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THORNTON MIDDLE SCHOOL CONVERSION PROJECT ENVIRONMENTAL IMPACT REPORT

for the Fremont Unified School District

PLACEWORKS

FREMONT UNIFIED SCHOOL DISTRICT
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1. Executive Summary

This chapter presents an overview of the proposed Thornton Middle School Conversion project, located at 4357 Thornton Avenue in the City of Fremont, herein referred to as the "proposed project" or "project." This executive summary also provides conclusions of the analyses contained in Subchapters 4.1 through 4.17 of this Draft Environmental Impact Report (Draft EIR), a summary of the alternative to the project, and issues to be resolved and questions. For a complete description of the project, see Chapter 3, project Description. For a complete discussion of alternative to the proposed project, see Chapter 6.

This Draft EIR addresses the environmental effects associated with construction and operation of the proposed project. An EIR is a public document designed to provide the public, local, and State governmental agency decision-makers with an analysis of potential environmental consequences to support informed decision-making. The California Environmental Quality Act (CEQA) requires that local government agencies consider environmental consequences prior to taking approval action on projects over which they have discretionary approval authority. School districts are considered individual local agencies that act as their lead agencies, and per Government Code 53094 (a) are not required to comply with the local land use regulations and zoning ordinances of a county or city in which projects located. This law notwithstanding, this EIR references City of Fremont regulations and standards to strengthen topical analyses. This Draft EIR has been prepared pursuant to the requirements of CEQA (California Public Resources Code, Division 13, Section 21000, et seq.) and the State CEQA Guidelines (Title 14 of the California Code of Regulations, Division 6, Chapter 3, Section 15000, et seq.) to determine if the project could have a significant impact on the environment. Information for this Draft EIR was obtained from on-site field observations; discussions with public service agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature in the public domain; and specialized environmental assessments (e.g., air quality, greenhouse gas emissions, noise, geotechnical, and transportation and traffic). Lead Agency the Fremont Unified School District (FUSD) has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment including reliance on applicable FUSD technical personnel and review of all technical reports.

1.1 ENVIRONMENTAL PROCEDURES

This Draft EIR has been prepared to assess the environmental effects associated with implementation of the proposed project. The six main objectives of this document as established by CEQA are:

- To disclose to decision-makers and the public the significant environmental effects of proposed activities.
- To identify ways to avoid or reduce environmental impacts.
- To prevent environmental impacts through implementation of feasible alternatives or mitigation measures.

- To disclose significant environmental effects.
- To foster interagency coordination in the review of projects.
- To enhance public participation in the planning process.

An EIR is the most comprehensive form of environmental documentation identified in the CEQA statute and in the CEQA Guidelines. It provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of any environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts. An EIR is also one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Prior to approving a proposed project, the lead agency must consider the information contained in the EIR, determine whether the EIR was properly prepared in accordance with CEQA and the CEQA Guidelines, determine that it reflects the independent judgment of the lead agency, adopt findings concerning the project's significant environmental impacts and alternatives, and if needed, adopt a Statement of Overriding Considerations if the proposed project would result in significant impacts that cannot be avoided.

1.1.1 EIR ORGANIZATION

This Draft EIR is organized into the following chapters:

- Chapter 1: Executive Summary. Summarizes environmental consequences that would result from implementation of the project, describes recommended mitigation measures, and indicates the level of significance of environmental impacts before and after mitigation.
- Chapter 2: Introduction. Provides an overview describing the Draft EIR document.
- Chapter 3: project Description. Describes the proposed project in detail, including the characteristics, objectives, and the structural and technical elements of the proposed action.
- Chapter 4: Environmental Evaluation. Organized into 17 sub-chapters corresponding to the environmental resource categories identified in Appendix G of the CEQA Guidelines, this section provides a description of the physical environmental conditions in the vicinity of the proposed project as they existed at the time the Notice of Preparation was published, from both a local and regional perspective. Additionally, this chapter provides an analysis of the potential environmental impacts of the proposed project, and recommended mitigation measures, if required, to reduce the impacts to less than significant where possible, and to reduce their magnitude or significance when impacts cannot be reduced to a less-than-significant level. The environmental setting included in each sub-chapter provides baseline physical conditions, which provide a context, which the lead agency uses to determine the significance of environmental impacts resulting from the proposed project. Each sub-chapter also includes a description of the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the proposed project; and the potential cumulative impacts associated with the proposed project.
- Chapter 5: Alternatives to the Proposed project. Considers alternatives to the proposed project, including the CEQA-required "No project" Alternative and a Reduced Enrollment Alternative.

- Chapter 6: CEQA-Mandated Sections. Discusses growth inducement, cumulative impacts, unavoidable significant effects, and significant irreversible changes as a result of the proposed project.
- Chapter 7: Organizations and Persons Consulted. Lists the people and organizations that were contacted during the preparation of this EIR for the proposed project.
- Appendices: The appendices for this document (presented in PDF format on a CD attached to the back cover) contain the following supporting documents:
  - Appendix A: Notice of Preparation and NOP Response Letters
  - Appendix B: Air Quality, Greenhouse Gas and Health Risk Modeling
  - Appendix C: Energy and Fuel Use Modeling
  - Appendix D: Geotechnical Evaluation and Geologic Hazard Assessment
  - Appendix E: Phase I Environmental Site Assessment
  - Appendix F: Noise Impact Report
  - Appendix G: Transportation Impact Analysis
  - Appendix H: AB 52 Consultation

1.1.2 TYPE AND PURPOSE OF THIS EIR

According to Section 15121(a) of the CEQA Guidelines, the purpose of an EIR is to:

> *Inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.*

This Draft EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) with the Fremont Unified School District (FUSD) as the Lead Agency. This Draft EIR assesses the potential environmental consequences of implementing the project and identifies Mitigation Measures and Alternatives to the project that would avoid or reduce significant impacts. This Draft EIR is intended to inform FUSD decision-makers, other responsible agencies, and the general public as to the nature of the project's potential environmental impacts.

1.2 PROJECT LOCATION

The project site is located at 4357 Thornton Avenue in the City of Fremont in Alameda County. Fremont is adjacent to the cities of Newark to the west, Union City to the north and Sunol to the northeast. The east shore of San Francisco Bay and the Don Edwards San Francisco Bay National Wildlife Refuge are about 3.5 miles to the west. Regional access to the site is primarily via north-south running Interstate 880, located about 0.75 miles west of the site, and east-west running State Route 84, renamed Thornton Avenue in the City of Fremont and on which the site is located.

1.3 PROJECT SUMMARY

The proposed Thornton Middle School Conversion Project is intended to increase the capacity of school facilities to accommodate the addition of 6th grade into the school. The conversion of the school from a 7th and 8th grade junior high to a 6th- 8th grade middle school would result in a 73 percent increase in student capacity, from 1,259 to 2,176 students. The project includes demolition of about 7,040 square feet of existing permanent and modular structures and construction of approximately 43,360 square feet of new buildings and building additions. Multiple campus buildings would receive various levels of improvements, and the entire campus would receive technological upgrades. Parking, circulation, play areas and fields would be renovated and reconfigured.

1.4 ISSUES TO BE RESOLVED

Section 15123(b) (3) of the CEQA Guidelines requires that an EIR identify issues to be resolved, including whether or how to mitigate potentially significant impacts and the choice among alternatives. With regard to the proposed project, the major issues to be resolved include decisions by FUSD, as Lead Agency, related to:

- Whether this Draft EIR adequately describes the environmental impacts of the project.
- Whether the proposed land use changes are compatible with the character of the existing area.
- Whether the identified mitigation measures should be adopted or modified.
- Whether there are other mitigation measures that should be applied to the project besides those Mitigation Measures identified in the Draft EIR.
- Whether there are any alternatives to the project that would substantially lessen any of the significant impacts of the project and achieve most of the basic objectives.

1.5 QUESTIONS AND CONCERNS

FUSD issued a Notice of Preparation (NOP) on February 11, 2019. A scoping meeting was held on February 14, 2019 at the Thornton Junior High School library to receive oral comments. The CEQA-mandated scoping period for this EIR was from February 12, 2019 to March 13, 2019, during which interested agencies and the public could submit comments about environmental concerns regarding the proposed project to be addressed in the EIR. During this time, FUSD received three comment letters from the following state and regional agencies:

- Alameda Transportation Commission
- California Department of Transportation
- Department of Toxic Substances Control
- California Native American Heritage Commission

The comments received focused primarily on the following issues that may be of concern during the environmental review process:

- Overall reduction of Vehicle Miles Traveled (VMT).
- Required Congestion Management Program (CMP) transportation review based on new VMT.
- Potential impacts on the Metropolitan Transportation System (MTS) network and operators.
- Potential impacts to users of the Countywide Bicycle Network and Pedestrian Plan Areas of Countywide Significance.
- Adherence to State-required analysis and mitigation of potential onsite hazardous materials and/or conditions.
- Compliance with Assembly Bill 52 and Senate Bill 18, regarding consultation with California Native American tribes.

No comment letters from members of the public were received. While every concern applicable to the CEQA process is addressed in this Draft EIR, this list is not necessarily exhaustive, but rather attempts to capture those concerns that are likely to generate the greatest interest based on the input received during the scoping process.

1.6 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Under CEQA, a significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.[1]

Table 1-1 summarizes the conclusions of the environmental analysis contained in this Draft EIR and presents a summary of impacts and mitigation measures identified. It is organized to correspond with the environmental issues discussed in Section 4, Subchapters 4.1 through 4.17. The table is arranged in four columns: 1) environmental impacts; 2) significance prior to mitigation; 3) recommended mitigation measures; and 4) significance after mitigation. For a complete description of potential impacts, please refer to the specific discussions in Section 4, Subchapters 4.1 through 4.17.

[1] State of California, 2019 California Environmental Quality Act, § 21060.5 and § 21068.

