CEQA: California Environmental Quality Act

NOTICE OF EXEMPTION

To: ☒ Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

☒ County Clerk
County of Los Angeles
12400 Imperial Hwy
Norwalk, CA 90650

From: El Rancho Unified School District
9333 Loch Lomond Drive
Pico Rivera, CA 90660

El Rancho High School Athletic Facilities Renovation Project
Project Title

6501 Passons Boulevard
Project Location – Specific

Pico Rivera
Project Location – City

Los Angeles
Project Location – County

The El Rancho Unified School District (ERUSD or District) proposes to renovate the athletic facilities at El Rancho High School (HS), with the implementation of a new pool and pool building; relocation of the existing softball field with new bleachers, dugouts, lighting structures, and batting cages; implementation of replacement lighting structures, new visitors and home bleachers for the football stadium (would not increase capacity), a new press box on the home bleachers of the football stadium at the same location of the existing press box, new concession stands and field houses, and new synthetic turf for the football/soccer field and synthetic material for the track and field; relocation of four outdoor basketball courts; a new multi-purpose natural turf field; and relocation of one parking lot.

Project improvements to the football/soccer field, track & field, softball field, and construction of the new swimming pool and pool building would not increase student population. No additional school sports programs would be added, and the improvements to the athletic facilities are not expected to increase the number of participants or spectators.

Description of Nature, Purpose, and Beneficiaries of Project

El Rancho Unified School District
Name of Public Agency Approving Project

El Rancho Unified School District
Name of Person or Agency Carrying Out Project

CEQA: California Environmental Quality Act

Exempt Status: (check one below)

☐ Ministerial (Sec. 21080(b)(1); 15268);

☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));

☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));

☒ Categorical Exemption. State type and section number: § 15301, Class 1, Existing Facilities; §15302, Class 2, Replacement and Reconstruction; § 15311, Class 11, Accessory Structures; .

☐ Statutory Exemptions. State code number:

A Class 1 categorical exemption applies because the proposed project would upgrade the existing athletic facilities on the campus, which would include replacing and upgrading the pool/aquatics facilities; relocating the existing softball field; replacing lighting, bleachers, and the press box, and implementing synthetic turf for the football/soccer field and synthetic material for the track and field; and relocating of one parking lot. However, the alterations do not alter the basic functions of the facilities and would not increase student capacity. A Class 2 categorical exemption applies because the proposed project would renovate existing football stadium, including installation of synthetic turf on the football/soccer field and synthetic material on the existing track, replacing the existing home and visitor bleachers (with no additional capacity), and replacing the existing lighting structures with a modern LED lighting system. The Class 2 exemption also applies to the replacement of the existing pool facility, with a new pool, pool deck and building. Additionally, project improvements would relocate and reconfigure the existing softball field. A Class 11 categorical exemption applies because the proposed project would relocate the existing parking lot located on the northeastern corner of the campus, to the open area just south of the existing parking lot, currently consisting of dirt, a sidewalk, and limited hardscape; to accommodate the new pool facility.

All proposed project improvements are located in the same general location, would serve the same purpose, and would not increase student capacity or the number of classrooms on the existing campus.

The proposed project was also reviewed for possible exceptions under Section 15300.2 and found that the exceptions do not apply. See Attachment to the Notice of Exemption for further explanation of the evaluation, which is available at the El Rancho Unified School District, 9333 Loch Lomond Drive, Pico Rivera, CA 90660.

Reasons why project is exempt

Marco Villegas — (562) 801-7300

Contact Person: — Area Code/Telephone/Extension:

If filed by applicant:

1. Attach certified document of exemption findings
2. Has a Notice of Exemption been filed by the public agency approving the project ☐ Yes ☒ No

Date Received for Filing:

Signature: Marco Villegas Title: Superintendent

Attachment to Notice of Exemption

El Rancho High School Athletic Facilities Renovation Project

El Rancho Unified School District

SUPPLEMENTAL INFORMATION

El Rancho High School (HS) is one of two high schools within the El Rancho Unified School (ERUSD or District), that serves the City of Pico Rivera. El Rancho HS provides its educational facilities and services for grades 9-12. The District proposes to renovate the athletic facilities at El Rancho HS. The District would replace and relocate the pool and pool building; relocate the existing softball field; replace field lighting, bleachers, and press box for the football stadium, add new concession stands and a field house, and new synthetic turf for the football/soccer field and synthetic material for the track and field; relocate four outdoor basketball courts; a new multipurpose practice field; and relocate one parking lot (proposed project). This supplemental information provides justification for the Categorical Exemption pursuant to the California Environmental Quality Act (CEQA) Guidelines under California Code of Regulations, Title 14, Section 15301, Section 15302, and Section 15311.

1. EXISTING CONDITIONS

PROJECT LOCATION

The El Rancho HS campus (campus) is at 6501 Passons Boulevard (Assessor Parcel Number [APN] 6378-009-900), in the City of Pico Rivera, Los Angeles County (project site). The City of Pico Rivera is surrounded by the City of Montebello to the west, the City of Downey to the south, the City of Santa Fe Springs to the southeast, and the City of Whittier to the east, and unincorporated Los Angeles County to the east and north. The project site is approximately 0.65 mile west of Interstate 605 (I-605), approximately 2.2 miles north of Interstate 5 (I-5), and approximately 3.6 miles south of State Route 60 (SR-60). El Rancho HS is bound by Passons Boulevard to the east, Loch Alene Avenue to the west, Homebrook Street to the south, and single-family residences to the north (see Figure 1, Local Vicinity).

EXISTING CONDITIONS

The project site is currently developed with existing athletic facilities and structures, including a football/soccer/track field stadium, home and visitor bleachers within the football stadium, softball field, basketball courts, a multipurpose field, and a parking lot. The existing athletic facilities are located in the northern portion of the campus directly south of single-family residences, with the football stadium located in the northwestern corner of the campus, north of the existing baseball field and west of the existing softball fields, and the existing pool, which is no longer in use, is located near the center of the campus, south of the athletic fields and east of the current baseball field (see Figure 2, Project Improvement Areas).

Vehicular access to the campus is currently provided via parking lots located along Homebrook Street, Loch Alene Avenue, Passons Avenue, and at the intersection of Loch Alene Avenue and Balfour Street.

GENERAL PLAN LAND USE DESIGNATION AND ZONING DESIGNATION

The campus is zoned public facilities (P-F), which is intended for continued use and future development of public and quasi-public uses, including schools, government administrative facilities, police/sheriff stations, and libraries. The campus is surround by properties zoned Single-Family Residential (S-F) on all sides, with additional properties zoned P-F and C-Z, to the south and east.

SURROUNDING LAND USES

The campus is in a residential neighborhood of Pico Rivera. The project site is surrounded by single family residences immediately to the north, east, south, and west. The campus is located north of the Pico Rivera City Hall and Sheriff's Station, and southeast of Ruben Salazar Continuation High School, which is also an ERUSD property.

2. PROJECT DESCRIPTION

The District proposes to renovate the athletic facilities at El Rancho HS. Renovations would include construction of a new pool and pool building; relocation of the existing softball fields; upgrade existing track and field lighting with modern stadium lighting technology, new bleachers (would not increase capacity), and synthetic turf for the football/track and field stadium; and, relocation of one parking lot.

Project improvements to the football/track and field, softball field, and construction of the new swimming pool would not increase student population. No additional school sports programs would be added, and the improvements to the athletic facilities are not expected to increase the number of participants or spectators.

Vehicular access to the campus would remain primarily the same, with parking lots located along Homebrook Street, Loch Alene Avenue, and at the intersection of Loch Alene Avenue and Balfour Street remaining unchanged. However, access to the parking lot along Passons Avenue would be moved south of its current location, and vehicles would enter and exit the lot via the intersection of Passons Avenue and Marjorie Street. Additionally, the project would include pedestrian improvements within the project site including new walkways to and from the proposed athletic facilities and American with Disabilities Act (ADA) improvements with the project site.

Football Stadium Improvements

Implementation of the proposed project would remove the natural turf of the football field and replace it with synthetic turf. The existing track surrounding the football field would also be replaced with synthetic material. The existing bleachers, both visitor and home team, would be replaced; however, no additional capacity is proposed. The proposed home bleachers located on the southern portion of the stadium would be approximately 224 feet wide, and would contain 19 rows with entry stairways, for approximately 2,160 spectators, including 27 ADA accessible seats and ramps. The home bleachers would also contain an 8-foot by 36-foot wide press box, which would be approximately 9 feet-7 inches tall, located at the top of the 15th row, at the same location of the existing press box. The visitors bleachers located on the northern portion of the stadium would be approximately 176 feet wide, and would contain 12 rows with entry stairways, for approximately 1,196 spectators, including 14 ADA accessible seats and ramps. The proposed project would also include a new 4,687-square foot field house/concession stand (Building A) and a new 2,618-square foot equipment field house (Building B), which would be constructed adjacent to the southwest corner of the football field and track.

The proposed project would also replace the existing permanent track and field lighting with new lighting technology. The proposed lighting would consist of four pre-cast concrete bases with four galvanized steel poles 90 feet tall, with eight light emitting diode (LED) luminaires mounted at 15.5 feet, 80 feet, and 90 feet. A maximum of 15 luminaries would be mounted per pole.

Softball Field Relocation

The existing softball fields located on the northeastern portion of the campus would be relocated and reconfigured. The new softball field would be directly south of the existing football stadium. In addition to reconfiguration, the softball field would include a natural grass outfield, two new dugouts and softball batting cages would be installed. The new softball field would also include four new Musco lighting structures with total heights between 60 and 70 feet tall.

Basketball Courts

The existing outdoor asphalt basketball courts would be demolished and refinished. The proposed project would provide four new full basketball courts in the same location as the existing courts.

Multi-Purpose Practice Field

A new multi-purpose natural turf field would be provided immediately south of the existing track and field.

New Pool and Pool Building

A new pool facility, complete with a pool, pool deck, and pool building would be constructed at the northeast corner of the campus to replace the existing pool, located near the center of the campus, south of the athletic fields, which is no longer in use. The proposed pool would be approximately 108 feet by 75 feet, and would reach a maximum depth of 7 feet-3 inches. The proposed 4,160-square foot pool building would contain lockers rooms, restrooms, mechanical rooms, and chemical storage rooms. Additionally, 10 new lighting structures would be located around the exterior of the pool and the entire pool facility would be enclosed by an 8-foot tall fencing and walls.

Parking Lot Relocation

The existing parking lot at the northeast corner of the campus would be demolished to accommodate the new pool facility. The parking lot would be relocated to the area consisting of dirt, a sidewalk, and limited hardscape just south of the existing parking lot at the northeast corner of the campus. The new parking lot would contain approximately 106 parking spaces, including 10 clean air vehicle spaces, and 3 ADA accessible spaces. The new parking lot would be immediately south of the new pool and pool building.

CONSTRUCTION

Construction would occur approximately over 18 months between fall 2023 and spring 2025. Once construction begins, all construction equipment and workers would be located within the boundaries of the project site and contractors would adhere to construction noise regulations to avoid disruption to campus operations.

3. REASONS WHY THE PROJECT IS EXEMPT

The proposed project is exempt from further environmental review under the requirements of the California Environmental Quality Act (Public Resources Code §§ 21000 et seq.) because it is consistent with Class 1, Class 2, and Class 11.

- **Class 1, Existing Facilities (CEQA Guidelines § 15301)** consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing or former use. The key consideration is whether the project involves negligible or no expansion of an existing use.

  A Class 1 categorical exemption applies because the proposed project would upgrade the existing athletic facilities on the campus, which would include replacing and upgrading the pool/aquatics facilities; relocating the existing softball fields; replacing lighting, bleachers, and the press box, and implementing synthetic turf for the football/soccer field and synthetic material for the track and field; and relocating one parking lot. However, do not alter the basic functions of the facilities and would not increase student capacity. Thus, the proposed project would be exempt from CEQA review pursuant to CEQA Guidelines Section 15301.

» **Class 2, Replacement or Reconstruction (CEQA Guidelines § 15301).** Class 2 consists of replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced.

A Class 2 categorical exemption applies because the proposed project would renovate existing football stadium, including installation of synthetic turf on the football/soccer field and synthetic material on the existing track, replacing the existing home and visitor bleachers (with no additional capacity), and replacing the existing lighting structures with a modern LED lighting system. Additionally, project improvements would relocate and reconfigure the existing softball field. The Class 2 exemption also applies to the replacement of the existing pool facility, with a new pool, pool deck and building. All proposed project improvements are located in the same general location, would serve the same purpose, and would not increase student capacity or the number of classrooms on the existing campus. Thus, the proposed project would be exempt from CEQA review pursuant to CEQA Guidelines Section 15302.

» **Class 11, Accessory Structures (CEQA Guidelines 15311).** Class 11 consists of construction, or placement of minor structures accessory to (appurtenant to) existing commercial, industrial, or institutional facilities, including but not limited to small parking lots.

A Class 11 categorical exemption applies because the proposed project would relocated the existing parking lot locate on the northeastern corner of the campus, to the open area just south of the existing parking lot, currently consisting of dirt, a sidewalk, and limited hardscape; to accommodate the new pool facility. All proposed project improvements are located in the same general location, would serve the same purpose, and would not increase student capacity or the number of classrooms on the existing campus. Thus, the proposed project would be exempt from CEQA review pursuant to CEQA Guidelines Section 15311.

Therefore, the proposed project would not alter or expand the existing high school use, would not increase student capacity, and would only make minor modifications to the existing campus. No off-campus improvements would occur.

4. REVIEW OF EXCEPTIONS TO THE CATEGORICAL EXEMPTION

The proposed project has been reviewed under CEQA Guidelines § 15300.2 - Exceptions, for any characteristics or circumstances that might invalidate findings that the proposed project is exempt from CEQA. Each exception is listed below followed by an assessment of whether that exception applies to the proposed project.

(a) **Location.** Classes 3,4,5,6 and 11 are qualified by consideration of where the project would be located—a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply all instances, except where the project may have an impact on an environmental resource of hazardous or critical concern where designated, precisely mapped and officially adopted pursuant to law by federal, state, or local agencies.

The project site is completely within the El Rancho HS campus, which is surrounded by residential properties and public facilities. The campus has buildings, asphalt hardcourts and parking lots, concrete driveways and walkways, athletic fields, and ornamental landscaping. Due to the school's developed nature, it does not contain any sensitive biological species or habitat. No mapped wetlands exist on the site (FWS 2023). Therefore, this exception does not apply to the proposed project.

(b) **Cumulative Impacts.** All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.

The proposed improvements are the only known and planned improvements to the campus during the planned construction. There are no other known successive projects—planned, approved, or under construction—of the same type at and/or near the project site that when combined with the proposed project would result in a cumulative environmental impact. This exception does not apply to the proposed project.

(c) **Significant Effects.** A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

There is no reasonable possibility that the proposed project would have a significant effect on the environment due to unusual circumstances. The proposed project would not increase the capacity of the school or increase building area. The construction manager would execute construction activities per current local, state, and federal laws, regulations, construction Best Management Practices (BPMs), District standards, and guidelines.

Air Quality

The analysis for air quality and greenhouse gas emissions in this section is based the Air Quality & Greenhouse Gas Emissions Assessment El Rancho High School Sports Field & Stadium Project (ECORP 2022a), included in Appendix A.

The proposed project would in some impacts to air quality and greenhouse gas emissions associated with construction activities. However, all temporary construction and operational impacts are considered less than significant. Therefore, this exception does not apply to the proposed project.

Construction

Construction-generated emissions of the proposed project would be temporary and short-term. Three basic sources of short-term emissions would be generated through construction of the proposed project: operation of the construction vehicles (i.e., excavators, trenchers, dump trucks), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil based substances during paving activities. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. However; as shown in the Air Quality and Greenhouse Gas Emissions Assessment prepared for the proposed project, emissions generated during project construction would not exceed the South Coast Air Quality Management District's (South Coast AQMD) regional thresholds of significance. Therefore, criteria pollutant emissions generated during project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (ECORP 2022a; see Appendix A).

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term project-generated emissions of diesel particulate matter (DPM), Reactive Organic Gasses (ROG), Nitric Oxides (NOx), Carbon Monoxide (CO), and Coarse particulate matter (PM_{10}) from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; and other miscellaneous activities. The portion of the SoCAB which encompasses the project site is designated as a nonattainment area for federal O3 and PM2.5 standards and is also a nonattainment area for the state standards for Ozone (O_3), Fine particulate matter ($PM_{2.5}$), and PM10 standards. Thus, existing O_3, PM_{10}, and $PM_{2.5}$ levels in the SoCAB are at unhealthy levels during certain periods. Project construction would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants (ECORP 2022a; see Appendix A).

Operation

The proposed project would not result in a long-term impact on the region's ability to meet state and federal air quality standards. The proposed project's long-term influence would also be consistent with the goals and policies of the South Coast AQMD's 2016 Air Quality Management Plan (AQMP). The proposed project would be consistent with the emission-reduction goals of the 2016 AQMP.

Operational Air Contaminants

Operation of the proposed project would not result in the development of any substantial sources of air toxics. There are no stationary sources associated with the operations of the proposed project; and the proposed project would not include additional mobile sources that spend long periods queuing and idling at the site. Onsite project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors. The proposed project would not have a high carcinogenic or non-carcinogenic risk during operation (ECORP 2022a; see Appendix A).

Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

During construction, the proposed project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short-term in nature and would rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the construction area. Therefore, construction odors would not adversely affect a substantial number of people to odor emissions (ECORP 2022a; see Appendix A).

Greenhouse Gas Emissions

Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the project site, and off-road construction equipment (e.g., dozers, loaders, excavators). The proposed project construction would result in the generation of approximately 622 metric tons of Carbon dioxide equivalent (CO_2e) over the course of construction, which would not exceed the South Coast AQMD significance threshold of 3,000 CO_2e. Once construction is complete, the generation of these GHG emissions would cease(ECORP 2022a; see Appendix A).

Operation

Improvements to the existing athletic facilities and construction of a swimming pool would not increase student population. No additional school sports programs would be added, and the improvements to the sports fields are not expected to increase the number of participants or spectators. The operational emissions would solely be generated from the energy consumption associated with the new pool would have a negligible contribution to existing conditions. Therefore, the proposed project would not generate quantifiable criteria GHG emissions from project operations (ECORP 2022a; see Appendix A).

Noise

The analysis for noise and vibration in this section is based on the Noise Assessment El Rancho High School Sports Field & Stadium Project (ECORP 2023), included in Appendix B.

There would be some temporary noise and vibration impacts associated with construction activities. However, all temporary construction and vibration impacts, and operational noise impacts, are considered less than significant. Therefore, this exception does not apply to the proposed project.

Construction Noise

Construction noise associated with the proposed project would be temporary and would vary depending on the specific nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways.

The nearest existing noise-sensitive land uses to the project site include single family residences north of the project site, located 172 feet from where construction would be occurring. The Noise Element of the City's General Plan states that construction-related noise and vibration should be minimized by limiting construction activities within 500 feet of noise-sensitive uses from 7:00 a.m. to 7:00 p.m. seven days a week; after hour permission shall be granted by City staff, Planning Commission, or the City Council.

It is acknowledged that the majority of construction equipment is not situated at any one location during construction activities, but rather spread throughout the project site and at various distances from sensitive receptors. Therefore, this analysis employs the Federal Transit Administration (FTA) guidance for calculating construction noise, which recommends measuring construction noise produced by all construction equipment from the center of the project site, which in this case is approximately 172 feet from the nearest sensitive receptor, the single family residences north of the project site. Construction of the proposed project would not exceed the construction noise standard of 85 dBA construction noise standard during the demolition, site preparation, grading, building construction, paving, and architectural coating activities as shown in Table 5-1, *Construction Average (dBA) Noise Levels at Nearest Receptors*, of the Noise Assessment (ECORP 2023; see Appendix B).

Construction Vibration

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the proposed project would be primarily associated with short-term construction-related activities. Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is not anticipated that pile drivers would be necessary during proposed project construction. Vibration decreases rapidly with distance, and it is acknowledged that construction activities would occur throughout the project site and would not be concentrated at the point closest to sensitive receptors, as shown in Table 5-3*, Representative Vibration Source Levels for Construction Equipment*.

The City of Pico Rivera's General Plan Noise Element includes Policy 11.3-2, *Vibration Standards*, which states that construction projects and new development anticipated to generate a significant amount of vibration are required to ensure acceptable interior vibration levels at nearby noise-sensitive uses based on FTA criteria, as outlined in Table 5-4, *Groundborne Vibration Impact Criteria for General Assessment*, of the Noise Assessment.

Proposed project construction activities would occur throughout the project site and would not be concentrated at the point closest to the nearest structure. Consistent with FTA recommendations for calculating construction vibration, construction vibration was measured from the center of the project site. The nearest structure of concern to the construction site, with regard to groundborne vibrations, is a residence located approximately 172 feet north of the center of the project site. Due to the nature of the Project, the impact levels for frequent events would be used for the proposed project's construction of the pool. It is noted that this can be classified as

frequent because although the construction would be temporary, the construction's vibrational impacts would be consistent and frequent throughout the construction period. With a Category 2 and frequent events classification, the impact events cannot exceed 72 VdB without exceeding the significance threshold.

Peak vibration decibel level 172 feet away from construction equipment is 68.9 VdB. As previously mentioned, ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance, as shown in Table 5-5, *Construction Vibration Levels at 172 Feet*. As a result, the residence located 172 feet away from the project site is calculated to experience vibrations below the County's threshold levels and therefore would not be negatively affected. Thus, proposed project construction would not exceed the recommended threshold (ECORP 2023; see Appendix B).

Operational Noise

Noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise-sensitive and may warrant unique measures for protection from intruding noise. The nearest existing noise-sensitive land uses to the proposed project are single family residences located adjacent to the project site.

With the exception of the softball batting cages and implementation of the new pool facilities, none of the proposed improvements would represent a new source of noise beyond current conditions. The improvements to the football field, track, and softball diamond would not result in an increase of events, participates, or spectators beyond current conditions and thus can be expected to generate the same level of noise as currently generated. On-site proposed project daytime noise associated with the proposed new batting cages, reconfigured softball diamond, and relocated pool have been calculated using the SoundPLAN 3D noise model.

As described in the Noise Assessment prepared for the proposed project, operational noise would not exceed daytime exterior noise standards at any of the nearest noise-sensitive residential receptors. Similarly, the proposed project would not exceed daytime interior noise standards at any of the nearest noise-sensitive receptors.

The proposed project would not be expected to exceed any nighttime standards (between the hours of 10:00 pm and 7:00 am). The City nighttime exterior noise standard is 55 dBA at residential receptors. While this noise level is calculated to be exceeded at specific locations, during a daytime scenario involving a near-capacity crowd attending a football game at the same time both the softball field are in full use, including operation of both the softball batting cages and full use of the new pool facility and adjoining parking lot, this level of activity would not occur in the nighttime hours (ECORP 2023; see Appendix B).

Operational Vibration

The improvements to the football and softball fields, and reinstatement of a swimming pool would not increase student population. No additional school sports programs would be added, and the new athletic facilities are not expected to increase the number of participants or spectators. Proposed project operations would not include the use of any large-scale stationary equipment that would result in excessive vibration levels. Therefore, the proposed project would not result groundborne vibration impacts during operations (ECORP 2023; see Appendix B).

(d) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings or similar resources, within a highway officially designated as a state scenic highway.

There are no designated State scenic highways near the project site. According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, the nearest officially designated state scenic highway is SR-91 in the City of Anaheim, from Post Mile (PM) R9.2 to R13.4, approximately 18 miles southeast of the project site. Additionally, the nearest highway that is eligible for a state scenic highway designation is State Route 57 (SR-57) beginning in the City of Brea and terminating in the City of Industry, from PM 19.9 to R4.5R, approximately 13 miles east of the project site (Caltrans 2023). The proposed project would not affect these highways; thus, the proposed project would not affect scenic resources along any scenic highways. Therefore, this exception does not apply to the proposed project.

(e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Government Code § 65962.5.

California Government Code Section 65962.5 requires the compiling of lists of the following types of hazardous materials sites: hazardous waste facilities subject to corrective action; hazardous waste discharges for which the State Water Quality Control Board has issued certain types of orders; public drinking water wells containing detectable levels of organic contaminants; underground storage tanks with reported unauthorized releases; and solid waste disposal facilities from which hazardous waste has migrated.

