D.														

SOURCE: City of Long Beach General Plan Noise Element, June 2023.

California Vehicle Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California. 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle.

Vibration Standards

Title 14 of the California Administrative Code Section 15000 requires that all state and local agencies implement the California Environmental Quality Act (CEQA) Guidelines, which requires the analysis of exposure of persons to excessive groundborne vibration. However, no statute has been adopted by the state that quantifies the level at which excessive groundborne vibration occurs.

Caltrans issued the *Transportation and Construction Vibration Guidance Manual*, April 2020. The Manual provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. However, this manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous (construction-related) and transient (transportation-related) sources of vibration, which found that the human response becomes distinctly perceptible at 0.25 inch per second PPV for transient sources and 0.04 inch per second PPV for continuous sources.

4.3 Local Regulations

The *City of Long Beach General Plan Noise Element*, June 2023 and Municipal Code establishes the following applicable policies related to noise and vibration.

City of Long Beach General Plan Noise Element

- | | |
|-----------------------|---|
| Strategy No. 1 | Apply site planning and other design strategies to reduce noise impacts, especially within the Founding and Contemporary Neighborhoods, Multifamily Residential—Low and Moderate, and Neighborhood-Serving Centers and Corridors – Low and Moderate PlaceTypes. |
| Policy N 1-1 | Integrate noise considerations into the land use planning process in order to prevent new land use noise conflicts. |
| Policy N 1-2 | Require noise attenuation measures to be incorporated into all development and redevelopment of sensitive receptor uses, including residential, health care facilities, schools, libraries, senior facilities, and churches in close proximity to existing or known planned rail lines. |
| Policy N 1-3 | Ensure development and redevelopment is considerate of the natural shape and contours of a site in order to reduce noise impacts. |
| Policy N 1-4 | Encourage developer or landowners to incorporate noise reduction features in the site planning process. |
| Policy N 1-5 | Incorporate urban design strategies such as courtyards, paseos, alleys, plazas and open space areas to provide a buffer to noise sensitive uses. |

Policy N 1-6	Ensure that project site design and function minimize the potential adverse impacts of noise.
Policy N 1-7	Encourage educational facilities to locate playgrounds, sports fields, and other outdoor activity areas away from residential areas.
Policy N 1-8	Require new development to provide facilities which support the use of multimodal transportation, including, walking, bicycling, carpooling and transit.
Policy N 1-9	Utilize noise barriers after all practical design-related noise measures have been integrated into the project. In instances where sound walls are necessary, they should be incorporated into the architectural and site character of the development and pedestrian access should be integrated.
Strategy No. 4	Protect and buffer noise sensitive areas and uses through effective building design and material selection.
Policy N 4-1	Encourage developers to utilize noise absorbing materials.
Policy N 4-5	Encourage building design that incorporates varying and/or angled wall articulation to disperse noise.
Policy N 4-6	Promote building design best practices such as staggering wall studs to minimize transmission of noise between rooms.
Policy N 4-7	Consider use of decorative walls and/or dense landscaping to further buffer noise between uses.
Strategy No. 6	Minimize vehicular traffic noise in residential areas and near noise-sensitive land uses.
Policy N 6-1	Ensure noise-compatible land uses along existing and future roadways, highways, and freeways.
Policy N 6-2	Use the “Land Use Compatibility Guidelines” and established Noise Standards or other measures that are acceptable to the City, to guide land use and zoning reclassification, subdivision, conditional use and use variance determinations and environmental assessment considerations, especially relative to sensitive uses, as defined by this chapter within a line-of-sight of freeways, major highways, or truck haul routes.
Policy N 6-4	Work toward understanding and reducing traffic noise in residential neighborhoods with a focus on analyzing the effects of traffic noise exposure throughout the City.
Policy N 6-6	For future noise sensitive land uses proposed within the 65 dBA Ldn noise contours, a qualified acoustical consultant shall conduct a noise analysis to determine appropriate measures are implemented to meet the necessary exterior and interior noise standards.
Policy N 6-9	Encourage site planning and building design measures that minimize the effects of traffic noise in residential zones.

Strategy No. 7	Promote multimodal mobility to reduce noise generated from vehicular traffic.
Policy N 7-1	Encourage the use of active transportation modes (walking, bicycling), micro-mobility (electric vehicles) and transit as stipulated in the Mobility Element to minimize traffic noise in the City.
Strategy No. 10	While the operations of airports and airport related uses are noisy by nature, the adverse effects of aircraft-related noise should be minimized.
Policy N 10-1	Ensure that new development can be made compatible with the noise environment by using noise/land use compatibility standards and the airport noise contour maps as guides to future planning and development decisions.
Strategy No. 12	Minimize construction noise and vibration levels in residential areas and in other locations near noise-sensitive uses where possible.
Policy N 12-1	Reduce construction, maintenance, and nuisance noise at the source, when possible, to reduce noise conflicts.
Policy N 12-2	Limit the allowable hours for construction activities and maintenance operations near sensitive uses.
Policy N 12-3	As part of the City’s Municipal Code, establish noise levels standards based on PlaceType and time of day, to which construction noise shall conform.
Policy N 12-4	Encourage off-site fabrication to reduce needed onsite construction activities and corresponding noise levels and duration.
Policy N 12-5	<p>Encourage the following construction best practices:</p> <ul style="list-style-type: none">▪ Schedule high-noise and vibration-producing activities to a shorter window of time during the day outside early morning hours to minimize disruption to sensitive uses.▪ Grading and construction contractors should use equipment that generates lower noise and vibration levels, such as rubber-tired equipment rather than metal-tracked equipment.▪ Construction haul truck and materials delivery traffic should avoid residential areas whenever feasible.▪ The construction contractor should place noise- and vibration-generating construction equipment and locate construction staging areas away from sensitive uses whenever feasible.▪ The construction contractor should use on-site electrical sources to power equipment rather than diesel generators where feasible.▪ All residential units located within 500 ft of a construction site should be sent a notice regarding the construction schedule. A sign legible at a distance of 50 ft should also be posted at the construction site. All notices and the signs should indicate the dates and durations of construction activities, as well as provide a telephone number for a “noise disturbance coordinator.”

- A “noise disturbance coordinator” should be established. The disturbance coordinator should be responsible for responding to any local complaints about construction noise. The disturbance coordinator should determine the cause of the noise complaint (e.g., starting too early, bad muffler) and should be required to implement reasonable measures to reduce noise levels.

City of Long Beach Municipal Code

The City’s Municipal Code identifies standards for noise intrusion from non-transportation sources within various Noise Districts. The proposed project is located in District One. Table B summarizes the applicable standards in Noise District One.

Table B – City of Long Beach Municipal Code Exterior Noise Standards

Noise level that may not be exceeded for more than...	Daytime ^a 7 a.m. – 10 p.m.	Nighttime ^a 10 p.m. – 7 a.m.
30 minutes in any hour	50 dB(A)	45 dB(A)
15 minutes in any hour	55 dB(A)	50 dB(A)
5 minutes in any hour	60 dB(A)	55 dB(A)
1 minute in any hour	65 dB(A)	60 dB(A)
Any time	70 dB(A)	65 dB(A)

Notes:

a) In the event that the alleged offensive noise contains a steady audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting or contains music or speech conveying informational content, the specified noise limits are reduced by 5 dB(A).

Source: City of Long Beach Municipal Code Chapter 8.80.160.

Section 8.80.202 of the City’s Noise Ordinance regulates noise from construction activities. These regulations limit the permissible hours of construction to between 7:00 a.m. and 7:00 p.m. on weekdays or federal holidays and between 9:00 a.m. and 6:00 p.m. on Saturdays. Construction is generally prohibited on Sundays. The Noise Ordinance also limits hours of operation for mechanically powered tools (e.g., saws, sanders, drills, grinders, lawnmowers, and garden tools) from 7:00 a.m. to 10:00 p.m. Leaf blowers have more stringent standards and can only be used between 8:00 a.m. and 8:00 p.m. on weekdays, 9:00 a.m. and 5:00 p.m. on Saturdays, and 11:00 a.m. and 5:00 p.m. on Sundays.

The Noise Ordinance also provides standards for vibration (Section 8.80.200(G)). It is a violation to operate or permit the operation of any device that creates vibration that is above the vibration perception threshold of an individual at or beyond the property boundary of the source. The Noise Ordinance defines the perception threshold as 0.001 g’s in the frequency range of 0-30 hertz and 0.003 g’s in the frequency range between 30 and 100 hertz. It should be noted that this perception threshold is only applicable to vibration caused during the operation of the proposed project.

5.0 EXISTING NOISE CONDITIONS

To determine the existing noise levels, noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the proposed project area is generally characterized by vehicle traffic on Atlantic Street that is adjacent to the west side of the School and Myrtle Avenue that is adjacent to the east side of the project site.

5.1 Noise Measurements taken in Project Vicinity

The following describes the measurement procedures, measurement locations, and noise measurement results of the noise measurements taken in the project vicinity.

Noise Measurement Equipment

The noise measurements were taken using a Larson-Davis Model 831 Type 1 precision sound level meter programmed in “slow” mode to record noise levels in “A” weighted form as well as the frequency spectrum of the noise broken down into 1/3 octaves. The sound level meter and microphone were mounted on a tripod five feet above the ground and were equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200. The accuracy of the calibrator is maintained through a program established through the manufacturer and is traceable to the National Bureau of Standards. The noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (ANSI S1.4-2014 standard).

Noise Measurement Locations

The noise monitoring locations were selected in order to obtain noise levels in the vicinity of the project site. Descriptions of the noise monitoring sites are provided below in Table B and are shown in Figure 4. Appendix A includes a photo index of the study area and noise level measurement locations.

Noise Measurement Timing and Climate

The noise measurements were recorded between 1:33 p.m. and 2:28 p.m. on Thursday, November 16, 2023. During the noise measurements, the sky was partly cloudy, the temperature was 74 degrees Fahrenheit, the humidity was 54 percent, barometric pressure was 29.87 inches of mercury, and the wind was blowing at an average rate of two miles per hour.

Noise Measurement Results

The results of the noise level measurements are presented in Table C and the noise monitoring data printouts are included in Appendix B.

Table C – Existing (Ambient) Noise Measurement Results

Site No.	Description	Primary Noise Source	Start Time of Measurement	Measured Noise Level	
				dBA Leq	dBA Lmax
1	Located east of the School, between homes at 6380 and 6390 Myrtle Avenue, approximately 30 feet east of Myrtle Avenue centerline	Vehicles on Myrtle Avenue	1:33 p.m.	51.8	70.0
2	Located approximately 10 feet south of the School in front of School access gate and 5 feet north of the tennis courts at Houghton Park.	Students playing on basketball courts	1:52 p.m.	54.0	66.3
3	Located west of the School, in front of Apartment Building at 571 E 64 th Street, approximately 30 feet north of 64 th Street centerline and 100 feet west of Atlantic Avenue centerline.	Vehicles on Atlantic Avenue	2:13 p.m.	63.2	79.1

Notes: Noise measurements taken with a Larson-Davis Model 831 Type 1 precision sound level meter on Thursday, November 16, 2023.



Figure 4
Field Noise Monitoring Locations

6.0 MODELING PARAMETERS AND ASSUMPTIONS

6.1 Construction Noise

The noise impacts from construction of the proposed project have been analyzed through use of the FHWA's Roadway Construction Noise Model (RCNM). The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table D below provides a list of the construction equipment anticipated to be used for each phase of construction as detailed in the *Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis Jordan High School New Gymnasium & Aquatics Center Project* (Air Quality Analysis), prepared by Vista Environmental, February 28, 2023.

Table D – Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Number of Equipment	Acoustical Use Factor ¹ (percent)	Spec 721.560 Lmax at 50 feet ² (dBA, slow ³)	Actual Measured Lmax at 50 feet ⁴ (dBA, slow ³)
Demolition				
Concrete/Industrial Saw	1	20	90	90
Excavator	1	40	85	81
Rubber Tired Dozer	1	40	85	82
Backhoe	1	40	80	78
Front End Loader	1	40	80	79
Tractor	1	40	84	N/A
Site Preparation				
Grader	1	40	85	83
Scraper	1	40	85	84
Tractor	1	40	84	N/A
Grading				
Grader	1	40	85	83
Excavator	1	40	85	81
Rubber Tired Dozer	1	40	85	82
Front End Loader	1	40	80	79
Tractor	1	40	84	N/A
Building Construction				
Crane	1	16	85	81
Forklift (Gradall)	2	40	85	83
Generator	1	50	82	81
Tractor	1	40	84	N/A
Welders	3	40	73	74
Paving				
Cement and Mortar Mixer	1	40	85	79
Paver	1	50	85	77
Paving Equipment	1	50	85	77
Rollers	2	20	85	80
Tractor	1	40	84	N/A
Architectural Coating				

Air Compressors	3	40	80	78
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Notes:

¹ Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.

² Spec 721.560 is the equipment noise level utilized by the RCNM program.

³ The “slow” response averages sound levels over 1-second increments. A “fast” response averages sound levels over 0.125-second increments.

⁴ Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.

Source: Federal Highway Administration, 2006.

Table D also shows the associated measured noise emissions for each piece of equipment from the RCNM model and measured percentage of typical equipment use per day. Construction noise impacts to the nearby sensitive receptors have been calculated according to the equipment noise levels and usage factors listed in Table D and through use of the RCNM. For each phase of construction, all construction equipment was analyzed based on being placed in the middle of the project site, which is based on the analysis methodology detailed in FTA Manual for a General Assessment. However, in order to provide a conservative analysis, all equipment was analyzed, instead of just the two noisiest pieces of equipment as detailed in the FTA Manual. The RCNM model printouts are provided in Appendix C.

6.2 Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table E gives approximate vibration levels for particular construction activities. The data in Table E provides a reasonable estimate for a wide range of soil conditions.

Table E – Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity (inches/second)	Approximate Vibration Level (L _v) at 25 feet
Pile driver (impact)	Upper range	1.518	112
	typical	0.644	104
Pile driver (sonic)	Upper range	0.734	105
	typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drill		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration, 2020.