EXECUTIVE SUMMARY

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
AESTHETICS			
AES-1: The proposed project would not have a substantial adverse effect on a scenic vista.	NI	N/A	N/A
AES-2: The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	NI	N/A	N/A
AES-3: The project would not conflict with applicable zoning and other regulations governing scenic quality.	LTS	N/A	N/A
AES-4: The project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	LTS	N/A	N/A
AES-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to aesthetics.	LTS	N/A	N/A
AIR QUALITY			
AQ-1: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.	LTS	N/A	N/A
AQ-2: Uncontrolled fugitive dust (PM_{10} and $PM_{2.5}$) could expose the areas that are downwind of construction sites to air pollution from construction activities without the implementation of the Air District's best management practices.	S	AQ-2: The Fremont Unified School District shall specify in the construction bid that the project contractor shall comply with the following the Bay Area Air Quality Management District's best management practices for reducing construction emissions of uncontrolled fugitive dust (coarse inhalable particulate matter [PM_{10}] and fine inhalable particulate matter [$PM_{2.5}$]): ▪ Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering shall be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water shall be used whenever possible. ▪ Pave, apply water twice daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging	LTS

NI = No Impact, LTS = Less than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable, N/A = Not Applicable

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		areas at construction sites. ▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). ▪ Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads, parking areas, and staging areas at the construction site to control dust. ▪ Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material. ▪ Hydro-seed or apply non-toxic soil stabilizers to inactive construction areas. ▪ Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt, sand). ▪ Limit vehicle traffic speeds on unpaved roads to 15 miles per hour. ▪ Replant vegetation in disturbed areas as quickly as possible. ▪ Install sandbags or other erosion control measures to prevent silt runoff from public roadways. These measures shall be noted on grading plans prepared by the District. The construction contractor shall implement these measures during ground disturbing activities. The Fremont Unified School District shall verify compliance that these measures have been implemented during normal construction site inspections.	
AQ-3: Construction activities of the project could expose sensitive receptors to substantial concentrations of TAC, exceeding the applicable cancer risk threshold.	S	AQ-3: The Fremont Unified School District shall specify in the construction bid that construction contractors shall use equipment that is retrofitted with Level 3 diesel particulate filters (DPFs) for off-road diesel-powered construction equipment with more than 50 horsepower for all construction activities. Prior to construction, the project contractor shall ensure that all construction (e.g., demolition and grading) plans clearly show the requirement for Level 3 DPFs for construction equipment over 50 horsepower. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the Fremont Unified School District. The construction equipment list shall state the makes, models, and numbers of construction equipment onsite in addition to the engine tier rating and California Air Resources Board engine identification number for each piece of construction equipment. Equipment shall be	LTS

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EXECUTIVE SUMMARY

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to 5 minutes or less in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.	
AQ-4: The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	NI	N/A	N/A
AQ-5: Implementation of the project would cumulatively contribute to air quality impacts in the Air Basin.	S	AQ-5: Implement Mitigation Measures AQ-2 and AQ-3.	LTS
BIOLOGICAL RESOURCES			
BIO-1: The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.	LTS	N/A	N/A
BIO-2: The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.	NI	N/A	
BIO-3: The proposed project would not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	NI	N/A	

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
BIO-4: Site clearance and tree removal could destroy active nests, and/or otherwise interfere with nesting, of birds protected under State laws.	S	**Mitigation Measure BIO-4:** Prior to vegetation clearance activities, the project applicant shall retain a qualified biologist to conduct preconstruction nesting bird surveys as follows: If tree removal would occur during the nesting season (February 1 to August 31), preconstruction surveys shall be conducted no more than 14 days prior to the start of tree removal or construction. Preconstruction surveys shall be repeated at 14-day intervals until construction has been initiated in the area after which surveys can be stopped. Locations of active nests containing viable eggs or young birds of protected bird species shall be documented and protective measures implemented under the direction of the qualified biologist until the nests no longer contain eggs or young birds. Protective measures shall include establishment of clearly delineated exclusion zones (i.e., demarcated by identifiable fencing, such as orange construction fencing or equivalent) around each nest location as determined by a qualified biologist, account for species, tolerance for disturbance, and proximity to existing development. Exclusion zones shall be a minimum of 300 feet for raptors and 75 feet for passerines and other birds. The active nest within an exclusion zone shall be monitored on a weekly basis throughout the nesting season to identify signs of disturbance and confirm nesting status. The radius of an exclusion zone may be increased by the qualified biologist if project activities are determined to be adversely affecting the nesting birds. Exclusion zones may be reduced by the qualified biologist only in consultation with CDFW. The protection measures shall remain in effect until the young have left the nest and are foraging independently or the nest is no longer active. No surveys are required before vegetation disturbance between September 1 and January 31, that is, outside of the nesting season.	LTS
BIO-5: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	NI	N/A	N/A
BIO-6: The proposed project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	NI	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
BIO-7: The proposed project would not result in significant cumulative impacts with respect to biological resources.	LTS	N/A	N/A
CULTURAL RESOURCES			
CULT-1: The proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.	NI	N/A	N/A
CULT-2: Implementation of the proposed project would have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.	S	CULT-2: If archaeological resources are encountered during excavation or construction, construction personnel shall be instructed to immediately suspend all activity in the immediate vicinity of the suspected resources and a licensed archeologist shall be contacted to evaluate the situation. A licensed archeologist shall be retained to inspect the discovery and make any necessary recommendations to evaluate the find under current CEQA Guidelines prior to the submittal of a resource mitigation plan and monitoring program to the District for review and approval prior to the continuation of any on-site construction activity.	LTS
CULT-3: Implementation of the proposed project would have the potential to disturb human remains, including those interred outside of formal cemeteries.	S	CULT-3: In the event a human burial or skeletal element is identified during excavation or construction, work in that location shall stop immediately until the find can be properly treated. The City and the Alameda County Coroner's office shall be notified. If deemed prehistoric, the Coroner's office would notify the Native American Heritage Commission who would identify a "Most Likely Descendant (MLD)." The archeological consultant and MLD, in conjunction with the project sponsor, shall formulate an appropriate treatment plan for the find, which might include, but not be limited to, respectful scientific recording and removal, being left in place, removal and reburial on site, or elsewhere. Associated grave goods are to be treated in the same manner.	LTS
CULT-4: The proposed project would not result in significant cumulative impacts with respect to cultural resources.	LTS	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
ENERGY			
ENERGY-1: The proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	LTS	N/A	N/A
ENERGY-2: The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	N/A	N/A
The proposed project would not result in significant cumulative impacts with respect to energy.	LTS	N/A	N/A
GEOLOGY AND SOILS			
GEO-1a: The proposed project would result in the placement of new buildings in, and relocation of students to, areas susceptible to ground failure in the form of significant dynamic soils settlement, potentially resulting in significant loss, injury, or death.	S	GEO-1: Fremont Unified School District and the project contractor shall implement one, or if required a combination of, the ground improvement strategies identified in the geotechnical investigation to mitigate earthquake-inducement dynamic settlement. Based on a pre-construction conference with a certified geotechnical consultant and ongoing observation by the geotechnical consultant during the ground improvement process, the project shall implement one or more of the following techniques: ▪ **Compaction Grouting**. This process refers to the injection of mortar-like grout under high pressure to compact and displace adjacent loose soils. Grout is injected at target soil zones and at incremental depths. Grout flow rate, grout pressure and grout volume shall be closely monitored throughout the process. ▪ **Deep Soil Mixing**. This ground treatment method involves blending soils with cement or other bonding materials to improve strength and compressibility. Deep soil mixing shall be performed in accordance with Federal Highway Administration (FHWA) design standards. ▪ **Vibro Stone Column**s. This construction technique involves the insertion of crushed stone in a grid pattern beneath structural footings, using a vibratory probe. This increases the strength of soil due to reinforcement of crushed stone and resulting densification of surrounding soils. ▪ **Rammed Aggregate Piers (RAP)**. This technique can be used to provide support	LTS