Five environmental databases were searched for hazardous materials sites on the site and within a quarter mile radius:

- EnviroStor. Department of Toxic Substances Control (DTSC 2023)
- GeoTracker. State Water Resources Control Board (SWRCB 2023)
- EJScreen. US Environmental Protection Agency (USEPA 2023a)
- EnviroMapper. US Environmental Protection Agency (USEPA 2023b)
- Solid Waste Information System. California Department of Resources Recycling and Recovery (CalRecycle 2023)

According to the DTSC's EnviroStor, there are no designated cleanup sites within a quarter mile from the project site. Additionally, according to the SWCRB's GeoTracker, there is one Leaking Underground Storage Tank (LUST) Cleanup Site near the project site, at the Pico Rivera Sheriff Station. However, cleanup at the site has been completed and the case has been closed since January 1990; and thus, would not affect the proposed project.

The project site and its surroundings are not identified in any of the other databases and are not identified as a hazardous materials site pursuant to Government Code Section 65962.5. Therefore, the proposed project would not create a hazard to the public. This exception does not apply to the proposed project.

(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of historical resources. Under Public Resource Code § 21084.1, a historical resource is a resource listed in or determined to be eligible for listing in the California Register of Historical Resources. Additionally, historical resources included in a local register of historical resources are presumed to be historically or culturally significant, and a lead agency can determine whether the resource may be an historical resource.

There are no historic resources on or within a 0.25-mile radius of the project site that are listed on the National Register of Historic Places (NPS 2023), the California Register of Historical Resources (OHP 2023a), or as a California State Historical Landmark (OHP 2023b). Therefore, implementation of the proposed project would not cause significant impacts to historical resources, and the historical resources exception will not apply to the proposed project.

5. CONCLUSION

The proposed project at the El Rancho HS is exempt from CEQA review pursuant to CEQA Guidelines Section 15301, 15302, and 15311. As substantiated in this document, the proposed project would not meet the conditions specified in § 15300.2, Exceptions, of the CEQA Guidelines, and the proposed project is categorically exempt under Class 1, Class 2, and Class 11.

6. REFERENCES

California Department of Resources Recycling and Recovery (CalRecycle). 2023. SWIS Facticity/Site Search. https://www2.calrecycle.ca.gov/SolidWaste/Site/Search

California Department of Transportation (Caltrans).2023. California Highway System. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aaca

Department of Toxic Substances Control. 2023. EnviroStor. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=6501+Passons+Blvd%2C+Pico+Rivera%2C+CA+90660

ECORP. 2022a, August. Air Quality & Greenhouse Gas Emissions Assessment El Rancho High School Sports Field & Stadium Project. Pico Rivera, California.

ECORP. 2023, May. Noise Impact Assessment for the El Rancho High School Sports Field & Stadium Project. Pico Rivera, California.

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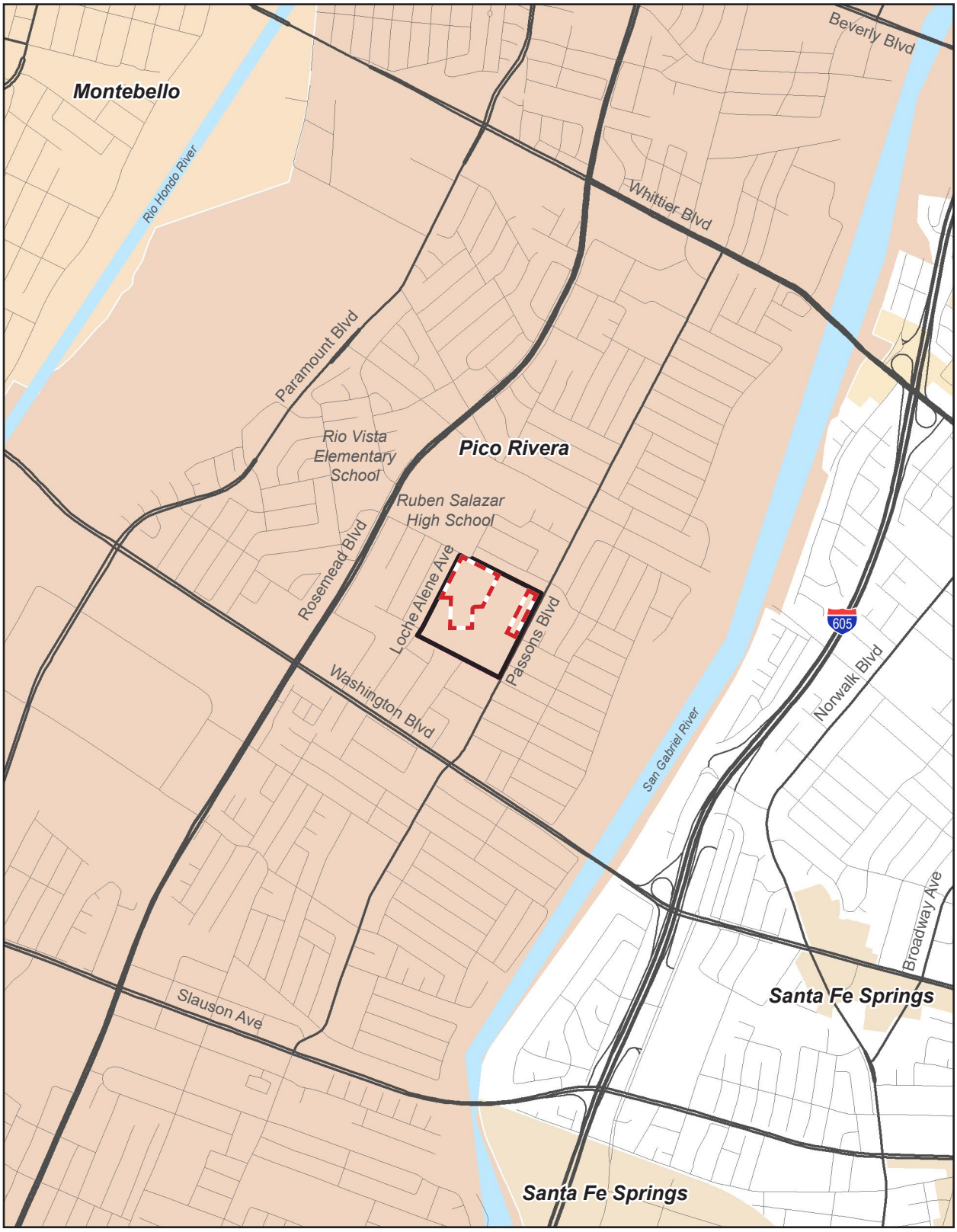
FIGURES

APPENDICES

Figure 1 - Local Vicinity



El Rancho High School Boundary

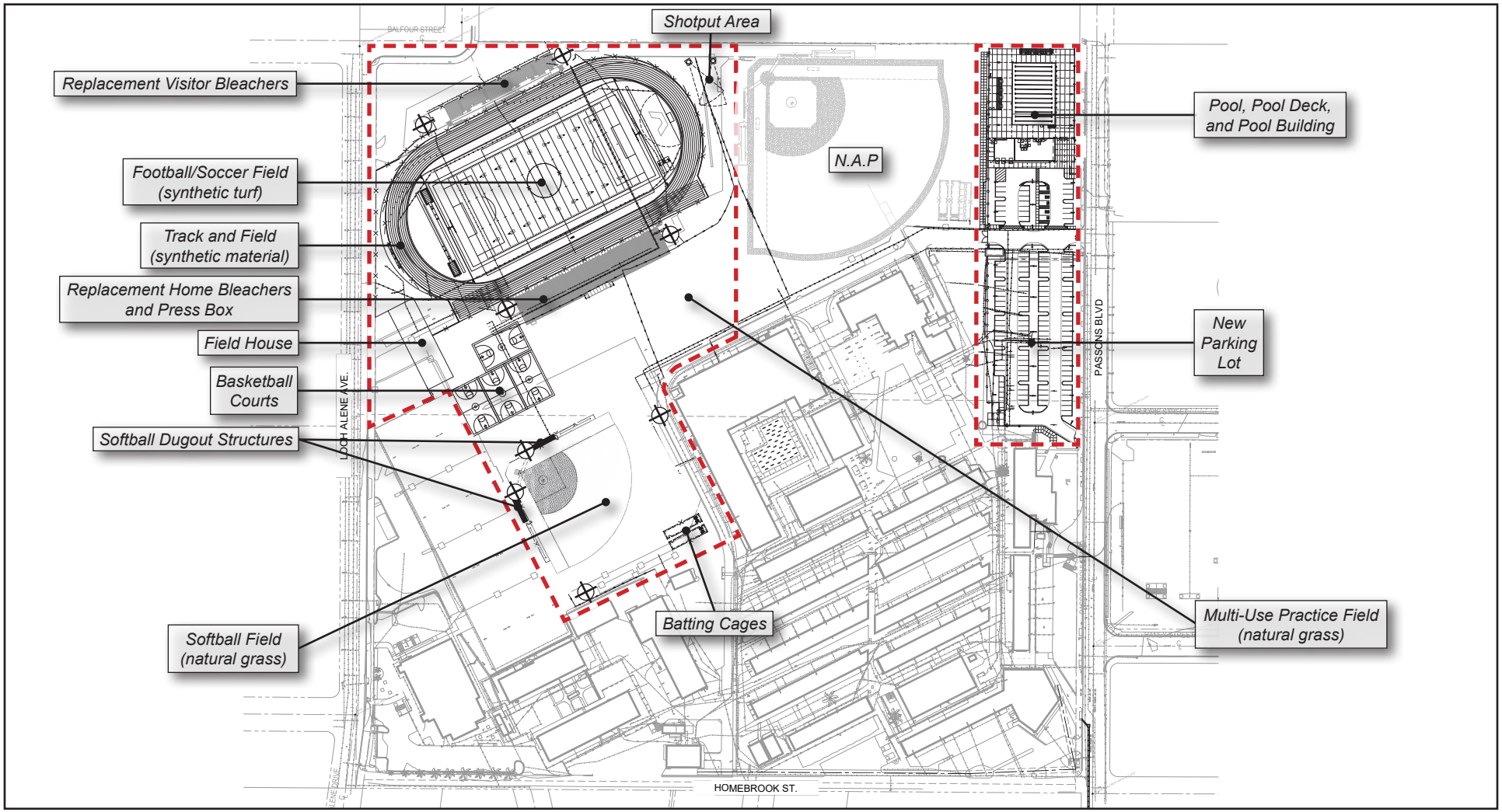
Area of Improvement

Note: Unincorporated county areas are shown in white.

Source: Generated using ArcMap, 2022

0 2,000
Scale (Feet)

Figure 2 - Project Improvement Areas



Source: LPA Design Studios, 2022.

Appendices

Appendix A Air Quality & Greenhouse Gas Emissions Assessment El Rancho High School Sports Field & Stadium Project

Appendices

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Air Quality & Greenhouse Gas Emissions Assessment
El Rancho High School Sports Field & Stadium Project

Pico Rivera, California

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ENVIRONMENTAL CONSULTANTS

May 2023

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LIST OF ATTACHMENTS

LIST OF ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
µg/m^3	Micrograms per cubic meter; ppm = parts per million
1992 CO Plan	1992 Federal Attainment Plan for Carbon Monoxide
AB	Assembly Bill
AQMD	Air Quality Management District
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	Methane
City	City of Pico Rivera
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
County	Los Angeles County
DPM	Diesel particulate matter
EO	Executive Order
GHG	Greenhouse gas
GWP	Global warming potential
IPCC	Intergovernmental Panel on Climate Change
LOS	Level of service
LSTs	Localized significance threshold
MT	Metric Ton
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards

LIST OF ACRONYMS AND ABBREVIATIONS

NO_2	Nitrogen dioxide
NO_x	Nitric oxides
O_3	Ozone
PM	Particulate matter
PM_{10}	Coarse particulate matter
$PM_{2.5}$	Fine particulate matter
ppb	Parts per billion
Project	El Rancho High School Sports Field & Stadium Project
RCPG	Regional Comprehensive Plan and Guide
ROGs	Reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SO_2	Sulfur dioxide
SO_x	Sulfur oxides
SR	State Route
SRA	Source receptor area
SoCAB	South Coast Air Basin
TACs	Toxic air contaminants
USEPA	U.S. Environmental Protection Agency

1.0 INTRODUCTION

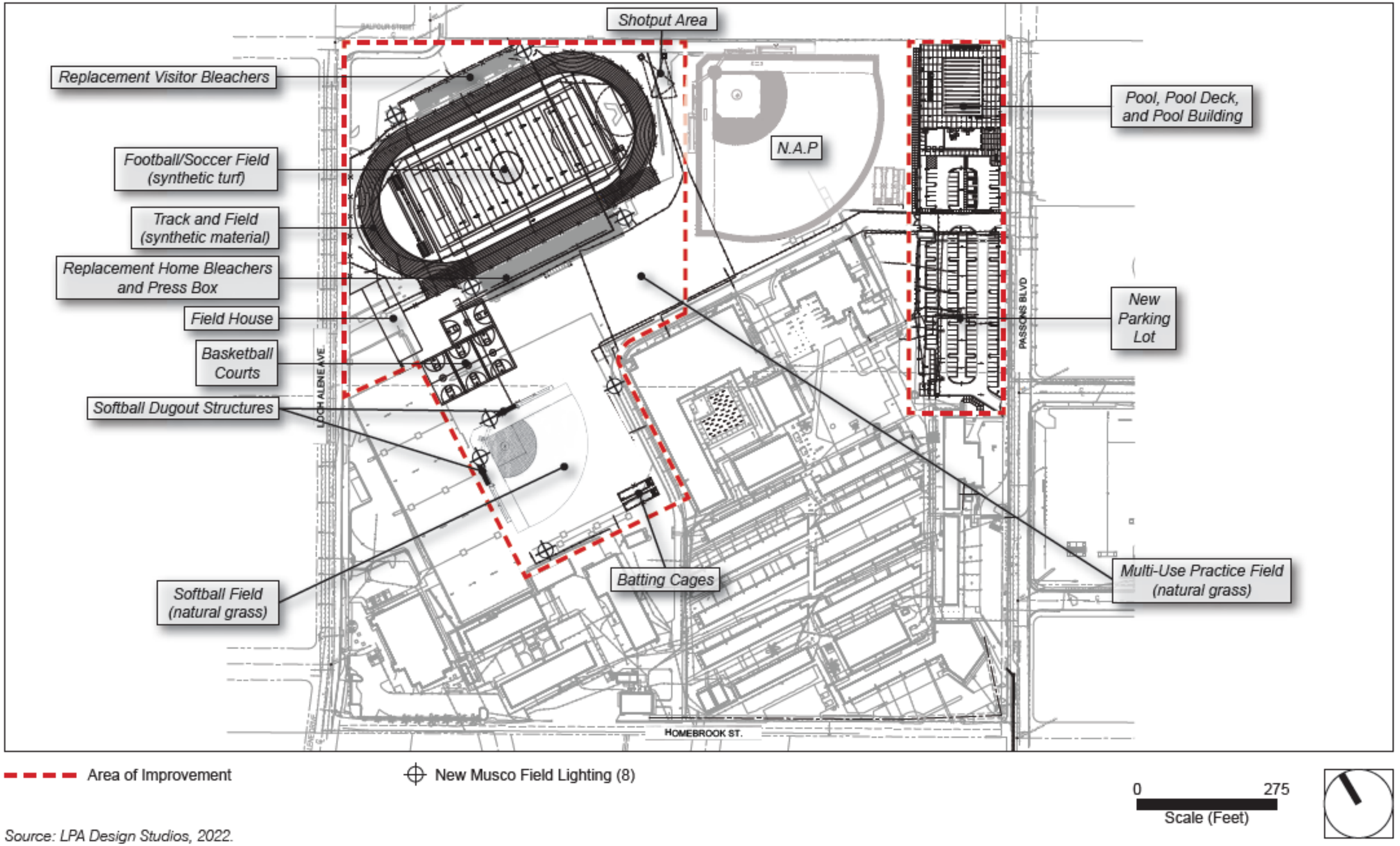
This report documents the results of an Air Quality and Greenhouse Gas (GHG) Emissions Assessment completed for the El Rancho High School Sports Field and Stadium Project (Project), which proposes modernizations to existing athletic facilities contained within the El Rancho High School campus in Pico Rivera, California. This assessment was prepared using methodologies and assumptions recommended in the rules and regulations of the South Coast Air Quality Management District (SCAQMD). Regional and local existing conditions are presented, along with pertinent emissions standards and regulations. The purpose of this assessment is to estimate Project-generated criteria air pollutants and GHG emissions attributable to the Project and to determine the level of impact the Project would have on the environment.

1.1 Project Location and Description

The existing El Rancho High School campus is located at 6501 Passons Boulevard in the City of Pico Rivera, California. Nestled between Loch Alene Avenue to the west, Balfour Street to the north, and Homebrook Street to the south, the school is predominately surrounded by residences and offices. California Highway 605 is located approximately 5,000 feet east of the Project Site.

The Project is proposing the renovations of several athletic facilities on the campus. Specifically, the existing natural turf of the football field, located at the northern corner of the high school campus, would be removed and replaced with synthetic turf. The earthen track surrounding the football field would also be replaced with synthetic material. The existing bleachers, both visitor and home team, would be replaced, though no additional capacity is proposed. A new equipment structure (i.e., Field House) would be constructed adjacent to the southwest corner of the football field and track (see Figure 1). The four existing outdoor basketball courts just south of the football stadium are proposed to be rejuvenated and the existing softball field (see Figure 1) would be reconfigured. In addition to reconfiguration, the softball field would be re-turfed, two new dugouts would be constructed, and softball batting cages would be installed. The existing parking lot at the northeast corner of the campus is proposed to be demolished in order to accommodate a pool facility, complete with a pool, pool deck, and pool building. The soil material excavated to construct the proposed pool would be used to fill in the existing pool on campus, which is currently not in use. The open area just south of the existing parking lot at the northeast corner of the campus, currently consisting of dirt, a sidewalk, and limited hardscape, would be replaced with a parking lot (see Figure 1). For the purposes of this analysis, 17.7 acres in total were estimated to be disturbed by these proposed improvements.

The improvements to the football field, softball diamonds, and reinstatement of a swimming pool would not increase student population. No additional school sports programs would be added, and the new gymnasium is not expected to increase the number of participants or spectators.



Source: LPA Design Studios, 2022.

Map Date: 9/1/2022
Photo (or Base) Source: *LPA 2022*

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Figure 1. Site Plan

2022-120 El Rancho High School Sports Fields and Stadium Project

2.0 AIR QUALITY

2.1 Air Quality Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the South Coast Air Basin (SoCAB), which encompasses the Project Site, pursuant to the regulatory authority of the SCAQMD.

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

2.1.1 South Coast Air Basin

The California Air Resources Board (CARB) divides the State into air basins that share similar meteorological and topographical features. The Project Site lies in the SoCAB, which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County. The air basin is on a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean on the southwest, with high mountains forming the remainder of the perimeter (SCAQMD 1993).

Temperature and Precipitation

The air basin is part of a semi-permanent high-pressure zone in the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds. The annual average temperature varies little throughout the 6,645-square-mile SoCAB, ranging from the low 60s to the high 80s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas (SCAQMD 1993).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all annual rains fall between November and April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains.

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent, and low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (SCAQMD 1993).

Wind

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

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

The mountain ranges to the east affect the diffusion of pollutants by inhibiting the eastward transport of pollutants. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 1993).

Inversion

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, two similarly distinct types of temperature inversions control the vertical depth through which pollutants are mixed. These inversions are the marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the "mixing height." The combination of winds and inversions is a critical determinant leading to highly degraded air quality in the summer and generally good air quality in the winter in Pico Rivera (SCAQMD 1993).

2.1.2 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O_3), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 2-1.

Table 2-1. Criteria Air Pollutants- Summary of Common Sources and Effects

Pollutant	Major Manmade Sources	Human Health & Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N_2O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM_{10} & $PM_{2.5}$	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: California Air Pollution Control Officers Association (CAPCOA 2013)

Carbon Monoxide

CO in the urban environment is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO levels in the SoCAB are in compliance with the state and federal one- and eight-hour standards.

Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NO_x). Motor vehicle emissions are the main source of NO_x in urban areas. NO_x is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_x, such as NO and NO_2, attribute to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

Ozone

O_3 is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) or ROGs and NO_x undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicle and other internal combustion engine exhaust. NO_x forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

Particulate Matter

PM includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and small than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NO_x, sulfur oxides (SO_x) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency

room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

2.1.3 Toxic Air Contaminants

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

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Most recently, CARB identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

2.1.4 Ambient Air Quality

Ambient air quality at the Project Site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout California. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region. As described in detail below, the region is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, $PM_{2.5}$ and PM_{10} (CARB 2019). The Pico Rivera air quality monitoring station (4144 San Gabriel River Parkway, Pico Rivera), located

approximately 15 miles northeast of the Project Site, monitors ambient concentrations of O_3 while the Los Angeles – North Main Street air quality monitoring station (1630 North Main Street, Los Angeles), located 17 miles northwest of the Project Site monitors ambient concentrations of $PM_{2.5}$ and PM_{10}. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations in the Project Area.

Table 2-2 summarizes the published data concerning O_3 from the Pico Rivera Monitoring Station, and $PM_{2.5}$ and PM_{10} from the Los Angeles – North Main Street monitoring station. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region.

Table 2-2. Summary of Ambient Air Quality Data

Pollutant Standards	2019	2020	2021
O_3 – Pico Rivera Monitoring Station			
Max 1-hour concentration (ppm)	0.108	0.169	0.104
Max 8-hour concentration (ppm) (State/federal)	0.092 / 0.091	0.114 / 0.114	0.074 / 0.074
Number of days above 1-hour standard (State/federal)	5 / 0	20 / 3	2 / 0
Number of days above 8-hour standard (State/federal)	8 / 1	25 / 7	3 / 0
PM_{10} – Los Angeles – North Main Street Monitoring Station			
Max 24-hour concentration (µg/m3) (State/federal)	93.9 / 62.4	185.2 / 83.7	138.5 / 64.0
Number of days above 24-hour standard (State/federal)	* / *	35.6 / *	17.2 / *
$PM_{2.5}$ – Los Angeles – North Main Street Monitoring Station			
Max 24-hour concentration (µg/m3) (State/federal)	* / *	35.6 / *	17.2 / 0
Number of days above federal 24-hour standard	62.4	83.7	64.0

Source: CARB 2022
µg/m^3 = micrograms per cubic meter; ppm = parts per million
* = Insufficient (or no) data available

The USEPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10} and $PM_{2.5}$ and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the Los Angeles County portion of the SoCAB, which encompasses the Project Site, is included in Table 2-3.

Table 2-3. Attainment Status of Criteria Pollutants in the Los Angeles County Portion of the SoCAB		
Pollutant	**State Designation**	**Federal Designation**
O_3	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2019

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the federal O_3, $PM_{2.5}$, and PM_{10} standards and is also a nonattainment area for the state standards for O_3, $PM_{2.5}$ and PM_{10} (CARB 2019).

2.1.5 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptor to the Project Site is a residence located approximately 172 feet (52 meters) north, fronting Balfour Street.

2.2 Regulatory Framework

2.2.1 Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants.

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

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the SoCAB for the criteria pollutants.