The construction-related vibration impacts have been calculated through the vibration levels shown above in Table E and through typical vibration propagation rates. The equipment assumptions were based on the equipment lists provided above in Table D.

7.0 IMPACT ANALYSIS

7.1 CEQA Thresholds of Significance

Consistent with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generation of excessive groundborne vibration or groundborne noise levels; or
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

7.2 Generation of Noise Levels in Excess of Standards

The proposed project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The following section calculates the potential noise emissions associated with the temporary construction activities and long-term operations of the proposed project and compares the noise levels to the City standards.

Construction-Related Noise

The construction activities for the proposed project are anticipated to include demolition of the existing gymnasium and outdoor paved area, site preparation and grading that includes deep soil cement mixing on approximately 2.5 acres, building construction of a new gymnasium and aquatics facility, paving of the pool deck and flat work, and application of architectural coatings. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

Section 8.80.202 of the City's Noise Ordinance restricts construction activities from occurring between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between 6:00 p.m. and 9:00 a.m. on Saturdays, or anytime on Sundays or federal holidays. Through adherence to the construction-related noise requirements provided in the City's Noise Ordinance, construction-related noise levels would not exceed any noise standards established in the General Plan or Noise Ordinance. However, as detailed above in Section 4.1, the General Plan Noise Element details that the federal standards may be used when local criteria are not established. As such, the FTA construction noise level standard of 90 dBA at the nearby homes and daycare facility have been utilized in this analysis.

The nearest sensitive receptors to the project site are residents at the multi-family homes on the west side of Atlantic Avenue that are located as near as 260 feet west of the project site. There are also single-family homes on the east side of Myrtle Avenue that are located as near as 440 feet east of the project site. In addition to the nearby homes, there is also a noise sensitive day care center at the Long Beach City Office, located in the northeast corner of Houghton Park, that is as near as 220 feet east of the project site. Construction noise levels to the nearby sensitive receptors have been calculated through use of the

RCNM and the parameters and assumptions detailed in Section 6.1 of this report including Table D – Construction Equipment Noise Emissions and Usage Factors. The results are shown below in Table F and the RCNM printouts are provided in Appendix C.

Table F – Construction Noise Levels at the Nearby Sensitive Receptors

Construction Phase	Construction Noise Level (dBA Leq) at:		
	Multi-Family Homes to West ¹	Single-Family Homes to East ²	Daycare Facility to East ³
Demolition	66	64	67
Site Preparation	65	62	65
Grading	65	62	65
Building Construction	65	63	66
Paving	63	61	64
Painting	58	56	59
FTA Construction Noise Threshold⁴	90	90	90
Exceed Thresholds?	No	No	No

¹ The multi-family homes to the west are located as near as 527 feet from center of project site.

² The single-family homes to the east are located as near as 707 feet from center of project site.

³ The daycare facility to the east is located as near as 487 feet from center of project site.

⁴ The FTA Construction noise thresholds are detailed above in Table A.

Source: RCNM, Federal Highway Administration, 2006

Table F shows that the greatest noise impacts would occur during the demolition phase, with a noise level as high as 66 dBA Leq at the nearest multi-family homes to the west and at the daycare facility to the east. All calculated construction noise levels shown in Table F are within the FTA daytime construction noise standard of 90 dBA. Therefore, through adherence to allowable construction times provided in Section 8.80.202 of the Municipal Code, the construction activities for the proposed project would not create a substantial temporary increase in ambient noise levels that are in excess of applicable noise standards. Impacts would be less than significant.

Operational-Related Noise

The proposed project consists of the demolition and reconstruction of the gymnasium and relocation of an existing aquatic center on campus. The proposed project would not result in an increase in student enrollment and is not anticipated to generate any new vehicle trips to the School. As such, no roadway noise impacts are anticipated to be created from operation of the proposed project. In addition, the new gymnasium would be constructed at the same location as the existing gymnasium and would be constructed to the most current Title 24 building efficiency and insulation standards that require the roof and walls to have enhanced insulation over what the existing gymnasium has, which would reduce the amount of interior noise being able to be transmitted outside of the building. For these reasons, the new gymnasium activities would result in lower noise levels than what is currently occurring onsite with the existing gymnasium and no further analysis is provided of the new gymnasium operational activity noise. Potential noise impacts associated with the operations of the proposed project would limited to the onsite noise sources associated with the new aquatics center activity use and rooftop HVAC equipment.

The operation of the proposed project may create an increase in onsite noise levels from the operation of pool area and rooftop mechanical equipment. Section 8.80.160 of the Municipal Code limits onsite noise

sources at the property lines of the nearby homes to 50 dBA between 7 a.m. and 10 p.m. and 45 dBA between 10 p.m. and 7 a.m..

In order to determine the noise impacts from the operation of pool activities and rooftop mechanical equipment, reference noise measurements for similar operations were taken of each source and are shown in Table G and the reference noise measurement printouts are provided in Appendix D. In order to account for the noise reduction provided by the proposed 8-foot high sound wall on the west side of the pool bleachers that is detailed in Project Design Feature 1 and the noise reduction provided by the approximately 30 foot high new gymnasium for the receptors to the east, the wall attenuation algorithm from the *Technical Noise Supplement to the Traffic Noise Analysis Protocol (TeNS)*, prepared by Caltrans, September 2013, was utilized and the sound wall noise reduction calculation spreadsheets are also provided in Appendix D.

Table G – Operational Noise Levels at the Nearby Sensitive Receptors

Noise Source	Reference Noise Measurements ¹		Calculated Noise Levels (dBA Leq) at ² :		
	Distance Receptor to Source (feet)	Reference Noise Level (dBA Leq)	Multi-Family Homes to West	Single-Family Homes to East	Daycare Facility to East
Pool Activities ³	30	71.8	40	24	27
Rooftop Equipment	6	65.1	27	17	20
Noise Level from All Sources Combined			40	25	28
City Noise Standards (day/night)			50/45	50/45	50/45
Exceed City Noise Standards (day/night)?			No/No	No/No	No/No

Notes:

¹ The reference noise measurements printouts are provided in Appendix D.

² The calculated noise levels account for the proposed 8-foot high wall on the west side behind the bleachers and the approximately 30 foot high new gymnasium on the east side and the wall noise reduction calculation spreadsheets are provided in Appendix D.

³ The pool activities was based on a noise measurement 30 feet from Long Beach Community College Liberal Arts Campus pool hosting a swim meet.

Source: Noise calculation methodology from Caltrans, 2013 (see Appendix D).

Table G shows that the proposed project's worst-case (i.e., during a swim meet) operational noise from the simultaneous operation of all noise sources on the project site would create a noise level as high as 40 dBA Leq at the multi-family homes to the west, which would be within both the City's daytime noise standards of 50 dBA between 7 a.m. and 10 p.m. and the City's nighttime noise standard of 45 dBA between 10 p.m. and 7 a.m.. Therefore, with implementation of Project Design Feature 1, the operational activities for the proposed project would not create a substantial temporary increase in ambient noise levels that are in excess of applicable noise standards. Impacts would be less than significant.

Level of Significance

Less than significant impact.

7.3 Generation of Excessive Groundborne Vibration

The proposed project would not expose persons to or generation of excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the proposed project.

Construction-Related Vibration Impacts

The construction activities for the proposed project are anticipated to include demolition of the existing gymnasium and outdoor paved area, site preparation and grading that includes deep soil cement mixing on approximately 2.5 acres, building construction of a new gymnasium and aquatics facility, paving of the pool deck and flat work, and application of architectural coatings. Vibration impacts from construction activities associated with the proposed project would typically be created from the operation of heavy off-road equipment. The nearest vibration sensitive receptors, which would consist of a structure where a person would sit or lay down, which would make them more susceptible to vibration would consist of the Long Beach City Office located in the northeast corner of Houghton Park and is located as near as 200 feet from the proposed project.

Section 8.80.200(G) of the City's Municipal Code limits vibration impacts to the nearby single-family homes to 0.001 g's in the frequency range of 0 to 30 hertz and 0.003 g's in the frequency range of 30 to 100 hertz. The acceleration of gravity (g), which is 32.2 feet per second can be converted into peak particle velocity by multiplying 0.001 g's by 32.2 and then converting to inch per second, which results in a threshold of 0.386 inch per second PPV.

A list of known vibration producing construction equipment is provided above in Table E. As shown in Table E above, a vibratory roller has the highest vibration level of the listed construction equipment that would likely be used during construction of the proposed project and would create a vibration level of 0.21 inch per second PPV at 25 feet. Based on typical propagation rates, the vibration level at the nearest offsite structure (200 feet away) would be 0.021 inch per second PPV, which would be well below the 0.386 inch per second PPV threshold detailed above. Impacts would be less than significant.

Operations-Related Vibration Impacts

The proposed project would consist of the development and operation of a new gymnasium and aquatics center. The on-going operation of the proposed project would not include the operation of any known vibration sources. Therefore, a less than significant vibration impact is anticipated from the operation of the proposed project.

Level of Significance

Less than significant impact.

7.4 Aircraft Noise

The proposed project would not expose people residing or working in the project area to excessive noise levels from aircraft. The nearest airport is Long Beach Airport that is located approximately 3.2 miles southeast of the project site. The project site is located outside of the 60 dBA CNEL noise contours of Long Beach Airport. A less than significant impact would occur from aircraft noise.

Level of Significance

Less than significant impact.

8.0 REFERENCES

California Department of Transportation (Caltrans), *Technical Noise Supplement to the Traffic Noise Analytics Protocol*, September 2013.

California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, April 2020.

City of Long Beach, *City of Long Beach General Plan Noise Element*, June, 2023.

City of Long Beach, *A Codification of the General Ordinances of Long Beach, California*, November 22, 2023.

Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, September 2018.

U.S. Department of Transportation, *FHWA Roadway Construction Noise Model User's Guide*, January, 2006.

Vista Environmental, *Air Quality, Energy, and Greenhouse Gas Emissions Impact Analysis Jordan High School New Gymnasium & Aquatic Center Project*, February 28, 2024.

APPENDIX A

Field Noise Measurements Photo Index



Noise Measurement Site 1 - looking north



Noise Measurement Site 1 - looking northeast



Noise Measurement Site 1 - looking east



Noise Measurement Site 1 - looking southeast



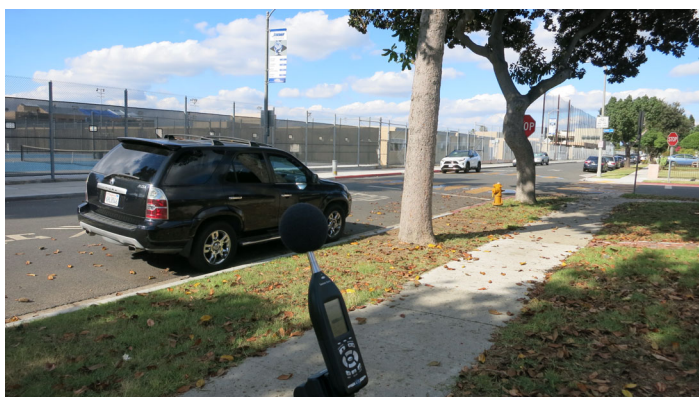
Noise Measurement Site 1 - looking south



Noise Measurement Site 1 - looking southwest



Noise Measurement Site 1 - looking west



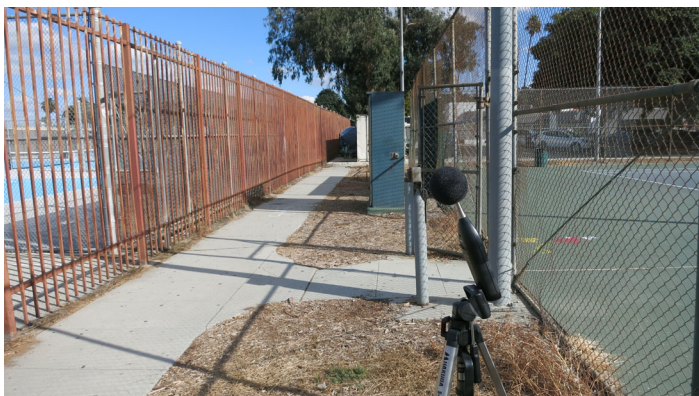
Noise Measurement Site 1 - looking northwest



Noise Measurement Site 2 - looking north



Noise Measurement Site 2 - looking northeast



Noise Measurement Site 2 - looking east



Noise Measurement Site 2 - looking southeast



Noise Measurement Site 2 - looking south



Noise Measurement Site 2 - looking southwest



Noise Measurement Site 2 - looking west



Noise Measurement Site 2 - looking northwest



Noise Measurement Site 3 - looking north



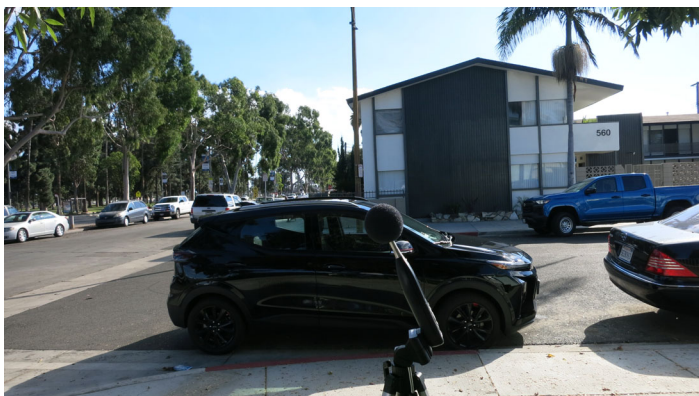
Noise Measurement Site 3 - looking northeast



Noise Measurement Site 3 - looking east



Noise Measurement Site 3 - looking southeast



Noise Measurement Site 3 - looking south



Noise Measurement Site 3 - looking southwest



Noise Measurement Site 3 - looking west



Noise Measurement Site 3 - looking northwest

APPENDIX B

Field Noise Measurements Printouts

Measurement Report

Report Summary

Meter's File Name	831_Data.001	Computer's File Name	
Meter	831		
Firmware	2.403		
User	GT		
Description	LBUSD Jordan HS New Gym		
Note	Located East of Project Site between homes at 6380 and 6390 Myrtle Ave. 74 F, 29.87 in Hg, 54% Hu, 2 mph wind, partly cloudy		
Start Time	2023-11-16 13:33:44	Duration	0:15:00.0
End Time	2023-11-16 13:48:44	Run Time	0:15:00.0
		Pause Time	0:00:00.0