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		beneath shallow foundations. RAPs are designed by specialty contractors and constructed by inserting compacted aggregate into strategically placed drill- or mandrel- dug openings beneath footings.	
GEO-1b: The proposed project would result in the placement of new buildings in, and relocation of students to, areas susceptible to liquefaction and resulting ground failure in the form of significant dynamic soils settlement, potentially resulting in significant loss, injury, or death.	S	GEO-1b: Implementation of Mitigation Measure GEO-1a.	LTS
GEO-2: The proposed project would not result in substantial soil erosion or the loss of topsoil.	LTS	N/A	N/A
GEO-3: The proposed project would result in the placement of new buildings in, and relocation of students to, an area of unstable soils that is susceptible to significant dynamic soils settlement, potentially resulting in significant loss, injury, or death.	PS	GEO-3: Implementation of Mitigation Measure GEO-1a.	LTS
GEO-4: The proposed project would result in the placement of new buildings atop areas of soils that are susceptible to expansion, potentially damaging structures and resulting in significant loss, injury, or death.	PS	GEO-4: The project applicant shall create a zone of low expansion utilizing one of the following two methods recommended in the geotechnical investigation attached as Appendix C. Based on a pre-construction conference with a certified geotechnical consultant and ongoing observation by the geotechnical consultant during the ground improvement process, the project shall implement one or more of the following techniques: ▪ **Imported Fill.** Expansive soils shall be replaced with non-expansive imported fill consistent with the expansion and plasticity requirements established in the geotechnical report; or ▪ **Chemical Treatment.** Expansive soils shall be chemically treated by a specialized contractor. Chemicals shall be limited to quicklime and cement that conform to appropriate American Society of Testing and Materials (ASTM) standards.	LTS
GEO-5: The proposed project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	LTS	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
GEO-6: The proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	PS	GEO-6: If fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery, as needed, in accordance with Society of Vertebrate Paleontology standards, evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction can resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the District for review and approval prior to implementation.	LTS
GEO-7: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to geology and soils.	LTS	N/A	N/A
GREENHOUSE GAS EMISSIONS			
GHG-1: The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	LTS	N/A	N/A
GHG-2: The proposed project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	LTS	N/A	N/A
GHG-3: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to greenhouse gas emissions.	LTS	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
HAZARDS AND HAZARDOUS MATERIALS			
HAZ-1: Demolition and interior reconfiguration of the existing structures on-site may create a significant hazard by exposing construction workers to asbestos containing materials.	S	HAZ-1: Prior to issuance of a demolition permit, a licensed asbestos abatement contractor shall conduct a comprehensive building survey to determine the presence or absence of any suspect asbestos-containing materials and/or lead-based paint. If such materials are identified, a licensed abatement contractor shall prepare an abatement plan that describes the demolition process, including material containment, disposal, and worker safety.	LTS
HAZ-2: Release or upset of asbestos containing materials during proposed demolition, structural upgrading and reconfiguring of existing structure on site poses a risk to public health and represents a significant impact.	S	HAZ-2: Implement Mitigation Measure HAZ-1.	LTS
HAZ-3: The proposed project could result in the disturbance of asbestos containing materials within 0.25 miles of one public elementary school and three childcare facilities.	S	HAZ-3: Implement Mitigation Measures HAZ-1.	LTS
HAZ-4: The proposed project would not create a significant hazard to the public or the environment by being located on a site which is included on a list of hazardous materials sites compiled pursuance to Government Code Section 65962.5.	LTS	N/A	N/A
HAZ-5: The proposed project would not be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard or excessive noise for people residing or working in the project area.	NI	N/A	N/A
HAZ-6: The proposed project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.	LTS	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
HAZ-7: The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	LTS	N/A	N/A
HAZ-8: The proposed project would not result in cumulative impacts with respect to hazards and hazardous materials.	LTS	N/A	N/A
HYDROLOGY AND WATER QUALITY			
HYDRO-1: The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.	LTS	N/A	N/A
HYDRO-2: The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	LTS	N/A	N/A
HYDRO-3: The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would 1) result in substantial erosion or siltation on- or off-site; 2) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; 3) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or 4) impede or redirect flood flows.	LTS	N/A	N/A

NI = No Impact, LTS = Less than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable, N/A = Not Applicable

EXECUTIVE SUMMARY

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
HYDRO-4: The proposed project would not, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	LTS	N/A	N/A
HYDRO-5: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	LTS	N/A	N/A
HYDRO-6: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to hydrology and water quality.	LTS	N/A	N/A
LAND USE AND PLANNING			
LU-1: The proposed project would not physically divide an established community.	LTS	N/A	N/A
LU-2: The proposed project would not cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	N/A	N/A
LU-3: The proposed project would not result in significant cumulative impacts with respect to land use and planning.	LTS	N/A	N/A
NOISE			
NOISE-1: The proposed project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or deferral standards.	LTS	N/A	N/A
NOISE-2: Vibration associated with construction of the proposed project could impact residential land use 20 feet southeast of the project site.	PS	NOISE-2: The use of a static roller in place of a vibratory roller will be used to reduce vibration levels below the performance standard of 0.2 in/sec PPV if paving is required within 25 feet of off-site residential buildings.	LTS

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
NOISE-3: The proximity of the project site to an airport or airstrip would not result in exposure of future residents or workers to airport-related noise.	LTS	N/A	N/A
POPULATION AND HOUSING			
POP-1: The proposed project would not induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).	LTS	N/A	N/A
POP-2: The proposed project would not displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere.	NI	N/A	N/A
POP-3: Implementation of the proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to population and housing.	LTS	N/A	N/A
PUBLIC SERVICES			
PS-1: The proposed project would not result in the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.	LTS	N/A	N/A
PS-2: The proposed project would result in less-than-significant cumulative impacts with respect to fire protection services.	LTS	N/A	N/A

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EXECUTIVE SUMMARY

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
PS-3: The proposed project would not result in the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.	LTS	N/A	N/A
PS-4: The proposed project would result in less-than-significant cumulative impacts with respect to police services.	LTS	N/A	N/A
PS-5: The proposed project would not result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.	NI		
PS-6: The proposed project would result in less-than-significant cumulative impacts with respect to school services.	NI		
PS-7: The proposed project would not result in the need for new or physically altered libraries, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.	NI		
PS-8: The proposed project would result in less-than-significant cumulative impacts with respect to the construction of libraries.	NI		
PS-9: The proposed project would not result in the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.	LTS	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
PS-10: The proposed project would result in less-than-significant cumulative impacts with respect to parks.	LTS	N/A	N/A
RECREATION			
REC-1: The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LTS	N/A	N/A
REC-2: The proposed project would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	LTS	N/A	N/A
REC-3: The proposed project would result in less-than-significant cumulative impacts with respect to recreational facilities.	LTS	N/A	N/A
TRANSPORTATION			
TRANS-1a: New vehicle trips resulting from the Thornton Middle School Conversion Project would result in the degradation of service at the two-way, stop sign-controlled intersection at Thornton Avenue/Oak Street (study intersection #2) from LOS E to LOS F during the AM peak hour under Existing and Near-Term conditions.	S	TRANS-1a: The Fremont Unified School District, in cooperation with the City of Fremont, shall install a traffic signal at the intersection of Thornton Avenue and Oak Street.	LTS
TRANS-1b: New student pedestrians from the proposed project would be susceptible to vehicle-pedestrian accidents from unsafe crossing conditions on Oak Street, conflicting with City of Fremont General Plan policy related to student pedestrian access and safety	S	TRANS-1b: The Fremont Unified School District's Business Services Department and Office of the Superintendent, in cooperation with the City of Fremont, shall install marked crosswalks across Oak Street on both the eastbound and westbound approach at Blue Ridge Street.	LTS
TRANS-2: The proposed project would not conflict with CEQA Guidelines Section 15064.3, subdivision (b)(1).	NI	N/A	N/A

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EXECUTIVE SUMMARY

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
TRANS-3: The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	N/A	N/A
TRANS-4: The proposed project would not result in inadequate emergency access.	LTS	N/A	N/A
TRANS-5a. The proposed Thornton Middle School Conversion project would contribute to the degradation of the operation of the two-way stop control intersection at Thornton Avenue/Oak Street (#3) to an unacceptable LOS F during the AM and PM peak hours under Cumulative Plus Project conditions.	S	TRANS-5. Installation of the traffic signal as described in Mitigation Measure TRANS 1.	LTS
TRANS-5b. The proposed Thornton Middle School Conversion would contribute to the degradation of the operation of the signalized intersection at Thornton Avenue/Dusterberry Way (#5) to an unacceptable LOS F during the AM peak hour under Cumulative Plus Project conditions.	S	TRANS-5b. Fremont Unified School District and the City of Fremont shall coordinate to optimize signal cycle length and phasing splits at the Thornton Avenue/ Dusterberry Way.	LTS
TRIBAL CULTURAL RESOURCES			
TRI-1: The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource, as defined in Public Resources Code Section 21074.	NI	N/A	N/A
UTILITIES AND SERVICE SYSTEMS			
UTIL-1: The proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects.	LTS	N/A	N/A

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
UTIL-2: The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	LTS	N/A	N/A
UTIL-3: The proposed project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	LTS	N/A	N/A
UTIL-4: The proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	LTS	N/A	N/A
UTIL-5: The proposed project would comply with federal, State, and local management and reduction statutes and regulations related to solid waste.	LTS	N/A	N/A
UTIL-6: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to water service.	LTS	N/A	N/A

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1.7 SUMMARY OF PROJECT ALTERNATIVES

This Draft EIR analyzes alternatives to the proposed project that are designed to reduce the significant environmental impacts of the proposed project and feasibly attain most of the project objectives. There is no set methodology for comparing the alternatives or determining the environmentally superior alternative under CEQA. Identification of the environmentally superior alternative involves weighing and balancing all the environmental resource areas. The following alternatives to the proposed project were considered and analyzed in detail:

- No Project Alternative
- Reduced Enrollment Alternative

Chapter 6, Alternatives to the Proposed Project of this Draft EIR includes a complete discussion of these alternatives and of alternatives that were rejected for various reasons.

1.7.1 NO PROJECT ALTERNATIVE

Consistent with Section 15126.6(e)(2) of the CEQA Guidelines, under the No Project Alternative, the proposed project would not be adopted or implemented. Thornton Junior High School would remain a 7th and 8th grade facility. No students would be reassigned to Thornton and no physical improvements to the campus would be made. Overcapacity at existing elementary schools in Fremont would not be addressed.

1.7.2 REDUCED ENROLLMENT ALTERNATIVE

The current proposed project assumes an enrollment increase of 917 students and a new classroom cluster totaling 34,860 square feet. Under the Reduced Enrollment Alternative, Thornton Junior High School would still be converted to a 6th to 8th grade middle school. However, the total number of new students would be reduced. New students under this alternative would be 63 percent of the proposed increase, or about 578 students. In addition, the total amount learning space would be reduced to reflect fewer students. Under the Reduced Enrollment Alternative, the New Classroom Cluster described in Chapter 3, Project Description, would be reduced from five, 2-story buildings to two, 2-story buildings. Total square footage of the cluster would be reduced from 34,860 square feet to 22,300 square feet.

2. Introduction

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, Chapter 14 California Code of Regulations, Section 15378[a], the Thornton Middle School Conversion Project is considered a "project" subject to environmental review as its implementation is "an action [undertaken by a public agency] which has the potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment." This Draft Environmental Impact Report (Draft EIR) provides an assessment of the potential environmental consequences of implementation of the project, herein referred to as "proposed project." Additionally, this Draft EIR identifies mitigation measures and alternatives to the proposed project that would avoid or reduce significant impacts. This Draft EIR compares the development of the proposed project with the existing baseline condition, described in detail in Chapter 4, Environmental Evaluation, and each subchapter (Chapters 4.1 through 4.17). The Fremont Unified School District (District) is the lead agency for the proposed project. This assessment is intended to inform the District's decision-makers, other responsible agencies, and the public-at-large of the nature of the proposed project and its effect on the environment.