2.2.2 State

California Clean Air Act

The California Clean Air Act (CCAA) allows the State to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, 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, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to

attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The *2016 Air Quality Management Plan* (2016 AQMP) is the SIP for the SoCAB. The 2016 AQMP is a regional blueprint for achieving air quality standards and healthful air in the SoCAB and those portions of the Salton Sea Air Basin that are under SCAQMD's jurisdiction. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities promoting reductions in GHGs and toxic risk, as well as efficiencies in energy use, transportation, and goods movement. The most effective way to reduce air pollution impacts is to reduce emissions from mobile sources. The AQMP relies on a regional and multi-level partnership of governmental agencies at the federal, state, regional, and local level. These agencies (USEPA, CARB, local governments, Southern California Association of Governments [SCAG] and the SCAQMD) are the primary agencies that implement the AQMP programs. The 2016 AQMP incorporates the latest scientific and technical information and planning assumptions, including SCAG's latest Regional Transportation Plan/Sustainable Communities Strategy, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. The 2016 AQMP includes integrated strategies and measures to meet the NAAQS. The current status of the SIPs for the SoCAB's nonattainment pollutants are shown below:

- On November 28, 2007, CARB submitted a SIP revision to the USEPA for O_3, $PM_{2.5}$ (1997 Standard), CO, and NO_2 in the SoCAB. This revision is identified as the "2007 South Coast SIP". The 2007 South Coast SIP demonstrates attainment of the federal $PM_{2.5}$ standard in the SoCAB by 2014 and attainment of the federal eight-hour O_3 standard by 2023. This SIP also includes a request to reclassify the O_3 attainment designation from "severe" to "extreme". The USEPA approved the redesignation effective June 4, 2010. The "extreme" designation requires the attainment of the eight-hour O_3 standard in the SoCAB by June 2024. CARB approved $PM_{2.5}$ SIP revisions in April 2011 and the O_3 SIP revisions in July 2011. The USEPA approved the $PM_{2.5}$ SIP in 2013 and has approved 46 of the 61, 1997 eight-hour O_3 SIP requirements (. In 2014, the USEPA proposed a finding that the SoCAB has attained the 1997 $PM_{2.5}$ standards. In 2016, the USEPA determined that the SoCAB had attained the 1997 $PM_{2.5}$ standards; however, the SoCAB was not redesignated as an attainment area because the USEPA had not approved a maintenance plan and additional requirements under the CAA had not been met.
- In 2012, the SCAQMD adopted the 2012 AQMP, which was a regional and multiagency effort (the SCAQMD, CARB, SCAG, and the USEPA). The primary purposes of the 2012 AQMP were to demonstrate attainment of the federal 24-hour $PM_{2.5}$ standard by 2014 and to update the USEPA-approved eight-hour Ozone Control Plan. In 2012, the 2012 AQMP was submitted to CARB and the USEPA for concurrent review and approval for inclusion in the SIP. The 2012 AQMP was approved by CARB on January 25, 2013.

- In 2017, the SCAQMD adopted the 2016 AQMP. The 2016 AQMP includes strategies and measures to meet the following NAAQS:
  - 2008 eight-hour O_3 (75 parts per billion [ppb]) by 2013
  - 2012 Annual $PM_{2.5}$ (12 µg/m^3) by 2025
  - 1997 eight-hour O_3 (80 ppb) by 2023
  - 1979 one-hour O_3 (120 ppb) by 2022
  - 2006 24-hour $PM_{2.5}$ (35 µg/m^3) by 2019

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

CARB's statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

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

2.2.3 Local

South Coast Air Quality Management District

The SCAQMD is the air pollution control agency for Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties, including the Project Site. The agency's primary responsibility is ensuring that the NAAQS and CAAQS are attained and maintained in the SoCAB. The SCAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns, as well as many other activities. All projects are subject to SCAQMD rules and regulations in effect at the time of construction.

The following is a list of noteworthy SCAQMD rules that are required of construction activities associated with the Proposed Project:

- **Rule 201 & Rule 203 (Permit to Construct & Permit to Operate)** – Rule 201 requires a "Permit to Construct" prior to the installation of any equipment "the use of which may cause the issuance of air contaminants . . ." and Regulation II provides the requirements for the application for a Permit to Construct. Rule 203 similarly requires a Permit to Operate.

- **Rule 212 (Standards for Approving Permits and Issuing Public Notice)**- This rule requires the applicant to show that the equipment used of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants, is so designed, controlled, or equipped with such air pollution control equipment that it may be expected to operate without emitting air contaminates in violation of Section 41700, 4170 or 44300 of the Health and Safety Code or of these rules.

- **Rule 402 (Nuisance)** – This rule prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- **Rule 403 (Fugitive Dust)** – This rule requires fugitive dust sources to implement best available control measures for all sources, and all forms of visible PM are prohibited from crossing any property line. This rule is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. PM_{10} suppression techniques are summarized below.

  a) Portions of a construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized.
  b) All onsite roads will be paved as soon as feasible or watered periodically or chemically stabilized.
  c) All material transported offsite will be either sufficiently watered or securely covered to prevent excessive amounts of dust.
  d) The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized at all times.
  e) Where vehicles leave a construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the workday to remove soil tracked onto the paved surface.

- **Rule 1113 (Architectural Coatings)** – This rule requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories.

- **Rule 1401 (New Source Review of Toxic Air Contaminants)** – This rule requires new source review of any new, relocated, or modified permit units that emit TACs. The rule establishes allowable risks for permit units requiring permits pursuant to Rules 201 and 203 discussed above.

Southern California Association of Governments

On September 3, 2020, the SCAG Regional Council adopted the *2020-2045 Regional Transportation Plan/ Sustainable Communities Strategy* (2020 RTP/SCS). The 2020 RTP/SCS charts a course for closely integrating land use and transportation – so that the region can grow smartly and sustainably. It was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The 2020 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The SCAG region strives toward sustainability through integrated land use and transportation planning. The SCAG region must achieve specific federal air quality standards and is required by state law to lower regional GHG emissions. Specifically, the region has been tasked by CARB to achieve a 19 percent per capita reduction by the end of 2035.

2.3 Air Quality Emissions Impact Assessment

2.3.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1) Conflict with or obstruct implementation of any applicable air quality plan.

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

3) Expose sensitive receptors to substantial pollutant concentrations.

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

The significance criteria established by the applicable air quality management or air pollution control district (SCAQMD) may be relied upon to make the above determinations. According to the SCAQMD, an air quality impact is considered significant if the Proposed Project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SCAQMD has established thresholds of significance for air quality for construction and operational activities of land use development projects such as that proposed, as shown in Table 2-4.

Table 2-4. SCAQMD Regional Significance Thresholds – Pounds per Day		
Air Pollutant	**Construction Activities**	**Operations**
Reactive Organic Gas	75	55
Carbon Monoxide	550	550
Nitrogen Oxide	100	55
Sulfur Oxide	150	150
Coarse Particulate Matter	150	150
Fine Particulate Matter	55	55

Source: SCAQMD 1993 ($PM_{2.5}$ threshold adopted June 1, 2007)

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

Localized Significance Thresholds

In addition to regional significance thresholds, the SCAQMD developed localized significance thresholds (LSTs) for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at new development sites (offsite mobile source emissions are not included in the LST analysis protocol). LSTs represent the maximum emissions that can be generated at a Project Site without expecting to cause or substantially contribute to an exceedance of the most stringent national or state ambient air quality standards. LSTs are based on the ambient concentrations of that pollutant within the Project source receptor area (SRA), as demarcated by the SCAQMD, and the distance to the nearest sensitive receptor. LST analysis is applicable for all projects that disturb five acres or less on a single day. The SCAQMD has prepared mass rate LST look-up tables for projects disturbing one acre, two acres, and five acres. The Proposed Project spans approximately 18.4-acres and is located within SCAQMD SRA 5 (Southeast Los Angeles County). Table 2-5 shows the LSTs for a one-acre, two-acre, and five-acre project site in SRA 5, as derived from the SCAQMD mass rate LST look-up tables, with sensitive receptors located within 50 meters.

Table 2-5. Local Significance Thresholds at 50 Meters of a Sensitive Receptor				
Project Size	**Pollutant (pounds per day)**			
	NO_2	**CO**	**PM_{10}**	**$PM_{2.5}$**
Construction Threshold				
1 Acres	81	735	13	4
2 Acres	111	1,082	21	6
5 Acres	165	1,855	42	10

Source: SCAQMD 2009

2.3.2 Methodology

Air quality impacts were assessed in accordance with methodologies recommended by the SCAQMD. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were calculated using CalEEMod model defaults for Los Angeles County. Once construction is complete, no emissions would be emitted greater than beyond existing conditions, resulting in no operational emission impacts.

2.3.3 Impact Analysis

Project Construction-Generated Criteria Air Quality Emissions

Regional Construction Significance Analysis

Construction-generated emissions are temporary and short-term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions will be generated through construction of the Proposed Project: operation of the construction vehicles (i.e., excavators, trenchers, dump trucks), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving activities. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation. Construction activities would be subject to SCAQMD Rule 403, which requires taking reasonable precautions to prevent the emissions of fugitive dust, such as using water or chemicals, where possible, for control of dust during the clearing of land and other construction activities.

Construction-generated emissions associated the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Attachment A for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in Table 2-6. Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the SCAQMD's thresholds of significance.

Table 2-6. Construction-Related Emissions (Regional Significance Analysis)

Construction Year	**Pollutant (pounds per day)**					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Construction Year One	4.33	34.56	46.09	0.11	10.85	5.03
Construction Year Two	8.52	32.42	45.06	0.11	21.09	11.29
SCAQMD Regional Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Exceed SCAQMD Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.

Notes: Emissions taken from the season (summer or winter) with the highest output. Emission reduction/credits for construction emissions are applied based on the required implementation of SCAQMD Rule 403. The specific Rule 403 measures applied in CalEEMod include the following: sweeping/cleaning adjacent roadway access areas daily; washing equipment tires before leaving the construction site; water exposed surfaces three times daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied. Building construction, paving and painting assumed to occur simultaneously.

As shown in Table 2-6, emissions generated during Project construction would not exceed the SCAQMD's regional thresholds of significance. Therefore, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.

Localized Construction Significance Analysis

The nearest sensitive receptor to the Project Site are residences located approximately 172 feet (52 meters) north of the Project Site fronting Balfour Street. LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with Project-specific level proposed projects.

For this Project, the appropriate SRA for the localized significance thresholds is Southeast Los Angeles County, SRA 5. As previously described, the SCAQMD has produced lookup tables for projects that disturb less than or equal to five acres daily. The SCAQMD has also issued guidance on applying the CalEEMod emissions software to LSTs for projects greater than five acres. Since CalEEMod calculates construction

emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, Table 2-7 is used to determine the maximum daily disturbed acreage for comparison to LSTs. All construction years have the same equipment, as such, only phases are show in the table.

Table 2-7. Equipment-Specific Grading Rates

Construction Phase	Equipment Type	Acres Graded/Disturbed per 8-Hour Day	Equipment Quantity	Operating Hours per Day	Acres Graded per Day
Demolition	Excavators	0.0	3	8	0.0
	Concrete/Industrial Saws	0.0	1	8	0.0
	Demolition Total:				**0.0**
Site Preparation	Rubber Tired Dozers	0.5	3	8	1.5
	Tractors/Loaders/Backhoes	0.5	4	8	2.0
	Site Preparation Total:				**3.5**
Site Grading	Excavators	0.0	2	8	0.0
	Graders	0.5	1	8	0.5
	Rubber Tired Dozers	0.5	1	8	0.5
	Scrapers	1.0	2	8	2.0
	Tractors/Loaders/Backhoes	0.5	2	8	1.0
	Site Grading Total:				**4.0**
Building Construction, Paving and Painting	Air Compressors	0.0	1	8	0.0
	Cranes	0.0	2	8	0.0
	Forklifts	0.0	6	8	0.0
	Generator Sets	0.0	2	8	0.0
	Pavers	0.0	2	8	0.0
	Paving Equipment	0.0	2	8	0.0
	Rollers	0.0	2	8	0.0
	Tractors/Loaders/Backhoes	0.5	6	8	3.0
	Welders	0.0	1	8	0.0
	Building Construction, Paving and Painting Total:				**3.0**

As shown in Table 2-7, Project implementation could potentially disturb a total maximum of 3.5 acres during site preparation, 4 acres during site grading, and 3.0 acres during the combined building

construction, paving, and painting phases. As described, the SCAQMD has produced lookup tables for projects that disturb one, two and five acres. While the Project Site could potentially disturb over two acres during the site preparation and grading phase and over two acres during the building construction, paving and painting phases, the LST threshold value for a two-acre site was employed from the LST lookup tables. This is conservative since the analysis will only account for the dispersion of air pollutants over one and two acres before reaching sensitive receptors, as opposed to accounting for the dispersion of air pollutants over a greater 18.4-acre Project Site.

LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. The nearest sensitive receptors to the Project site are the residences directly adjacent to the eastern and southern Project Site boundary with the closest being approximately 172 feet (52 meters) distant. Thus, LSTs for receptors located at 50 meters were utilized in this analysis. The SCAQMD's methodology clearly states that "offsite mobile emissions from a project should not be included in the emissions compared to LSTs." Therefore, for purposes of the construction LST analysis, only emissions included in the CalEEMod "onsite" emissions outputs were considered. Table 2-8 presents the results of localized emissions from the most polluting activity for each year of construction.

Table 2-8. Construction-Related Emissions (Localized Significance Analysis)

Activity	**Pollutant (pounds per day)**			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Demolition	2.34	20.47	1.91	1.1
Site Preparation	27.22	18.95	9.02	5.44
Grading	34.57	28.77	5.16	2.78
Building Construction, Paving, and Paining	77.68	110.26	9.6	4.86
SCAQMD Localized Significance Threshold (2.0 acre of disturbance)	*111*	*1,082*	*21*	*6*
Exceed SCAQMD Localized Threshold?	**No**	**No**	**No**	**No**

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.

Notes: Emissions taken from the season (summer or winter) with the highest output. Emission reduction/credits for construction emissions are applied based on the required implementation of SCAQMD Rule 403. The specific Rule 403 measures applied in CalEEMod include the following: sweeping/cleaning adjacent roadway access areas daily; washing equipment tires before leaving the construction site; water exposed surfaces three times daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied. Building construction, paving and painting assumed to occur simultaneously.

Table 2-8 shows that the emissions of these pollutants on the peak day of construction would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, significant impacts would not occur concerning LSTs during construction activities. LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative. The SCAQMD Environmental Justice Enhancement Initiative program seeks to ensure that everyone has the right to equal protection from air pollution. The Environmental Justice Program is divided into three categories, with the LST protocol

promulgated under Category I: *Further-Reduced Health Risk*. Thus, the fact that onsite Project construction emissions would be generated at rates below the LSTs for NO_x, CO, PM_{10}, and $PM_{2.5}$ demonstrates that the Project would not adversely impact the neighboring receptors in the vicinity of the Project.

Project Operations Criteria Air Quality Emissions

Regional Operational Significance Analysis

The Project is proposing several improvements to the existing campus for the purposes of modernization. The improvements to the football field, softball diamonds, and reinstatement of a swimming pool would not increase student population. No additional school sports programs would be added, and the new gymnasium is not expected to increase the number of participants or spectators. The operational emissions would solely be generated from the energy consumption associated with the new pool area and would have a negligible contribution to existing conditions. Therefore, the Project would not generate quantifiable criteria emissions from Project operations.

Conflict with the 2016 Air Quality Management Plan

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the NAAQS and CAAQS. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

As previously mentioned, the Project Site is located within the SoCAB, which is under the jurisdiction of the SCAQMD. The SCAQMD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SoCAB is in nonattainment. In order to reduce such emissions, the SCAQMD drafted the 2016 AQMP. The 2016 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving state (California) and national air quality standards. The 2016 AQMP is a regional and multi-agency effort including the SCAQMD, CARB, SCAG, and the USEPA. The plan's pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including SCAG's latest RTP/SCS, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. (SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans.) The Project is subject to the SCAQMD's AQMP.

According to the SCAQMD, in order to determine consistency with SCAQMD's air quality planning two main criteria must be addressed.

Criterion 1:

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

a) Would the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new air quality violations?

As shown in Table 2-6 and 2-8 above, the Proposed Project would result in emissions that would be below the SCAQMD regional as well as the localized thresholds during construction. As also demonstrated, operations of the Project would not result in the generation of emissions beyond existing conditions. Therefore, the Proposed Project would not result in an increase in the frequency or severity of existing air quality violations and would not have the potential to cause or affect a violation of the ambient air quality standards.

b) Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?

As shown in Table 2-6, the Proposed Project would result in emissions that would be below the SCAQMD regional thresholds during construction. As also demonstrated, operations of the Project would not result in the generation of emissions beyond existing conditions Because the Project would result in less than significant regional emission impacts, it would not delay the timely attainment of air quality standards or AQMP emissions reductions.

Criterion 2:

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it is important to recognize that air quality planning within the SoCAB focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining Project consistency focuses on whether or not the Proposed Project exceeds the assumptions utilized in preparing the forecasts presented its air quality planning documents. Determining whether or not a project exceeds the assumptions reflected in the 2016 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

a) Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the 2016 AQMP?

A project is consistent with regional air quality planning efforts in part if it is consistent with the population, housing, and employment assumptions that were used in the development of the SCAQMD air quality plans. Generally, three sources of data form the basis for the projections of air pollutant emissions in Pico Rivera. Specifically, SCAG's Growth Management Chapter of the Regional Comprehensive Plan and Guide (RCPG) provides regional population forecasts for the region and SCAG's RTP/SCS provides socioeconomic forecast projections of regional population growth. The City of Pico Rivera's General Plan is referenced by SCAG in order to assist forecasting future growth in the City.

The Project is proposing several improvements to the existing campus. The improvements to the football field, softball diamonds, and reinstatement of a swimming pool would not increase student population. No additional school sports programs would be added, and the new gymnasium is not expected to increase the number of participants or spectators beyond current conditions. The Project does not involve

the development of new housing or employment centers. As such, the Project would not be contributing to an increase in population, housing or employment growth. Therefore, the Proposed Project would be considered consistent with the population, housing, and employment growth projections utilized in the preparation of SCAQMD's air quality plans.

b) Would the project implement all feasible air quality mitigation measures?

In order to further reduce emissions, the Project would be required to comply with emission reduction measures promulgated by the SCAQMD, such as SCAQMD Rules 201, 402, 403, and 1113. SCAQMD Rule 402 prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. SCAQMD Rule 403 requires fugitive dust sources to implement Best Available Control Measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. SCAQMD 1113 requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories. As such, the Proposed Project meets this consistency criterion.

c) Would the project be consistent with the land use planning strategies set forth by SCAQMD air quality planning efforts?

The AQMP contains air pollutant reduction strategies based on SCAG's latest growth forecasts, and SCAG's growth forecasts were defined in consultation with local governments and with reference to local general plans. The Proposed Project is consistent with the land use designation and development density presented in the City's General Plan and therefore, would not exceed the population or job growth projections used by the SCAQMD to develop the AQMP.

In conclusion, the determination of AQMP consistency is primarily concerned with the long-term influence of a project on air quality. The Proposed Project would not result in a long-term impact on the region's ability to meet state and federal air quality standards. The Proposed Project's long-term influence would also be consistent with the goals and policies of the SCAQMD's 2016 AQMP.

The Project would be consistent with the emission-reduction goals of the 2016 AQMP.

Exposure of Sensitive Receptors to Toxic Air Contaminants

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

to the Project Site is a residence located approximately 172 feet north of the Project Site, fronting Balfour Street.

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term Proposed Project-generated emissions of diesel particulate matter (DPM), ROG, NOx, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; and other miscellaneous activities. The portion of the SoCAB which encompasses the Project Area is designated as a nonattainment area for federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, $PM_{2.5}$, and PM_{10} standards (CARB 2019). Thus, existing O_3, PM_{10}, and $PM_{2.5}$ levels in the SoCAB are at unhealthy levels during certain periods. However, as shown in Table 2-6 and Table 2-8, the Project would not exceed the SCAQMD regional or localized significance thresholds for emissions.

The health effects associated with O_3 are generally associated with reduced lung function. Because the Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NOx) in excess of the SCAQMD thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The Project would not involve construction activities that would result in CO emissions in excess of the SCAQMD thresholds. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the primary TAC of concern. PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM. As with O_3 and NOx, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the SCAQMD's thresholds. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, Project construction would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Operational Air Contaminants

Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There are no stationary sources associated with the operations of the Project; nor would the Project attract additional mobile sources that spend long periods queuing and idling at the site. Onsite Project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors. The Project would not have a high carcinogenic or non-carcinogenic risk during operation.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SoCAB is designated as in attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. The analysis prepared for CO attainment in the South Coast Air Quality Management District's (SCAQMD's) *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 AQMP can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD is the air pollution control officer for much of southern California. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Federal Attainment Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). In order to establish a more accurate record of baseline CO concentrations affecting the Los Angeles, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-

hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Thus, there was no violation of CO standards.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD), the air pollution control officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

The improvements to the football field, softball diamonds, and reinstatement of a swimming pool would not increase student population. No additional school sports programs would be added, and the new gymnasium is not expected to increase the number of participants or spectators. Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day) and there is no likelihood of the Project traffic exceeding CO values.

Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During construction, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources.

Additionally, odors would be localized and generally confined to the construction area. Therefore, construction odors would not adversely affect a substantial number of people to odor emissions.

According to the SCAQMD, land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any uses identified by the SCAQMD as being associated with odors.

3.0 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are CO_2, methane (CH_4), and N_2O. Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (Intergovernmental Panel on Climate Change [IPCC] 2014).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2 (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the

last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013).

Table 3-1. Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about 12 years.[2]
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: [1]USEPA 2016a, [2] USEPA 2016b, [3] USEPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.1.1 Sources of Greenhouse Gas Emissions

In 2021, CARB released the 2021 edition of the California GHG inventory covering calendar year 2019 emissions. In 2019, California emitted 418.2 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2019, accounting for approximately 40 percent of total GHG emissions in the State. When emissions from extracting, refining and moving transportation fuels in California are included, transportation is responsible for over 50 percent of statewide emissions in 2019. Continuing the downward

trend from 2018, transportation emissions decreased 3.5 million metric tons of CO_2e in 2019, only being outpaced by electricity, which reduced emissions by 4.3 million metric tons of CO_2e in 2019. Emissions from the electricity sector account for 14 percent of the inventory and have shown a substantial decrease in 2019 due to increases in renewables. California's industrial sector accounts for the second largest source of the State's GHG emissions in 2019, accounting for 21 percent (CARB 2021).

3.2 Regulatory Framework

3.2.1 State

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2017 Scoping Plan Update, addresses the 2030 target established by Senate Bill (SB) 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include increasing the use of renewable energy in the State, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030.

Senate Bill X1-2 of 2011, Senate Bill 350 of 2015, and Senate Bill 100 of 2018

In 2018, SB 100 was signed codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings

The Building and Efficiency Standards (Energy Standards) were first adopted and put into effect in 1978 and have been updated periodically in the intervening years. These standards are a unique California asset that have placed the State on the forefront of energy efficiency, sustainability, energy independence and climate change issues. The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The 2019 standards are a major step toward meeting Zero Net Energy. The most significant efficiency improvement to the residential Standards includes the introduction of photovoltaic into the perspective package, improvements for attics, walls, water heating and lighting. Buildings permitted on or after January 1, 2020, must comply with the 2019 Standards.

In 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CalGreen Building Standard (CalGreen) and establishes voluntary and mandatory standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. Like Part 6 of Title 24, the CalGreen standards are periodically updated, with increasing energy savings and efficiencies associated with each code update. CalGreen contains voluntary "Tier 1" and "Tier 2" standards that are not mandatory statewide but could be required by a City or County. These are 'reach' standards that can be adopted by local jurisdictions and may be incorporated as mandatory standards in future code cycles.

3.2.2 Local

South Coast Air Quality Management District

To provide guidance to local lead agencies on determining significance for GHG emissions in CEQA documents, SCAQMD staff is convening an ongoing GHG CEQA Significance Threshold Working Group. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that provide input to SCAQMD staff on developing the significance thresholds. On October 8, 2008, the SCAQMD released the Draft AQMD Staff CEQA GHG Significance Thresholds. These thresholds have not been finalized and continue to be developed through the working group.

On September 28, 2010, SCAQMD Working Group Meeting #15 provided further guidance, including an interim screening level numeric "bright-line" threshold of 3,000 metric tons of CO_2e annually and an efficiency-based threshold of 4.8 metric tons of CO_2e per service population (defined as the people that work and/or congregate on the Project site) per year in 2020 and 3.0 metric tons of CO_2e per service

population per year in 2035. The SCAQMD has not announced when staff is expecting to present a finalized version of these thresholds to the governing board.

3.3 Greenhouse Gas Emissions Impact Assessment

3.3.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to greenhouse gas emissions if it would:

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

2) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases or

The Appendix G thresholds for GHG emissions do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 CCR 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's

requirements for cumulative impact analysis (see CEQA Guidelines Section 15130). As a note, the CEQA Guidelines were amended in response to Senate Bill 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The local air quality agency regulating the SoCAB is the SCAQMD, the regional air pollution control officer for the basin. As previously stated, to provide guidance to local lead agencies on determining significance for GHG emissions in CEQA documents, SCAQMD staff convened a GHG CEQA Significance Threshold Working Group. The Working Group was formed to assist the SCAQMD's efforts to develop a GHG significance threshold and is composed of a wide variety of stakeholders including the State Office of Planning and Research (OPR), CARB, the Attorney General's Office, a variety of city and county planning departments in the Basin, various utilities such as sanitation and power companies throughout the Basin, industry groups, and environmental and professional organizations. The numeric bright line and efficiency-based thresholds described above were developed to be consistent with CEQA requirements for developing significance thresholds, are supported by substantial evidence, and provide guidance to CEQA practitioners and lead agencies with regard to determining whether GHG emissions from a proposed project are significant.