Results

Overall Metrics

LA _{eq}	51.8 dB		
LAE	81.4 dB	SEA	--- dB
EA	15.3 µPa²h		
LZ _{peak}	104.5 dB	2023-11-16 13:33:44	
LAS _{max}	70.0 dB	2023-11-16 13:45:36	
LAS _{min}	45.2 dB	2023-11-16 13:36:40	
LA _{eq}	51.8 dB		
LC _{eq}	63.2 dB	LC _{eq} - LA _{eq}	11.3 dB
LAI _{eq}	56.8 dB	LAI _{eq} - LA _{eq}	4.9 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	1	0:00:02.0
LAS > 85.0 dB	0	0:00:00.0
LZ _{peak} > 135.0 dB	0	0:00:00.0
LZ _{peak} > 137.0 dB	0	0:00:00.0
LZ _{peak} > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
51.8 dB	51.8 dB	0.0 dB	
LDEN	LDay	LEve	LNight
51.8 dB	51.8 dB	--- dB	--- dB

Any Data

A		C		Z	
Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	51.8 dB	63.2 dB		71.3 dB	
LS _(max)	70.0 dB 2023-11-16 13:45:36	76.0 dB 2023-11-16 13:45:47		94.3 dB 2023-11-16 13:33:44	
LF _(max)	76.6 dB 2023-11-16 13:45:36	80.8 dB 2023-11-16 13:38:34		99.5 dB 2023-11-16 13:33:44	
LI _(max)	79.3 dB 2023-11-16 13:45:36	84.1 dB 2023-11-16 13:38:34		102.4 dB 2023-11-16 13:33:44	
LS _(min)	45.2 dB 2023-11-16 13:36:40	58.0 dB 2023-11-16 13:43:46		63.6 dB 2023-11-16 13:37:21	
LF _(min)	44.9 dB 2023-11-16 13:36:40	55.9 dB 2023-11-16 13:45:12		60.3 dB 2023-11-16 13:37:21	
LI _(min)	45.1 dB 2023-11-16 13:36:40	58.4 dB 2023-11-16 13:43:46		65.4 dB 2023-11-16 13:38:08	
L _{Peak(max)}	93.4 dB 2023-11-16 13:47:15	92.1 dB 2023-11-16 13:38:53		104.5 dB 2023-11-16 13:33:44	

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	57.3 dB
LAS 10.0	55.2 dB
LAS 33.3	50.4 dB
LAS 50.0	48.5 dB
LAS 66.6	47.4 dB
LAS 90.0	46.4 dB

Measurement Report

Report Summary

Meter's File Name	831_Data.002	Computer's File Name	
Meter	831		
Firmware	2.403		
User	GT		
Description	LBUSD Jordan HS New Gym		
Note	Located South of Project Site at Houghton Park, approx 10 feet south of school and 5 feet north of tennis courts. 74 F, 29.87 in Hg, 53% Hu, 2 mph win		
Start Time	2023-11-16 13:52:27	Duration	0:15:00.0
End Time	2023-11-16 14:07:27	Run Time	0:15:00.0
		Pause Time	0:00:00.0

Results

Overall Metrics

LA _{eq}	54.0 dB		
LAE	83.5 dB	SEA	--- dB
EA	25.1 µPa²h		
LZ _{peak}	105.1 dB	2023-11-16 13:52:27	
LAS _{max}	66.3 dB	2023-11-16 13:56:35	
LAS _{min}	50.8 dB	2023-11-16 13:57:19	
LA _{eq}	54.0 dB		
LC _{eq}	64.1 dB	LC _{eq} - LA _{eq}	10.1 dB
LAI _{eq}	59.7 dB	LAI _{eq} - LA _{eq}	5.7 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	1	0:00:01.1
LAS > 85.0 dB	0	0:00:00.0
LZ _{peak} > 135.0 dB	0	0:00:00.0
LZ _{peak} > 137.0 dB	0	0:00:00.0
LZ _{peak} > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
54.0 dB	54.0 dB	0.0 dB	
LDEN	LDay	LEve	LNight
54.0 dB	54.0 dB	--- dB	--- dB

Any Data

Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	54.0 dB		64.1 dB		70.1 dB	
L _{S(max)}	66.3 dB	2023-11-16 13:56:35	74.7 dB	2023-11-16 13:52:27	99.2 dB	2023-11-16 13:52:27
L _{F(max)}	72.5 dB	2023-11-16 13:56:35	78.6 dB	2023-11-16 13:54:23	100.4 dB	2023-11-16 13:52:27
L _{I(max)}	76.0 dB	2023-11-16 13:56:35	83.7 dB	2023-11-16 13:54:23	102.9 dB	2023-11-16 13:52:27
L _{S(min)}	50.8 dB	2023-11-16 13:57:19	60.6 dB	2023-11-16 14:02:29	64.6 dB	2023-11-16 14:02:28
L _{F(min)}	49.8 dB	2023-11-16 13:57:15	59.1 dB	2023-11-16 14:02:26	62.1 dB	2023-11-16 13:56:45
L _{I(min)}	50.8 dB	2023-11-16 13:57:19	60.6 dB	2023-11-16 14:02:29	65.5 dB	2023-11-16 13:57:09
L _{Peak(max)}	93.3 dB	2023-11-16 13:54:38	96.9 dB	2023-11-16 13:54:38	105.1 dB	2023-11-16 13:52:27

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	56.8 dB
LAS 10.0	55.5 dB
LAS 33.3	53.8 dB
LAS 50.0	53.2 dB
LAS 66.6	52.7 dB
LAS 90.0	52.0 dB

Measurement Report

Report Summary

Meter's File Name	831_Data.003	Computer's File Name				
Meter	831					
Firmware	2.403					
User	GT					
Description	LBUSD Jordan HS New Gym					
Note	Located West of Project Site in front of Apartment at 571 E 64th St. Approx 30 ft north of 64th St CL and 100 ft west of Atlantic Ave CL. 75 F, 29.86 in H					
Start Time	2023-11-16 14:13:27	Duration	0:15:00.0			
End Time	2023-11-16 14:28:27	Run Time	0:15:00.0	Pause Time 0:00:00.0		

Results

Overall Metrics

LA _{eq}	63.2 dB		
LAE	92.7 dB	SEA	--- dB
EA	208.5 µPa²h		
LZ _{peak}	101.9 dB	2023-11-16 14:13:28	
LAS _{max}	79.1 dB	2023-11-16 14:24:17	
LAS _{min}	51.4 dB	2023-11-16 14:25:39	
LA _{eq}	63.2 dB		
LC _{eq}	72.9 dB	LC _{eq} - LA _{eq}	9.7 dB
LAI _{eq}	65.1 dB	LAI _{eq} - LA _{eq}	1.9 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	26	0:03:19.9
LAS > 85.0 dB	0	0:00:00.0
LZ _{peak} > 135.0 dB	0	0:00:00.0
LZ _{peak} > 137.0 dB	0	0:00:00.0
LZ _{peak} > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
63.2 dB	63.2 dB	0.0 dB	
LDEN	LDay	LEve	LNight
63.2 dB	63.2 dB	--- dB	--- dB

Any Data

A		C		Z	
Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	63.2 dB	72.9 dB		76.5 dB	
LS _(max)	79.1 dB 2023-11-16 14:24:17	89.9 dB 2023-11-16 14:27:52		95.6 dB 2023-11-16 14:13:28	
LF _(max)	82.7 dB 2023-11-16 14:24:14	93.3 dB 2023-11-16 14:27:52		97.4 dB 2023-11-16 14:13:28	
LI _(max)	84.4 dB 2023-11-16 14:24:14	94.3 dB 2023-11-16 14:27:52		99.8 dB 2023-11-16 14:13:28	
LS _(min)	51.4 dB 2023-11-16 14:25:39	62.3 dB 2023-11-16 14:20:57		66.4 dB 2023-11-16 14:20:57	
LF _(min)	50.4 dB 2023-11-16 14:25:38	60.9 dB 2023-11-16 14:25:34		64.7 dB 2023-11-16 14:20:51	
LI _(min)	51.1 dB 2023-11-16 14:25:38	62.6 dB 2023-11-16 14:16:30		67.7 dB 2023-11-16 14:20:51	
L _{Peak(max)}	95.0 dB 2023-11-16 14:24:14	100.0 dB 2023-11-16 14:24:14		101.9 dB 2023-11-16 14:13:28	

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	66.9 dB
LAS 10.0	65.6 dB
LAS 33.3	62.9 dB
LAS 50.0	61.3 dB
LAS 66.6	59.1 dB
LAS 90.0	55.2 dB

APPENDIX C

RCNM Model Construction Noise Calculations

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/29/2024

Case Description: Jordan HS New Gym & Aquatics Center - Demolition

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)	
		Daytime	Evening
MFHs to West	Residential	63.2	63.2

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Concrete Saw	No	20		89.6	527	0
Dozer	No	40		81.7	527	0
Backhoe	No	40		77.6	527	0
Front End Loader	No	40		79.1	527	0
Tractor	No	40	84		527	0
Excavator	No	40		80.7	527	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq
Concrete Saw	69.1	62.1	N/A	N/A	N/A	N/A
Dozer	61.2	57.2	N/A	N/A	N/A	N/A
Backhoe	57.1	53.1	N/A	N/A	N/A	N/A
Front End Loader	58.7	54.7	N/A	N/A	N/A	N/A
Tractor	63.5	59.6	N/A	N/A	N/A	N/A
Excavator	60.3	56.3	N/A	N/A	N/A	N/A
Total	69	66	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/29/2024

Case Description: Jordan HS New Gym & Aquatics Center - Demolition

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)			Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening	Night				
SFHs to East	Residential	51.8	51.8	51.8				
		Impact Device	Usage(%)					
Concrete Saw		No	20			89.6	707	0
Dozer		No	40			81.7	707	0
Backhoe		No	40			77.6	707	0
Front End Loader		No	40			79.1	707	0
Tractor		No	40	84			707	0
Excavator		No	40			80.7	707	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq
Concrete Saw	66.6	59.6	N/A	N/A	N/A	N/A
Dozer	58.7	54.7	N/A	N/A	N/A	N/A
Backhoe	54.6	50.6	N/A	N/A	N/A	N/A
Front End Loader	56.1	52.1	N/A	N/A	N/A	N/A
Tractor	61.0	57.0	N/A	N/A	N/A	N/A
Excavator	57.7	53.7	N/A	N/A	N/A	N/A
Total	67	64	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/29/2024

Case Description: Jordan HS New Gym & Aquatics Center - Demolition

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)			Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening	Night				
Daycare to East	Commercial	54.0	54.0	54.0				
		Impact Device	Usage(%)					
Concrete Saw		No	20			89.6	487	0
Dozer		No	40			81.7	487	0
Backhoe		No	40			77.6	487	0
Front End Loader		No	40			79.1	487	0
Tractor		No	40	84			487	0
Excavator		No	40			80.7	487	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq
Concrete Saw	69.8	62.8	N/A	N/A	N/A	N/A
Dozer	61.9	57.9	N/A	N/A	N/A	N/A
Backhoe	57.8	53.8	N/A	N/A	N/A	N/A
Front End Loader	59.3	55.4	N/A	N/A	N/A	N/A
Tractor	64.2	60.2	N/A	N/A	N/A	N/A
Excavator	60.9	57.0	N/A	N/A	N/A	N/A
Total	70	67	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/7/2024

Case Description: Jordan HS New Gym & Aquatics Center - Site Preparation

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		Night	Equipment Spec	Actual	Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening					
MFHs to West	Residential	63.2	63.2	63.2				
Description		Impact Device	Usage(%)	Lmax (dBA)	Lmax (dBA)			
Grader		No	40	85		527	0	
Scraper		No	40		83.6	527	0	
Tractor		No	40	84		527	0	

Results

Equipment		Calculated (dBA)		Noise Limits (dBA)			
		*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Grader		64.5	60.6	N/A	N/A	N/A	N/A
Scraper		63.1	59.1	N/A	N/A	N/A	N/A
Tractor		63.5	59.6	N/A	N/A	N/A	N/A
Total		65	65	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		Night	Equipment Spec	Actual	Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening					
SFHs to East	Residential	51.8	51.8	51.8				
Description		Impact Device	Usage(%)	Lmax (dBA)	Lmax (dBA)			
Grader		No	40	85		707	0	
Scraper		No	40		83.6	707	0	
Tractor		No	40	84		707	0	

Results

Equipment		Calculated (dBA)		Noise Limits (dBA)			
		*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Grader		62.0	58.0	N/A	N/A	N/A	N/A
Scraper		60.6	56.6	N/A	N/A	N/A	N/A
Tractor		61.0	57.0	N/A	N/A	N/A	N/A
Total		62	62	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/7/2024

Case Description: Jordan HS New Gym & Aquatics Center - Site Preparation

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Daycare to East	Commercial	54.0	54.0	54.0

Description	Impact Device	Usage(%)	Equipment			
			Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Grader	No	40	85		487	0
Scraper	No	40		83.6	487	0
Tractor	No	40	84		487	0

Equipment	Calculated (dBA)		Results Noise Limits (dBA)				
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	
Grader	65.2	61.2	N/A	N/A	N/A	N/A	N/A
Scraper	63.8	59.8	N/A	N/A	N/A	N/A	N/A
Tractor	64.2	60.2	N/A	N/A	N/A	N/A	N/A
Total	65	65	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/29/2024