2.1 PROPOSED PROJECT

The Thornton Middle School Conversion Project would involve construction of new buildings, reconfiguration and modernization of existing buildings, development of new parking and vehicular circulation areas, various campus site upgrades and campus-wide technology upgrades within the existing, 18-acre footprint of the Thornton Junior High School campus. The project is intended to convert the currently 7th and 8th grade junior high school to a middle school with 6th, 7th, and 8th grades. The project would increase the capacity of the school facilities from of 1,259 students to 2,176 students, a 73 percent increase in student capacity.

The proposed project is included in the District's 2014 Long Range Facilities Plan (LRFP).[1] It will be funded by the District's Measure E bond program, which includes funding for CEQA review. The project would not require a change in General Plan land use designation or zoning. The proposed project is described in more detail in Chapter 3, Project Description, of this Draft EIR.

2.2 EIR SCOPE

This Draft EIR is a project-level EIR that identifies and analyzes site specific potential impacts of the project. The environmental analysis primarily focuses on the changes in the environment that would result

[1] Fremont Unified School District, January 2014, Long Range Facilities Plan.

from the development of the proposed project. This Draft EIR examines the specific short-term impacts (construction) and long-term impacts (operation) that would occur as a result of project approval and implementation. For a complete listing of environmental topics covered in this Draft EIR, see Chapter 4, Environmental Evaluation.

2.3 ENVIRONMENTAL REVIEW PROCESS

2.3.1 DRAFT EIR

Pursuant to CEQA Section 21080(d)[2] and CEQA Guidelines Section 15063,[3] the District determined that the proposed project could result in potentially significant environmental impacts and that an EIR would be required. In compliance with CEQA Section 21080.4, the City circulated the Notice of Preparation (NOP) of an EIR for the proposed project to the Office of Planning and Research State Clearinghouse and interested agencies and persons on February 4, 2019, for a 30-day review period. A public Scoping Meeting was held on February 14, 2019 at 4:00 p.m. in the Thornton Junior High School library located at 4357 Thornton Avenue in the City of Fremont. The NOP and scoping process solicited comments from responsible and trustee agencies regarding the scope of the Draft EIR. Appendix A of this Draft EIR contains the NOP, as well as the comments received by the City in response to the NOP.

The scope of this EIR was established through the EIR scoping process and includes an analysis of both the proposed project's impacts and cumulative impacts in the following issue areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions
- Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- CEQA- Mandated Assessment Conclusions:
  - Impacts Found not to be Significant
  - Significant Unavoidable Impacts
  - Growth-Inducing Impacts
  - Significant Irreversible Changes

This Draft EIR will be available for review by the public and interested parties, agencies, and organizations for a 45-day comment period starting on January 17, 2020 and ending on March 3, 2020. During the comment period, the public is invited to submit written comments vial mail or e-mail s on the Draft EIR to the Fremont Unified School District. Written comments (electronic communication preferred) should be submitted to:

[2] The CEQA Statute is found at California Public Resources Code, Division 13, Sections 21000 to 21177.
[3] The CEQA Guidelines are found at California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000 to 15387.

Kelle Lynch-McMahon, Interim Director of Facilities
Fremont Unified School District
4210 Technology Drive, Fremont, CA 94538
Email: klynchmcmahon@fusdk12.net

Written and/or verbal comments on the Draft EIR will also be accepted at a School Board hearing, during the public comment period, which will be legally noticed and is tentatively scheduled for Wednesday, February 12, 2020 at 6:30 p.m. in the in the Education Center Board Room (4210 Technology Drive, Fremont, CA 94538).

2.3.2 FINAL EIR

Upon completion of the 45-day review period for the Draft EIR, the District will review all comments received and prepare written responses for each comment on the adequacy of the Draft EIR. A Final EIR will then be prepared, which contains all comments received, responses to comments raising environmental issues, and any changes to the Draft EIR. A School Board hearing will be scheduled to consider a decision on the project and certification of the Final EIR. All persons who commented on the Draft EIR will be notified of the availability of the Final EIR and the date of the hearing. All responses to comments submitted on the Draft EIR by agencies will be provided to those agencies at least 10 days prior to the hearing.

If the School Board determines that the project may be approved, the School Board will certify the Final EIR and adopt and incorporate into the project all feasible mitigation measures identified in the EIR. The Board may also require other feasible mitigation measures as conditions of approval.

2.3.3 MITIGATION MONITORING

Public Resources Code Section 21081.6 requires that the lead agency adopt a monitoring or reporting program for any project for which it has made mitigation findings pursuant to Public Resources Code 21081. Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of an EIR. The Mitigation Monitoring and Reporting Program for the proposed project will be completed and available to the public prior to certification of this EIR.

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3. *Project Description*

3.1 INTRODUCTION

Fremont Unified School District (FUSD or District), the Project Applicant (Applicant), is proposing the Thornton Middle School Conversion Project ("project"). The project would involve construction of new buildings, reconfiguration and modernization of existing buildings, development of new parking and vehicular circulation areas, various campus site upgrades and campus-wide technology upgrades within the existing, 18-acre footprint of the Thornton Junior High School campus. The project is intended to convert the currently 7th and 8th grade junior high school to a middle school with 6th, 7th, and 8th grades. The project would increase the capacity of the school facilities from of 1,259 students to 2,176 students, a 73 percent increase in student capacity.

The proposed project is included in the District's Long Range Facilities Plan (LRFP). It will be funded by the District's Measure E bond program, which includes funding for California Environmental Quality Act (CEQA) review.

This chapter provides a detailed description of the project, including the lead agency, project location, existing setting (including characteristics of the site and surrounding area and General Plan and Zoning), objectives of the project, components of the project, and approximate construction phasing, as well as required permits and approvals. These activities and approvals collectively constitute the "project" for the purposes of this EIR. Additional descriptions of the environmental setting are included in Chapters 4.1 through 4.17 of this Draft EIR.

3.2 LEAD AGENCY

In accordance with Section 15367 of the CEQA Guidelines, the Fremont Unified School District is the Lead Agency for the proposed project, since it will serve as "the public agency which has the principal responsibility for carrying out or approving the project."

3.3 PROJECT SITE LOCATION AND CHARACTERISTICS

3.3.1 REGIONAL LOCATION AND ACCESS

The project site is located at 4357 Thornton Avenue in the City of Fremont in Alameda County (Assessor Parcel Number [APN] 501-0221-085-02). The regional location is shown on Figure 3-1. Fremont is adjacent

Source:ESRI, 2017; City of Santa Rosa, 2017; PlaceWorks, 2017.

Project Site
Railroad
Fremont BART Station
Other BART Stations

Figure 3-1
Regional Location

to the cities of Newark to the west, Union City to the north and the unincorporated community of Sunol to the northeast. The City of Milpitas in Santa Clara County is located to the south.

The east shore of San Francisco Bay and the Don Edwards San Francisco Bay National Wildlife Refuge are about 3.5 miles to the west.

Regional access to the site is primarily via north-south running Interstate 880, located about 0.75 miles west of the site, and east-west running State Route 84, renamed Thornton Avenue in the City of Fremont and on which the site is located. The Fremont BART Station is located about 2 miles east of the project site. Interstate 680 is located about 4.2 miles east of the project site.

3.3.2 LOCAL SETTING

The project site is located northeast of the intersection of Thornton Avenue and Coronado Drive (see Figure 3-2). It is within the City of Fremont's Cabrillo Park subdivision, which is bounded by Thornton Avenue to the southeast, Fremont Boulevard to the northwest, Decoto Road to the northwest and I-880 to the west. As shown in Figure 3-3, the school is primarily surrounded by Residential-Low and Residential Low-Medium land uses, per the City's General Plan, to the north, west and east. Commercial and retail uses are located directly across Thornton Avenue to the south, including a small outdoor mall that includes a branch of the United States Post Office. Two churches are also located across Thornton Avenue. Fremont Boulevard, three blocks east of the school, is lined with auto-oriented service and sales businesses. Several other schools are in the immediate area, including Oliveira Elementary School, which is nearly directly catty-corner to Thornton to the northeast, as well and Cabrillo Elementary School, American High School and Fremont Christian School.

Finally, the project site is located just over 1 mile to the west of Centerville Junior High School and just under 6 miles to the west of Hopkins Junior High School. The project site is located about 2½ miles west of Fremont's Central District.

3.3.3 EXISTING SITE CONDITIONS

The project site is the existing 18-acre, 43-classroom Thornton Junior High School campus. The school was built in 1963 with nine permanent, wood frame buildings. A series of modular buildings was added from 1990 to 2004 to accommodate new students. The last permanent structure built on the campus was a concrete block gymnasium added in 2007.

The current configuration of the campus is generally characterized by paved circulation and parking areas fronting Thornton Avenue, followed by a row of the original permanent buildings that spans the width of the campus. A hardcourt play area is situated behind the buildings. Turfed fields, including the running track and baseball diamond, fill the rear area of the campus.

Source:ESRI, 2019; City of Fremont, 2019; PlaceWorks, 2019.

Project Site

Figure 3-2
Local Vicinity

Source:ESRI, 2019; City of Fremont, 2019; PlaceWorks, 2019.

Project Site

Figure 3-3
Surrounding Setting

3.3.3.1 SCHOOL BUILDINGS

The current campus, shown in Figure 3-4, includes permanent buildings and portable and modular structures. There are 10 permanent buildings totaling 56,582 square feet; 17 modular buildings totaling 17,760 square feet; and nine portable buildings totaling 9,120 square feet, for a campus total of 83,462 gross square feet of interior space.