In *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal. 4th 2014, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, Public Resources Code section 21003(f) provides it is a policy of the State that "[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be

minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227.)

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. For the Proposed Project, the SCAQMD's 3,000 metric tons of CO_2e per year threshold is used as the significance threshold in addition to the qualitative thresholds of significance set forth below from Section VII of CEQA Guidelines Appendix G. The 3,000 metric tons of CO_2e per year threshold represents a 90 percent capture rate (i.e., this threshold captures projects that represent approximately 90 percent of GHG emissions from new sources). The 3,000 metric tons of CO_2e per year value is typically used in defining small projects within this air basin that are considered less than significant because it represents less than one percent of future 2050 statewide GHG emissions target and the lead agency can provide more efficient implementation of CEQA by focusing its scarce resources on the top 90 percent. This threshold is correlated to the 90 percent capture rate for industrial projects within the air basin. Land use projects above the 3,000 metric tons of CO_2e per year level would fall within the percentage of largest projects that are worth mitigating without wasting scarce financial, governmental, physical and social resources (Crockett 2011). As noted in the academic study, the fact that small projects below a numeric bright line threshold are not subject to CEQA-based mitigation does not mean such small projects do not help the State achieve its climate change goals because even small projects participate in or comply with non-CEQA-based GHG reduction programs, such as constructing development in accordance with statewide GHG-reducing energy efficiency building standards, called Cal Green or Title 24 energy-efficiency building standards (Crockett 2011).

3.3.2 Methodology

GHG emissions-related impacts were assessed in accordance with methodologies recommended by the SCAQMD. Where GHG emission quantification was required, emissions were modeled using CalEEMod, version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction-generated GHG emissions were calculated using CalEEMod model defaults for Los Angeles County.

3.3.3 Impact Analysis

Generation of GHG Emissions

Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 3-2 illustrates the specific construction generated GHG emissions

that would result from construction of the Project. Once construction is complete, the generation of these GHG emissions would cease.

Table 3-2. Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Total Overall Construction Emissions	**622**
SCAQMD Significance Threshold	3,000
Exceed SCAQMD Threshold?	**No**

Source: CalEEMod version 2020.4.0. Refer to Attachment B for Model Data Outputs.

As shown in Table 3-2, Project construction would result in the generation of approximately 622 metric tons of CO_2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease.

Operational Significance Analysis

The Project is proposing several improvements to the existing campus for the purposes of modernization. The improvements to the football field, softball diamonds, and reinstatement of a swimming pool would not increase student population. No additional school sports programs would be added, and the new gymnasium is not expected to increase the number of participants or spectators. The operational emissions would solely be generated from the energy consumption associated with the new pool would have a negligible contribution to existing conditions. Therefore, by its very nature, the Project would not generate quantifiable criteria GHG emissions from Project operations.

Conflict with any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

The SCAQMD supports state, federal, and international policies to reduce levels of GHG emissions through its policies and rules, and the Proposed Project would comply with the SCAQMD's GHG threshold. The Proposed Project would comply with the State Building Code provisions designed to reduce GHG emissions. In addition, the Proposed Project would comply with all SCAQMD applicable rules and regulations during construction of the operational phase. As indicated above, Project emissions would not exceed the 3,000 metric tons of CO_2e annually threshold, and therefore it would not interfere with the state's goals of reducing GHG emission to 1990 levels by the year 2020 as stated in AB 32 and an 80 percent reduction in GHG emissions below 1990 levels by 2050 as stated in Executive Order S-3-05. Therefore, the Project would not conflict with any applicable plan, policy or regulation related to the reduction in the emissions of GHG and thus a less than significant impact will occur directly, indirectly and cumulatively in this regard.

4.0 REFERENCES

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LIST OF ATTACHMENTS

Attachment A – CalEEMod Output File for Air Quality Emissions

Attachment B – CalEEMod Output File for Greenhouse Gas Emissions

ATTACHMENT A

CalEEMod Output Files – Criteria Air Pollutants

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

El Rancho High School Sports Fields & Stadium

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	15.70	Acre	15.70	683,892.00	0
Recreational Swimming Pool	34.50	1000sqft	0.79	34,500.00	0
Parking Lot	134.00	Space	1.21	53,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2024
Utility Company	Pico Rivera Innovative Municipal Energy				
CO2 Intensity (lb/MWhr)	683.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - City Park includes improved fields and field house
Recreational Swimming Pool includes pool bldg

Construction Phase - total days adjusted to better reflect project

Grading -

Area Mitigation -

Off-road Equipment - unit amounts doubled from defaults

Demolition -

Construction Off-road Equipment Mitigation - SCAQMD Rule 403. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	300.00	200.00
tblConstructionPhase	PhaseEndDate	9/16/2022	8/11/2023
tblConstructionPhase	PhaseEndDate	9/30/2022	5/31/2024
tblConstructionPhase	PhaseEndDate	11/11/2022	7/14/2023
tblConstructionPhase	PhaseEndDate	1/5/2024	5/17/2024
tblConstructionPhase	PhaseEndDate	2/2/2024	6/28/2024
tblConstructionPhase	PhaseEndDate	3/1/2024	7/26/2024
tblConstructionPhase	PhaseStartDate	8/21/2022	7/17/2023
tblConstructionPhase	PhaseStartDate	9/17/2022	5/20/2024
tblConstructionPhase	PhaseStartDate	10/1/2022	6/5/2023
tblConstructionPhase	PhaseStartDate	11/12/2022	8/14/2023
tblConstructionPhase	PhaseStartDate	1/6/2024	6/3/2024
tblConstructionPhase	PhaseStartDate	2/3/2024	7/1/2024
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

2.0 Emissions Summary

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.3286	34.5602	46.0858	0.1096	9.4271	1.4458	10.8530	3.7130	1.3603	5.0248	0.0000	10,894.2515	10,894.2515	1.9493	0.4405	11,060.0776
2024	8.5192	32.4173	45.0626	0.1083	19.8582	1.2722	21.0887	10.1558	1.1966	11.2879	0.0000	10,765.1908	10,765.1908	1.3682	0.4301	10,927.5727
Maximum	**8.5192**	**34.5602**	**46.0858**	**0.1096**	**19.8582**	**1.4458**	**21.0887**	**10.1558**	**1.3603**	**11.2879**	**0.0000**	**10,894.2515**	**10,894.2515**	**1.9493**	**0.4405**	**11,060.0776**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.3286	34.5602	46.0858	0.1096	3.7352	1.4458	5.1611	1.4652	1.3603	2.7769	0.0000	10,894.2515	10,894.2515	1.9493	0.4405	11,060.0776
2024	8.5192	32.4173	45.0626	0.1083	7.7975	1.2722	9.0280	3.9761	1.1966	5.1082	0.0000	10,765.1908	10,765.1908	1.3682	0.4301	10,927.5727
Maximum	**8.5192**	**34.5602**	**46.0858**	**0.1096**	**7.7975**	**1.4458**	**9.0280**	**3.9761**	**1.3603**	**5.1082**	**0.0000**	**10,894.2515**	**10,894.2515**	**1.9493**	**0.4405**	**11,060.0776**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	60.62	0.00	55.58	60.77	0.00	51.66	0.00	0.00	0.00	0.00	0.00	0.00

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4164	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.6328	2.4345	24.0374	0.0512	5.3066	0.0371	5.3437	1.4135	0.0344	1.4480		5,217.5148	5,217.5148	0.3664	0.2228	5,293.0670
Total	**3.0492**	**2.4347**	**24.0562**	**0.0512**	**5.3066**	**0.0372**	**5.3438**	**1.4135**	**0.0345**	**1.4480**		**5,217.5551**	**5,217.5551**	**0.3665**	**0.2228**	**5,293.1100**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4164	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.6328	2.4345	24.0374	0.0512	5.3066	0.0371	5.3437	1.4135	0.0344	1.4480		5,217.5148	5,217.5148	0.3664	0.2228	5,293.0670
Total	**3.0492**	**2.4347**	**24.0562**	**0.0512**	**5.3066**	**0.0372**	**5.3438**	**1.4135**	**0.0345**	**1.4480**		**5,217.5551**	**5,217.5551**	**0.3665**	**0.2228**	**5,293.1100**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/5/2023	7/14/2023	5	30	
2	Demolition	Demolition	7/17/2023	8/11/2023	5	20	
3	Building Construction	Building Construction	8/14/2023	5/17/2024	5	200	
4	Site Preparation	Site Preparation	5/20/2024	5/31/2024	5	10	
5	Paving	Paving	6/3/2024	6/28/2024	5	20	
6	Architectural Coating	Architectural Coating	7/1/2024	7/26/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 90

Acres of Paving: 1.21

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 23,946; Non-Residential Outdoor: 7,982; Striped Parking Area: 3,216 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

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

Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	2	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	164.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	18	324.00	127.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	65.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

Clean Paved Roads

3.2 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**9.2036**	**1.4245**	**10.6281**	**3.6538**	**1.3105**	**4.9643**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

3.2 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0640	0.0446	0.7228	1.9800e-003	0.2236	1.3400e-003	0.2249	0.0593	1.2400e-003	0.0605		200.0151	200.0151	5.0400e-003	4.6200e-003	201.5167
Total	**0.0640**	**0.0446**	**0.7228**	**1.9800e-003**	**0.2236**	**1.3400e-003**	**0.2249**	**0.0593**	**1.2400e-003**	**0.0605**		**200.0151**	**200.0151**	**5.0400e-003**	**4.6200e-003**	**201.5167**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5894	0.0000	3.5894	1.4250	0.0000	1.4250			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**3.5894**	**1.4245**	**5.0139**	**1.4250**	**1.3105**	**2.7355**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

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

3.2 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0640	0.0446	0.7228	1.9800e-003	0.1458	1.3400e-003	0.1472	0.0402	1.2400e-003	0.0414		200.0151	200.0151	5.0400e-003	4.6200e-003	201.5167
Total	**0.0640**	**0.0446**	**0.7228**	**1.9800e-003**	**0.1458**	**1.3400e-003**	**0.1472**	**0.0402**	**1.2400e-003**	**0.0414**		**200.0151**	**200.0151**	**5.0400e-003**	**4.6200e-003**	**201.5167**

3.3 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.7772	0.0000	1.7772	0.2691	0.0000	0.2691			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**1.7772**	**0.9975**	**2.7747**	**0.2691**	**0.9280**	**1.1971**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

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

3.3 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0178	1.0700	0.2856	4.8000e-003	0.1435	6.7500e-003	0.1503	0.0394	6.4600e-003	0.0458		526.9813	526.9813	0.0290	0.0837	552.6451
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0480	0.0335	0.5421	1.4800e-003	0.1677	1.0100e-003	0.1687	0.0445	9.3000e-004	0.0454		150.0113	150.0113	3.7800e-003	3.4600e-003	151.1375
Total	**0.0658**	**1.1035**	**0.8277**	**6.2800e-003**	**0.3112**	**7.7600e-003**	**0.3190**	**0.0838**	**7.3900e-003**	**0.0912**		**676.9926**	**676.9926**	**0.0328**	**0.0871**	**703.7827**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6931	0.0000	0.6931	0.1049	0.0000	0.1049			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**0.6931**	**0.9975**	**1.6906**	**0.1049**	**0.9280**	**1.0329**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

3.3 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0178	1.0700	0.2856	4.8000e-003	0.1002	6.7500e-003	0.1069	0.0287	6.4600e-003	0.0352		526.9813	526.9813	0.0290	0.0837	552.6451
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0480	0.0335	0.5421	1.4800e-003	0.1094	1.0100e-003	0.1104	0.0302	9.3000e-004	0.0311		150.0113	150.0113	3.7800e-003	3.4600e-003	151.1375
Total	**0.0658**	**1.1035**	**0.8277**	**6.2800e-003**	**0.2095**	**7.7600e-003**	**0.2173**	**0.0589**	**7.3900e-003**	**0.0663**		**676.9926**	**676.9926**	**0.0328**	**0.0871**	**703.7827**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1455	28.7698	32.4880	0.0539		1.3995	1.3995		1.3169	1.3169		5,110.4199	5,110.4199	1.2157		5,140.8121
Total	**3.1455**	**28.7698**	**32.4880**	**0.0539**		**1.3995**	**1.3995**		**1.3169**	**1.3169**		**5,110.4199**	**5,110.4199**	**1.2157**		**5,140.8121**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1462	4.8747	1.8885	0.0236	0.8135	0.0245	0.8380	0.2342	0.0234	0.2577		2,543.5874	2,543.5874	0.0852	0.3657	2,654.6951
Worker	1.0369	0.7228	11.7093	0.0321	3.6216	0.0218	3.6433	0.9605	0.0201	0.9805		3,240.2442	3,240.2442	0.0817	0.0748	3,264.5704
Total	**1.1831**	**5.5975**	**13.5978**	**0.0557**	**4.4351**	**0.0463**	**4.4813**	**1.1947**	**0.0435**	**1.2382**		**5,783.8316**	**5,783.8316**	**0.1669**	**0.4405**	**5,919.2654**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1455	28.7698	32.4880	0.0539		1.3995	1.3995		1.3169	1.3169	0.0000	5,110.4198	5,110.4198	1.2157		5,140.8121
Total	**3.1455**	**28.7698**	**32.4880**	**0.0539**		**1.3995**	**1.3995**		**1.3169**	**1.3169**	**0.0000**	**5,110.4198**	**5,110.4198**	**1.2157**		**5,140.8121**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1462	4.8747	1.8885	0.0236	0.5818	0.0245	0.6063	0.1774	0.0234	0.2008		2,543.5874	2,543.5874	0.0852	0.3657	2,654.6951
Worker	1.0369	0.7228	11.7093	0.0321	2.3622	0.0218	2.3840	0.6513	0.0201	0.6714		3,240.2442	3,240.2442	0.0817	0.0748	3,264.5704
Total	**1.1831**	**5.5975**	**13.5978**	**0.0557**	**2.9440**	**0.0463**	**2.9902**	**0.8287**	**0.0435**	**0.8722**		**5,783.8316**	**5,783.8316**	**0.1669**	**0.4405**	**5,919.2654**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9431	26.8876	32.3336	0.0539		1.2266	1.2266		1.1538	1.1538		5,111.3978	5,111.3978	1.2087		5,141.6153
Total	**2.9431**	**26.8876**	**32.3336**	**0.0539**		**1.2266**	**1.2266**		**1.1538**	**1.1538**		**5,111.3978**	**5,111.3978**	**1.2087**		**5,141.6153**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1417	4.8846	1.8483	0.0233	0.8135	0.0247	0.8382	0.2342	0.0236	0.2578		2,505.3875	2,505.3875	0.0856	0.3606	2,614.9809
Worker	0.9660	0.6452	10.8807	0.0312	3.6216	0.0209	3.6424	0.9605	0.0192	0.9797		3,148.4055	3,148.4055	0.0739	0.0695	3,170.9765
Total	**1.1078**	**5.5298**	**12.7290**	**0.0544**	**4.4351**	**0.0455**	**4.4806**	**1.1947**	**0.0428**	**1.2375**		**5,653.7930**	**5,653.7930**	**0.1595**	**0.4301**	**5,785.9574**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9431	26.8876	32.3336	0.0539		1.2266	1.2266		1.1538	1.1538	0.0000	5,111.3978	5,111.3978	1.2087		5,141.6153
Total	**2.9431**	**26.8876**	**32.3336**	**0.0539**		**1.2266**	**1.2266**		**1.1538**	**1.1538**	**0.0000**	**5,111.3978**	**5,111.3978**	**1.2087**		**5,141.6153**

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

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1417	4.8846	1.8483	0.0233	0.5818	0.0247	0.6065	0.1774	0.0236	0.2010		2,505.3875	2,505.3875	0.0856	0.3606	2,614.9809
Worker	0.9660	0.6452	10.8807	0.0312	2.3622	0.0209	2.3830	0.6513	0.0192	0.6705		3,148.4055	3,148.4055	0.0739	0.0695	3,170.9765
Total	**1.1078**	**5.5298**	**12.7290**	**0.0544**	**2.9440**	**0.0455**	**2.9895**	**0.8287**	**0.0428**	**0.8715**		**5,653.7930**	**5,653.7930**	**0.1595**	**0.4301**	**5,785.9574**

3.5 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310		3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**19.6570**	**1.2294**	**20.8864**	**10.1025**	**1.1310**	**11.2335**		**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

3.5 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0537	0.0358	0.6045	1.7300e-003	0.2012	1.1600e-003	0.2024	0.0534	1.0700e-003	0.0544		174.9114	174.9114	4.1100e-003	3.8600e-003	176.1654
Total	**0.0537**	**0.0358**	**0.6045**	**1.7300e-003**	**0.2012**	**1.1600e-003**	**0.2024**	**0.0534**	**1.0700e-003**	**0.0544**		**174.9114**	**174.9114**	**4.1100e-003**	**3.8600e-003**	**176.1654**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.6662	0.0000	7.6662	3.9400	0.0000	3.9400			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310	0.0000	3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**7.6662**	**1.2294**	**8.8956**	**3.9400**	**1.1310**	**5.0710**	**0.0000**	**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

3.5 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0537	0.0358	0.6045	1.7300e-003	0.1312	1.1600e-003	0.1324	0.0362	1.0700e-003	0.0373		174.9114	174.9114	4.1100e-003	3.8600e-003	176.1654
Total	**0.0537**	**0.0358**	**0.6045**	**1.7300e-003**	**0.1312**	**1.1600e-003**	**0.1324**	**0.0362**	**1.0700e-003**	**0.0373**		**174.9114**	**174.9114**	**4.1100e-003**	**3.8600e-003**	**176.1654**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.1585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1467**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0299	0.5037	1.4400e-003	0.1677	9.7000e-004	0.1686	0.0445	8.9000e-004	0.0454		145.7595	145.7595	3.4200e-003	3.2200e-003	146.8045
Total	**0.0447**	**0.0299**	**0.5037**	**1.4400e-003**	**0.1677**	**9.7000e-004**	**0.1686**	**0.0445**	**8.9000e-004**	**0.0454**		**145.7595**	**145.7595**	**3.4200e-003**	**3.2200e-003**	**146.8045**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.1585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1467**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0299	0.5037	1.4400e-003	0.1094	9.7000e-004	0.1103	0.0302	8.9000e-004	0.0310		145.7595	145.7595	3.4200e-003	3.2200e-003	146.8045
Total	**0.0447**	**0.0299**	**0.5037**	**1.4400e-003**	**0.1094**	**9.7000e-004**	**0.1103**	**0.0302**	**8.9000e-004**	**0.0310**		**145.7595**	**145.7595**	**3.4200e-003**	**3.2200e-003**	**146.8045**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.1446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**8.3254**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1938	0.1294	2.1829	6.2500e-003	0.7266	4.1800e-003	0.7307	0.1927	3.8500e-003	0.1965		631.6246	631.6246	0.0148	0.0140	636.1527
Total	**0.1938**	**0.1294**	**2.1829**	**6.2500e-003**	**0.7266**	**4.1800e-003**	**0.7307**	**0.1927**	**3.8500e-003**	**0.1965**		**631.6246**	**631.6246**	**0.0148**	**0.0140**	**636.1527**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.1446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**8.3254**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1938	0.1294	2.1829	6.2500e-003	0.4739	4.1800e-003	0.4781	0.1307	3.8500e-003	0.1345		631.6246	631.6246	0.0148	0.0140	636.1527
Total	**0.1938**	**0.1294**	**2.1829**	**6.2500e-003**	**0.4739**	**4.1800e-003**	**0.4781**	**0.1307**	**3.8500e-003**	**0.1345**		**631.6246**	**631.6246**	**0.0148**	**0.0140**	**636.1527**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6328	2.4345	24.0374	0.0512	5.3066	0.0371	5.3437	1.4135	0.0344	1.4480		5,217.5148	5,217.5148	0.3664	0.2228	5,293.0670
Unmitigated	2.6328	2.4345	24.0374	0.0512	5.3066	0.0371	5.3437	1.4135	0.0344	1.4480		5,217.5148	5,217.5148	0.3664	0.2228	5,293.0670

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	12.25	30.77	34.38	51,954	51,954
Recreational Swimming Pool	994.29	313.95	469.20	2,002,200	2,002,200
Parking Lot	0.00	0.00	0.00		
Total	1,006.54	344.72	503.58	2,054,154	2,054,154

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Recreational Swimming Pool	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

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

Parking Lot	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4164	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429
Unmitigated	0.4164	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.7300e-003	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429
Total	**0.4164**	**1.7000e-004**	**0.0188**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0403**	**0.0403**	**1.1000e-004**		**0.0429**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.7300e-003	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429
Total	**0.4164**	**1.7000e-004**	**0.0188**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0403**	**0.0403**	**1.1000e-004**		**0.0429**

7.0 Water Detail

7.1 Mitigation Measures Water

Turf Reduction

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

El Rancho High School Sports Fields & Stadium

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	15.70	Acre	15.70	683,892.00	0
Recreational Swimming Pool	34.50	1000sqft	0.79	34,500.00	0
Parking Lot	134.00	Space	1.21	53,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2024
Utility Company	Pico Rivera Innovative Municipal Energy				
CO2 Intensity (lb/MWhr)	683.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - City Park includes improved fields and field house
Recreational Swimming Pool includes pool bldg

Construction Phase - total days adjusted to better reflect project

Grading -

Area Mitigation -

Off-road Equipment - unit amounts doubled from defaults

Demolition -

Construction Off-road Equipment Mitigation - SCAQMD Rule 403. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	300.00	200.00
tblConstructionPhase	PhaseEndDate	9/16/2022	8/11/2023
tblConstructionPhase	PhaseEndDate	9/30/2022	5/31/2024
tblConstructionPhase	PhaseEndDate	11/11/2022	7/14/2023
tblConstructionPhase	PhaseEndDate	1/5/2024	5/17/2024
tblConstructionPhase	PhaseEndDate	2/2/2024	6/28/2024
tblConstructionPhase	PhaseEndDate	3/1/2024	7/26/2024
tblConstructionPhase	PhaseStartDate	8/21/2022	7/17/2023
tblConstructionPhase	PhaseStartDate	9/17/2022	5/20/2024
tblConstructionPhase	PhaseStartDate	10/1/2022	6/5/2023
tblConstructionPhase	PhaseStartDate	11/12/2022	8/14/2023
tblConstructionPhase	PhaseStartDate	1/6/2024	6/3/2024
tblConstructionPhase	PhaseStartDate	2/3/2024	7/1/2024
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

2.0 Emissions Summary

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.4008	34.6720	45.1987	0.1079	9.4271	1.4459	10.8530	3.7130	1.3605	5.0248	0.0000	10,727.7234	10,727.7234	1.9493	0.4465	10,895.3776
2024	8.5343	32.7142	44.2506	0.1067	19.8582	1.2723	21.0887	10.1558	1.1967	11.2879	0.0000	10,603.8101	10,603.8101	1.3689	0.4358	10,767.8969
Maximum	**8.5343**	**34.6720**	**45.1987**	**0.1079**	**19.8582**	**1.4459**	**21.0887**	**10.1558**	**1.3605**	**11.2879**	**0.0000**	**10,727.7234**	**10,727.7234**	**1.9493**	**0.4465**	**10,895.3776**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.4008	34.6720	45.1987	0.1079	3.7352	1.4459	5.1611	1.4652	1.3605	2.7769	0.0000	10,727.7234	10,727.7234	1.9493	0.4465	10,895.3776
2024	8.5343	32.7142	44.2506	0.1067	7.7975	1.2723	9.0280	3.9761	1.1967	5.1082	0.0000	10,603.8101	10,603.8101	1.3689	0.4358	10,767.8969
Maximum	**8.5343**	**34.6720**	**45.1987**	**0.1079**	**7.7975**	**1.4459**	**9.0280**	**3.9761**	**1.3605**	**5.1082**	**0.0000**	**10,727.7234**	**10,727.7234**	**1.9493**	**0.4465**	**10,895.3776**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	60.62	0.00	55.58	60.77	0.00	51.66	0.00	0.00	0.00	0.00	0.00	0.00