Case Description: Jordan HS New Gym & Aquatics Center - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		Night	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening					
MFHs to West	Residential	63.2	63.2	63.2				
		Impact Device	Usage(%)					
Grader		No	40	85			527	0
Dozer		No	40			81.7	527	0
Front End Loader		No	40			79.1	527	0
Tractor		No	40	84			527	0
Excavator		No	40			80.7	527	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq
Equipment						
Grader	64.5	60.6	N/A	N/A	N/A	N/A
Dozer	61.2	57.2	N/A	N/A	N/A	N/A
Front End Loader	58.7	54.7	N/A	N/A	N/A	N/A
Tractor	63.5	59.6	N/A	N/A	N/A	N/A
Excavator	60.3	56.3	N/A	N/A	N/A	N/A
Total	65	65	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/29/2024

Case Description: Jordan HS New Gym & Aquatics Center - Grading

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)			Equipment	Actual	Receptor	Estimated
		Daytime	Evening	Night				
SFHs to East	Residential	51.8	51.8	51.8				
Description	Impact	Device	Usage(%)	Spec Lmax (dBA)	Lmax (dBA)	Receptor Distance (feet)	Shielding (dBA)	
Grader	No		40	85		707	0	
Dozer	No		40		81.7	707	0	
Front End Loader	No		40		79.1	707	0	
Tractor	No		40	84		707	0	
Excavator	No		40		80.7	707	0	

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	
Grader	62.0	58.0	N/A	N/A	N/A	N/A	
Dozer	58.7	54.7	N/A	N/A	N/A	N/A	
Front End Loader	56.1	52.1	N/A	N/A	N/A	N/A	
Tractor	61.0	57.0	N/A	N/A	N/A	N/A	
Excavator	57.7	53.7	N/A	N/A	N/A	N/A	
Total	62	63	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/29/2024

Case Description: Jordan HS New Gym & Aquatics Center - Grading

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)			Equipment	Actual	Receptor	Estimated
		Daytime	Evening	Night				
Daycare to East	Commercial	54.0	54.0	54.0				
Description		Impact		Usage(%)	Spec	Lmax	Distance	Shielding
		Device			Lmax			
Grader		No		40	85		487	0
Dozer		No		40		81.7	487	0
Front End Loader		No		40		79.1	487	0
Tractor		No		40	84		487	0
Excavator		No		40		80.7	487	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day	Leq	Evening	Leq
Grader	65.2	61.2	N/A	N/A	N/A	N/A
Dozer	61.9	57.9	N/A	N/A	N/A	N/A
Front End Loader	59.3	55.4	N/A	N/A	N/A	N/A
Tractor	64.2	60.2	N/A	N/A	N/A	N/A
Excavator	60.9	57.0	N/A	N/A	N/A	N/A
Total	65	66	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/7/2024

Case Description: Jordan HS New Gym & Aquatics Center - Building Construction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
MFHs to West	Residential	63.2	63.2	63.2			
Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)	
Crane	No	16		80.6	527	0	
Gradall	No	40		83.4	527	0	
Gradall	No	40		83.4	527	0	
Generator	No	50		80.6	527	0	
Tractor	No	40	84		527	0	
Welder / Torch	No	40		74	527	0	
Welder / Torch	No	40		74	527	0	
Welder / Torch	No	40		74	527	0	

Results

Equipment	Calculated (dBA)		Day Lmax	Noise Limits (dBA)			
	*Lmax	Leq		Leq	Evening Lmax	Leq	
Crane	60.1	52.1	N/A	N/A	N/A	N/A	
Gradall	62.9	59.0	N/A	N/A	N/A	N/A	
Gradall	62.9	59.0	N/A	N/A	N/A	N/A	
Generator	60.2	57.2	N/A	N/A	N/A	N/A	
Tractor	63.5	59.6	N/A	N/A	N/A	N/A	
Welder / Torch	53.5	49.6	N/A	N/A	N/A	N/A	
Welder / Torch	53.5	49.6	N/A	N/A	N/A	N/A	
Welder / Torch	53.5	49.6	N/A	N/A	N/A	N/A	
Total	64	65	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/7/2024

Case Description: Jordan HS New Gym & Aquatics Center - Building Construction

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)	
		Daytime	Evening
SFHs to East	Residential	51.8	51.8

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Crane	No	16		80.6	707	0
Gradall	No	40		83.4	707	0
Gradall	No	40		83.4	707	0
Generator	No	50		80.6	707	0
Tractor	No	40	84		707	0
Welder / Torch	No	40		74	707	0
Welder / Torch	No	40		74	707	0
Welder / Torch	No	40		74	707	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Noise Limits (dBA)			
			Day Lmax	Leq	Evening Lmax	Leq
Crane	57.5	49.6	N/A	N/A	N/A	N/A
Gradall	60.4	56.4	N/A	N/A	N/A	N/A
Gradall	60.4	56.4	N/A	N/A	N/A	N/A
Generator	57.6	54.6	N/A	N/A	N/A	N/A
Tractor	61.0	57.0	N/A	N/A	N/A	N/A
Welder / Torch	51.0	47.0	N/A	N/A	N/A	N/A
Welder / Torch	51.0	47.0	N/A	N/A	N/A	N/A
Welder / Torch	51.0	47.0	N/A	N/A	N/A	N/A
Total	61	63	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/7/2024

Case Description: Jordan HS New Gym & Aquatics Center - Building Construction

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Daycare to East	Commercial	54.0	54.0	54.0

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Crane	No	16		80.6	487	0
Gradall	No	40		83.4	487	0
Gradall	No	40		83.4	487	0
Generator	No	50		80.6	487	0
Tractor	No	40	84		487	0
Welder / Torch	No	40		74	487	0
Welder / Torch	No	40		74	487	0
Welder / Torch	No	40		74	487	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Crane	60.8	52.8	N/A	N/A	N/A	N/A
Gradall	63.6	59.6	N/A	N/A	N/A	N/A
Gradall	63.6	59.6	N/A	N/A	N/A	N/A
Generator	60.9	57.8	N/A	N/A	N/A	N/A
Tractor	64.2	60.2	N/A	N/A	N/A	N/A
Welder / Torch	54.2	50.2	N/A	N/A	N/A	N/A
Welder / Torch	54.2	50.2	N/A	N/A	N/A	N/A
Welder / Torch	54.2	50.2	N/A	N/A	N/A	N/A
Total	64	66	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/7/2024

Case Description: Jordan HS New Gym & Aquatics Center - Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
MFHs to West	Residential	63.2	63.2	63.2

Description	Impact Device	Usage(%)	Equipment Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	527	0
Paver	No	50		77.2	527	0
Paver	No	50		77.2	527	0
Roller	No	20		80	527	0
Roller	No	20		80	527	0
Tractor	No	40	84		527	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Concrete Mixer Truck	58.3	54.4	N/A	N/A	N/A	N/A
Paver	56.8	53.8	N/A	N/A	N/A	N/A
Paver	56.8	53.8	N/A	N/A	N/A	N/A
Roller	59.5	52.6	N/A	N/A	N/A	N/A
Roller	59.5	52.6	N/A	N/A	N/A	N/A
Tractor	63.5	59.6	N/A	N/A	N/A	N/A
Total	64	63	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/7/2024

Case Description: Jordan HS New Gym & Aquatics Center - Paving

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
SFHs to East	Residential	51.8	51.8	51.8

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	707	0
Paver	No	50		77.2	707	0
Paver	No	50		77.2	707	0
Roller	No	20		80	707	0
Roller	No	20		80	707	0
Tractor	No	40	84		707	0

Equipment	Calculated (dBA)		Results			
	*Lmax	Leq	Noise Limits (dBA)		Evening	
			Day Lmax	Day Leq	Lmax	Leq
Concrete Mixer Truck	55.8	51.8	N/A	N/A	N/A	N/A
Paver	54.2	51.2	N/A	N/A	N/A	N/A
Paver	54.2	51.2	N/A	N/A	N/A	N/A
Roller	57.0	50.0	N/A	N/A	N/A	N/A
Roller	57.0	50.0	N/A	N/A	N/A	N/A
Tractor	61.0	57.0	N/A	N/A	N/A	N/A
Total	61	61	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/7/2024

Case Description: Jordan HS New Gym & Aquatics Center - Paving

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Daycare to East	Commercial	54.0	54.0	54.0

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Concrete Mixer Truck	No	40		78.8	487	0
Paver	No	50		77.2	487	0
Paver	No	50		77.2	487	0
Roller	No	20		80	487	0
Roller	No	20		80	487	0
Tractor	No	40	84		487	0

Equipment	Calculated (dBA)		Results Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Concrete Mixer Truck	59.0	55.0	N/A	N/A	N/A	N/A
Paver	57.4	54.4	N/A	N/A	N/A	N/A
Paver	57.4	54.4	N/A	N/A	N/A	N/A
Roller	60.2	53.2	N/A	N/A	N/A	N/A
Roller	60.2	53.2	N/A	N/A	N/A	N/A
Tractor	64.2	60.2	N/A	N/A	N/A	N/A
Total	64	64	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 2/29/2024

Case Description: Jordan HS New Gym & Aquatics Center - Painting

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		Night			
		Daytime	Evening		Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)
MFHs to West	Residential	63.2	63.2	63.2			
		Impact Device	Usage(%)				Estimated Shielding (dBA)
Compressor (air)		No	40			77.7	527
Compressor (air)		No	40			77.7	527
Compressor (air)		No	40			77.7	527

Results

			Calculated (dBA)		Noise Limits (dBA)		
					Day	Evening	
Equipment		*Lmax	Leq		Lmax	Leq	Lmax
Compressor (air)		57.2	53.2		N/A	N/A	N/A
Compressor (air)		57.2	53.2		N/A	N/A	N/A
Compressor (air)		57.2	53.2		N/A	N/A	N/A
Total		57	58		N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		Night			
		Daytime	Evening		Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)
SFHs to East	Residential	51.8	51.8	51.8			
		Impact Device	Usage(%)				Estimated Shielding (dBA)
Compressor (air)		No	40			77.7	707
Compressor (air)		No	40			77.7	707
Compressor (air)		No	40			77.7	707

Results

			Calculated (dBA)		Noise Limits (dBA)		
					Day	Evening	
Equipment		*Lmax	Leq		Lmax	Leq	Lmax
Compressor (air)		54.7	50.7		N/A	N/A	N/A
Compressor (air)		54.7	50.7		N/A	N/A	N/A
Compressor (air)		54.7	50.7		N/A	N/A	N/A
Total		55	56		N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/29/2024

Case Description: Jordan HS New Gym & Aquatics Center - Painting

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Daycare to East	Commercial	54.0	54.0	54.0

Description	Impact Device	Usage(%)	Equipment Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Compressor (air)	No	40		77.7	487	0
Compressor (air)	No	40		77.7	487	0
Compressor (air)	No	40		77.7	487	0

Equipment	Calculated (dBA)		Results		Noise Limits (dBA)		
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	
Compressor (air)	57.9	53.9	N/A	N/A	N/A	N/A	
Compressor (air)	57.9	53.9	N/A	N/A	N/A	N/A	
Compressor (air)	57.9	53.9	N/A	N/A	N/A	N/A	
Total	58	59	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

APPENDIX D

Operational Reference Noise Measurements and Sound Wall Calculations

General Information												
Serial Number	02509											
Model	831											
Firmware Version	2.314											
Filename	831_Data.001											
User	GT											
Job Description	LBCC 2041 Facilities Master Plan											
Location	Approx 30 ft north of pool and 5 ft south of scoreboard											
Measurement Description												
Start Time	Friday, 2018 March 30 12:24:51											
Stop Time	Friday, 2018 March 30 12:34:52											
Duration	00:10:00.5											
Run Time	00:10:00.5											
Pause	00:00:00.0											
Pre Calibration	Friday, 2018 March 30 12:23:28											
Post Calibration	None											
Calibration Deviation	---											

Note
Noise from swim meet at pool 30 ft from pool and 60 ft from loud speaker
76F, 29.91 in Hg, 51% hu, 2 mph wind, hazy sky

Overall Data												
L _{Aeq}											71.8	dB
L _{ASmax}	2018 Mar 30 12:34:05										89.5	dB
L _{Apeak} (max)	2018 Mar 30 12:34:05										100.5	dB
L _{ASmin}	2018 Mar 30 12:32:15										56.5	dB
L _{Ceq}											73.2	dB
L _{Aeq}											71.8	dB
L _{Ceq} - L _{Aeq}											1.4	dB
L _{A1eq}											78.1	dB
L _{Aeq}											71.8	dB
L _{A1eq} - L _{Aeq}											6.2	dB
L _{dn}											71.8	dB
L _{Day} 07:00-22:00											71.8	dB
L _{Night} 22:00-07:00											---	dB
L _{den}											71.8	dB
L _{Day} 07:00-19:00											71.8	dB
L _{Evening} 19:00-22:00											---	dB
L _{Night} 22:00-07:00											---	dB
L _{AE}											99.6	dB
# Overloads											0	
Overload Duration											0.0	s
# OBA Overloads											0	
OBA Overload Duration											0.0	s

Statistics												
L _{AS5.00}											77.5	dBA
L _{AS10.00}											75.3	dBA
L _{AS33.30}											70.1	dBA
L _{AS50.00}											67.6	dBA
L _{AS66.60}											65.3	dBA
L _{AS90.00}											62.4	dBA
L _{AS} > 65.0 dB (Exceedence Counts / Duration)											28 / 489.8	s
L _{AS} > 85.0 dB (Exceedence Counts / Duration)											2 / 2.8	s
L _{Apeak} > 135.0 dB (Exceedence Counts / Duration)											0 / 0.0	s
L _{Apeak} > 137.0 dB (Exceedence Counts / Duration)											0 / 0.0	s
L _{Apeak} > 140.0 dB (Exceedence Counts / Duration)											0 / 0.0	s

Settings												
RMS Weight	A Weighting											
Peak Weight	A Weighting											
Detector	Slow											
Preamp	PRM831											
Integration Method	Linear											
OBA Range	Low											
OBA Bandwidth	1/1 and 1/3											
OBA Freq. Weighting	Z Weighting											
OBA Max Spectrum	Bin Max											
Gain											+0	dB
Under Range Limit											26.1	dB
Under Range Peak											75.8	dB
Noise Floor											17.0	dB
Overload											143.4	dB