The uses and characteristics of all campus structures are summarized in Table 3-1 below.

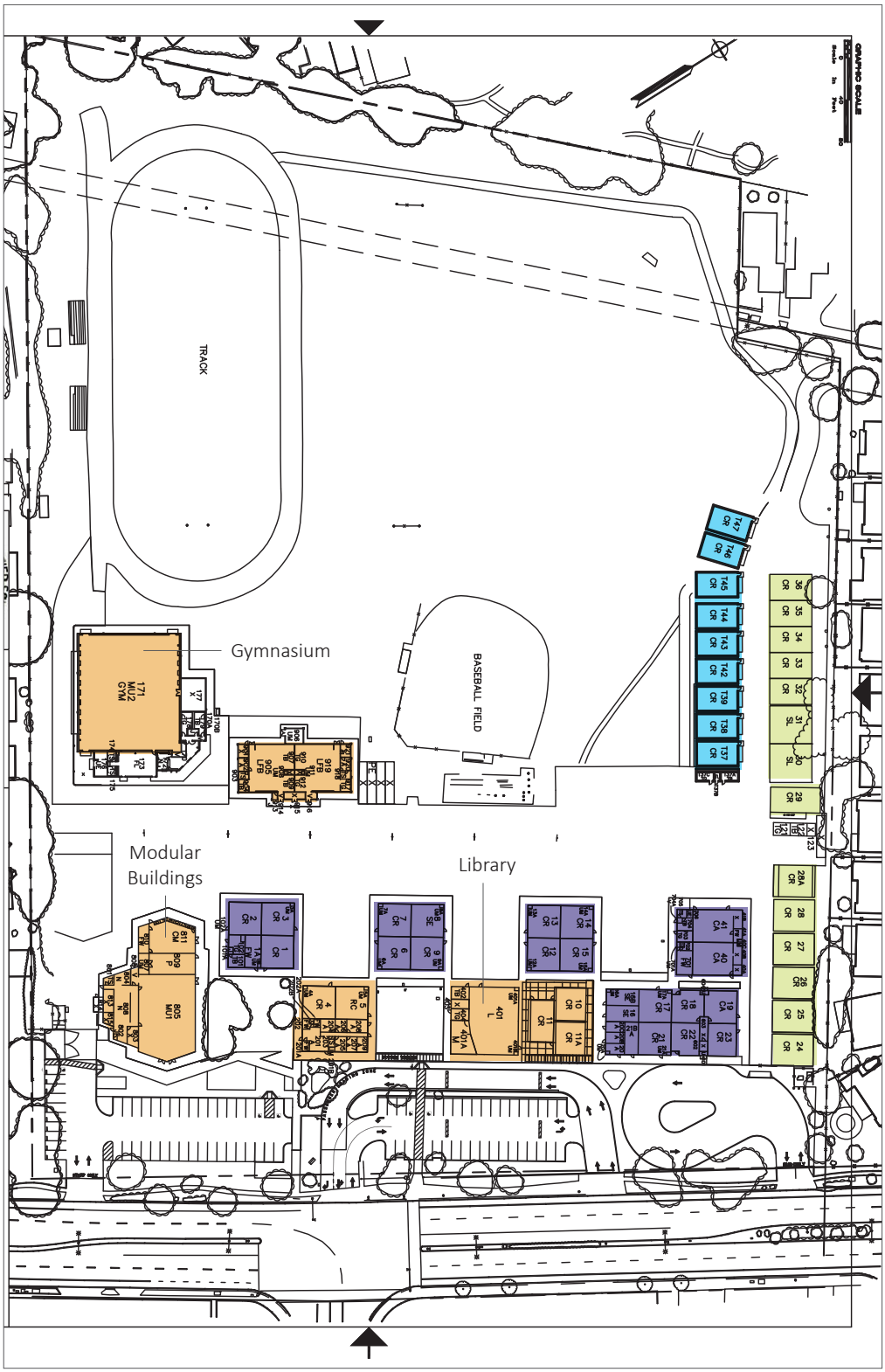
TABLE 3-1 EXISTING CAMPUS STRUCTURES

			Uses	
Building	Title	Gross Area (SF)	Classrooms	Other
Permanent Buildings				
1	Entryway	3,971	2	Admin.
2	Library	3,971	0	Library, Support
3	Large Classroom	3,971	6	Admin., Support
4	Art Classroom	3,971	2	Admin., Support
5	Classroom	3,971	4	None
6	Classroom	3,971	4	None
7	Classroom	3,971	3	Admin, Support
8	Multi-Purpose Room	8,755	1	Food, Assembly
9	Lockers	5,589	0	Locker Room
10	Gymnasium	14,441	0	Admin., Support
Total		**56,582**		
Modular Buildings		17,760	14	
Portable Buildings		9,120	9	
Total All		**83,462**	**45**	

Source: Fremont Unified School District, Long Range Facilities Plan.

3.3.3.2 CIRCULATION AND PARKING

The Thornton Avenue-facing front of the school is dedicated to circulation and parking. A bus turnaround loop is located at the northeast corner of the campus. This area is accessed by a single entry/exit way on Thornton Avenue. A separate parking area with 36 pull-in parking stalls and a median-separated drop-off lane is located south of the bus turnaround. This area is accessible via a two-lane entry-only driveway on the north side. One lane of a three-lane driveway on south side provides access to the interior parking area only. The other two lanes are exit-only lanes direct traffic back to Thornton Avenue (see Figure 3-4). A second, separate parking lot with 45 parking stalls is located on the southeast corner of the campus. This lot is accessible via a single, two-lane entry and exit driveway.



Source: FremontUNified School District, 2017.

Modular Buildings
Portable Buildings
Permanent Classroom Building
Permanent Shared Buildings

Figure 3-4
Existing Site Plan

3.3.3.3 HARDTOP PLAY AREAS

A hardtop recreation area is located behind the primary cluster of campus buildings. This paved area includes basketball courts, volleyball courts, handball courts, pull up bars and other surface play facilities. This area spans the width of the campus.

3.3.3.4 FIELDS AND TURF AREAS

Unpaved, permeable recreation facilities are located further back from paved areas, in the far rear of the campus. The existing campus includes an open field area, one softball field, one running track, and a perimeter running track located in the northwest corner of the site.

3.3.4 GENERAL PLAN LAND USE AND ZONING

3.3.4.1 GENERAL PLAN

As illustrated in Figure 3-5, the City of Fremont General Plan 2030 designates the project site Public Facility. The Public Facility land use designation generally applies to non-open space parcels owned by public agencies or utilities facilities, public schools, water and sanitary district facilities, transit agency facilities, utilities, and other federal, state, county, and local government facilities.

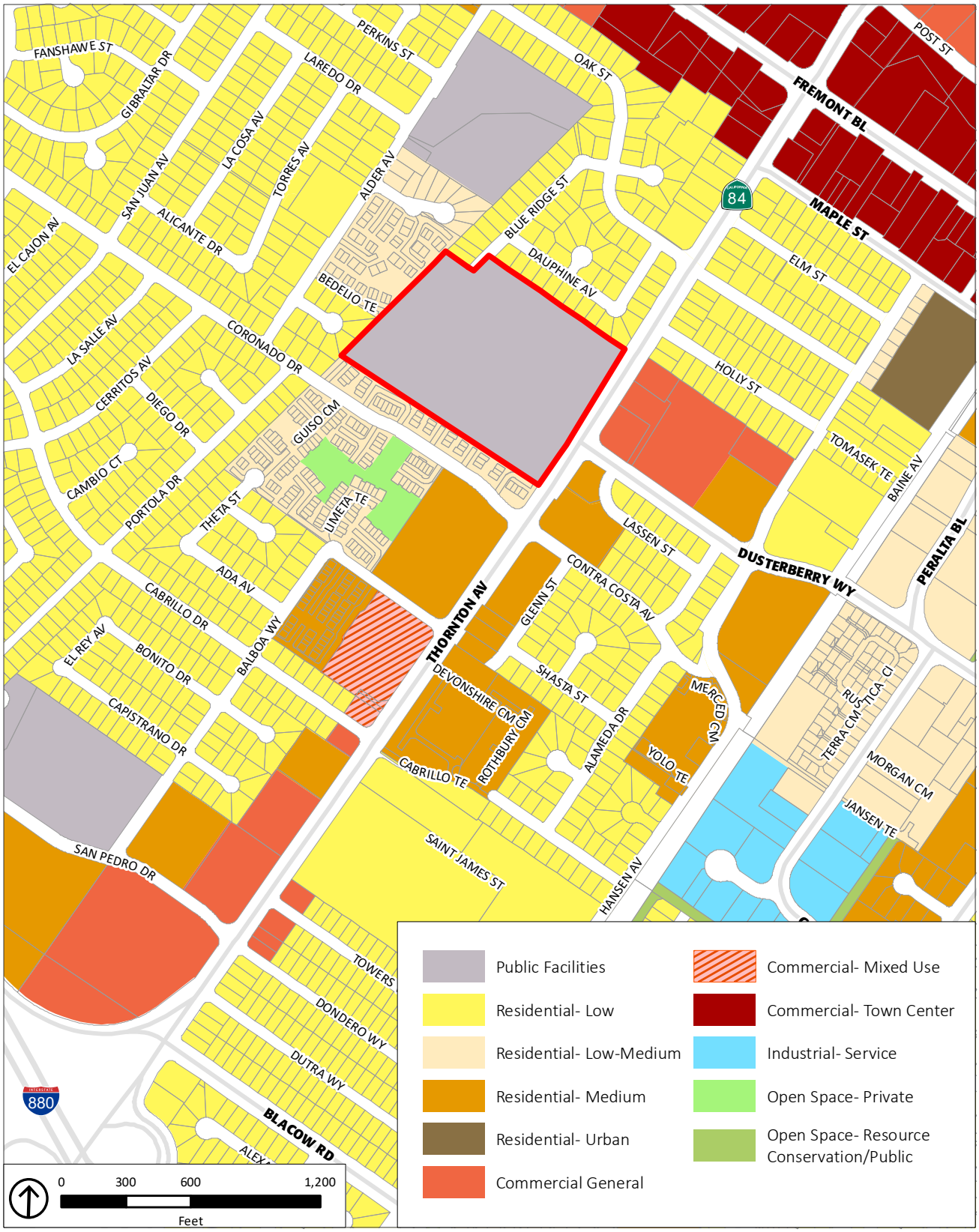
3.3.4.2 ZONING

The site is zoned P-F Public Facilities by the City of Fremont Municipal Code. Similar to the Public Facility land use designation, the purpose of the P-F zoning district is to foster the development of educational and public service uses in the community and to prevent the intrusion of land uses which may overburden community facilities and resources.