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4164	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.5746	2.6292	23.7786	0.0490	5.3066	0.0371	5.3438	1.4135	0.0345	1.4480		4,998.8639	4,998.8639	0.3797	0.2329	5,077.7552
Total	**2.9909**	**2.6294**	**23.7974**	**0.0490**	**5.3066**	**0.0372**	**5.3438**	**1.4135**	**0.0345**	**1.4481**		**4,998.9043**	**4,998.9043**	**0.3799**	**0.2329**	**5,077.7981**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4164	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.5746	2.6292	23.7786	0.0490	5.3066	0.0371	5.3438	1.4135	0.0345	1.4480		4,998.8639	4,998.8639	0.3797	0.2329	5,077.7552
Total	**2.9909**	**2.6294**	**23.7974**	**0.0490**	**5.3066**	**0.0372**	**5.3438**	**1.4135**	**0.0345**	**1.4481**		**4,998.9043**	**4,998.9043**	**0.3799**	**0.2329**	**5,077.7981**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/5/2023	7/14/2023	5	30	
2	Demolition	Demolition	7/17/2023	8/11/2023	5	20	
3	Building Construction	Building Construction	8/14/2023	5/17/2024	5	200	
4	Site Preparation	Site Preparation	5/20/2024	5/31/2024	5	10	
5	Paving	Paving	6/3/2024	6/28/2024	5	20	
6	Architectural Coating	Architectural Coating	7/1/2024	7/26/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 90

Acres of Paving: 1.21

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 23,946; Non-Residential Outdoor: 7,982; Striped Parking Area: 3,216 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	2	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	164.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	18	324.00	127.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	65.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

Clean Paved Roads

3.2 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**9.2036**	**1.4245**	**10.6281**	**3.6538**	**1.3105**	**4.9643**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.2 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0688	0.0493	0.6644	1.8700e-003	0.2236	1.3400e-003	0.2249	0.0593	1.2400e-003	0.0605		189.4707	189.4707	5.1100e-003	4.9300e-003	191.0678
Total	**0.0688**	**0.0493**	**0.6644**	**1.8700e-003**	**0.2236**	**1.3400e-003**	**0.2249**	**0.0593**	**1.2400e-003**	**0.0605**		**189.4707**	**189.4707**	**5.1100e-003**	**4.9300e-003**	**191.0678**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5894	0.0000	3.5894	1.4250	0.0000	1.4250			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**3.5894**	**1.4245**	**5.0139**	**1.4250**	**1.3105**	**2.7355**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.2 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0688	0.0493	0.6644	1.8700e-003	0.1458	1.3400e-003	0.1472	0.0402	1.2400e-003	0.0414		189.4707	189.4707	5.1100e-003	4.9300e-003	191.0678
Total	**0.0688**	**0.0493**	**0.6644**	**1.8700e-003**	**0.1458**	**1.3400e-003**	**0.1472**	**0.0402**	**1.2400e-003**	**0.0414**		**189.4707**	**189.4707**	**5.1100e-003**	**4.9300e-003**	**191.0678**

3.3 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.7772	0.0000	1.7772	0.2691	0.0000	0.2691			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**1.7772**	**0.9975**	**2.7747**	**0.2691**	**0.9280**	**1.1971**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.3 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0166	1.1172	0.2895	4.8000e-003	0.1435	6.7700e-003	0.1503	0.0394	6.4700e-003	0.0458		527.5368	527.5368	0.0290	0.0838	553.2260
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0516	0.0370	0.4983	1.4100e-003	0.1677	1.0100e-003	0.1687	0.0445	9.3000e-004	0.0454		142.1030	142.1030	3.8300e-003	3.7000e-003	143.3009
Total	**0.0682**	**1.1542**	**0.7878**	**6.2100e-003**	**0.3112**	**7.7800e-003**	**0.3190**	**0.0838**	**7.4000e-003**	**0.0912**		**669.6398**	**669.6398**	**0.0328**	**0.0875**	**696.5269**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6931	0.0000	0.6931	0.1049	0.0000	0.1049			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**0.6931**	**0.9975**	**1.6906**	**0.1049**	**0.9280**	**1.0329**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.3 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0166	1.1172	0.2895	4.8000e-003	0.1002	6.7700e-003	0.1069	0.0287	6.4700e-003	0.0352		527.5368	527.5368	0.0290	0.0838	553.2260
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0516	0.0370	0.4983	1.4100e-003	0.1094	1.0100e-003	0.1104	0.0302	9.3000e-004	0.0311		142.1030	142.1030	3.8300e-003	3.7000e-003	143.3009
Total	**0.0682**	**1.1542**	**0.7878**	**6.2100e-003**	**0.2095**	**7.7800e-003**	**0.2173**	**0.0589**	**7.4000e-003**	**0.0663**		**669.6398**	**669.6398**	**0.0328**	**0.0875**	**696.5269**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1455	28.7698	32.4880	0.0539		1.3995	1.3995		1.3169	1.3169		5,110.4199	5,110.4199	1.2157		5,140.8121
Total	**3.1455**	**28.7698**	**32.4880**	**0.0539**		**1.3995**	**1.3995**		**1.3169**	**1.3169**		**5,110.4199**	**5,110.4199**	**1.2157**		**5,140.8121**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1412	5.1037	1.9478	0.0237	0.8135	0.0247	0.8382	0.2342	0.0236	0.2578		2,547.8779	2,547.8779	0.0849	0.3667	2,659.2670
Worker	1.1140	0.7985	10.7628	0.0304	3.6216	0.0218	3.6433	0.9605	0.0201	0.9805		3,069.4257	3,069.4257	0.0828	0.0799	3,095.2985
Total	**1.2552**	**5.9022**	**12.7106**	**0.0541**	**4.4351**	**0.0465**	**4.4815**	**1.1947**	**0.0436**	**1.2383**		**5,617.3035**	**5,617.3035**	**0.1677**	**0.4465**	**5,754.5655**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1455	28.7698	32.4880	0.0539		1.3995	1.3995		1.3169	1.3169	0.0000	5,110.4198	5,110.4198	1.2157		5,140.8121
Total	**3.1455**	**28.7698**	**32.4880**	**0.0539**		**1.3995**	**1.3995**		**1.3169**	**1.3169**	**0.0000**	**5,110.4198**	**5,110.4198**	**1.2157**		**5,140.8121**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1412	5.1037	1.9478	0.0237	0.5818	0.0247	0.6064	0.1774	0.0236	0.2009		2,547.8779	2,547.8779	0.0849	0.3667	2,659.2670
Worker	1.1140	0.7985	10.7628	0.0304	2.3622	0.0218	2.3840	0.6513	0.0201	0.6714		3,069.4257	3,069.4257	0.0828	0.0799	3,095.2985
Total	**1.2552**	**5.9022**	**12.7106**	**0.0541**	**2.9440**	**0.0465**	**2.9904**	**0.8287**	**0.0436**	**0.8723**		**5,617.3035**	**5,617.3035**	**0.1677**	**0.4465**	**5,754.5655**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9431	26.8876	32.3336	0.0539		1.2266	1.2266		1.1538	1.1538		5,111.3978	5,111.3978	1.2087		5,141.6153
Total	**2.9431**	**26.8876**	**32.3336**	**0.0539**		**1.2266**	**1.2266**		**1.1538**	**1.1538**		**5,111.3978**	**5,111.3978**	**1.2087**		**5,141.6153**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1365	5.1142	1.9069	0.0233	0.8135	0.0248	0.8383	0.2342	0.0237	0.2580		2,509.7021	2,509.7021	0.0852	0.3615	2,619.5685
Worker	1.0414	0.7125	10.0100	0.0295	3.6216	0.0209	3.6424	0.9605	0.0192	0.9797		2,982.7103	2,982.7103	0.0750	0.0743	3,006.7131
Total	**1.1779**	**5.8267**	**11.9169**	**0.0528**	**4.4351**	**0.0457**	**4.4807**	**1.1947**	**0.0429**	**1.2376**		**5,492.4123**	**5,492.4123**	**0.1602**	**0.4358**	**5,626.2816**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9431	26.8876	32.3336	0.0539		1.2266	1.2266		1.1538	1.1538	0.0000	5,111.3978	5,111.3978	1.2087		5,141.6153
Total	**2.9431**	**26.8876**	**32.3336**	**0.0539**		**1.2266**	**1.2266**		**1.1538**	**1.1538**	**0.0000**	**5,111.3978**	**5,111.3978**	**1.2087**		**5,141.6153**

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

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1365	5.1142	1.9069	0.0233	0.5818	0.0248	0.6066	0.1774	0.0237	0.2011		2,509.7021	2,509.7021	0.0852	0.3615	2,619.5685
Worker	1.0414	0.7125	10.0100	0.0295	2.3622	0.0209	2.3830	0.6513	0.0192	0.6705		2,982.7103	2,982.7103	0.0750	0.0743	3,006.7131
Total	**1.1779**	**5.8267**	**11.9169**	**0.0528**	**2.9440**	**0.0457**	**2.9896**	**0.8287**	**0.0429**	**0.8716**		**5,492.4123**	**5,492.4123**	**0.1602**	**0.4358**	**5,626.2816**

3.5 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310		3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**19.6570**	**1.2294**	**20.8864**	**10.1025**	**1.1310**	**11.2335**		**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.5 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0579	0.0396	0.5561	1.6400e-003	0.2012	1.1600e-003	0.2024	0.0534	1.0700e-003	0.0544		165.7061	165.7061	4.1700e-003	4.1300e-003	167.0396
Total	**0.0579**	**0.0396**	**0.5561**	**1.6400e-003**	**0.2012**	**1.1600e-003**	**0.2024**	**0.0534**	**1.0700e-003**	**0.0544**		**165.7061**	**165.7061**	**4.1700e-003**	**4.1300e-003**	**167.0396**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.6662	0.0000	7.6662	3.9400	0.0000	3.9400			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310	0.0000	3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**7.6662**	**1.2294**	**8.8956**	**3.9400**	**1.1310**	**5.0710**	**0.0000**	**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.5 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0579	0.0396	0.5561	1.6400e-003	0.1312	1.1600e-003	0.1324	0.0362	1.0700e-003	0.0373		165.7061	165.7061	4.1700e-003	4.1300e-003	167.0396
Total	**0.0579**	**0.0396**	**0.5561**	**1.6400e-003**	**0.1312**	**1.1600e-003**	**0.1324**	**0.0362**	**1.0700e-003**	**0.0373**		**165.7061**	**165.7061**	**4.1700e-003**	**4.1300e-003**	**167.0396**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.1585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1467**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0482	0.0330	0.4634	1.3700e-003	0.1677	9.7000e-004	0.1686	0.0445	8.9000e-004	0.0454		138.0884	138.0884	3.4700e-003	3.4400e-003	139.1997
Total	**0.0482**	**0.0330**	**0.4634**	**1.3700e-003**	**0.1677**	**9.7000e-004**	**0.1686**	**0.0445**	**8.9000e-004**	**0.0454**		**138.0884**	**138.0884**	**3.4700e-003**	**3.4400e-003**	**139.1997**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.1585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1467**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0482	0.0330	0.4634	1.3700e-003	0.1094	9.7000e-004	0.1103	0.0302	8.9000e-004	0.0310		138.0884	138.0884	3.4700e-003	3.4400e-003	139.1997
Total	**0.0482**	**0.0330**	**0.4634**	**1.3700e-003**	**0.1094**	**9.7000e-004**	**0.1103**	**0.0302**	**8.9000e-004**	**0.0310**		**138.0884**	**138.0884**	**3.4700e-003**	**3.4400e-003**	**139.1997**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.1446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**8.3254**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2089	0.1429	2.0082	5.9200e-003	0.7266	4.1800e-003	0.7307	0.1927	3.8500e-003	0.1965		598.3832	598.3832	0.0151	0.0149	603.1986
Total	**0.2089**	**0.1429**	**2.0082**	**5.9200e-003**	**0.7266**	**4.1800e-003**	**0.7307**	**0.1927**	**3.8500e-003**	**0.1965**		**598.3832**	**598.3832**	**0.0151**	**0.0149**	**603.1986**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.1446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**8.3254**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2089	0.1429	2.0082	5.9200e-003	0.4739	4.1800e-003	0.4781	0.1307	3.8500e-003	0.1345		598.3832	598.3832	0.0151	0.0149	603.1986
Total	**0.2089**	**0.1429**	**2.0082**	**5.9200e-003**	**0.4739**	**4.1800e-003**	**0.4781**	**0.1307**	**3.8500e-003**	**0.1345**		**598.3832**	**598.3832**	**0.0151**	**0.0149**	**603.1986**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5746	2.6292	23.7786	0.0490	5.3066	0.0371	5.3438	1.4135	0.0345	1.4480		4,998.8639	4,998.8639	0.3797	0.2329	5,077.7552
Unmitigated	2.5746	2.6292	23.7786	0.0490	5.3066	0.0371	5.3438	1.4135	0.0345	1.4480		4,998.8639	4,998.8639	0.3797	0.2329	5,077.7552

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	12.25	30.77	34.38	51,954	51,954
Recreational Swimming Pool	994.29	313.95	469.20	2,002,200	2,002,200
Parking Lot	0.00	0.00	0.00		
Total	1,006.54	344.72	503.58	2,054,154	2,054,154

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Recreational Swimming Pool	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

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

Parking Lot	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4164	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429
Unmitigated	0.4164	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.7300e-003	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429
Total	**0.4164**	**1.7000e-004**	**0.0188**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0403**	**0.0403**	**1.1000e-004**		**0.0429**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Winter

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3700					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.7300e-003	1.7000e-004	0.0188	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0403	0.0403	1.1000e-004		0.0429
Total	**0.4164**	**1.7000e-004**	**0.0188**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0403**	**0.0403**	**1.1000e-004**		**0.0429**

7.0 Water Detail

7.1 Mitigation Measures Water

Turf Reduction

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

CalEEMod Output Files – Greenhouse Gas Emissions

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Annual

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

El Rancho High School Sports Fields & Stadium

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	15.70	Acre	15.70	683,892.00	0
Recreational Swimming Pool	34.50	1000sqft	0.79	34,500.00	0
Parking Lot	134.00	Space	1.21	53,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2024
Utility Company	Pico Rivera Innovative Municipal Energy				
CO2 Intensity (lb/MWhr)	683.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - City Park includes improved fields and field house
Recreational Swimming Pool includes pool bldg

Construction Phase - total days adjusted to better reflect project

Grading -

Area Mitigation -

Off-road Equipment - unit amounts doubled from defaults

Demolition -

Construction Off-road Equipment Mitigation - SCAQMD Rule 403. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied

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

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	300.00	200.00
tblConstructionPhase	PhaseEndDate	9/16/2022	8/11/2023
tblConstructionPhase	PhaseEndDate	9/30/2022	5/31/2024
tblConstructionPhase	PhaseEndDate	11/11/2022	7/14/2023
tblConstructionPhase	PhaseEndDate	1/5/2024	5/17/2024
tblConstructionPhase	PhaseEndDate	2/2/2024	6/28/2024
tblConstructionPhase	PhaseEndDate	3/1/2024	7/26/2024
tblConstructionPhase	PhaseStartDate	8/21/2022	7/17/2023
tblConstructionPhase	PhaseStartDate	9/17/2022	5/20/2024
tblConstructionPhase	PhaseStartDate	10/1/2022	6/5/2023
tblConstructionPhase	PhaseStartDate	11/12/2022	8/14/2023
tblConstructionPhase	PhaseStartDate	1/6/2024	6/3/2024
tblConstructionPhase	PhaseStartDate	2/3/2024	7/1/2024
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

2.0 Emissions Summary

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

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2900	2.4802	2.9075	6.8300e-003	0.3797	0.1037	0.4834	0.1179	0.0971	0.2150	0.0000	613.0682	613.0682	0.0991	0.0212	621.8502
2024	0.3127	1.8825	2.5079	5.8900e-003	0.3256	0.0751	0.4007	0.1118	0.0705	0.1823	0.0000	529.7339	529.7339	0.0743	0.0200	537.5487
Maximum	**0.3127**	**2.4802**	**2.9075**	**6.8300e-003**	**0.3797**	**0.1037**	**0.4834**	**0.1179**	**0.0971**	**0.2150**	**0.0000**	**613.0682**	**613.0682**	**0.0991**	**0.0212**	**621.8502**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2900	2.4802	2.9075	6.8300e-003	0.2097	0.1037	0.3134	0.0644	0.0971	0.1615	0.0000	613.0677	613.0677	0.0991	0.0212	621.8498
2024	0.3127	1.8825	2.5079	5.8900e-003	0.1894	0.0751	0.2645	0.0623	0.0705	0.1327	0.0000	529.7336	529.7336	0.0743	0.0200	537.5484
Maximum	**0.3127**	**2.4802**	**2.9075**	**6.8300e-003**	**0.2097**	**0.1037**	**0.3134**	**0.0644**	**0.0971**	**0.1615**	**0.0000**	**613.0677**	**613.0677**	**0.0991**	**0.0212**	**621.8498**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**43.42**	**0.00**	**34.64**	**44.85**	**0.00**	**25.94**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
4	**5-21-2023**	**8-20-2023**	0.8703	0.8703
5	**8-21-2023**	**11-20-2023**	1.2783	1.2783
6	**11-21-2023**	**2-20-2024**	1.2431	1.2431
7	**2-21-2024**	**5-20-2024**	1.1491	1.1491
8	**5-21-2024**	**8-20-2024**	0.3090	0.3090
		Highest	1.2783	1.2783

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0759	2.0000e-005	2.3500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5700e-003	4.5700e-003	1.0000e-005	0.0000	4.8700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.8203	5.8203	2.8000e-004	3.0000e-005	5.8374
Mobile	0.3749	0.3948	3.5517	7.3500e-003	0.7718	5.5000e-003	0.7773	0.2059	5.1000e-003	0.2110	0.0000	679.7473	679.7473	0.0508	0.0315	690.4010
Waste						0.0000	0.0000		0.0000	0.0000	40.1922	0.0000	40.1922	2.3753	0.0000	99.5745
Water						0.0000	0.0000		0.0000	0.0000	0.6473	77.0312	77.6786	0.0702	2.0200e-003	80.0358
Total	**0.4508**	**0.3948**	**3.5540**	**7.3500e-003**	**0.7718**	**5.5100e-003**	**0.7773**	**0.2059**	**5.1100e-003**	**0.2110**	**40.8396**	**762.6034**	**803.4429**	**2.4966**	**0.0335**	**875.8536**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0759	2.0000e-005	2.3500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5700e-003	4.5700e-003	1.0000e-005	0.0000	4.8700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.8203	5.8203	2.8000e-004	3.0000e-005	5.8374
Mobile	0.3749	0.3948	3.5517	7.3500e-003	0.7718	5.5000e-003	0.7773	0.2059	5.1000e-003	0.2110	0.0000	679.7473	679.7473	0.0508	0.0315	690.4010
Waste						0.0000	0.0000		0.0000	0.0000	40.1922	0.0000	40.1922	2.3753	0.0000	99.5745
Water						0.0000	0.0000		0.0000	0.0000	0.6473	77.0312	77.6786	0.0702	2.0200e-003	80.0358
Total	**0.4508**	**0.3948**	**3.5540**	**7.3500e-003**	**0.7718**	**5.5100e-003**	**0.7773**	**0.2059**	**5.1100e-003**	**0.2110**	**40.8396**	**762.6034**	**803.4429**	**2.4966**	**0.0335**	**875.8536**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/5/2023	7/14/2023	5	30	
2	Demolition	Demolition	7/17/2023	8/11/2023	5	20	
3	Building Construction	Building Construction	8/14/2023	5/17/2024	5	200	

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4	Site Preparation	Site Preparation	5/20/2024	5/31/2024	5	10	
5	Paving	Paving	6/3/2024	6/28/2024	5	20	
6	Architectural Coating	Architectural Coating	7/1/2024	7/26/2024	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 90

Acres of Paving: 1.21

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 23,946; Non-Residential Outdoor: 7,982; Striped Parking Area: 3,216 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	2	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36

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Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	164.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	18	324.00	127.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	65.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

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3.2 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1381	0.0000	0.1381	0.0548	0.0000	0.0548	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0498	0.5177	0.4208	9.3000e-004		0.0214	0.0214		0.0197	0.0197	0.0000	81.8028	81.8028	0.0265	0.0000	82.4642
Total	**0.0498**	**0.5177**	**0.4208**	**9.3000e-004**	**0.1381**	**0.0214**	**0.1594**	**0.0548**	**0.0197**	**0.0745**	**0.0000**	**81.8028**	**81.8028**	**0.0265**	**0.0000**	**82.4642**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	7.6000e-004	0.0102	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.6167	2.6167	7.0000e-005	7.0000e-005	2.6388
Total	**9.5000e-004**	**7.6000e-004**	**0.0102**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**2.6167**	**2.6167**	**7.0000e-005**	**7.0000e-005**	**2.6388**

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3.2 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0538	0.0000	0.0538	0.0214	0.0000	0.0214	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0498	0.5177	0.4208	9.3000e-004		0.0214	0.0214		0.0197	0.0197	0.0000	81.8027	81.8027	0.0265	0.0000	82.4641
Total	**0.0498**	**0.5177**	**0.4208**	**9.3000e-004**	**0.0538**	**0.0214**	**0.0752**	**0.0214**	**0.0197**	**0.0410**	**0.0000**	**81.8027**	**81.8027**	**0.0265**	**0.0000**	**82.4641**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	7.6000e-004	0.0102	3.0000e-005	2.1500e-003	2.0000e-005	2.1700e-003	5.9000e-004	2.0000e-005	6.1000e-004	0.0000	2.6167	2.6167	7.0000e-005	7.0000e-005	2.6388
Total	**9.5000e-004**	**7.6000e-004**	**0.0102**	**3.0000e-005**	**2.1500e-003**	**2.0000e-005**	**2.1700e-003**	**5.9000e-004**	**2.0000e-005**	**6.1000e-004**	**0.0000**	**2.6167**	**2.6167**	**7.0000e-005**	**7.0000e-005**	**2.6388**

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

3.3 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0178	0.0000	0.0178	2.6900e-003	0.0000	2.6900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0227	0.2148	0.1964	3.9000e-004		9.9800e-003	9.9800e-003		9.2800e-003	9.2800e-003	0.0000	33.9921	33.9921	9.5200e-003	0.0000	34.2301
Total	**0.0227**	**0.2148**	**0.1964**	**3.9000e-004**	**0.0178**	**9.9800e-003**	**0.0278**	**2.6900e-003**	**9.2800e-003**	**0.0120**	**0.0000**	**33.9921**	**33.9921**	**9.5200e-003**	**0.0000**	**34.2301**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7000e-004	0.0113	2.8700e-003	5.0000e-005	1.4100e-003	7.0000e-005	1.4800e-003	3.9000e-004	6.0000e-005	4.5000e-004	0.0000	4.7828	4.7828	2.6000e-004	7.6000e-004	5.0157
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.8000e-004	5.1100e-003	1.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3084	1.3084	3.0000e-005	3.0000e-005	1.3194
Total	**6.5000e-004**	**0.0117**	**7.9800e-003**	**6.0000e-005**	**3.0500e-003**	**8.0000e-005**	**3.1300e-003**	**8.3000e-004**	**7.0000e-005**	**9.0000e-004**	**0.0000**	**6.0912**	**6.0912**	**2.9000e-004**	**7.9000e-004**	**6.3351**

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3.3 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.9300e-003	0.0000	6.9300e-003	1.0500e-003	0.0000	1.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0227	0.2148	0.1964	3.9000e-004		9.9800e-003	9.9800e-003		9.2800e-003	9.2800e-003	0.0000	33.9920	33.9920	9.5200e-003	0.0000	34.2300
Total	**0.0227**	**0.2148**	**0.1964**	**3.9000e-004**	**6.9300e-003**	**9.9800e-003**	**0.0169**	**1.0500e-003**	**9.2800e-003**	**0.0103**	**0.0000**	**33.9920**	**33.9920**	**9.5200e-003**	**0.0000**	**34.2300**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7000e-004	0.0113	2.8700e-003	5.0000e-005	9.9000e-004	7.0000e-005	1.0500e-003	2.8000e-004	6.0000e-005	3.5000e-004	0.0000	4.7828	4.7828	2.6000e-004	7.6000e-004	5.0157
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.8000e-004	5.1100e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.3084	1.3084	3.0000e-005	3.0000e-005	1.3194
Total	**6.5000e-004**	**0.0117**	**7.9800e-003**	**6.0000e-005**	**2.0600e-003**	**8.0000e-005**	**2.1300e-003**	**5.8000e-004**	**7.0000e-005**	**6.6000e-004**	**0.0000**	**6.0912**	**6.0912**	**2.9000e-004**	**7.9000e-004**	**6.3351**