1/1 Spectra												
Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
L _{Zeq}	58.3	61.4	64.5	63.1	61.2	59.2	64.8	69.9	62.3	60.1	43.3	34.0
L _{Zsmax}	80.3	74.2	70.6	73.0	69.5	66.1	81.7	89.2	75.4	77.9	59.7	47.9
L _{Zsmin}	49.2	55.8	60.8	57.2	56.6	53.6	53.7	52.4	48.0	43.0	33.5	23.8

1/3 Spectra												
Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	52.9	54.4	53.8	56.2	57.5	56.5	60.5	61.7	53.2	53.9	55.6	61.5
LZSmax	73.7	77.7	69.9	70.3	71.4	69.4	65.9	68.2	62.5	60.4	65.8	72.8
LZSmin	40.5	39.9	43.6	48.1	49.2	50.1	56.1	57.5	47.9	48.5	51.3	53.5
Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	58.9	54.3	54.5	55.6	53.2	54.3	56.5	59.5	62.3	62.9	67.9	62.4
LZSmax	67.1	68.4	64.7	63.3	60.9	63.5	68.0	75.3	80.7	77.9	88.4	82.7
LZSmin	52.6	49.1	48.5	48.9	47.4	47.6	49.1	48.9	48.8	48.7	47.1	46.2
Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	58.7	55.5	57.7	59.7	51.6	45.6	40.6	38.0	35.1	31.8	28.4	23.6
LZSmax	70.1	68.7	75.4	78.6	67.7	60.1	52.0	58.6	48.3	45.1	43.1	38.1
LZSmin	44.3	43.3	41.5	39.8	36.4	32.9	30.4	27.9	25.4	21.4	17.7	13.4

Calibration History												
Preamp	Date										dB re. 1V/Pa	
PRM831	30 Mar 2018 12:23:25										-25.8	
PRM831	07 Mar 2018 13:40:34										-25.8	
PRM831	28 Feb 2018 12:16:10										-25.9	
PRM831	30 Jan 2018 23:18:32										-26.2	
PRM831	30 Jan 2018 13:42:45										-26.2	
PRM831	30 Jan 2018 13:32:25										-26.0	
PRM831	30 Jan 2018 10:54:43										-26.0	
PRM831	06 Jan 2018 13:07:04										-26.0	
PRM831	19 Dec 2017 10:41:35										-25.5	
PRM831	25 Oct 2017 08:21:25										-25.2	
PRM831	11 Oct 2017 12:05:04										-25.5	

Measurement Report

Report Summary

Meter's File Name	831_Data.004	Computer's File Name	SLM_0002509_831_Data_004.02.ldbin
Meter	831		
Firmware	2.314		
User	GT	Location	
Description	Riverside - The Motorcycle Company - Phase 3		
Note	On Roof - Approx 6 feet from HVAC Unit		
Start Time	2020-05-09 13:23:15	Duration	0:10:00.2
End Time	2020-05-09 13:33:15	Run Time	0:10:00.2
		Pause Time	0:00:00.0

Results

Overall Metrics

LA _{eq}	65.1 dB		
LAE	92.9 dB	SEA	--- dB
EA	214.7 µPa²h		
LZ _{peak}	106.4 dB	2020-05-09 13:25:40	
LAS _{max}	80.1 dB	2020-05-09 13:25:19	
LAS _{min}	55.1 dB	2020-05-09 13:30:14	
LA _{eq}	65.1 dB		
LC _{eq}	78.1 dB	LC _{eq} - LA _{eq}	13.0 dB
LAI _{eq}	68.9 dB	LAI _{eq} - LA _{eq}	3.8 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	16	0:02:46.5
LAS > 85.0 dB	0	0:00:00.0
LZ _{peak} > 135.0 dB	0	0:00:00.0
LZ _{peak} > 137.0 dB	0	0:00:00.0
LZ _{peak} > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
65.1 dB	65.1 dB	0.0 dB	
LDEN	LDay	LEve	LNight
65.1 dB	65.1 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	65.1 dB		78.1 dB		80.9 dB	
LS _(max)	80.1 dB	2020-05-09 13:25:19	91.6 dB	2020-05-09 13:26:05	97.4 dB	2020-05-09 13:23:15
LF _(max)	84.7 dB	2020-05-09 13:25:18	95.4 dB	2020-05-09 13:25:40	97.5 dB	2020-05-09 13:23:15
LI _(max)	86.7 dB	2020-05-09 13:25:18	97.5 dB	2020-05-09 13:25:40	99.6 dB	2020-05-09 13:23:15
LS _(min)	55.1 dB	2020-05-09 13:30:14	64.7 dB	2020-05-09 13:30:02	67.4 dB	2020-05-09 13:28:06
LF _(min)	54.3 dB	2020-05-09 13:30:13	63.0 dB	2020-05-09 13:30:12	65.8 dB	2020-05-09 13:27:31
LI _(min)	54.6 dB	2020-05-09 13:30:13	65.0 dB	2020-05-09 13:30:02	68.0 dB	2020-05-09 13:27:59
L _{Peak(max)}	98.9 dB	2020-05-09 13:25:18	105.7 dB	2020-05-09 13:25:40	106.4 dB	2020-05-09 13:25:40

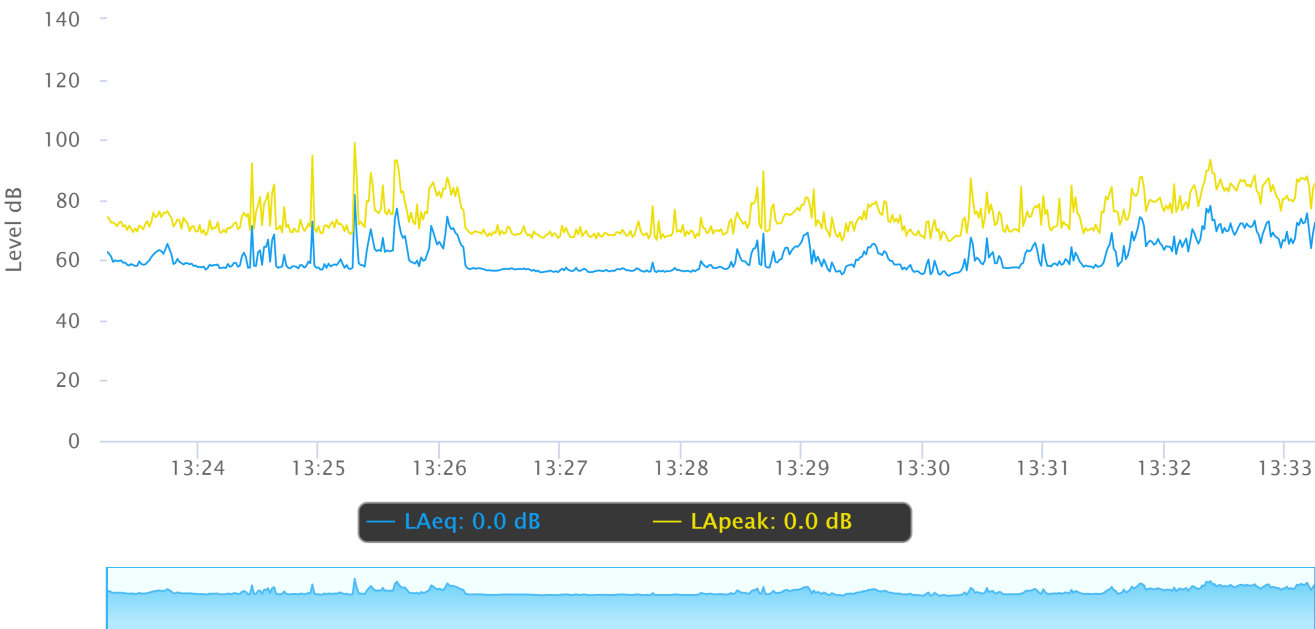
Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

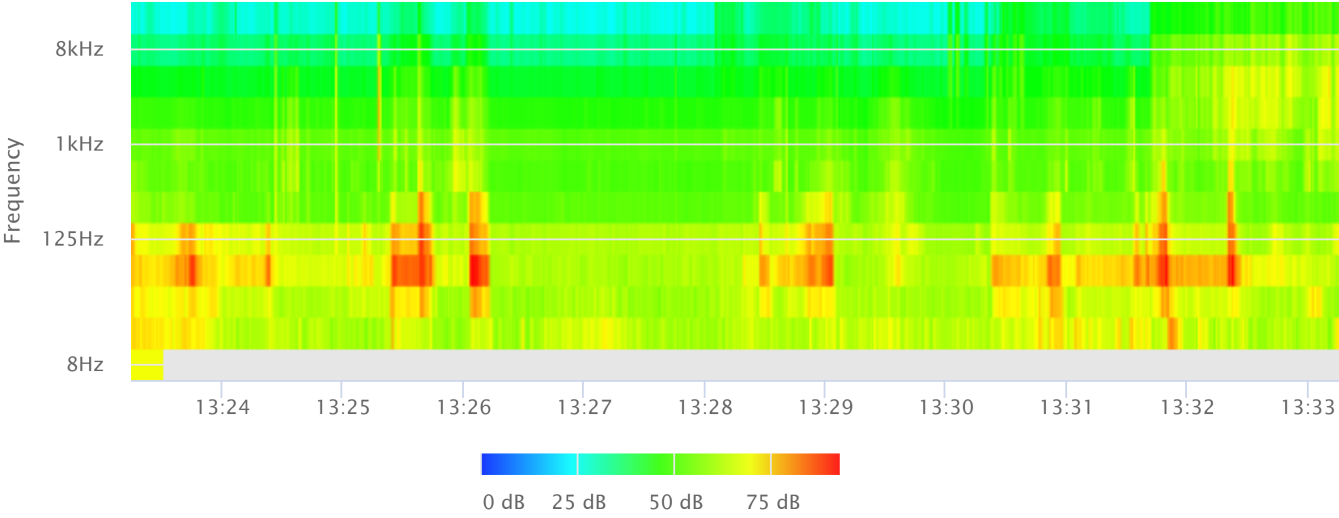
Statistics

LAS 5.0	71.5 dB
LAS 10.0	69.4 dB
LAS 33.3	62.7 dB
LAS 50.0	59.5 dB
LAS 66.6	58.1 dB
LAS 90.0	56.5 dB

Time History



OBA 1/1 Leq



Stationary Noise Calculations at Multi-Family Homes West of Project Site

Stationary Noise Sources	Reference Measurement		Unmitigated Noise Level at Receptor	
	Distance	Leq	Distance	Leq
Pool Activities - Swim Meet	30	71.8	300	52
Rooftop HVAC	6	65.1	290	31

1 (Line Source: hard=0, soft=-.5; Point Source: hard=1, soft=1.5)
(eq. N-2141.2 of TeNS)

Stationary Noise Sources	Distance from Receptor to Wall	Distance from source to Wall	Height of Wall (feet)	Without Wall Noise Level at		With Wall Noise Level at		Exterior Observer Height (feet)	Source Frequency y (hz)	barrier to receiver - b (all)	source to barrier - a		source to receiver - c		path difference y = a+b-c (auto)	line of sight (slope)	Barrier Atten
				Residence	Level at	Residence	at				barrier - a		receiver - c				
Pool Activities - Sw	280	20	8	52		40		3	800	280.02	20.62		300.01		0.62	1	1.78
Rooftop HVAC	280	10	8	31		27		30	800	280.02	24.17		291.08		13.11	-1	0.00
																	-4.9

Stationary Noise Calculations at Single-Family Homes East of Project Site

Stationary Noise Sources	Reference Measurement			Unmitigated Noise Level at Receptor		
	Distance	Leq		Distance	Leq	
Pool Activities - Swim Meet	30	71.8		860	43	1 (Line Source: hard=0, soft=.5; Point Source: hard=1, soft=1.5)
Rooftop HVAC	6	65.1		850	22	(eq. N-2141.2 of TeNS)

Stationary Noise Sources	Distance from Receptor to Wall	Distance from source to Wall	Height of Wall (feet)	Without Wall		Height of Wall (feet)	With Wall		Exterior Observer Height (feet)	Source Frequency (hz)	barrier to receiver - b (all)	source to barrier - a		source to receiver - c		path difference y = a+b-c (auto)	line of sight (slope)	Barrier Atten -18.811
				Level at Residence	at Residence		at Residence	at Residence				barrier - a	source to barrier - a	source to receiver - c	path difference y = a+b-c (auto)			
Pool Activities - Sw	830	30	30	43	24	3	24	5	5	800	830.38	40.36	860.00	10.73	10.03	1.00	30.54	-18.811
Rooftop HVAC	830	20	30	22	17	30	17	5	5	800	830.38	20.00	850.37	0.01	0.01	1.00	0.03	-5.2

Stationary Noise Calculations at Daycare Facility East of Project Site

Stationary Noise Sources	Reference Measurement			Unmitigated Noise Level at Receptor		
	Distance	Leq		Distance	Leq	
Pool Activities - Swim Meet	30	71.8		600	46	1 (Line Source: hard=0, soft=.5; Point Source: hard=1, soft=1.5)
Rooftop HVAC	6	65.1		590	25	(eq. N-2141.2 of TeNS)

46

Stationary Noise Sources	Distance from Receptor to Wall	Distance from source to Wall	Height of Wall (feet)	Without Wall Noise Level at		Source Height (feet)	Exterior Observer Height (feet)	Source Frequency (hz)	barrier to receiver - b (all)		source to barrier - a		source to receiver - c		path difference y = a+b-c (auto)	line of sight (slope)	Barrier Atten -19,004
				Residence	at Residence				580.54	580.54	33.60	10.00	600.00	590.53	14.14	1.00	
Pool Activities - Sw	580	20	30	46	27	3	5	800								1.00	
Rooftop HVAC	580	10	30	25	20	30	5	800							0.01	1.00	-5.2

Combined Noise Levels

46

28

APPENDIX C – NOISE REPORT



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



February 12, 2024
9620 Chesapeake Drive, Suite 202
San Diego, CA 92123
21430

Ms. Ferdows Fazeli
Senior Program Manager
Long Beach Unified School District
Facilities Development and Planning Branch
2425 Webster Avenue
Long Beach, CA 90810

Subject: Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

Dear Ms. Ferdows Fazeli:

Chambers Group provides the following Cultural Resources Survey Results Letter Report to the Long Beach Unified School District (LBUSD) for the proposed Jordan High School New Gymnasium and Aquatics Center Project (Project; Proposed Project) in the City of Long Beach in Los Angeles County, California (Figure 1). This assessment includes the results of a cultural resources records search and literature review of the Project site and surrounding half-mile radius (study area). These tasks were conducted to determine the presence of and potential for prehistoric and/or historic cultural resources within the Project site and to assess potential for impacts to those resources from Project activities in compliance with applicable county, state, and federal codes, regulations, and statutes.