3.4 PROJECT OBJECTIVES

The overarching goal of the proposed project is to reduce capacity and overcrowding at FUSD elementary schools, per the LRFP. The District has developed the following project objectives to aid decision-makers in their review of the project, consideration of project alternatives and associated environmental impacts.

- Integrate 6th grade into the current 7th and 8th grade program.
- Help accommodate an increasing student population across the District.
- Maximize outdoor learning spaces in a secure environment.
- Improve circulation while maximizing safety at school entry and parking areas.



Source:ESRI, 2019; City of Fremont, 2019; PlaceWorks, 2019.

Project Site

Figure 3-5
General Plan Land Use

3.5 PROJECT DESCRIPTION

As previously noted, the Thornton Middle School Conversion Project is intended to increase the capacity of school facilities to accommodate the addition of 6th grade into the school. As detailed below in Section 3.5.1, the project includes demolition of about 7,040 square feet of existing permanent and modular structures and construction of approximately 43,350 square feet of new buildings and building additions. Multiple campus buildings would receive various levels of improvements, and the entire campus would receive technological upgrades. Parking, circulation, play areas and fields would be renovated and reconfigured.

Development of the proposed project would be divided into two major increments:
1. Site Preparation and Demolition for New Classroom Buildings
2. New Construction, Modernization and Site Work

These are described in the following sections.

3.5.1 SITE PREPARATION AND DEMOLITION

This increment would include demolition of selected areas and features, soil preparation and mitigation, utility relocation, and foundation work to prepare for construction of a new cluster of classrooms and a new administration building (see Section 3.5.2.1, below). This work would be further broken down into the phases described below.

3.5.1.1 SITE CLEARING

Initial site clearing would target the footprint of a proposed five-building cluster of new classrooms (see Section 3.5.2.1, below). This would include removing approximately 50,000 square feet of existing asphalt within the footprint of the proposed buildings, relocating existing utility infrastructure from the footprint, performing necessary soil improvements, certifying a building pad in preparation for foundation and slab construction. Finally, required ground improvements would be completed during this phase of site preparation. Geotechnical reporting completed for the project recommends ground improvement and soil strengthening below all new building foundations, potentially to a depth of 20 feet below ground surface (bgs).[1]

A second phase of site clearing would be dedicated to preparing for the construction of a new administration and library building at the entrance to the school (see Section 3.5.2.1, below). This building would require demolition of the existing administration and library buildings and three neighboring modular buildings, a total of just over 7,000 square feet of existing building space. This work would include removing approximately 13,000 square feet of existing hardscape, relocating existing utility infrastructure out of the footprint, performing recommended soil improvements, and achieving pad certification in preparation for the foundation and slab construction. Similar to site clearance for the

[1] Ninyo & Moore, 2018. Geotechnical Evaluation and Geologic Hazard Assessment, Thornton Middle School Conversion Project, December 28.

classrooms described above, removal of material will be required to the depth of the pad, with additional removal and replacement pending the required strategy for ground improvement.

3.5.2 CONSTRUCTION, MODERNIZATION AND SITE WORK

Following completion of site preparation and demolition described above, new construction, building improvement and modernization and site work would begin. This section provides written and graphic details of the proposed project components. A proposed site plan is shown in Figure 3-6.

3.5.2.1 NEW BUILDING CONSTRUCTION

The proposed project would result in the construction of a cluster of new classroom buildings, a new school entrance building with administration offices and a library. As summarized in Table 3-2, below, the proposed project would result in 36,320 net square feet of new building space.

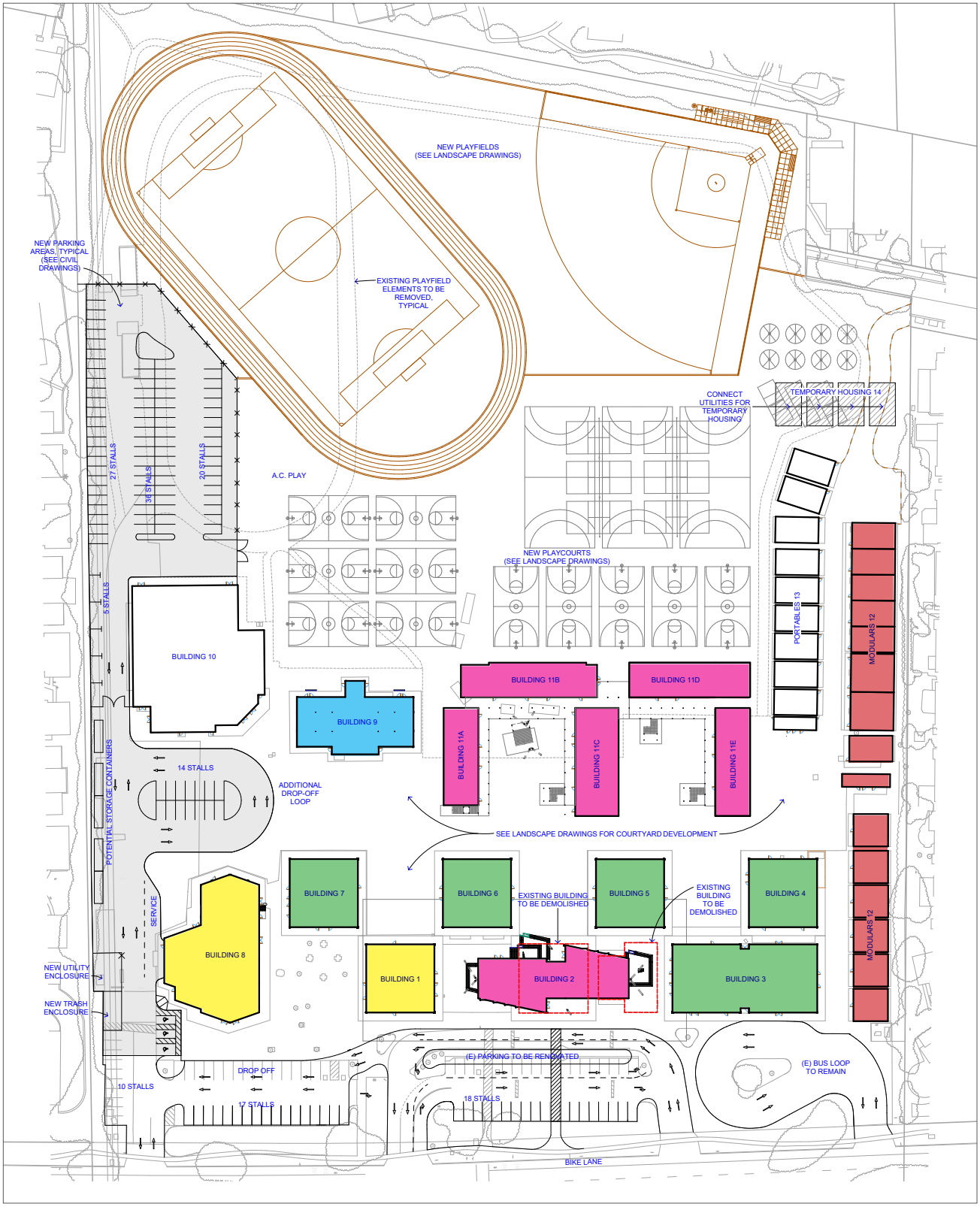
TABLE 3-2 NEW BUILDING CONSTRUCTION SUMMARY

Project Component	Demolition (Square Feet)	Gross New Construction (Square Feet)	Net New Construction (Square Feet)
Classroom Cluster	2,931	34,860	31,929
Administration/Library/Entrance Building	4,109	8,500	4,391
Total	**7,040**	**43,360**	**36,320**

Source: Quattrocchi Kwok Architects, 2019.

New Classrooms Cluster

The largest structural component of the project would be a cluster of five new, two-story classroom structures totaling 34,860 square feet. All of the buildings would be 34 feet tall. These buildings (labeled 11A to 11E on Figure 3-6) would be in the center of campus. As illustrated in detail on Figure 3-7 the buildings would be oriented in an "E" shape to create courtyard-style outdoor learning spaces. Elevations of the buildings are shown in Figure 3-8. This figure shows the covered, second story walkway that would be located on the internal facades of the buildings and connect all five buildings. This walkway would be accessible by five exterior staircases. These buildings would be wood or light gage steel framing, with steel moment frames, poured in place concrete second floors and steel deck roofing.