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3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1573	1.4385	1.6244	2.6900e-003		0.0700	0.0700		0.0658	0.0658	0.0000	231.8048	231.8048	0.0551	0.0000	233.1833
Total	**0.1573**	**1.4385**	**1.6244**	**2.6900e-003**		**0.0700**	**0.0700**		**0.0658**	**0.0658**	**0.0000**	**231.8048**	**231.8048**	**0.0551**	**0.0000**	**233.1833**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1700e-003	0.2559	0.0958	1.1800e-003	0.0400	1.2300e-003	0.0413	0.0116	1.1700e-003	0.0127	0.0000	115.4571	115.4571	3.8600e-003	0.0166	120.5051
Worker	0.0514	0.0408	0.5520	1.5400e-003	0.1775	1.0900e-003	0.1786	0.0472	1.0000e-003	0.0482	0.0000	141.3035	141.3035	3.7600e-003	3.6800e-003	142.4936
Total	**0.0586**	**0.2967**	**0.6477**	**2.7200e-003**	**0.2175**	**2.3200e-003**	**0.2199**	**0.0587**	**2.1700e-003**	**0.0609**	**0.0000**	**256.7606**	**256.7606**	**7.6200e-003**	**0.0203**	**262.9987**

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3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1573	1.4385	1.6244	2.6900e-003		0.0700	0.0700		0.0658	0.0658	0.0000	231.8045	231.8045	0.0551	0.0000	233.1830
Total	**0.1573**	**1.4385**	**1.6244**	**2.6900e-003**		**0.0700**	**0.0700**		**0.0658**	**0.0658**	**0.0000**	**231.8045**	**231.8045**	**0.0551**	**0.0000**	**233.1830**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1700e-003	0.2559	0.0958	1.1800e-003	0.0287	1.2300e-003	0.0299	8.7700e-003	1.1700e-003	9.9500e-003	0.0000	115.4571	115.4571	3.8600e-003	0.0166	120.5051
Worker	0.0514	0.0408	0.5520	1.5400e-003	0.1160	1.0900e-003	0.1171	0.0320	1.0000e-003	0.0331	0.0000	141.3035	141.3035	3.7600e-003	3.6800e-003	142.4936
Total	**0.0586**	**0.2967**	**0.6477**	**2.7200e-003**	**0.1447**	**2.3200e-003**	**0.1470**	**0.0408**	**2.1700e-003**	**0.0430**	**0.0000**	**256.7606**	**256.7606**	**7.6200e-003**	**0.0203**	**262.9987**

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

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1472	1.3444	1.6167	2.7000e-003		0.0613	0.0613		0.0577	0.0577	0.0000	231.8491	231.8491	0.0548	0.0000	233.2198
Total	**0.1472**	**1.3444**	**1.6167**	**2.7000e-003**		**0.0613**	**0.0613**		**0.0577**	**0.0577**	**0.0000**	**231.8491**	**231.8491**	**0.0548**	**0.0000**	**233.2198**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.9500e-003	0.2564	0.0938	1.1600e-003	0.0400	1.2400e-003	0.0413	0.0116	1.1800e-003	0.0127	0.0000	113.7249	113.7249	3.8700e-003	0.0164	118.7037
Worker	0.0480	0.0364	0.5132	1.5000e-003	0.1775	1.0400e-003	0.1786	0.0472	9.6000e-004	0.0481	0.0000	137.3082	137.3082	3.4000e-003	3.4200e-003	138.4121
Total	**0.0549**	**0.2928**	**0.6070**	**2.6600e-003**	**0.2175**	**2.2800e-003**	**0.2198**	**0.0587**	**2.1400e-003**	**0.0608**	**0.0000**	**251.0330**	**251.0330**	**7.2700e-003**	**0.0198**	**257.1158**

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3.4 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1472	1.3444	1.6167	2.7000e-003		0.0613	0.0613		0.0577	0.0577	0.0000	231.8488	231.8488	0.0548	0.0000	233.2195
Total	**0.1472**	**1.3444**	**1.6167**	**2.7000e-003**		**0.0613**	**0.0613**		**0.0577**	**0.0577**	**0.0000**	**231.8488**	**231.8488**	**0.0548**	**0.0000**	**233.2195**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.9500e-003	0.2564	0.0938	1.1600e-003	0.0287	1.2400e-003	0.0299	8.7700e-003	1.1800e-003	9.9500e-003	0.0000	113.7249	113.7249	3.8700e-003	0.0164	118.7037
Worker	0.0480	0.0364	0.5132	1.5000e-003	0.1160	1.0400e-003	0.1170	0.0320	9.6000e-004	0.0330	0.0000	137.3082	137.3082	3.4000e-003	3.4200e-003	138.4121
Total	**0.0549**	**0.2928**	**0.6070**	**2.6600e-003**	**0.1447**	**2.2800e-003**	**0.1470**	**0.0408**	**2.1400e-003**	**0.0430**	**0.0000**	**251.0330**	**251.0330**	**7.2700e-003**	**0.0198**	**257.1158**

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3.5 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1359	0.0917	1.9000e-004		6.1500e-003	6.1500e-003		5.6600e-003	5.6600e-003	0.0000	16.7285	16.7285	5.4100e-003	0.0000	16.8638
Total	**0.0133**	**0.1359**	**0.0917**	**1.9000e-004**	**0.0983**	**6.1500e-003**	**0.1044**	**0.0505**	**5.6600e-003**	**0.0562**	**0.0000**	**16.7285**	**16.7285**	**5.4100e-003**	**0.0000**	**16.8638**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.0000e-004	2.8500e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7628	0.7628	2.0000e-005	2.0000e-005	0.7690
Total	**2.7000e-004**	**2.0000e-004**	**2.8500e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.7628**	**0.7628**	**2.0000e-005**	**2.0000e-005**	**0.7690**

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3.5 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0383	0.0000	0.0383	0.0197	0.0000	0.0197	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1359	0.0917	1.9000e-004		6.1500e-003	6.1500e-003		5.6500e-003	5.6500e-003	0.0000	16.7285	16.7285	5.4100e-003	0.0000	16.8638
Total	**0.0133**	**0.1359**	**0.0917**	**1.9000e-004**	**0.0383**	**6.1500e-003**	**0.0445**	**0.0197**	**5.6500e-003**	**0.0254**	**0.0000**	**16.7285**	**16.7285**	**5.4100e-003**	**0.0000**	**16.8638**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.0000e-004	2.8500e-003	1.0000e-005	6.4000e-004	1.0000e-005	6.5000e-004	1.8000e-004	1.0000e-005	1.8000e-004	0.0000	0.7628	0.7628	2.0000e-005	2.0000e-005	0.7690
Total	**2.7000e-004**	**2.0000e-004**	**2.8500e-003**	**1.0000e-005**	**6.4000e-004**	**1.0000e-005**	**6.5000e-004**	**1.8000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.7628**	**0.7628**	**2.0000e-005**	**2.0000e-005**	**0.7690**

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3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1885
Paving	1.5900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0115**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1885**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.4000e-004	4.7500e-003	1.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.2714	1.2714	3.0000e-005	3.0000e-005	1.2816
Total	**4.4000e-004**	**3.4000e-004**	**4.7500e-003**	**1.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6500e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.2714**	**1.2714**	**3.0000e-005**	**3.0000e-005**	**1.2816**

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3.6 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8800e-003	0.0953	0.1463	2.3000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	20.0265	20.0265	6.4800e-003	0.0000	20.1884
Paving	1.5900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0115**	**0.0953**	**0.1463**	**2.3000e-004**		**4.6900e-003**	**4.6900e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**20.0265**	**20.0265**	**6.4800e-003**	**0.0000**	**20.1884**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.4000e-004	4.7500e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.2714	1.2714	3.0000e-005	3.0000e-005	1.2816
Total	**4.4000e-004**	**3.4000e-004**	**4.7500e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.2714**	**1.2714**	**3.0000e-005**	**3.0000e-005**	**1.2816**

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

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0815					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5569
Total	**0.0833**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5569**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9200e-003	1.4600e-003	0.0206	6.0000e-005	7.1200e-003	4.0000e-005	7.1600e-003	1.8900e-003	4.0000e-005	1.9300e-003	0.0000	5.5093	5.5093	1.4000e-004	1.4000e-004	5.5536
Total	**1.9200e-003**	**1.4600e-003**	**0.0206**	**6.0000e-005**	**7.1200e-003**	**4.0000e-005**	**7.1600e-003**	**1.8900e-003**	**4.0000e-005**	**1.9300e-003**	**0.0000**	**5.5093**	**5.5093**	**1.4000e-004**	**1.4000e-004**	**5.5536**

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

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0815					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0122	0.0181	3.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	2.5533	2.5533	1.4000e-004	0.0000	2.5568
Total	**0.0833**	**0.0122**	**0.0181**	**3.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.4000e-004**	**0.0000**	**2.5568**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9200e-003	1.4600e-003	0.0206	6.0000e-005	4.6500e-003	4.0000e-005	4.7000e-003	1.2900e-003	4.0000e-005	1.3200e-003	0.0000	5.5093	5.5093	1.4000e-004	1.4000e-004	5.5536
Total	**1.9200e-003**	**1.4600e-003**	**0.0206**	**6.0000e-005**	**4.6500e-003**	**4.0000e-005**	**4.7000e-003**	**1.2900e-003**	**4.0000e-005**	**1.3200e-003**	**0.0000**	**5.5093**	**5.5093**	**1.4000e-004**	**1.4000e-004**	**5.5536**

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4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3749	0.3948	3.5517	7.3500e-003	0.7718	5.5000e-003	0.7773	0.2059	5.1000e-003	0.2110	0.0000	679.7473	679.7473	0.0508	0.0315	690.4010
Unmitigated	0.3749	0.3948	3.5517	7.3500e-003	0.7718	5.5000e-003	0.7773	0.2059	5.1000e-003	0.2110	0.0000	679.7473	679.7473	0.0508	0.0315	690.4010

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	12.25	30.77	34.38	51,954	51,954
Recreational Swimming Pool	994.29	313.95	469.20	2,002,200	2,002,200
Parking Lot	0.00	0.00	0.00		
Total	1,006.54	344.72	503.58	2,054,154	2,054,154

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Recreational Swimming Pool	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Parking Lot	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5.8203	5.8203	2.8000e-004	3.0000e-005	5.8374
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5.8203	5.8203	2.8000e-004	3.0000e-005	5.8374
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Annual

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	18760	5.8203	2.8000e-004	3.0000e-005	5.8374
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Total		**5.8203**	**2.8000e-004**	**3.0000e-005**	**5.8374**

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

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	18760	5.8203	2.8000e-004	3.0000e-005	5.8374
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Total		**5.8203**	**2.8000e-004**	**3.0000e-005**	**5.8374**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0759	2.0000e-005	2.3500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5700e-003	4.5700e-003	1.0000e-005	0.0000	4.8700e-003
Unmitigated	0.0759	2.0000e-005	2.3500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5700e-003	4.5700e-003	1.0000e-005	0.0000	4.8700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.1400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0675					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.3500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5700e-003	4.5700e-003	1.0000e-005	0.0000	4.8700e-003
Total	**0.0759**	**2.0000e-005**	**2.3500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.5700e-003**	**4.5700e-003**	**1.0000e-005**	**0.0000**	**4.8700e-003**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Annual

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.1400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0675					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.3500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.5700e-003	4.5700e-003	1.0000e-005	0.0000	4.8700e-003
Total	**0.0759**	**2.0000e-005**	**2.3500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.5700e-003**	**4.5700e-003**	**1.0000e-005**	**0.0000**	**4.8700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Turf Reduction

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	77.6786	0.0702	2.0200e-003	80.0358
Unmitigated	77.6786	0.0702	2.0200e-003	80.0358

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 18.7063	64.4778	3.1100e-003	3.8000e-004	64.6679
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	2.04044 / 1.25059	13.2008	0.0671	1.6400e-003	15.3678
Total		**77.6786**	**0.0702**	**2.0200e-003**	**80.0358**

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

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 18.7063	64.4778	3.1100e-003	3.8000e-004	64.6679
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	2.04044 / 1.25059	13.2008	0.0671	1.6400e-003	15.3678
Total		**77.6786**	**0.0702**	**2.0200e-003**	**80.0358**

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	40.1922	2.3753	0.0000	99.5745
Unmitigated	40.1922	2.3753	0.0000	99.5745

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.35	0.2740	0.0162	0.0000	0.6789
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	196.65	39.9182	2.3591	0.0000	98.8956
Total		**40.1922**	**2.3753**	**0.0000**	**99.5745**

El Rancho High School Sports Fields & Stadium - Los Angeles-South Coast County, Annual

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

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.35	0.2740	0.0162	0.0000	0.6789
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	196.65	39.9182	2.3591	0.0000	98.8956
Total		**40.1922**	**2.3753**	**0.0000**	**99.5745**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B Noise Impact Assessment for the El Rancho High School Sports Field & Stadium Project

Appendices

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Noise Impact Assessment
for the
El Rancho High School Sports Field & Stadium Project

City of Pico Rivera, California

Prepared For:

Placeworks
3 MacArthur Place, Suite 1100
Santa Ana, CA 92707

Prepared By:

September 2022

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LIST OF ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	Decibel is A-weighted
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Hz	Hertz
L_{dn}	Day-night average sound level
L_{eq}	Measure of ambient noise
L_{max}	The maximum A-weighted noise level during the measurement period.
L_{min}	The minimum A-weighted noise level during the measurement period.
NIOSH	National Institute for Occupational Safety and Health
OPR	Office of Planning and Research
OSHA	Federal Occupational Safety and Health Administration
PPV	Peak particle velocity
Project	El Rancho High School Sports Field & Stadium Project
RCNM	Roadway Construction Noise Model
RMS	Root mean square
STC	Sound Transmission Class
VdB	Vibration Velocity Level
WEAL	Western Electro-Acoustic Laboratory, Inc.

1.0 INTRODUCTION

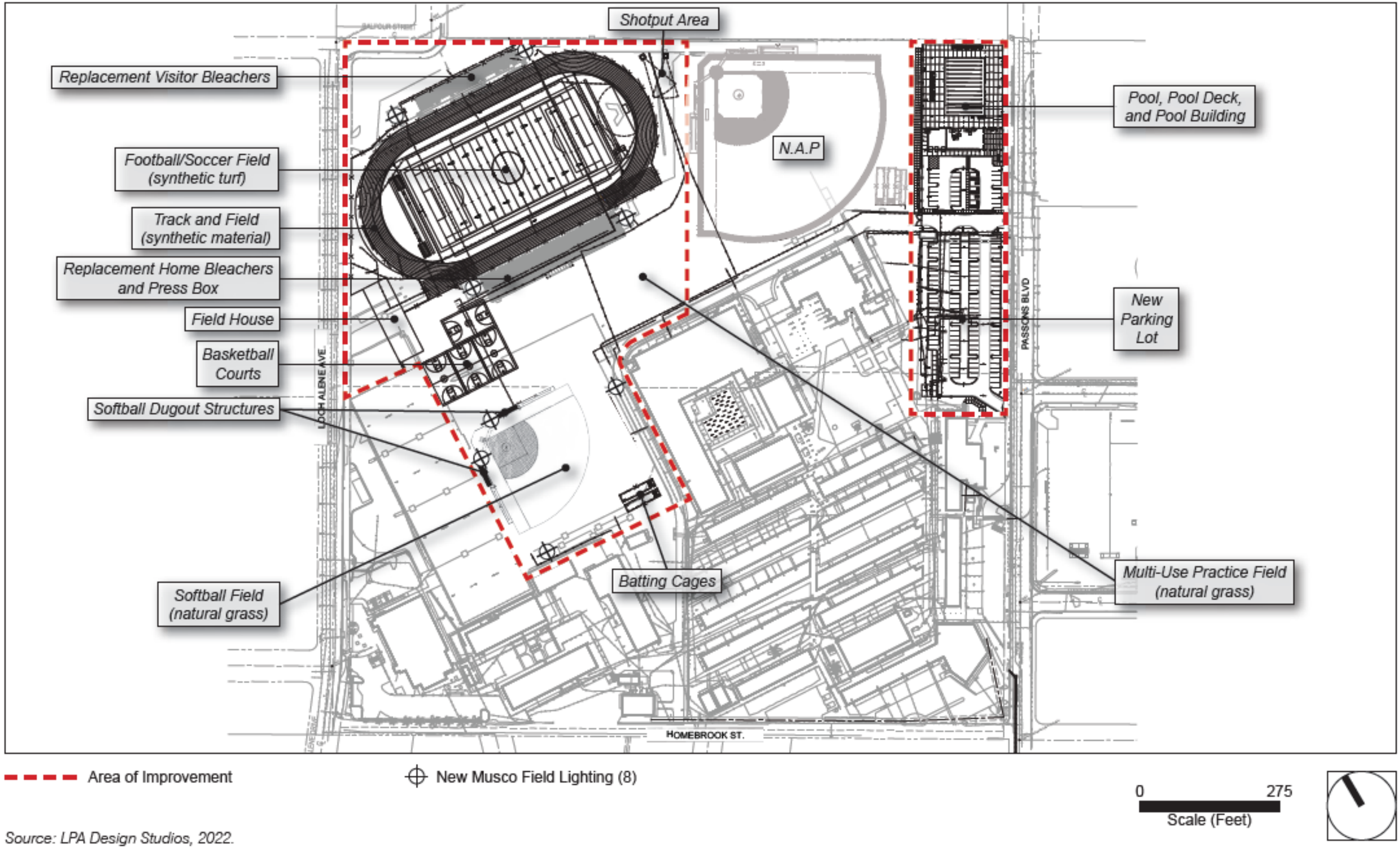
This report documents the results of a Noise Impact Assessment completed for the El Rancho High School Sports Field & Stadium Project (Project), which proposes modernizations to existing athletic facilities contained within the El Rancho High School campus in Pico Rivera, California. This report was prepared as a comparison of predicted Project noise levels to noise standards promulgated by the City of Pico Rivera General Plan Noise Element. The purpose of this report is to estimate Project-generated noise and to determine the level of impact the Project would have on the environment.

1.1 Project Location and Description

The existing El Rancho High School campus is located at 6501 Passons Boulevard in the City of Pico Rivera, California. Nestled between Loch Alene Avenue to the west, Balfour Street to the north, and Homebrook Street to the south, the school is predominately surrounded by residences and offices. California Highway 605 is located approximately 5,000 feet east of the Project Site.

The Project is proposing the renovations of several athletic facilities on the campus. Specifically, the existing natural turf of the football field, located at the northern corner of the high school campus, would be removed and replaced with synthetic turf. The earthen track surrounding the football field would also be replaced with synthetic material. The existing bleachers, both visitor and home team, would be replaced, though no additional capacity is proposed. A new equipment structure (i.e., Field House) would be constructed adjacent to the southwest corner of the football field and track (see Figure 1). The four existing outdoor basketball courts just south of the football stadium are proposed to be rejuvenated and the existing softball field (see Figure 1) would be reconfigured. In addition to reconfiguration, the softball field would be re-turfed, two new dugouts would be constructed, and softball batting cages would be installed. The existing parking lot at the northeast corner of the campus is proposed to be demolished in order to accommodate a pool facility, complete with a pool, pool deck, and pool building. The soil material excavated to construct the proposed pool would be used to fill in the existing pool on campus, which is currently not in use. The open area just south of the existing parking lot at the northeast corner of the campus, currently consisting of dirt, a sidewalk, and limited hardscape, would be replaced with a parking lot (see Figure 1). For the purposes of this analysis, 17.7 acres in total were estimated to be disturbed by these proposed improvements.

The improvements to the football field, softball diamond, and reinstatement of a swimming pool would not increase student population. No additional school sports programs would be added, and the new gymnasium is not expected to increase the number of participants or spectators.



Source: LPA Design Studios, 2022.

Map Date: 9/1/2022
Photo (or Base) Source: *LPA 2022*

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 1. Site Plan

2022-120 El Rancho High School Sports Fields and Stadium Project

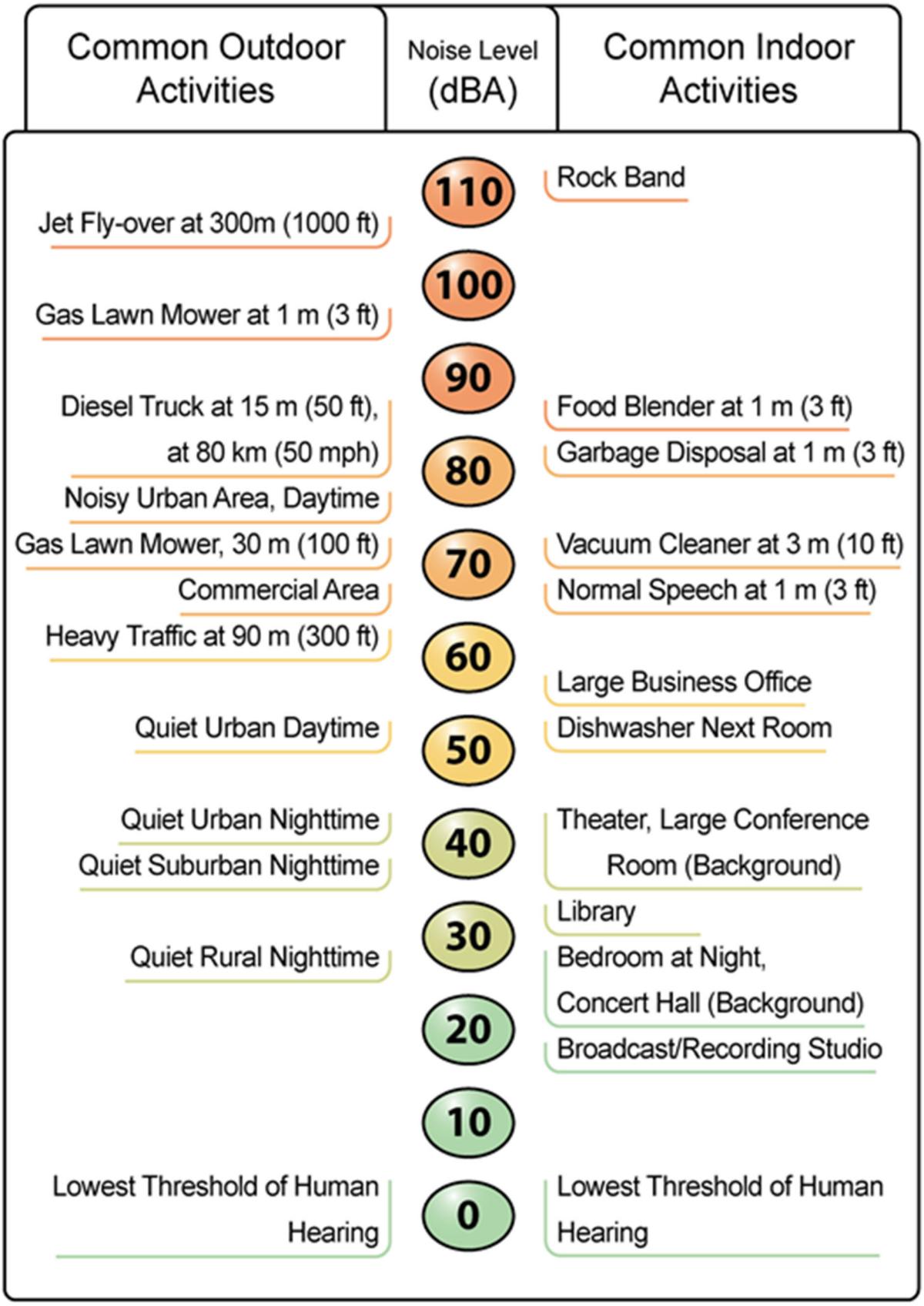
2.0 ENVIRONMENTAL NOISE AND GROUNDBORNE VIBRATION ANALYSIS

2.1 Fundamentals of Noise and Environmental Sound

2.1.1 Addition of Decibels

The decibel (dB) scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be three dB higher than one source under the same conditions (Federal Transit Administration [FTA] 2018). For example, a 65-dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by three dB). Under the decibel scale, three sources of equal loudness together would produce an increase of five dB.