Proposed Project Site Location and Description

The proposed Jordan High School New Gymnasium & Aquatic Center Project (Proposed Project) would demolish the existing gymnasium, build a new gymnasium and a new Aquatic Center for the Jordan HS campus. LBUSD is the lead agency for the Proposed Project.

Jordan High School is located at 6500 Atlantic Avenue, Long Beach, CA 90805 and is situated in a primarily residential area surrounded by housing on the north and east sides and Houghton Park directly south (Figure 1). The Proposed Project site is found on the United States Geological Survey (USGS) Long Beach, California 7.5-minute topographic quadrangle, in Township 3 South, Range 12 West (USGS 2021) and is within Assessor Parcel Number (APN) 7115-025-900.

Jordan High School accommodates students from grades 9-12. The school was built over various phases between 1935 and 2024 and is approximately 26.9 acres in size. There are 13 permanent buildings and 53 interim housing relocatable/portable buildings. The campus is undergoing modernization starting in 2014 to implement the master plan to replace aging buildings with new ones and modernize buildings when feasible.

Construction of the new Gymnasium building will include over-excavating 5.5 feet below the existing grade. The over-excavation will extend at least 5 feet outside the building footprint. Additionally, the Project includes ground improvements comprising of deep soil mixing within the footprint of the new gymnasium.

For the Aquatic Center's pool, pool deck, and pool buildings, construction would include over-excavating approximately 8 feet below grade. At the deep end of the pool, construction will include over excavating another 2 feet to a total depth of 10 feet. All other pavement areas require 2-foot-deep earth work.



Cultural Resources Survey Results Letter Report for the
Jordan High School New Gymnasium and Aquatics Center
Project

LONG BEACH UNIFIED SCHOOL DISTRICT



F



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



Regulatory Framework

Work for this Project was conducted in compliance with the California Environmental Quality Act (CEQA). The regulatory framework as it pertains to cultural resources under CEQA has been detailed below.

Under the provisions of CEQA, including the CEQA Statutes (Public Resources Code [PRC] §§ 21083.2 and 21084.1), the CEQA Guidelines (Title 14 California Code of Regulations [CCR] § 15064.5), and PRC § 5024.1 (Title 14 CCR § 4850 et seq.), properties expected to be directly or indirectly affected by a Proposed Project must be evaluated for California Register of Historical Resources (CRHR) eligibility (PRC § 5024.1).

The purpose of the CRHR is to maintain listings of the state's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from material impairment and substantial adverse change. The term *historical resources* include a resource listed in or determined to be eligible for listing in the CRHR; a resource included in a local register of historical resources; and any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CCR § 15064.5[a]). The criteria for listing properties in the CRHR were expressly developed in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP). The California Office of Historic Preservation (OHP 1995:2) regards "any physical evidence of human activities over 45 years old" as meriting recordation and evaluation.

California Register of Historical Resources

A cultural resource is considered "historically significant" under CEQA if the resource meets one or more of the criteria for listing on the CRHR. The CRHR was designed to be used by state and local agencies, private groups, and citizens to identify existing cultural resources within the state and to indicate which of those resources should be protected, to the extent prudent and feasible, from substantial adverse change. The following criteria have been established for the CRHR. A resource is considered significant if it:

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

In addition to meeting one or more of the above criteria, historical resources eligible for listing in the California Register must retain enough of their historic character or appearance to be able to convey the reasons for their significance. Such integrity is evaluated in regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Under CEQA, if an archeological site is not a historical resource but meets the definition of a "unique archeological resource" as defined in PRC § 21083.2, then it should be treated in accordance with the provisions of that section. A *unique archaeological resource* is defined as follows:

- An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
 - Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
 - Has a special and particular quality, such as being the oldest of its type or the best available example of its type
 - Is directly associated with a scientifically recognized important prehistoric or historic event or person



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



Resources that neither meet any of these criteria for listing in the CRHR nor qualify as a “unique archaeological resource” under CEQA PRC § 21083.2 are viewed as not significant. Under CEQA, “A non-unique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects” (PRC § 21083.2[h]).

Impacts that adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. Impacts to historical resources from a proposed project are thus considered significant if the project (1) physically destroys or damages all or part of a resource; (2) changes the character of the use of the resource or physical feature within the setting of the resource, which contributes to its significance; or (3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

Assembly Bill 52

Assembly Bill (AB) 52 was enacted in 2015 and expands CEQA by defining a new resource category: tribal cultural resources (TCRs). AB 52 establishes that “a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment” (PRC § 21084.2). AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. AB 52 requires that lead agencies “begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.” Native American tribes to be included in the process are those that have requested notice of projects proposed in the jurisdiction of the lead agency. It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a TCR, when feasible (PRC § 21084.3). PRC § 21074 (a)(1)(A) and (B) define TCRs as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” which meet either of the following criteria:

- Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC § 5020.1(k)
- 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 PRC § 5024.1 (in applying the criteria set forth in subdivision (c) of PRC § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe)

Environmental Setting

The Project site is located in the Peninsular Ranges geomorphic province, within the western inland portion of the actively subsiding Los Angeles Basin. This basin is bound by the Santa Monica and San Gabriel Mountains to the north, the Santa Ana Mountains to the east, and the Palos Verdes Hills to the south (Yerkes et al. 1965). Geologic units underlying the Project site are Holocene and late Pleistocene-age deposits (Saucedo et al. 2016). Soils of the project area are mapped as Urban Land from the Metz-Pico complex, with 0-2 percent slopes (UC Davis SoilWeb 2023).

The Project site is situated atop a geologic formation of Pleistocene to Holocene age structures comprised largely of marine and non-marine alluvium, lake, playa, and terrace deposits; this includes both unconsolidated and semi-consolidated; mostly nonmarine but includes marine deposits near the coast (Jennings 2010; California Department of Conservation 2022). In southern California, the middle Pleistocene is generally associated with a pre-human presence, although recent research suggests early human exploration of North America earlier in the Late Pleistocene than previously documented. Fossil specimens are also associated with the Pleistocene epoch, particularly in areas where deposits are referred to as “older Alluvium.” The Holocene is the most recent geologic period and one that is directly associated with human activity. The Holocene is also generally associated with “younger Alluvium,” which tends not to be fossil-bearing, except in instances where fossils have been redeposited.



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



Cultural Setting

Prehistoric Overview

During the twentieth century, many archaeologists developed chronological sequences to explain prehistoric cultural changes within all or portions of southern California (Moratto 1984; Jones and Klar 2007). A prehistoric chronology was devised for the southern California coastal region based on early studies and focused on data synthesis that included four horizons: Early Man, Milling Stone, Intermediate, and Late Prehistoric (Wallace 1955, 1978). Though initially lacking the chronological precision of absolute dates (Moratto 1984:159), Wallace's 1955 synthesis has been modified and improved using thousands of radiocarbon dates obtained by southern California researchers over recent decades (Byrd and Raab 2007:217; Koerper and Drover 1983; Koerper et al. 2002). The prehistoric chronological sequence for southern California presented below is a composite based on Wallace (1955) and Warren (1968) as well as later studies, including Koerper and Drover (1983).

It is generally believed that human occupation of southern California began at least 10,000 years before present (BP). The archaeological record indicates that between approximately 10,000- and 6,000-years BP, a predominantly hunting and gathering economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. The most heavily exploited species were likely those species still alive today. Bones of extinct species have been found but cannot definitively be associated with human artifacts in California, unlike other regions of the continent. Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and vegetal foods were likely exploited. A lack of deep cultural deposits from this period suggests small groups practiced high residential mobility during this period (Wallace 1978).

The three major periods of prehistory for the greater Los Angeles Basin region have been refined by recent research using radiocarbon dates from archaeological sites in coastal southern California (Koerper and Drover 1983; Mason and Peterson 1994):

- Millingstone Period (6,000–1,000 B.C., or about 8,000–3,000 years ago)
- Intermediate Period (1,000 B.C.–A.D. 650, or 3,000–1,350 years ago)
- Late Prehistoric Period (A.D. 650–about A.D. 1800, or 1,350–200 years ago)

Around 6,000 years BP, a shift in focus from hunting toward a greater reliance on vegetal resources occurred. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter (Wallace 1978). This period, known to archaeologists as the Millingstone Period, was a long period of time characterized by small, mobile groups that likely relied on a seasonal round of settlements that included both inland and coastal residential bases. Seeds from sage and grasses, rather than acorns, provided calories and carbohydrates. Faunal remains from sites dating to this period indicate similar animals were hunted. Inland Millingstone sites are characterized by numerous manos, metates, and hammerstones. Shell middens are common at coastal Millingstone sites. Coarse-grained lithic materials, such as quartzite and rhyolite, are more common than fine-grained materials in flaked stone tools from this time. Projectile points are found in archaeological sites from this period, but they are far fewer in number than from sites dating to before 6,000 years BP. An increase in the size of groups and the stability of settlements is indicated by deep, extensive middens at some sites from this period (Wallace 1978).

In sites post-dating roughly 3,000 years BP, archaeological evidence indicates the reliance on both plant gathering and hunting continued but was more specialized and locally adapted to particular environments. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Chipped-stone tools became more refined and specialized, and bone tools were more common. During this period, new peoples from the Great Basin began entering southern California. These immigrants, who spoke a language of the Uto-Aztec linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples. The exact time of their entry into the region is not known; however, they were present in southern California during the final phase of prehistory. During this period, population densities were higher than before; and settlement became concentrated in villages and communities



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



along the coast and interior valleys (Erlandson 1994; McCawley 1996). During the Intermediate Period, mortars and pestles appeared, indicating the beginning of acorn exploitation. Use of the acorn – a high-calorie, storable food source – probably facilitated greater sedentism and increased social organization. Large projectile points from archaeological sites of this period indicate that the bow and arrow, a hallmark of the Late Prehistoric Period, had not yet been introduced; and hunting was likely accomplished using the *atlatl* (spear thrower) instead. Settlement patterns during this time are not well understood. The semi-sedentary settlement pattern characteristic of the Late Prehistoric Period may have begun during the Intermediate Period, although territoriality may not yet have developed because of lower population densities. Regional subcultures also started to develop, each with its own geographical territory and language or dialect (Kroeber 1925; McCawley 1996; Moratto 1984). These were most likely the basis for the groups encountered by the first Europeans during the eighteenth century (Wallace 1978). Despite the regional differences, many material culture traits were shared among groups, indicating a great deal of interaction (Erlandson 1994). The Late Prehistoric Period is better understood than earlier periods largely through ethnographic analogy made possible by ethnographic and anthropological research of the descendants of these groups in the late nineteenth and early twentieth centuries.

Ethnographic Overview

The Proposed Project is located within an area of the City of Long Beach identified as part of Gabrielino traditional territory. In addition, the Juaneño or Acjachemen suggest that the areas immediately east and south of the Proposed Project are part of their traditional territory.

Gabrielino

The Gabrielino (sometimes spelled Gabrieliño, Gabrieleno or Gabrieleño), are Cupan speakers. The Cupan languages are part of the Takic family, which is part of the Uto-Aztecan linguistic stock. Their tribal territory included the watersheds of the Los Angeles, San Gabriel, and Santa Ana rivers, all of the Los Angeles Basin, the coast from Aliso Creek in the south to Topanga Creek in the north, and the islands of San Clemente, San Nicholas, and Santa Catalina. Villages or triblets were politically autonomous and made up of different lineages. Each lineage had its own leader and would seasonally leave the village to collect resource items (Bean and Smith 1978). Tribal boundaries were not fixed and overlapped with neighboring people, including Chumash (Barbareño, Ventureño, Purisimeño, Obispeño, Ineseño, Cruzeño, Emigdiano, and the Cuyama Chumash), Fernandeno Tataviam, Serrano, Cahuilla, Acjachemen (Juaneño), and Luiseño cultural groups. These overlaps historically have been a source of confusion, contest, conflict, and opportunity, which has persisted to this day.

During the Spanish missionization period, people from the greater area would have been incorporated into the San Gabriel mission. Whether they were Serrano, Cahuilla, Fernandeno Tataviam, Chumash or local Gabrielino, all would have been identified as Gabrielino, or as belonging to Mission San Gabriel. Indeed, even Fernandeno people have been collectively grouped within Gabrielino ethnographic treatments. Today, Fernandeno Tataviam, Gabrieleño Band of Mission Indians-Kihz Nation, and the Gabrielino-Tongva Indian Tribe identify as individual groups.

Juaneño/Acjachemen

The Juaneño, or Acjachemen, are members of the Takic-speaking group that includes Gabrielino, Luiseño, Cupan, and Cahuilla, among others, and are named after the Spanish mission at San Juan Capistrano (Bean and Shipek 1978). The degree to which the Acjachemen are related to their Gabrielino neighbors to the north, or to their Luiseño neighbors to the south and east is debated. Bean and Shipek (1978) essentially subsume the Juaneño within the greater Luiseño discussion, while others (e.g., Kroeber 1925, Harrington, n.d., cited in Koerper and Mason 2004) suggest affinity with the Gabrielino. Nevertheless, Juaneño or Acjachemen territory generally ranged between Las Flores creek in the south, to Aliso Creek in the north, and from the coast, across the Santa Ana Mountains, to Temescal Valley in the east.