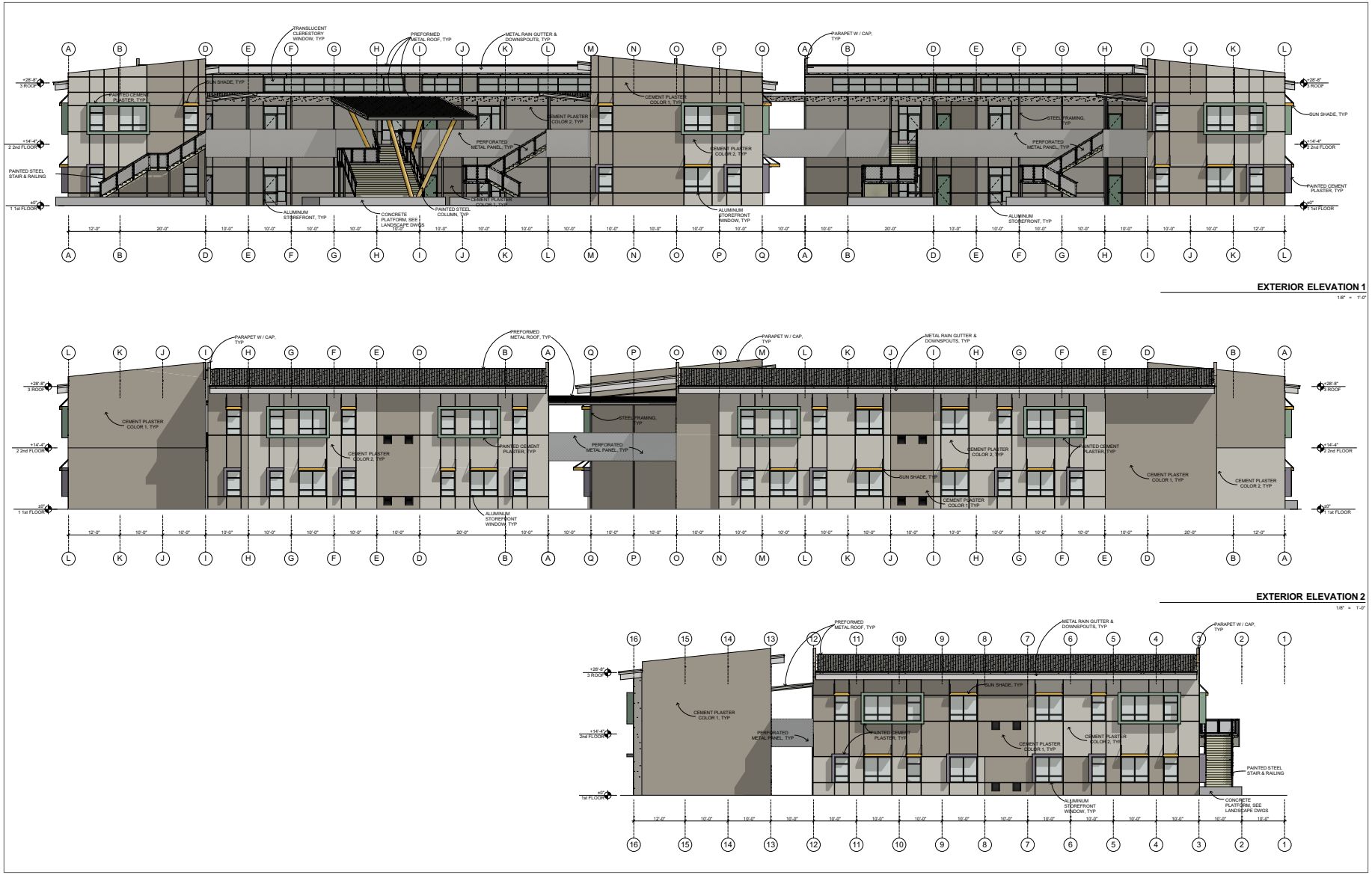
Source: Quattrocchi Kwok Architects; January 10, 2019.

- Minor Modernization
- Very Minor Modernization
- New Construction
- Reconfiguration and Structural Upgrade
- Reconfiguration and Minor Modernization

Figure 3-6
Proposed Site Plan

Source: Quattrocchi Kwok Architects; October 2019.

Figure 3-7
Proposed Classroom Buildings Floor Plans



Source: Quattrocchi Kwok Architects; January 10, 2019.

Figure 3-8

Proposed Classroom Buildings Exterior Elevations

The facilities located in each building (labeled A, B, C, D and E) are shown in Table 3-3, below.

TABLE 3-3 NEW CLASSROOM BUILDING ATTRIBUTES

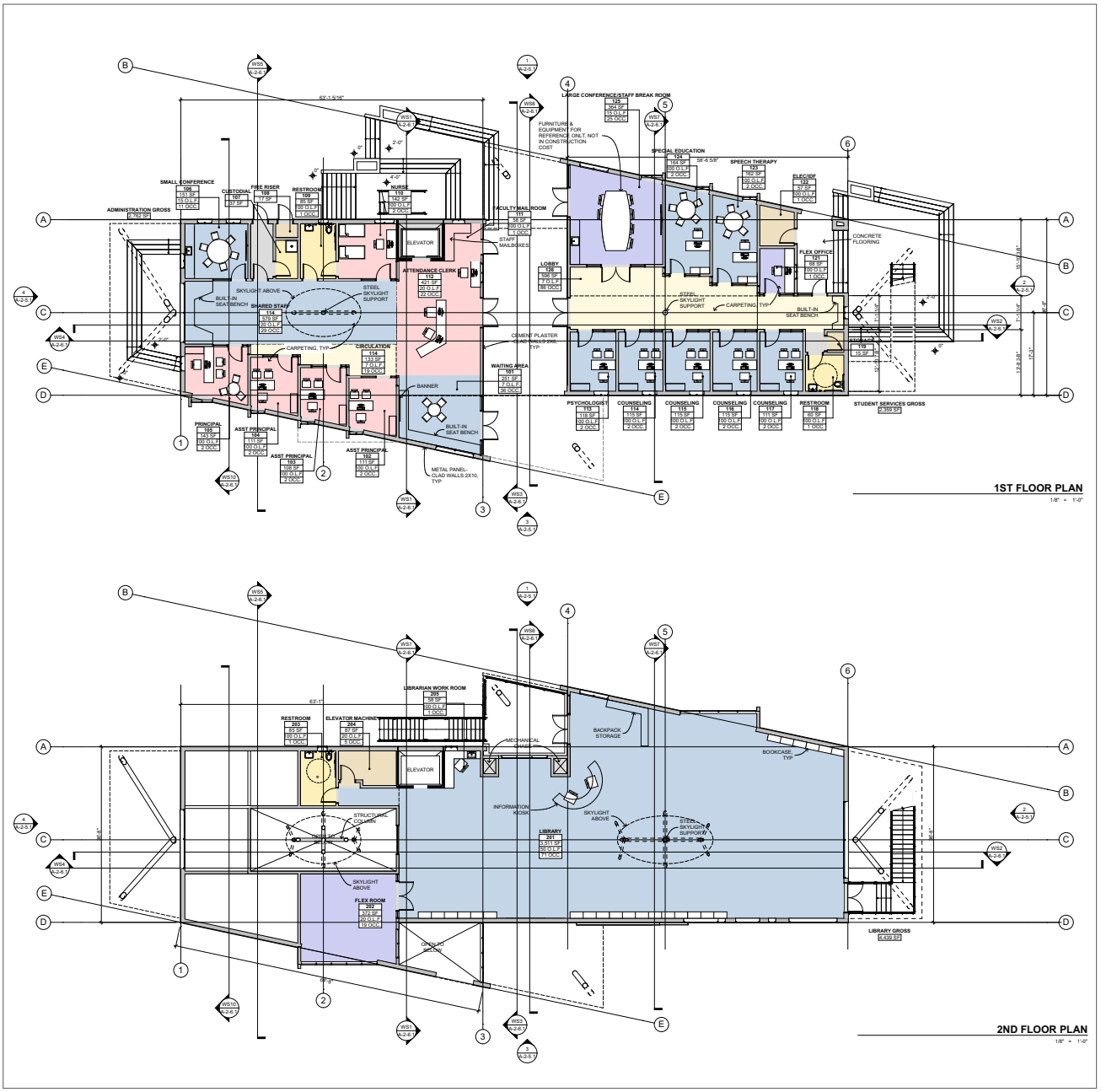
Classroom Building	Size (Square Feet)	Classrooms/ Learning Spaces	First Floor	Second Floor
A	6,185	4	Science labs, storage, mechanical	Science labs, staff restroom, mechanical
B	8,040	4	Student restrooms, science labs, mechanical, electrical, custodial	Student restrooms, science labs, mechanical, electrical, custodial
C	6,185	4	Science or flex classrooms, storage, mechanical	Science classrooms, storage, mechanical. teacher collaboration rooms
D	9,580	8	Classrooms, mechanical, electrical, custodial	Classrooms, mechanical, electrical, custodial, staff restroom
E	4,870	4	Classrooms, mechanical, electrical, custodial	Classrooms, mechanical, electrical, custodial, staff restroom
Total	**34,860**	**24**		

Source: Quattrocchi Kwok Architects, 2019.