Typical noise levels associated with common noise sources are depicted in Figure 2-1.



Source: California Department of Transportation (Caltrans) 2020a

Figure 2-1. Common Noise Levels

2.1.2 Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB (dBA) for each doubling of distance from a stationary or point source (FHWA 2017). Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dBA for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (Federal Highway Administration [FHWA] 2017). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dBA per doubling of distance is normally assumed. For line sources, an overall attenuation rate of three dB per doubling of distance is assumed (FHWA 2011).

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about five dBA (FHWA 2006), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2011). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction 35 dBA or greater (Western Electro-Acoustic Laboratory, Inc. [WEAL] 2000). To achieve the most potent noise-reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the "line of sight" between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend lengthwise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver.

The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (Harris Miller, Miller & Hanson Inc. [HMMH] 2006). Generally, in exterior noise environments ranging from 60 dBA Community Noise Equivalent Level (CNEL) to 65 dBA CNEL, interior noise levels can typically be maintained below 45 dBA, a typical residential interior noise standard, with the incorporation of an adequate forced air mechanical ventilation system in each residential building, and standard thermal-pane residential windows/doors with a minimum rating of Sound Transmission Class (STC) 28. (STC is an integer rating of how well a building partition attenuates airborne sound. In the U.S., it is widely used to rate interior partitions, ceilings, floors, doors, windows, and exterior wall configurations). In exterior noise environments of 65 dBA CNEL or greater, a combination of forced-air mechanical ventilation and sound-rated construction methods is often required to meet the interior noise level limit. Attaining the necessary noise reduction from exterior to interior spaces is readily achievable in noise environments less than 75 dBA CNEL with proper wall construction techniques following California Building Code methods, the selections of proper windows and doors, and the incorporation of forced-air mechanical ventilation systems.

2.1.3 Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn}/CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

- **Equivalent Noise Level (L_{eq})** is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- **Day-Night Average (L_{dn})** is a 24-hour average L_{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
- **Community Noise Equivalent Level (CNEL)** is a 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 pm to 10:00 pm and a 10-dBA weighting added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the evening and nighttime, respectively.

Table 2-1 provides a list of other common acoustical descriptors.

Table 2-1. Common Acoustical Descriptors

Descriptor	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	A 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
Community Noise Equivalent Level, CNEL	A 24-hour average L_{eq} with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.

The A-weighted decibel sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about ±1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source. Close to the noise source, the models are accurate to within about ±1 to 2 dBA.

2.1.4 Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL or L_{dn} is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in A-weighted noise levels (dBA), the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in community response would be expected. An increase of 5 dBA is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

2.1.5 Effects of Noise on People

2.1.5.1 Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

2.1.5.2 Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources.

2.2 Fundamentals of Environmental Groundborne Vibration

2.2.1 Vibration Sources and Characteristics

Sources of earthborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or manmade causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage. For human response, however, an average vibration amplitude is more appropriate because it takes time for the human body to respond to the excitation (the human body responds to an average vibration amplitude, not a peak amplitude). Because the average particle velocity over time is zero, the RMS amplitude is typically used to assess human response. The RMS value is the average of the amplitude squared over time, typically a 1- sec. period (FTA 2018).

Table 2-2 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high-noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. For instance, heavy-duty trucks generally generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances, which as identified in Table 2-2 is considered very unlikely to cause damage to buildings of any type. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment.

Table 2-2. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4–0.6	98–104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: Caltrans 2020b

3.0 EXISTING ENVIRONMENTAL NOISE SETTING

3.1 Noise Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as hospitals, historic sites, cemeteries, and certain recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The nearest existing noise-sensitive land use to the Project include existing classrooms on the school's campus (see Figure 1-1).

3.1.1 Existing Ambient Noise Measurements

The Project Site is developed land surrounded mainly by residential and commercial land uses. In order to quantify existing ambient noise levels in the Project Area, ECORP Consulting, Inc. conducted five short-term noise measurements on the morning of August 23, 2022. These short-term noise measurements are representative of typical existing noise exposure within and immediately adjacent to the Project Site during the daytime (see Attachment A). The 15-minute measurements were taken between 10:26 a.m. and 11:52 a.m. The average noise levels of noise measured at each location are listed in Table 3-1.

Table 3-1. Existing (Baseline) Noise Measurements					
Location Number	**Location**	**L_{eq} dBA**	**L_{min} dBA**	**L_{max} dBA**	**Time**
1	Southeast sidewalk of Passons Boulevard; 100m north of Marjorie Street	**65.2 dBA**	46.9 dBA	85.4 dBA	10:26 a.m. – 10:41 a.m.
2	Northwest corner of Passons Boulevard and Balfour Street	**61.9 dBA**	42.4 dBA	79.3 dBA	10:44 a.m. – 10:59 a.m.
3	On Parkway at the southwest intersection of Balfour Street and Coolhurst Drive	**54.9 dBA**	41.7 dBA	74.4 dBA	11:01 a.m. – 11:16 a.m.
4	Northwest corner of Balfour Street and Lindsey Avenue	**55.3 dBA**	42.5 dBA	70.0 dBA	11:19 a.m. – 11:34 a.m.
5	Northeast sidewalk of Loch Alene Avenue; 500 feet north of Homebrook Avenue	**58.0 dBA**	40.3 dBA	75.9 dBA	11:37 a.m. – 11:52 a.m.

Source: Measurements were taken by ECORP with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator. See Attachment A for noise measurement outputs.

Notes: L_{eq} is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. L_{min} is the minimum noise level during the measurement period and L_{max} is the maximum noise level during the measurement period.

As shown, the existing traffic-generated noise level on Project-vicinity roadways currently ranges from 54.9 to 65.2 dBA L_{eq}. The most common noise in the Project vicinity is produced by automotive vehicles (e.g., cars, trucks, buses, motorcycles) on area roadways.

4.0 REGULATORY FRAMEWORK

4.1 Federal

4.1.1 Occupational Safety and Health Act of 1970

OSHA regulates onsite noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 decibels with A-weighting (dBA) over an eight-hour work shift (29 Code of Regulations 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

4.1.2 National Institute of Occupational Safety and Health

A division of the US Department of Health and Human Services, the National Institute for Occupational Safety and Health (NIOSH) has established a construction-related noise level threshold as identified in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998. NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. The intention of these thresholds is to protect people from hearing losses resulting from occupational noise exposure.

4.2 State

4.2.1 State of California General Plan Guidelines

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The State of California General Plan Guidelines (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

4.2.2 State Office of Planning and Research Noise Element Guidelines

The State OPR *Noise Element Guidelines* include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a Land Use Compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the CNEL.

4.2.3 California Department of Transportation

In 2020, the California Department of Transportation (Caltrans) published the Transportation and Construction Vibration Manual (Caltrans 2020b). The manual provides general guidance on vibration issues associated with the construction and operation of projects concerning human perception and structural damage. Table 2-2 above presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

4.3 Local

4.3.1 City of Pico Rivera General Plan Noise Element

The City of Pico Rivera's regulations with respect to noise are included in the Noise Element of the City's General Plan. Policy 11.1-1, *Land Use Compatibility*, presents exterior noise standards for the various land use categories. These standards are presented in Table 4-1.

Table 4-1. City of Pico Rivera Exterior Noise Standards

Land Use Category	Time Period	Noise Level
Residential	Nighttime (7:00 p.m.-7:00 a.m.)	55 dBA
	Daytime (7:00 a.m.-7:00 p.m.)	65 dBA
Transient Lodging (Motels/Hotels)	Anytime	65 dBA
Schools, Libraries, Churches, Hospitals/Medical Facilities, Nursing Homes, Museums	Anytime	70 dBA
Theaters, Auditoriums	Anytime	70 dBA
Playgrounds, Parks	Anytime	75 dBA
Golf Courses, Riding Stables, Water Recreation	Anytime	75 dBA
Office Buildings, Business Commercial, and Professional	Anytime	70 dBA
Industrial; Manufacturing, and Utilities	Anytime	75 dBA

Source: City of Pico Rivera General Plan Noise Element

Additionally, Policy 11.1-1 presents interior noise standards for various land use categories. These standards are presented in Table 4-2 below.

Table 4-2. City of Pico Rivera Interior Noise Standards

Land Use Category	Time Period	Noise Level
Residential	Nighttime (7:00 p.m.-7:00 a.m.)	45 dBA
	Daytime (7:00 a.m.-7:00 p.m.)	55 dBA
Transient Lodging (Motels/Hotels)	Anytime	45 dBA
Schools, Libraries, Churches, Hospitals/Medical Facilities, Nursing Homes, Museums	Anytime	45 dBA
Theaters, Auditoriums	Anytime	N/A
Playgrounds, Parks	Anytime	N/A
Golf Courses, Riding Stables, Water Recreation	Anytime	N/A
Office Buildings, Business Commercial, and Professional	Anytime	N/A
Industrial; Manufacturing, and Utilities	Anytime	N/A

Source: City of Pico Rivera General Plan Noise Element (2014).

Additionally, Policy 11.3-1, *Construction Noise*, states that construction-related noise and vibration should be minimized by limiting construction activities within 500 feet of noise-sensitive uses from 7:00 a.m. to 7:00 p.m. seven days a week; after hour permission shall be granted by City staff, Planning Commission, or the City Council.

- Require proposed development adjacent to occupied noise sensitive land uses to implement a construction-related noise mitigation plan. This plan would depict the location of construction equipment storage and maintenance areas, and document methods to be employed to minimize noise impacts on adjacent noise sensitive land uses.
- Require that construction equipment utilize noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- Require that haul truck deliveries be subject to the same hours specified for construction. Additionally, the plan shall denote any construction traffic haul routes where heavy trucks would exceed 100 daily trips (counting those both to and from the construction site). To the extent feasible, the plan shall denote haul routes that do not pass sensitive land uses or residential dwellings.

5.0 Impact Assessment

5.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act Guidelines Appendix G thresholds of significance. The Project would result in a significant noise-related impact if it would result in the:

1) 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.

2) Generation of excessive groundborne vibration or groundborne noise levels.

3) 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.

For purposes of this analysis, the City noise standards were used for evaluation of Project-related noise impacts. As previously stated, the Noise Element of the City's General Plan construction-related noise and vibration should be minimized by limiting construction activities within 500 feet of noise-sensitive uses from 7:00 a.m. to 7:00 p.m. seven days a week; after hour permission shall be granted by City staff, Planning Commission, or the City Council. In order to evaluate the potential health-related effects (physical damage to the ear and mental damage from lack of sleep or focus) from construction noise, construction equipment noise levels are calculated and compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998 by NIOSH, described above.

5.2 Methodology

This analysis of the existing and future noise environments is based on empirical observations. Predicted construction noise levels were calculated utilizing the FHWA's Roadway Construction Noise Model (2006). Groundborne vibration levels associated with construction-related activities for the Project have been evaluated utilizing typical groundborne vibration levels associated with construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, taking into account the distance from construction activities to nearby structures and typically applied criteria for structural damage and human annoyance.

5.3 Impact Analysis

5.3.1 Would the Project Result in Short-Term Construction-Generated Noise in Excess of City Standards?

Onsite Construction Noise

Construction noise associated with the Proposed Project would be temporary and would vary depending on the specific nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., site preparation, excavation, paving). Noise generated by construction equipment, including earth movers, pile drivers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site.

The nearest existing noise-sensitive land uses to the Project Site include single family residences north of the Project Site, located 172 feet from where construction would be occurring. As previously stated, As previously stated, the Noise Element of the City's General Plan construction-related noise and vibration should be minimized by limiting construction activities within 500 feet of noise-sensitive uses from 7:00 a.m. to 7:00 p.m. seven days a week; after hour permission shall be granted by City staff, Planning Commission, or the City Council.

To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptors and in order to evaluate the potential health-related effects (physical damage to the ear) from construction noise, the construction equipment noise levels were calculated using the Roadway Noise Construction Model and compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998 by NIOSH. A division of the US Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. For the purposes of this analysis, the lowest, more conservative threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby sensitive receptors.

It is acknowledged that the majority of construction equipment is not situated at any one location during construction activities, but rather spread throughout the Project Site and at various distances from sensitive receptors. Therefore, this analysis employs the FTA guidance for calculating construction noise, which recommends measuring construction noise produced by all construction equipment from the center of the Project Site (FTA 2018), which in this case is approximately 172 feet from the nearest sensitive receptor, the

single family residences north of the Project Site. The anticipated short-term construction noise levels generated for the necessary equipment is presented in Table 5-1.

Table 5-1. Construction Average (dBA) Noise Levels at Nearest Receptors

Equipment	Estimated Exterior Construction Noise Level @ Closest Noise Sensitive Receptor	Construction Noise Standard (dBA L_{eq})	Exceeds Standards?
Demolition			
Combined Demolition Equipment	75.7 dBA	*85*	**No**
Site Preparation			
Combined Site Preparation Equipment	77.6 dBA	*85*	**No**
Grading			
Combined Grading Equipment	78.6 dBA	*85*	**No**
Building Construction			
Combined Building Construction Equipment	80.4 dBA	*85*	**No**
Paving			
Combined Paving Equipment	75.8 dBA	*85*	**No**
Architectural Coating			
Combined Building Construction, Paving, and Architectural Coating Equipment	63.0 dBA	*85*	**No**

Source: Construction noise levels were calculated by ECORP Consulting using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Attachment B for Model Data Outputs.

Notes: Construction equipment used during construction derived from CalEEMod 2020.4.0. CalEEMod is designed to calculate air pollutant emissions from construction activity and contains default construction equipment and usage parameters for typical construction projects based on several construction surveys conducted in order to identify such parameters. Consistent with FTA recommendations for calculating construction noise, construction noise was measured from the center of the Project Site (FTA 2018), which is 172 feet from the nearest receptor. Construction, paving and painting are assumed to occur simultaneously.

L_{eq} = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

As shown in Table 5-1, Project construction does not have the potential to exceed the construction noise standard of 85 dBA construction noise standard during the demolition, site preparation, grading, building construction, paving, and architectural coating activities.

5.3.2 Would the Project Result in a Substantial Permanent Increase in Ambient Noise Levels in Excess of City Standards During Operations?

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise-sensitive and may warrant unique measures for protection from intruding noise. The nearest existing noise-sensitive land uses to the Project are single family residences located adjacent to the Project Site.

Operational Noise

The Project is proposing the renovations of several athletic facilities on the campus. Specifically, the existing natural turf of the football field, located at the northern corner of the high school campus, would be removed and replaced with synthetic turf. The earthen track surrounding the football field would also be replaced with synthetic material. The existing bleachers, both visitor and home team, would be replaced, though no additional capacity is proposed. A new equipment structure (i.e., Field House) would be constructed adjacent to the southwest corner of the football field and track (see Figure 1). The four existing outdoor basketball courts just south of the football stadium are proposed to be rejuvenated and the existing softball field (see Figure 1) would be reconfigured. In addition to reconfiguration, the softball field would be re-turfed, two new dugouts would be constructed, and softball batting cages would be installed.

With the exception of the softball batting cages, none of these proposed improvements would represent a new source of noise beyond current conditions. The improvements to the football field, track, softball diamonds would not result in an increase of events, participates, or spectators beyond current conditions and thus can be expected to generate the same level of noise as currently generated. It is noted that the softball diamonds are proposed to be reconfigured, and while this would not result in an increase of events, participates, or spectators beyond current conditions, could result in a change in the existing ambient noise environment due to the repositioning of the diamond configurations.

In addition to the proposed batting cages, the other Project features that would potentially alter the existing ambient noise environment includes the proposal to demolish the existing parking lot at the northeast corner of the campus in order to accommodate a new pool facility, complete with a pool, pool deck, and pool building. While the existing pool on campus would be filled, the Project would result in school-related pool activities occurring nearer to sensitive receptors. Lastly, the demolished parking lot at the northeast corner of the campus would effectively be replaced at the open area just south of the existing parking lot, currently consisting of dirt, a sidewalk, and limited hardscape. Thus, while the improvements to the football field, softball diamonds, and reinstatement of a swimming pool would not increase student population, would not result in additional school sports programs, and is not expected to increase the number of sports participants or spectators, the proposed softball batting cages would represent new sources of noise, the existing softball diamonds would be reconfigured, pool-related activities would occur nearer to noise-sensitive residential receptors, and the parking lot at the northeast corner of the campus would be effectively relocated to a location nearer to residential receptors.

On-site Project daytime noise associated with the proposed new batting cages, reconfigured softball and relocated pool and parking lot have been calculated using the SoundPLAN 3D noise model. Although already an existing use and not proposed for any reconfiguration, noise generated at the football stadium is also accounted in order to provide a conservative analysis. The Project noise calculations used in this analysis are conservative in that they account for the active use of all these sources simultaneously, which is unlikely to occur. For instance, the predicted Project noise levels account for a near-capacity crowd attending a football game at the same time the softball field is in full use, including operation of both the softball batting cages. Full use of the new pool facility and adjoining parking lots are also accounted as occurring. In summary, predicted Project daytime noise levels include the following simultaneously occurring activities:

- A sporting event at the re-turfed football stadium at the northern portion of the high school with a near-capacity crowd of spectators in the improved bleachers.
- A sporting event at the reconfigured softball field at the west-central portion of the high school.
- Active use of the new softball batting cages at the west-central portion of the high school.
- Active use of the relocated pool facility at the northeast corner of the high school.
- Active use of the relocated parking lot facility at the eastern portion of the high school.

As previously described, noise levels may also be reduced by intervening structures. The existing wall traversing the northeastern boundary, estimated at six feet in height, has been included in the SoundPLAN modeling calculations.

Table 5-2 shows the predicted Project noise levels at 16 noise-sensitive locations in the Project vicinity, as predicted by SoundPLAN. These 16 noise-sensitive locations represent nearby residences of the high school. Additionally, a noise contour graphic (see Figure 5-1) has been prepared to provide a visual depiction of the predicted noise levels in the Project vicinity from Project operations.

Table 5-2. Modeled Operational Daytime Noise Levels

Location	Modeled Operational Noise Attributed to Project (dBA L_{eq})	City Daytime Exterior Noise Standards (dBA L_{eq})	Exceed Daytime Exterior Standard?
#1	52.6 dBA	*65 dBA*	**No**
#2	54.1 dBA	*65 dBA*	**No**
#3	55.6 dBA	*65 dBA*	**No**
#4	56.7 dBA	*65 dBA*	**No**
#5	57.4 dBA	*65 dBA*	**No**
#6	56.8 dBA	*65 dBA*	**No**
#7	59.5 dBA	*65 dBA*	**No**
#8	59.1 dBA	*65 dBA*	**No**
#9	57.4 dBA	*65 dBA*	**No**
#10	55.6 dBA	*65 dBA*	**No**
#11	53.5 dBA	*65 dBA*	**No**
#12	52.0 dBA	*65 dBA*	**No**
#13	50.8 dBA	*65 dBA*	**No**
#14	49.9 dBA	*65 dBA*	**No**
#15	49.8 dBA	*65 dBA*	**No**
#16	49.5 dBA	*65 dBA*	**No**

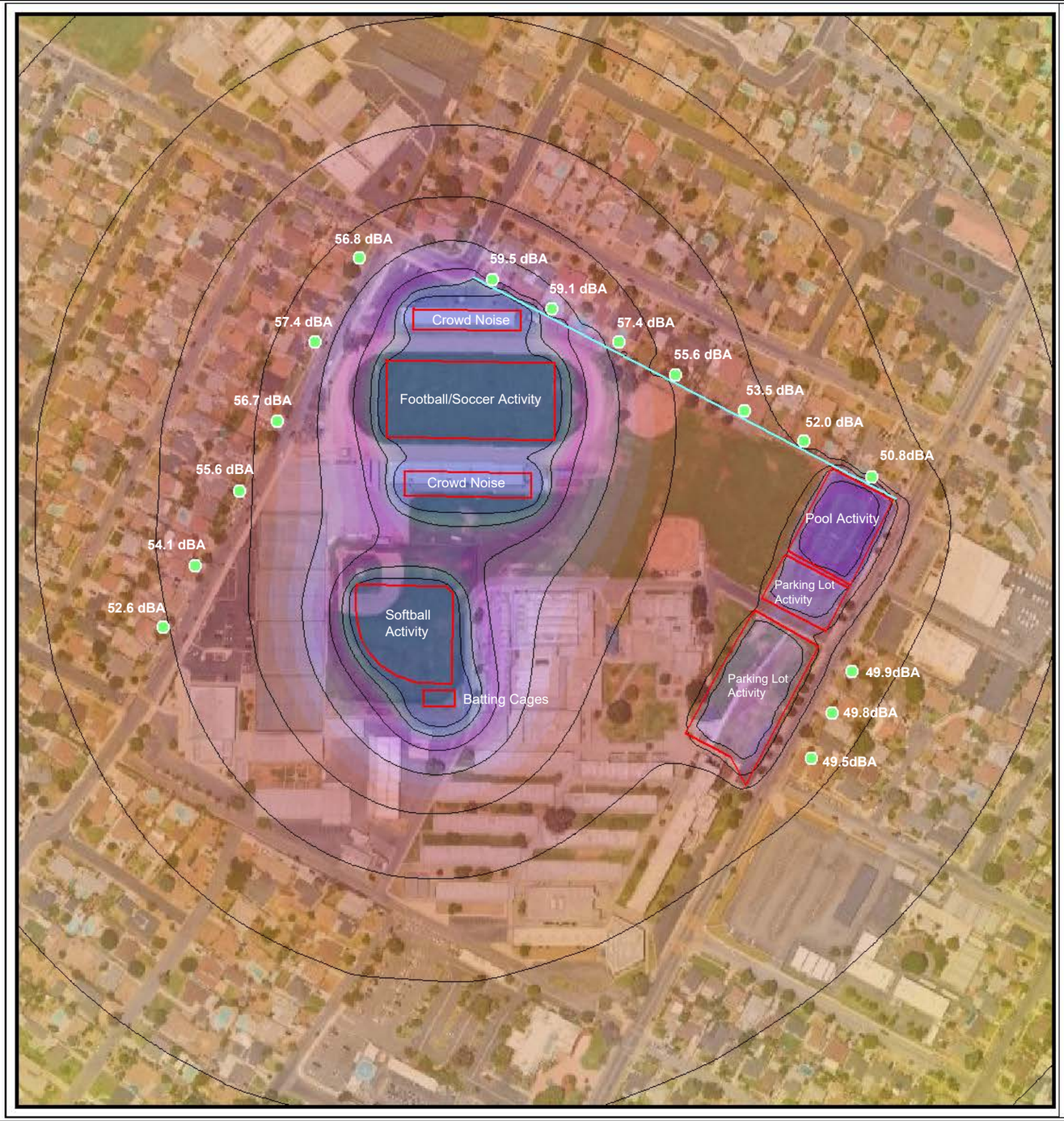
Source: SounPLAN v 5.1. Refer to Attachment C for Model Data Outputs.

As shown in Table 5-2, Project operational noise would not exceed daytime exterior noise standards at any of the nearest noise-sensitive residential receptors (see Table 4-1 for City exterior noise standards).

Similarly, the Project would not exceed daytime interior noise standards at any of the nearest noise-sensitive receptors (see Table 4-2 for City interior noise standards). As previously described, the manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (Harris Miller, Miller & Hanson Inc. [HMMH] 2006). The least efficient exterior-to-interior noise attenuation of 20 dBA (Caltrans 2002) results in interior noise levels of 29.5 dBA though 39.5 dBA, which fall under the City's interior noise standards for noise-sensitive residential receptors.

The Project would not be expected to exceed any nighttime standards. As identified in Table 4-1, the City nighttime exterior noise standard is 55 dBA at residential receptors. While this noise level is calculated to

be exceeded at Locations #3-10, during a daytime scenario involving a near-capacity crowd attending a football game at the same time both the softball field are in full use, including operation of the softball batting cages and full use of the new pool facility and adjoining parking lot, this level of activity would not occur in the nighttime hours.



El Rancho High School

Project Noise
in dB(A)

	>= 64
	61 - 64
	58 - 61
	55 - 58
	52 - 55
	49 - 52
	46 - 49
	43 - 46
	40 - 43
	< 40

Legend

- Area Source
- Receiver
- Wall

N

Scale 1:313
0 100 200

Map Date:*5/1/2023*
Photo (or Base) Source:*SoundPLAN*

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 5-1 SoundPLAN Noise Contour

2022-200 El Rancho High School Sports Fields and Stadium Project

5.3.3 Would the Project Expose Structures to Substantial Groundborne Vibration During Construction?

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Project would be primarily associated with short-term construction-related activities. Construction on the Project Site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is not anticipated that pile drivers would be necessary during Project construction. Vibration decreases rapidly with distance, and it is acknowledged that construction activities would occur throughout the Project Site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with construction equipment are summarized in Table 5-3.