The Acjachemen practiced a semi-sedentary hunting and gathering subsistence strategy, with a focus on well-watered drainage systems that allowed seasonally available resources (Koerper and Mason 2004). One of the most important food resources for the group were hard seeds. Availability of seed as a staple may have been a determinant as to when



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



the group moved or split apart into smaller units in other parts of the territory (Koerper and Mason 2004). Additionally, acorns were gathered from oak groves in canyons, drainages, and foothills. Acorns were ground into flour using mortars and pestles. Protein was supplemented through the meat of deer, rabbits, and other animals, hunted with the bow and arrow, or trapped. Shellfish were collected and eaten, and the shell was then used to make hooks for fishing, beads, and other ornaments (Bean and Shipek 1978).

Accurate population figures remain elusive; however, villages may have contained up to 300 people at certain times of the year. These tended to be located near permanent water and a variety of food sources. The San Juan Basin was densely populated, and villages were closely spaced because of the year-round availability of fresh water in San Juan Creek. Each village was typically located in the center of an established area from which resources for the group were gathered, usually within a day's journey. Subsequently, small groups would leave the village for a short time to hunt fish or gather plant materials (Bean and Shipek 1978).

Historic Overview

Post-European contact history for the State of California is generally divided into three periods: the Spanish Period (1540–1822), the Mexican Period (1822–1848), and the American Period (1848– present). Briefly, and in very general terms, the Spanish Period encompassed the earliest historic-period explorations of the West, followed by colonization, missionization and proselytization across the western frontier later during their occupation. The Spanish Period witnessed the establishment of pueblos such as Los Angeles and Monterey and a line of missions and presidios with attendant satellite communities, minor prospecting, and a foundational economic structure based on nascent ranchos and cattle herds, and a ship-based trade and exchange system. The Mexican Period initiated with a continuation of the same Spanish structures; however, commensurate with the political changes that led to the establishment of the Mexican state the missions and presidios were secularized, the lands parceled into ranchos, and Indian laborers released from Church lands only to be conscripted into the ranchos. Increased global trade introduced both foreign and American actors into the Mexican economic and political spheres, and both coincidentally and purposefully, smoothing the transition to the American Period. The American Period was ushered in, following the conclusion of the Mexican-American War of 1846, with a momentous influx of people seeking fortune in the Sierra foothills where gold was “discovered” in 1848. By the early 1850s people from all over the globe had made their way to California. Expansive industries were required to supply the early mining operations, such as forestry products and food networks. Grains, poultry, cattle, and water systems, which were initiated in the early Mexican Period, were intensified into a broad system of ranches and supply networks. Additionally, this period witnessed the development and expansion of port cities to supply hard goods and clothes, animals, and people that migrated and transported along improved trail and road networks throughout the interior regions of the state. California cycled through boom and bust for several decades until World War I when the Department of the Navy began porting warships along the west coast. Subsequently, California has grown, and contracted, predominantly around military policy along the west coast, and the Pacific Ocean. Following the industrial expansion related to World War II and the Cold War, technology and systems associated have come to fore as economic drivers.

City of Long Beach

The chronology of school construction in LBUSD mirrors the growth and development of the City of Long Beach. The first school in Long Beach, located near Willow Street and Santa Fe Avenue, was founded in 1879 by the 11 families who constituted the American Colony. A year later, William E. Willmore established his town site the “American Colony” or “Willmore City.” In 1885, the LBUSD was established. The first Board of Trustees was elected and consisted of John W. Bixby, A.M. Hough, and Frank C. Butler. The same year, the first school in the newly formed LBUSD was established by Mrs. John Bixby and Belle Lowe (PCR 2015).

The present City of Long Beach is located on a portion of the 300,000 acres of land granted to Manuel Nieto by the Spanish colonial government in 1784. This property would subsequently be divided into five smaller land grants, including Rancho Los Alamitos and Rancho Cerritos, on which Long Beach would later be established. Rancho Los Alamitos was purchased in 1840 by real estate speculator and cattleman Abel Stearns, who was in the process of



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



amassing one of the largest landholdings in southern California, known collectively as Stearn's Ranchos. Rancho Cerritos was purchased in 1843 by Los Angeles merchant John Temple. The two ranchos owned by Stearns and Temple would later be sold to Jotham Bixby (PCR 2015).

The town site was purchased in 1884 by the Long Beach Land and Water Company, which began making significant improvements, including the construction of a wharf and hotel, and connecting the town to the southern Pacific Railroad's Wilmington branch line. The elements for growth now in place, the expansion was vast, especially after the opening of a Pacific Electric line to the city in 1902. Long Beach, which in the early 1900s had become one of the region's seaside resort locations, was incorporated as a city in 1908. The discovery of oil in 1921 and the construction of a modern harbor between 1925 and 1930 sparked a boom in the building industry in Long Beach, including associated residential, commercial, and industrial development. The demand for housing and the availability of capital resulted in the redevelopment of part of the downtown shoreline with apartment hotels (PCR 2015).

The stock market crash in 1929 and the 1933 earthquake had a damaging impact on the built environment, both financial and physical. In 1935, thanks to funding from the federal Works Progress Administration, parks and transportation facilities, and civic and recreational buildings in the city were reconstructed. In addition, the Federal Art Project subsidized art, literature, music, and drama and engaged public artists, producing a legacy of public art in Long Beach. By 1940, the local economy was sufficiently reinvigorated by the oil and air transportation industries. After 1941, the wartime defense industry served to fully restore it, unlike many southern California communities, which only truly rebounded in the postwar period. When residential and commercial construction resumed after the war, outlying areas of Long Beach experienced rapid growth during the latter part of the 1940s and through the 1950s to accommodate the increasing population and resulting generation of baby boomers (PCR 2015).

Brown vs. Board of Education was a landmark Supreme Court decision in 1954 in which the Court declared state laws establishing separate schools for white and black students unconstitutional. This ruling paved the way for social integration and was a major victory of the Civil Rights Movement, which peaked during the 1960s. The Brown vs. Board of Education decision, in combination with post-war economic prosperity and the "baby boom," had a profound effect on school modernization programs throughout California and in Long Beach (PCR 2015).

In the post-World War II period in America, the Moderne style of architecture became the predominant pattern applied to buildings of every type. During the 1950s and 1960s, distinct and identifiable stylistic variants of Modernism evolved. The aesthetic closest to the 1920s origins of Modernism in Europe was dubbed the International Style and was identified by its rectilinear form, flat roofs, open floor plans, use of steel and glass, and lack of applied ornamentation. Local variants of Modern design, while based upon International Style tenets, were generally less formal in their expression of Modernist tenets with results that vary widely in terms of materials, form, and spatial arrangements. The features of the Post-World War II Modern style are one-story; flat or shed roofed, often with cantilevered overhangs, stucco or brick exterior, modular planning, classrooms with glass walls on one side and clerestory windows on the opposite side, incorporation of outdoor classrooms, and exterior corridors with roofs supported by pipe columns.

Jordan High School (formally David Starr Jordan High School) was originally built in 1935, with modifications and additional buildings being added in 1949, 1952, 1962, 1974, and 1990. The campus, which is situated on approximately 26.9 acres, was designed by prominent Long Beach architect Kenneth Wing.

Methods of Review

Chambers Group requested a records search from the California Historical Resources Information System (CHRIS) South-Central Coastal Information Center (SCCIC) at California State University, Fullerton on October 6, 2023. A half-mile study area was requested to provide additional context to the Project site and surrounding area and more information on which to base this review. Resources consulted during the records search conducted by the SCCIC included the National Register of Historic Places (NRHP), California Historical Landmarks (CHL), California Points of Historical Interest (CPHI), California Department of Transportation (Caltrans) Historic Highway Bridge Inventory, the CRHR Inventory, local registries of historic properties, and a review of available Sanborn Fire Insurance maps as well as



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



historic photographs, maps, and aerial imagery. The task also included a search for potential prehistoric and/or historic burials (human remains) evident in previous site records and/or historical maps. In addition, Chambers Group submitted a request to the Native American Heritage Commission (NAHC) for a review of the Sacred Land Files (SLF) for the Project site and surrounding vicinity. Results of the NAHC SLF records search are detailed below and included in Attachment 1. The results of the SCCIC records search are also detailed below and included in confidential Attachment 2.

Additionally, on October 6, 2023, Chambers Group requested a paleontological records search from the Natural History Museum of Los Angeles County (NHMLA). This information was requested with the intent to provide further context related to the paleontological setting of the area based on known fossil locations identified within the Project site and surrounding study area. The paleontological records provide insight into which associated geological formations are more likely to contain fossils as well as the associated depths and placement of the documented fossil localities relative to the geological formations mapped in the area. The results of the NHMLA records search are detailed below.

In addition to the records search review, Chambers Group archaeologists completed background research to determine if any additional historic properties, landmarks, bridges, or other potentially significant or listed properties are located within the Project site or half-mile study area. This background research included, but was not limited to, the NRHP, California State Historic Property Data Files, California State Historical Landmarks, California Points of Historical Interest, Office of Historic Preservation Archaeological Determinations of Eligibility, historic aerial imagery accessed via NETR Online, Historic U.S. Geological Survey topographic maps, Built Environment Resource Directory (BERD), and Caltrans State and Local Bridge Surveys. Additionally, Chambers Group archaeologists reviewed the City of Long Beach Historical Landmarks inventory, local historical newspaper clippings via Newspapers.com, ProQuest Historical Newspapers.com, and the California Digital Newspaper Collection.

Project Personnel

Chambers Group Cultural Resources Department Lead Lucas Tutschulte managed the Project tasks related to cultural resources. Chambers Group cultural resources specialists Richard Shultz, MA, RPA, and Kellie Kandybowicz conducted background research and coauthored the report. Mr. Shultz also served as Principal Investigator for cultural resources and performed quality control for the report.

Cultural Resources Reports within the Study Area

The results of the records search request were received on November 7, 2023. The CHRIS records search indicates that 11 previous cultural resource investigations have been recorded within a half-mile radius of the Proposed Project site. Of these, no investigations include the Proposed Project site. The details pertaining to the investigations are listed below in Table 1 and in confidential Attachment 2.

Table 1. Prior Cultural Resources Studies within a Half-Mile Radius of the Project Site

SCCIC Report Number	Author / Company	Year	Study Title	Included Project site?
LA-00083	Rosen, Martin D./ University of California,	1975	Evaluation of the Archaeological Resources and Potential Impact of the Joint Outfall System's Improvements on Sewer Treatment Plants and Installation Routes for New Large Diameter Sewers, Los Angeles County	No



**Cultural Resources Survey Results Letter Report for the
Jordan High School New Gymnasium and Aquatics Center
Project**

LONG BEACH UNIFIED SCHOOL DISTRICT

Table 1. Prior Cultural Resources Studies within a Half-Mile Radius of the Project Site

SCCIC Report Number	Author / Company	Year	Study Title	Included Project site?
LA-00358	Stickel, Gary E./ Environmental Research Archaeologists	1976	An Archaeological and Paleontological Resource Survey of the Los Angeles River, Rio Hondo River and the Whittier Narrows Flood Control Basin, Los Angeles, California	No
LA-02882	McKenna, Jeanette A.	1993	Cultural Resources Investigations, Site Inventory, and Evaluations, the Cajon Pipeline Project Corridor, Los Angeles and San Bernadino Counties, California	No
LA-02970	Chamberlaine, Pat and Jean Rivers-Council/ City of Adelanto, and Bureau of Land Management	1992	Cajon Pipeline Project Draft Environmental Impact Statement Environmental Impact Report	No
LA-03102	McCawley, William, John Romani, and Dana Slawson/ Greenwood and Associates	1994	The Los Angeles County Drainage Area Subsequent Environmental Impact Report	No
LA-05873	Duke, Curt/ LSA Associates, Inc.	2002	Cultural Resource Assessment AT&T Wireless Services Facility No. 05088 Los Angeles County, California	No
LA-06182	Duke, Curt/ LSA Associates, Inc.	2002	Cultural Resource Assessment AT&T Wireless Services Facility No. 05249 Los Angeles County, California	No
LA-07950	Harper, Caprice D./ BonTerra Consulting	2006	Archaeological Survey Report for the Interstate 105 (I-105) Dewatering Wells Beneficial Re-Use of Groundwater Project, in the Cities of Paramount, Compton, Long Beach, and Carson, Los Angeles County, California	No
LA-09835	Wayne H. Bonner/ Michael Brandman Associates	2009	Cultural Resource Records Search and Site Visit Results for T-Mobile USA Candidate LA33770A (US Storage), 6655 Atlantic Avenue, Long Beach, Los Angeles County, California	No



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



Table 1. Prior Cultural Resources Studies within a Half-Mile Radius of the Project Site

SCCIC Report Number	Author / Company	Year	Study Title	Included Project site?
LA-11993	O'Neill, Laura/ Galvin Preservation Associates	2012	Finding of No Adverse Effect for the Proposed Interstate 710 Corridor Project Between Ocean Boulevard and the State Route 60 Interchange	No
LA-13274	Williams, Audry and Wendy L. Tinsley Becker/ Southern California Edison	2016	Historical Resource Analysis Report / Historic Property Survey Report, Southern California Edison Company, Long Beach Steam Plant 66kV and 220kV Transmission Lines	No

Previously Recorded Cultural Resources within the Study Area

The CHRIS records search also identified two previously recorded cultural resources located within a half-mile radius of the Proposed Project site. None of these resources were mapped within the Proposed Project site. The results are summarized below in Table 2 and are also illustrated in confidential Attachment 2.

Table 2. Previously Recorded Cultural Resources within a Half-Mile Radius of the Proposed Project Site

Primary Number	Trinomial	Resource Type	Recorded by and Year Recorded	Resource Description	Within Project site?
P-19-186746	-	Historic Building	2002 (A. Donnelly, CRM)	Community Presbyterian Church Sanctuary	No
P-19-192309	-	Historic Building	2016 (Audry Williams, SCE)	Southern California Edison's (SCE) Long Beach-Laguna Bell 60kV and 220 kV Transmission Lines	No

Background Research Results

Based on the background research and SCCIC records search results, none of the previously recorded cultural resources are documented within the Proposed Project site. Additionally, the Jordan High School campus itself does not possess buildings, structures, or objects that have been determined to be eligible for listing on the NRHP. LBUSD prepared a districtwide Cultural Resources Assessment to assess all potential cultural resources, both historic and prehistoric, located within all District campuses and facilities. PCR surveyed the campus, assessing the existing buildings for eligibility under the California and National Register's Criteria for listing as a Historic Resource, and concluded the property was not potentially eligible as a Historic Resource on the NRHP (PCR 2015).