Table 5-3. Representative Vibration Source Levels for Construction Equipment

Equipment Type	Receiver Vibration Decibels (VdB)
Large Bulldozer	87
Caisson Drilling	87
Loaded Trucks	86
Rock Breaker	87
Jackhammer	79
Small Bulldozer/Tractor	58
Vibratory Roller	94

Source: FTA 2018; Caltrans 2020b

The City of Pico Rivera's General Plan Noise Element includes Policy 11.3-2, *Vibration Standards*, which states that construction projects and new development anticipated to generate a significant amount of vibration are required to ensure acceptable interior vibration levels at nearby noise-sensitive uses based on Federal Transit Administration criteria, as outlined in Table 5-4.

Table 5-4 Groundborne Vibration Impact Criteria for General Assessment			
Land Use Category	**Impact Levels (VdB)**		
	Frequent Events[a]	**Occasional Events[b]**	**Infrequent Events[c]**
Category 1: Buildings where vibration would interfere with interior operations	65[d]	65[d]	65[d]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

It is acknowledged that construction activities would occur throughout the Project Site and would not be concentrated at the point closest to the nearest structure. Consistent with FTA recommendations for calculating construction vibration, construction vibration was measured from the center of the Project Site (FTA 2018). The nearest structure of concern to the construction site, with regard to groundborne vibrations, is a residence located approximately 172 feet north of the center of the Project Site. In reference to Table 5-4, the land uses surrounding the Project Site can be considered a Category 2 land use because it is residential. Due to the nature of the Project, the impact levels for *frequent events* will be used for the Proposed Project's construction of the pool. It is noted that this can be classified as *frequent* because although the construction is temporary, the construction's vibrational impacts will be consistent and frequent throughout the construction period. With a Category 2 and *frequent events* classification, the impact events cannot exceed 72 VdB without exceeding the significance threshold.

Based on the representative vibration levels presented for various construction equipment types in Table 5-3 and the construction vibration assessment methodology published by the FTA (2018), it is possible to estimate the potential Project construction vibration levels. The FTA provides the following equation:

$$[L_{v.distance} = L_{vref} - 30\log (D/25)]$$

Table 5-5 presents the expected Project related vibration levels at a distance of 172 feet.

Table 5-5 Construction Vibration Levels at 172 Feet

Receiver Vdb Levels[1]							Peak Vibration	Threshold	Exceed Threshold?
Large Bulldozer	Caisson Drilling	Loaded Trucks	Rock Breaker	Jackhammer	Small Bulldozer	Vibratory Roller			
61.9	61.8	60.8	61.8	53.9	33.9	68.9	**68.9**	*72*	**No**

[1]*Based on the Vibration Source Levels of Construction Equipment included on Table 5-3 (FTA 2018).*

As shown in Table 5-5, the peak vibration decibel level 172 feet away from construction equipment is 68.9 VdB. As previously mentioned, ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. As a result, the residence located 172 feet away from the Project Site is calculated to experience vibrations below the County's threshold levels and therefore would not be negatively affected. Thus, Project construction would not exceed the recommended threshold.

5.3.4 Would the Project Expose Structures to Substantial Groundborne Vibration During Operations?

The Project is proposing several improvements to the existing campus. The improvements to the football field, softball diamond, and reinstatement of a swimming pool would not increase student population. No additional school sports programs would be added, and the new gymnasium is not expected to increase the number of participants or spectators. Project operations would not include the use of any large-scale stationary equipment that would result in excessive vibration levels. Therefore, the Project would not result groundborne vibration impacts during operations.

5.3.5 Would the Project Expose People Residing or Working in the Project area to Excessive Airport Noise?

The Project Site is located approximately 10 miles southwest of the San Gabriel Valley Airport in El Monte and approximately 13 miles southeast of the Fullerton Municipal Airport, in Fullerton. According to the Los Angeles County Airport Land Use Commission and the Orange County Airport Land Use Commission, the Project Site is located outside of the noise contours of both San Gabriel Valley Airport and the Fullerton Municipal Airport. Therefore, implementation of the Proposed Project would not result in increased exposure of people working at or visiting the Project Site to aircraft noise.

6.0 REFERENCES

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LIST OF ATTACHMENTS

Attachment A - Baseline (Existing) Noise Measurements – Project Site and Vicinity

Attachment B – Federal Highway Administration Roadway Construction Noise Outputs

Attachment C – SoundPLAN Onsite Noise Generation

ATTACHMENT A

Baseline (Existing) Noise Measurements – Project Site and Vicinity

El Rancho HS Sports Field & Stadium

9/7/2022

El Rancho HS POINT - El Rancho HS POINT

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

1:4,514

0 0.03 0.06 0.12 mi

0 0.05 0.1 0.2 km

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Map Date: *9/07/2022*
Photo (or Base) Source: *ESRI Online 2022*

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Baseline Noise Measurement Locations

2022-200 El Rancho HS Sports Fields and Stadium

Site Number: 1			
Recorded By: Lindsay Liegler			
Job Number: 2022-200			
Date: 8/23/2022			
Time: 10:26 – 10:41			
Location: East side of Passons Boulevard, on sidewalk. Approximately 1,000 meters north of Marjorie Street			
Source of Peak Noise: Vehicular Traffic on Passons Boulevard			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
65.2	46.9	85.4	104.2

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**11/29/2021**	
	Microphone	**Larson Davis**	**377B02**	**334361**	**11/30/2021**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**042852**	**11/30/2021**	
	Calibrator	**Larson Davis**	**CAL200**	**14105**	**11/10/2021**	

Weather Data			
Est.	**Duration:** 15 minutes		**Sky:** Clear
	Note: dBA Offset = 0.02		**Sensor Height (ft):** 3.5 Feet
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	4 mph	74°F	29.81

Photo of Measurement Location

Measurement Report

Report Summary

Meter's File Name	LxT_Data.435.s	Computer's File Name	LxTse_0005120-20220823 102634-LxT_Data.435.ldbin
Meter	LxT SE 0005120		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2022-08-23 10:26:34	Duration	0:15:00.0
End Time	2022-08-23 10:41:34	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	65.2 dB		
LAE	94.8 dB	SEA	--- dB
EA	333.8 µPa²h		
LZ_{peak}	104.2 dB	2022-08-23 10:40:20	
LAS_{max}	85.4 dB	2022-08-23 10:40:20	
LAS_{min}	46.9 dB	2022-08-23 10:27:28	
LA_{eq}	65.2 dB		
LC_{eq}	71.8 dB	LC_{eq} - LA_{eq}	6.5 dB
LAI_{eq}	67.5 dB	LAI_{eq} - LA_{eq}	2.3 dB

Exceedances	Count	Duration
LAS > 85.0 dB	1	0:00:01.3
LAS > 115.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	65.2 dB	65.2 dB	0.0 dB

	LDEN	LDay	LEve	LNight
	65.2 dB	65.2 dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	65.2 dB		71.8 dB		--- dB	
$Ls_{(max)}$	85.4 dB	2022-08-23 10:40:20	--- dB		--- dB	
$LS_{(min)}$	46.9 dB	2022-08-23 10:27:28	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		104.2 dB	2022-08-23 10:40:20

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	69.9 dB
LAS 10.0	68.1 dB
LAS 33.3	63.2 dB
LAS 50.0	60.1 dB
LAS 66.6	56.7 dB
LAS 90.0	50.6 dB

Site Number: 2			
Recorded By: Lindsay Liegler			
Job Number: 2022-200			
Date: 8/23/2022			
Time: 10:44 am – 10:59 am			
Location: Northwest corner of Passons Boulevard/Balfour Street Intersection			
Source of Peak Noise: Vehicular Traffic on Passons Boulevard and Balfour Street			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
61.9	42.4	79.3	102.2

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**11/29/2021**	
	Microphone	**Larson Davis**	**377B02**	**334361**	**11/30/2021**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**042852**	**11/30/2021**	
	Calibrator	**Larson Davis**	**CAL200**	**14105**	**11/10/2021**	

Weather Data			
Est.	**Duration:** 15 minutes		**Sky:** Clear
	Note: dBA Offset = 0.02		**Sensor Height (ft):** 3.5 Feet
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	4 mph	76°F	29.81

Photo of Measurement Location

Measurement Report

Report Summary

Meter's File Name	LxT_Data.436.s	Computer's File Name	LxTse_0005120-20220823 104438-LxT_Data.436.ldbin
Meter	LxT SE 0005120		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2022-08-23 10:44:38	Duration	0:15:00.0
End Time	2022-08-23 10:59:38	Run Time	0:15:00.0
		Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	61.9 dB		
LAE	91.4 dB	SEA	--- dB
EA	154.7 µPa²h		
LZ_{peak}	102.2 dB	2022-08-23 10:44:52	
LAS_{max}	79.3 dB	2022-08-23 10:59:38	
LAS_{min}	42.4 dB	2022-08-23 10:56:21	
LA_{eq}	61.9 dB		
LC_{eq}	73.5 dB	LC_{eq} - LA_{eq}	11.6 dB
LAI_{eq}	64.0 dB	LAI_{eq} - LA_{eq}	2.2 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
61.9 dB	61.9 dB	0.0 dB

LDEN	LDay	LEve	LNight
61.9 dB	61.9 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	61.9 dB		73.5 dB		--- dB	
$Ls_{(max)}$	79.3 dB	2022-08-23 10:59:38	--- dB		--- dB	
$LS_{(min)}$	42.4 dB	2022-08-23 10:56:21	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		102.2 dB	2022-08-23 10:44:52

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	66.3 dB
LAS 10.0	63.7 dB
LAS 33.3	59.6 dB
LAS 50.0	57.5 dB
LAS 66.6	54.5 dB
LAS 90.0	49.4 dB

Site Number: 3			
Recorded By: Lindsay Liegler			
Job Number: 2022-200			
Date: 8/23/2022			
Time: 11:01 am – 11:16 am			
Location: Southwest corner of Balfour Street/Coolhurst Intersection			
Source of Peak Noise: Vehicular Traffic on Passons Boulevard and Balfour Street			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
54.9	41.7	74.4	94.6

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**11/29/2021**	
	Microphone	**Larson Davis**	**377B02**	**334361**	**11/30/2021**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**042852**	**11/30/2021**	
	Calibrator	**Larson Davis**	**CAL200**	**14105**	**11/10/2021**	

Weather Data			
Est.	**Duration:** 15 minutes		**Sky:** Clear
	Note: dBA Offset = 0.02		**Sensor Height (ft):** 3.5 Feet
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	4 mph	77°F	29.81

Photo of Measurement Location

Measurement Report

Report Summary

Meter's File Name	LxT_Data.437.s	Computer's File Name	LxTse_0005120-20220823 110149-LxT_Data.437.ldbin
Meter	LxT SE 0005120		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2022-08-23 11:01:49	Duration	0:15:00.0
End Time	2022-08-23 11:16:49	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	54.9 dB		
LAE	84.4 dB	SEA	--- dB
EA	30.9 µPa²h		
LZ_{peak}	94.6 dB	2022-08-23 11:10:21	
LAS_{max}	74.4 dB	2022-08-23 11:10:21	
LAS_{min}	41.7 dB	2022-08-23 11:12:43	
LA_{eq}	54.9 dB		
LC_{eq}	65.9 dB	LC_{eq} - LA_{eq}	11.0 dB
LAI_{eq}	59.4 dB	LAI_{eq} - LA_{eq}	4.5 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
54.9 dB	54.9 dB	0.0 dB

LDEN	LDay	LEve	LNight
54.9 dB	54.9 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	54.9 dB		65.9 dB		--- dB	
$Ls_{(max)}$	74.4 dB	2022-08-23 11:10:21	--- dB		--- dB	
$LS_{(min)}$	41.7 dB	2022-08-23 11:12:43	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		94.6 dB	2022-08-23 11:10:21

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	59.9 dB
LAS 10.0	57.3 dB
LAS 33.3	51.7 dB
LAS 50.0	48.9 dB
LAS 66.6	46.6 dB
LAS 90.0	43.2 dB

Site Number: 4			
Recorded By: Lindsay Liegler			
Job Number: 2022-200			
Date: 8/23/2022			
Time: 11:19 am – 11:34 am			
Location: Northwest corner of Balfour Street/Lindsay Avenue Intersection			
Source of Peak Noise: Vehicular Traffic on Balfour Street and Lindsay Avenue. Distant Landscaping Equipment.			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
55.3	42.5	70.0	96.4

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**11/29/2021**	
	Microphone	**Larson Davis**	**377B02**	**334361**	**11/30/2021**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**042852**	**11/30/2021**	
	Calibrator	**Larson Davis**	**CAL200**	**14105**	**11/10/2021**	

Weather Data			
Est.	**Duration:** 15 minutes		**Sky:** Clear
	Note: dBA Offset = 0.02		**Sensor Height (ft):** 3.5 Feet
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	4 mph	78°F	29.81

Photo of Measurement Location

Measurement Report

Report Summary

Meter's File Name	LxT_Data.438.s	Computer's File Name	LxTse_0005120-20220823 111946-LxT_Data.438.ldbin
Meter	LxT SE 0005120		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2022-08-23 11:19:46	Duration	0:15:00.0
End Time	2022-08-23 11:34:46	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	55.3 dB		
LAE	84.8 dB	SEA	--- dB
EA	33.9 µPa²h		
LZ_{peak}	96.4 dB	2022-08-23 11:34:09	
LAS_{max}	70.0 dB	2022-08-23 11:28:32	
LAS_{min}	42.5 dB	2022-08-23 11:26:54	
LA_{eq}	55.3 dB		
LC_{eq}	67.9 dB	LC_{eq} - LA_{eq}	12.6 dB
LAI_{eq}	57.5 dB	LAI_{eq} - LA_{eq}	2.2 dB

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	55.3 dB	55.3 dB	0.0 dB

	LDEN	LDay	LEve	LNight
	55.3 dB	55.3 dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	55.3 dB		67.9 dB		--- dB	
$Ls_{(max)}$	70.0 dB	2022-08-23 11:28:32	--- dB		--- dB	
$LS_{(min)}$	42.5 dB	2022-08-23 11:26:54	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		96.4 dB	2022-08-23 11:34:09

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	61.2 dB
LAS 10.0	57.9 dB
LAS 33.3	53.6 dB
LAS 50.0	51.5 dB
LAS 66.6	49.5 dB
LAS 90.0	44.3 dB

Site Number: 5			
Recorded By: Lindsay Liegler			
Job Number: 2022-200			
Date: 8/23/2022			
Time: 11: 37 am – 11:52 am			
Location: Northeast side of Loch Alene Avenue, on sidewalk. Approximately 500 feet north of Homebrook Street.			
Source of Peak Noise: Vehicular Traffic on Loch Alene Avenue. Distant overhead plane.			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
58.0	40.3	75.9	99.3

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**11/29/2021**	
	Microphone	**Larson Davis**	**377B02**	**334361**	**11/30/2021**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**042852**	**11/30/2021**	
	Calibrator	**Larson Davis**	**CAL200**	**14105**	**11/10/2021**	

Weather Data			
Est.	**Duration:** 15 minutes		**Sky:** Clear
	Note: dBA Offset = 0.02		**Sensor Height (ft):** 3.5 Feet
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	4 mph	79°F	29.81

Photo of Measurement Location

Measurement Report

Report Summary

Meter's File Name	LxT_Data.439.s	Computer's File Name	LxTse_0005120-20220823 113735-LxT_Data.439.ldbin
Meter	LxT SE 0005120		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2022-08-23 11:37:35	Duration	0:15:00.0
End Time	2022-08-23 11:52:35	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	58.0 dB		
LAE	87.5 dB	SEA	--- dB
EA	62.8 µPa²h		
LZ_{peak}	99.3 dB	2022-08-23 11:40:34	
LAS_{max}	75.9 dB	2022-08-23 11:42:02	
LAS_{min}	40.3 dB	2022-08-23 11:51:12	
LA_{eq}	58.0 dB		
LC_{eq}	67.2 dB	LC_{eq} - LA_{eq}	9.2 dB
LAI_{eq}	61.3 dB	LAI_{eq} - LA_{eq}	3.3 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
58.0 dB	58.0 dB	0.0 dB

LDEN	LDay	LEve	LNight
58.0 dB	58.0 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	58.0 dB		67.2 dB		--- dB	
$Ls_{(max)}$	75.9 dB	2022-08-23 11:42:02	--- dB		--- dB	
$LS_{(min)}$	40.3 dB	2022-08-23 11:51:12	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		99.3 dB	2022-08-23 11:40:34

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	63.2 dB
LAS 10.0	60.0 dB
LAS 33.3	52.8 dB
LAS 50.0	48.5 dB
LAS 66.6	45.9 dB
LAS 90.0	43.5 dB

ATTACHMENT B

Federal Highway Administration Roadway Construction Noise Outputs

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/29/2022
Case Description: El Rancho High School Sports Field & Stadium Project

Description	**Land Use**
Demolition	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Concrete Saw	No	20		89.6	172
Excavator	No	40		80.7	172
Excavator	No	40		80.7	172
Excavator	No	40		80.7	172
Dozer	No	40		81.7	172
Dozer	No	40		81.7	172

Results

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Concrete Saw	78.8	71.9
Excavator	70	66
Excavator	70	66
Excavator	70	66
Dozer	70.9	67
Dozer	70.9	67
Total	**78.8**	**75.7**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/29/2022

Case Description: El Rancho High School Sports Field & Stadium Project

Description	**Land Use**
Site Preparation	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Tractor	No	40	84		172
Tractor	No	40	84		172
Tractor	No	40	84		172
Tractor	No	40	84		172
Tractor	No	40	84		172
Dozer	No	40		81.7	172
Dozer	No	40		81.7	172
Dozer	No	40		81.7	172

Results

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Tractor	73.3	69.3
Tractor	73.3	69.3
Tractor	73.3	69.3
Tractor	73.3	69.3
Tractor	73.3	69.3
Dozer	70.9	67
Dozer	70.9	67
Dozer	70.9	67
Total	**73.3**	**77.6**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/29/2022
Case Description: El Rancho High School Sports Field & Stadium Project

Description	**Land Use**
Grading	Residential

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)
Tractor	No	40	84		172
Tractor	No	40	84		172
Excavator	No	40		80.7	172
Excavator	No	40		80.7	172
Grader	No	40	85		172
Dozer	No	40		81.7	172
Scraper	No	40		83.6	172
Scraper	No	40		83.6	172
Tractor	No	40	84		172
Tractor	No	40	84		172

Results

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Tractor	73.3	69.3
Tractor	73.3	69.3
Excavator	70	66
Excavator	70	66
Grader	74.3	70.3
Dozer	70.9	67
Scraper	72.8	68.9
Scraper	72.8	68.9
Tractor	73.3	69.3
Tractor	73.3	69.3
Total	**74.3**	**78.6**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/29/2022
Case Description: El Rancho High School Sports Field & Stadium Project

Description	**Land Use**
Building Construction	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Crane	No	16		80.6	172
Crane	No	16		80.6	172
Gradall	No	40		83.4	172
Gradall	No	40		83.4	172
Gradall	No	40		83.4	172
Gradall	No	40		83.4	172
Gradall	No	40		83.4	172
Gradall	No	40		83.4	172
Generator	No	50		80.6	172
Generator	No	50		80.6	172
Tractor	No	40	84		172
Tractor	No	40	84		172
Tractor	No	40	84		172
Tractor	No	40	84		172
Tractor	No	40	84		172
Tractor	No	40	84		172
Welder / Torch	No	40		74	172
Welder / Torch	No	40		74	172

Results

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Crane	69.8	61.9
Crane	69.8	61.9
Gradall	72.7	68.7
Gradall	72.7	68.7
Gradall	72.7	68.7
Gradall	72.7	68.7
Gradall	72.7	68.7
Gradall	72.7	68.7
Generator	69.9	66.9
Generator	69.9	66.9

Tractor		73.3	69.3
Tractor		73.3	69.3
Tractor		73.3	69.3
Tractor		73.3	69.3
Tractor		73.3	69.3
Tractor		73.3	69.3
Welder / Torch		63.3	59.3
Welder / Torch		63.3	59.3
	Total	**73.3**	**80.4**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/29/2022
Case Description: El Rancho High School Sports Field & Stadium Project

Description	**Land Use**
Paving	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Paver	No	50		77.2	172
Paver	No	50		77.2	172
Pavement Scarafier	No	20		89.5	172
Pavement Scarafier	No	20		89.5	172
Roller	No	20		80	172
Roller	No	20		80	172

Results

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Paver	66.5	63.5
Paver	66.5	63.5
Pavement Scarafier	78.8	71.8
Pavement Scarafier	78.8	71.8
Roller	69.3	62.3
Roller	69.3	62.3
Total	**78.8**	**75.8**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/29/2022
Case Description: El Rancho High School Sports Field & Stadium Project

Description	**Land Use**
Architectural Coating	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Compressor (air)	No	40		77.7	172

Results

	Calculated (dBA)	
Equipment	***Lmax**	**Leq**
Compressor (air)	66.9	63
Total	**66.9**	**63**

*Calculated Lmax is the Loudest value.

ATTACHMENT C

SoundPLAN Onsite Noise Generation

SoundPLAN
Output Source Information

Number	Reciever Name	Location	Level at Ground Floor
1	Residential	On Loch Alene Avenue approximately 290 feet northeast from Homebrook Street. Across from School Parking Lot.	52.6 dBA
2	Residential	On Loch Alene Avenue approximately 500 feet northeast from Homebrook Street. Across from Northern-most School Pickelball Court.	54.1 dBA
3	Residential	On Loch Alene Avenue approximately 616 feet northeast from Homebrook Street. Across from Home Bleachers.	55.6 dBA
4	Residential	On Loch Alene Avenue approximately 755 feet northeast from Homebrook Street. Across from Football Stadium.	56.7 dBA
5	Residential	On Loch Alene Avenue approximately 920 feet northeast from Homebrook Street. Across from Football Stadium.	57.4 dBA
6	Residential	On Loch Alene Avenue approximately 1,115 feet northeast from Homebrook Street. Across from School Parking Lot North of Football Stadium. Last Residence on Loch Alene.	56.8 dBA
7	Residential	Fronting Balfour Street. Corner of Balfour Street and Lindsay Avenue	59.5 dBA
8	Residential	Fronting Balfour Street approximately 190 feet east of Lindsay Avenue.	59.1 dBA
9	Residential	Fronting Balfour Street approximately 370 feet east of Lindsay Avenue.	57.4 dBA
10	Residential	Fronting Balfour Street approximately 500 feet east of Lindsay Avenue. Northeast of Existing Baseball Field.	55.6 dBA
11	Residential	Fronting Balfour Street approximately 675 feet east of Lindsay Avenue and 400 feet west of Passons Boulevard.	53.5 dBA
12	Residential	Fronting Balfour Street approximately 850 feet east of Lindsay Avenue and 225 feet west of Passons Boulevard.	52.0 dBA
13	Residential	Fronting Balfour Street approximately 950 feet east of Lindsay Avenue and 125 feet west of Passons Boulevard. Northeast of Proposed Pool.	50.8 dBA
14	Residential	On Passons Boulevard approximately 560 feet southwest of Balfour Street and 300 feet northeast of Marjorie Street.	49.9 dBA
15	Residential	On Passons Boulevard approximately 650 feet southwest of Balfour Street and 210 feet northeast of Marjorie Street.	49.8 dBA
16	Residential	Corner of Passons Avenue and Marjorie Street.	49.5 dBA

Number	Noise Source Information	Citation	Level at Source
1	Parking Lot Activity	ECORP Consulting, Inc. Refrence Noise Measurment (Parking Lot Noise)	51.0 dBA
2	Sports Contests	ECORP Consulting, Inc. Refrence Noise Measurment (Softball Tournament)	66.0 dBA
3	Pool Activity	ECORP Consulting, Inc. Refrence Noise Measurment (Outdoor Recreational Pool)	54.9 dBA
4	Crowd Noise	SoundPLAN Spectrum Library (Sports Spectator Noise)	70.0 dBA
5	Batting Cages	ECORP Consulting, Inc. Refrence Noise Measurment (Commercial Batting Cage)	75.2 dBA