Jordan High School was originally built in 1935, but modifications and additional buildings were added to the site in 1949, 1952, 1962, 1974, 1990s, and through 2024. Although the campus was designed with some Moderne style



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



detailing by prominent Long Beach architect Kenneth Wing, the buildings are “functional and program-based” buildings and are not connected to his important other Moderne projects. Jordan High School currently contains a one-story gymnasium with an attached parking lot, along Atlantic Avenue. This existing gymnasium will be demolished to make room for the new Gymnasium & Aquatic Center (PCR 2015).

NAHC SLF Search

Chambers Group submitted a request for a search of the SLF records housed at the California NAHC on October 6, 2022. The results of the search were returned on November 27, 2023, and were **negative**. The NAHC response provided contact information for the nine tribes that may have information on cultural resources on the Project site.

The NAHC provided a list of 12 contacts, representing nine tribal governments, who may have knowledge of cultural resources near the Project Site (Attachment 1). The nine Native American tribal governments identified by the NAHC include the:

- Gabrieleño Band of Mission Indians - Kizh Nation
- Gabrielino - Tongva Indians of California Tribal Council
- Gabrielino - Tongva San Gabriel Band of Mission Indians
- Gabrielino/ Tongva Nation
- Gabrielino - Tongva Tribe
- Juaneño Band of Mission Indians Acjachemen Nation Belardes
- Juaneño Band of Mission Indians Acjachemen Nation - 84A
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseño Indians

Due to both the negative SLF results and the phase of the Proposed Project, no NAHC scoping notification letters have been sent to the Native American contacts provided by the NAHC with the SLF results.

AB 52 Consultation

AB 52 was enacted in 2015 (Chapter 532, Statutes of 2014), requiring an update to Appendix G (Initial Study [IS] Checklist) of the CEQA Guidelines to include questions related to impacts to tribal cultural resources (PRC § 21074), and establishing a formal consultation process for California tribes within the CEQA process (PRC § 21080.3.1, 21080.3.2). The bill specifies that any project may affect or cause a substantial adverse change in the significance of a tribal cultural resource would require a lead agency to “begin consultation with a California Native American tribe that is traditional and culturally affiliated with the geographic area of the proposed project.” PRC § 21074 defines TCRs as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” and is either listed on or eligible for the CRHR or a local historic register, or if the lead agency chooses to treat the resource as a tribal cultural resource. As a Lead Agency, LBUSD is required to conduct AB 52 consultation with requesting tribal groups on a government-to-government basis.

PRC § 21074 defines a resource as a TCR if it meets either of the following criteria:

1. sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe that are listed, or determined to be eligible for listing, in the national or state register of historical resources, or listed in a local register of historic resources; or
2. a resource that the lead agency determines, in its discretion, is a tribal cultural resource

Paleontological Resources

On October 22, 2023, Chambers Group received the results of the paleontological records search from the NHMLA. The results show that no fossil localities lie directly within the Project site, however there are fossil localities documented nearby from the same sedimentary deposit that underlays the Project site, either at the surface or at depth (Bell 2023).



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



The records search covered only the records of the NHMLA. Based on the available information, the paleontological sensitivity could be considered low to moderate in the overall area considering the fossil localities recorded within the study area surrounding the Project site and the existence of similar fossil-bearing geologic units mapped underlying the Project site.

The geology of Long Beach has been mapped by Saucedo et al. (2016) at a scale of 1:100,000, showing young alluvium, Unit 2 (Qya2) underlying the Project site. Qya2 sediments were deposited during the late Pleistocene (126,000 years ago to 11,700 years ago) and Holocene (11,700 years ago to today) Epochs, and are composed of poorly consolidated, poorly sorted, permeable floodplain deposits consisting of soft clay, silt and loose to moderately dense sand and silty sand (Saucedo et al. 2016). Deposits from the Holocene Epoch (less than 11,700 years ago) can contain remains of animals and plants; however, only those from the middle to early Holocene (older than about 5,000 radiocarbon years) are considered scientifically important or significant (Society of Vertebrate Paleontology 2010). Holocene-age deposits may overlie older alluvium of Pleistocene age at unknown but potentially shallow depths. Pleistocene-age alluvium is also potentially present at the ground surface elevation. Pleistocene-age alluvial deposits have yielded scientifically important fossils elsewhere in the region, including mammoth, bison, and other large and small mammals, reptiles, and fish at the natural ground surface (Bell 2023).

Conclusions and Recommendations

Although background research has been completed with no new resources identified, as noted above, the historic age of the Jordan High School structures and the existence of previously recorded prehistoric and historic resources within the half-mile study area around the Proposed Project site, undocumented resources still have the potential to be discovered in or near the Project site. Due to the demonstrated overall sensitivity of the area, we recommend the following mitigation measures be implemented.

MM CUL-1 LBUSD shall retain the services of a qualified cultural resources consultant and require that all initial ground disturbing work be monitored by a cultural resources monitor. This includes all initial construction activities that will potentially expose or encounter intact subsurface sediments underlying the Project site. The cultural resources consultant shall provide a Qualified Archaeologist, meeting the Secretary of the Interior Standards (U.S. Department of the Interior, 2008), and require that all initial ground-disturbing work be monitored by a cultural resources monitor (monitor) proficient in artifact and feature identification in monitoring contexts. The Consultant (Qualified Archaeologist and/or monitor) shall be present at the Project construction phase kickoff meeting.

MM CUL-2 Prior to commencing construction activities and thus prior to any ground disturbance in the Proposed Project site, the Consultant shall conduct initial Worker Environmental Awareness Program (WEAP) training to all construction personnel, including supervisors, present at the outset of the Project construction work phase, for which the lead contractor and all subcontractors shall make their personnel available. This WEAP training will educate construction personnel on how to work with the monitor(s) to identify and minimize impacts to cultural resources and maintain environmental compliance and be performed periodically for new personnel coming on to the Project as needed.

MM CUL-3 The contractor shall provide the Consultant with a schedule of initial potential ground disturbing activities. A minimum of 48-hours' notice will be provided to the archaeological consultant of commencement of any initial ground disturbing activities that have potential to expose or encounter intact subsurface sediments underlying the Project site. These activities may include grading, trenching, and mass excavation.

As detailed in the schedule provided, a monitor shall be present onsite at the commencement of ground-disturbing activities related to the Project. The Consultant shall observe initial ground disturbing activities and, as they proceed, adjust the monitoring approach as needed to provide adequate observation and



**Cultural Resources Survey Results Letter Report for the
Jordan High School New Gymnasium and Aquatics Center
Project**

LONG BEACH UNIFIED SCHOOL DISTRICT



oversight. All monitors will have stop-work authority to allow for recordation and evaluation of finds during construction. The monitor will maintain a daily record of observations as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project.

The Consultant, the lead contractor, and subcontractors shall maintain a line of communication regarding schedule and activity such that the Consultant is aware of all ground-disturbing activities in advance in order to provide appropriate oversight.

- MM CUL-4** In addition to cultural resources monitoring, if formally requested during Native American Consultation under AB 52, a Native American monitor(s) selected by the tribe should be present at the Project kickoff meeting, be provided with a schedule of initial ground-disturbing activities, and be onsite at the commencement of ground-disturbing activities related to the Project, and as the Project proceeds adjusting personnel and schedule as needed to provide sufficient oversight. The Consultant, lead contractor, and all subcontractors shall routinely update the Native American monitor and their scheduling representative(s) regarding scheduling for ground-disturbing activities, and changes to said schedule, such that there is sufficient advance notice that a Native American monitor can be scheduled accordingly.
- MM-CUL-5** If cultural resources are discovered, construction shall be halted within 50 feet of any cultural artifacts or features and within 100 feet of any potential human remains and shall not resume until the Qualified Archaeologist can determine the significance of the find and/or the find has been fully investigated, appropriately documented, and cleared.
- MM CUL-6** At the completion of all ground disturbing activities, the Consultant shall prepare a Cultural Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds, as well as providing follow-up reports of any finds to the SCCIC, as required.

HUMAN REMAINS – LEGAL REQUIREMENTS

In the event that human remains are discovered during ground-disturbing activities, then the Proposed Project would be subject to California Health and Safety Code 7050.5, CEQA Section 15064.5, and California Public Resources Code Section 5097.98 (NPS 1983). If human remains are found during ground-disturbing activities, State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Los Angeles County Medical Examiner-Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the Los Angeles County Medical Examiner-Coroner shall be notified immediately. If the human remains are determined to be prehistoric, the Medical Examiner-Coroner shall notify the NAHC, which shall notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials (NPS 1983).

Sincerely,

CHAMBERS GROUP, INC.

A handwritten signature in blue ink that reads "Kellie Kandybowicz".

Kellie Kandybowicz
Cultural Resource Specialist
kkandybowicz@chambersgroupinc.com

A handwritten signature in blue ink that reads "Richard D. Shultz".

Richard D. Shultz
Principal Investigator
rshultz@chambersgroupinc.com



**Cultural Resources Survey Results Letter Report for the
Jordan High School New Gymnasium and Aquatics Center
Project**

LONG BEACH UNIFIED SCHOOL DISTRICT

Attachments

Attachment 1: NAHC SLF Records Search Results Letter

Attachment 2: CONFIDENTIAL Record Search Results Figure

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GROUP



Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT



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Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT

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Cultural Resources Survey Results Letter Report for the Jordan High School New Gymnasium and Aquatics Center Project

LONG BEACH UNIFIED SCHOOL DISTRICT

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ATTACHMENT 1: NAHC SLF RECORDS SEARCHES LETTER





CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
*Yakaya Pomo, Yuki,
Nomlaki*

SECRETARY
Sara Dutschke
Miwok

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Laurena Bolden
Serrano

COMMISSIONER
Reid Milanovich
Cahuilla

COMMISSIONER
Vacant

EXECUTIVE SECRETARY
**Raymond C.
Hitchcock**
Miwok, Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

STATE OF CALIFORNIA

Govin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

November 27, 2023

Kellie Kandybowicz
Chambers Group, Inc.

Via Email to: kkandybowicz@chambersgroupinc.com

Re: Jordan HS New Gym Project, Los Angeles County

Dear Ms. Kandybowicz:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green
Cultural Resources Analyst

Attachment

**Native American Heritage Commission
Native American Contact List
Los Angeles County
11/27/2023**

Tribe Name	Contact Person	Contact Address	Phone #	Email Address	Cultural Affiliation	Last Updated
Gabrieleno Band of Mission Indians - Kizh Nation	Christina Swindall Martinez, Secretary	P.O. Box 393 Covina, CA, 91723	(844) 390-0787	admin@gabrielenoindians.org	Gabrieleno	8/18/2023
Gabrieleno Band of Mission Indians - Kizh Nation	Andrew Salas, Chairperson	P.O. Box 393 Covina, CA, 91723	(844) 390-0787	admin@gabrielenoindians.org	Gabrieleno	8/18/2023
Gabrieleno/Tongva San Gabriel Band of Mission Indians	Anthony Morales, Chairperson	P.O. Box 693 San Gabriel, CA, 91778	(626) 483-3564	GTTribalcouncil@aol.com	Gabrieleno	
Gabrielino /Tongva Nation	Sandonne Goad, Chairperson	106 1/2 Judge John Aiso St., #231 Los Angeles, CA, 90012	(951) 807-0479	sgoad@gabrielino-tongva.com	Gabrielino	3/28/2023
Gabrielino Tongva Indians of California Tribal Council	Christina Conley, Cultural Resource Administrator	P.O. Box 941078 Simi Valley, CA, 93094	(626) 407-8761	christina.marsden@alumni.usc.edu	Gabrielino	3/16/2023
Gabrielino Tongva Indians of California Tribal Council	Robert Dorame, Chairperson	P.O. Box 490 Bellflower, CA, 90707	(562) 761-6417	gtongva@gmail.com	Gabrielino	3/16/2023
Gabrielino-Tongva Tribe	Sam Dunlap, Cultural Resource Director	P.O. Box 3919 Seal Beach, CA, 90740	(909) 262-9351	tongvator@gmail.com	Gabrielino	5/30/2023
Gabrielino-Tongva Tribe	Charles Alvarez, Chairperson	23454 Vanowen Street West Hills, CA, 91307	(310) 403-6048	Chavez1956metro@gmail.com	Gabrielino	5/30/2023
Juaneno Band of Mission Indians Acjachemen Nation - Belardes	Joyce Perry, Cultural Resource Director	4955 Paseo Segovia Irvine, CA, 92603	(949) 293-8522	kaamalam@gmail.com	Juaneno	3/17/2023
Juaneno Band of Mission Indians Acjachemen Nation 84A	Heidi Lucero, Chairperson, THPO	31411-A La Matanza Street San Juan Capistrano, CA, 92675	(562) 879-2884	jbmian.chairwoman@gmail.com	Juaneno	3/28/2023
Santa Rosa Band of Cahuilla Indians	Lovina Redner, Tribal Chair	P.O. Box 391820 Anza, CA, 92539	(951) 659-2700	Isaul@santarosa-nsn.gov	Cahuilla	
Soboba Band of Luiseno Indians	Jessica Valdez, Cultural Resource Specialist	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-6261	jvaldez@soboba-nsn.gov	Cahuilla Luiseno	7/14/2023
Soboba Band of Luiseno Indians	Joseph Ontiveros, Tribal Historic Preservation Officer	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-5279	jontiveros@soboba-nsn.gov	Cahuilla Luiseno	7/14/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

ATTACHMENT 2: CONFIDENTIAL RECORDS SEARCH RESULTS FIGURE