New Administration/Library/Entrance Building

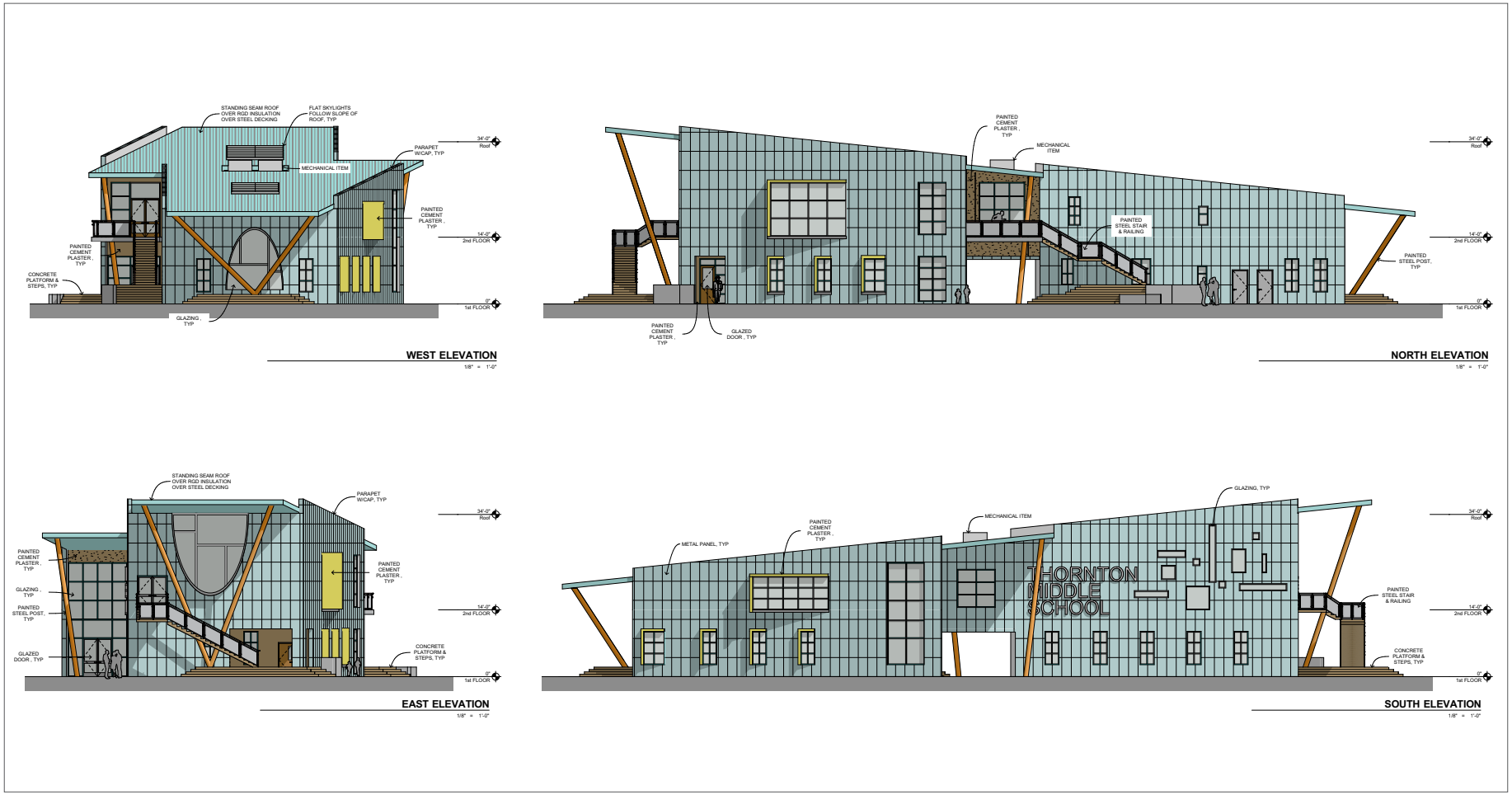
Following demolition of the school's existing administration building and three adjacent modular buildings (see Section 3.5.1.1, above) at the front of the school (see Figure 3-4), a new 8,500-square-foot replacement building would be constructed (Building 2 on Figure 3-6). The roof of this two-story building would slope upward to the northwest, reaching a maximum height of 37 feet. As shown in Figure 3-9, the first floor of the building would include a waiting area, administration offices, restrooms, conference rooms and a break room; the second floor would be primarily dedicated to a 3,500-square-foot school library. The building would be broken into two areas separated by an external walkway into the campus. This walkway would be covered by a second-story internal walkway that connects two areas of the second floor (see Figure 3-10). Due to the slope of the roof, most of the second-floor space would be limited to the northwestern side of the building. The building would include an elevator, as well as external stairways on both the west at the center and east ends.

The building would be a steel frame moment structure with a metal roof. Wall framing would consist of metal studs with painted cement plaster cladding. It is anticipated that construction will require shallow spread footings with a minimum bearing depth of 24 inches. Renderings of the building are shown on Figure 3-11.



Source: Quattrocchi Kwok Architects; January 10, 2019.

Figure 3-9
Proposed Administration/Library/Entrance Building Floor Plans



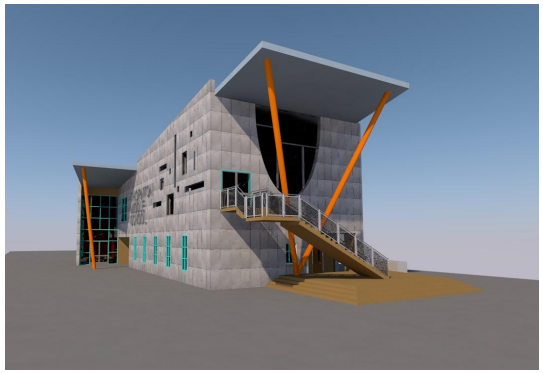
Source: Quattrocchi Kwok Architects; January 10, 2019.

Figure 3-10
Proposed Administration/Library/Entrance Building Elevations

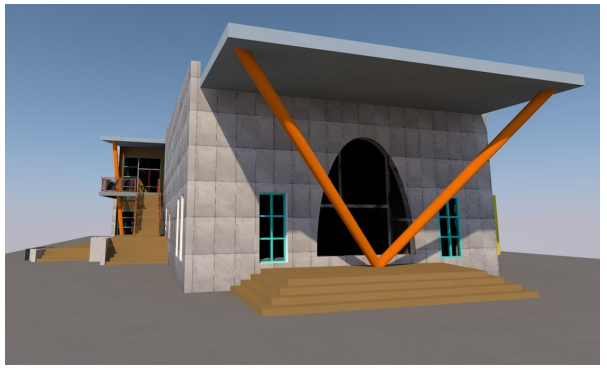
EXTERIOR PERSPECTIVE 1

EXTERIOR PERSPECTIVE 3

EXTERIOR PERSPECTIVE 2



EXTERIOR PERSPECTIVE 4



EXTERIOR PERSPECTIVE 5

Source: Quattrocchi Kwok Architects; January 10, 2019.

Figure 3-11
Proposed Administration/Library/Entrance Building Renderings

3.5.2.2 IMPROVEMENTS AND MODERNIZATION

In addition to the new building construction described above, the project would include various levels of physical improvements and facility modernizations to a number of existing buildings. These range from full structural upgrades to minor technological improvements. None of the following components would increase the footprints of existing buildings.

The following buildings are grouped by the level of upgrades proposed.

Reconfiguration and Structural Upgrades

School Locker Room

The school locker room, labeled Building 9 on Figure 3-6, would be reconfigured and structurally upgraded. Central interior walls that connect both sides of the locker room would be demolished, and various interior privacy walls would be demolished and replaced for increased privacy and interior circulation. The reconfiguration would result in approximately 26 percent more restroom space. Walls separating office space and storage areas on both sides of the building would be demolished and relocated to increase office space. The storage area at the building entrance would be relocated to the mechanical equipment area at the rear of the building and replaced with new restrooms. Two, 10-foot-wide privacy walls on shallow-spread footings would be constructed outside the entrances to the girl's and boy's sides of the building. Doors, windows, plumbing fixtures, bathroom partitions and drinking fountains would be demolished and replaced, as well as benches and locker structures.

A collection of 24 solar tubes would also be installed on the ceiling of the locker room as part of the project. These 16-inch tubes would be evenly spaced across the ceiling and protrude from the building roof.

Finally, all structural walls of the locker room would be adequately anchored to the existing roof diaphragm to increase the structural integrity of the building.

Reconfiguration and Minor Modernizations

Multi-Use Room

The school's Multi-Use Room would receive minor facility modernizations under the proposed project. The music room would be updated and modernized. Interior partitions and shelving would be demolished. Primary and stage flooring and door framing would be replaced. A wall mounted table and bench system would be installed.

Classroom Building 1

One of the school's original classroom buildings (Building 1 on Figure 3-6) would also be reconfigured with minor upgrades. The square building is currently divided into four quadrant rooms, including one classroom, one science lab, and two rooms divided by interior walls into various administration and support rooms. As part of the project, the building would be reconfigured into four classrooms by

demolishing interior walls within the divided rooms. In addition, light fixtures would be repaired, interior walls and exterior doors patched, areas of flooring removed and replaced, and existing science casework demolished.

Minor Modernizations

Classroom Buildings 3, 4, 5, 6, and 7

The project would include minor facility modernizations to five of the original Thornton classrooms. This work would be limited to improvements such as flooring improvement, light fixture repair, science casework removal, drinking fountain replacement, mechanical system upgrades, interior countertop replacement and removal, and wall patching and painting.

Very Minor Modernizations

Modular Buildings

The Thornton campus includes 14 modular buildings (see Table 3-1) used for classrooms and science education. As part of the proposed project, some of these structures would undergo very minor improvements as necessary, such as repair of ceiling tiles and light fixtures, interior wall patching, and painting and repair of exterior doors.

Campus-Wide Technology Upgrades

The project would include technology upgrades to all existing buildings. These upgrades would be focused on strengthening internal telecommunications and internet connections throughout the campus. Upgrades would include replacement of campus transformers, extensions of telecom service equipment, reorganization of and additional Intermediate Distribution Frames (IDF) to better connect classroom devices to the campus' main distribution frame, and relocation of the campus' Main Point of Entry (MPOE). This is the point at which the school's telecommunication provider's wiring enters the campus.

3.5.2.3 CAMPUS SITE IMPROVEMENTS

The project would include redevelopment of circulation areas and recreational areas, as well as various campus site upgrades. These are described in the following sections.

Parking and Circulation

As shown in Figure 3-6, the project would result in a revised campus circulation plan consisting of three major components. The project would:

- Renovate the school's central parking and vehicular entrance area.
- Combine the central parking and vehicular entrance area with the adjacent parking lot.
- Develop two additional parking lots along the southwest boundary of the campus.

Central Parking Area Reconfiguration

As described in Section 3.3.3.2 and shown in Figure 3-4, the current campus includes a central parking lot and student drop-off lane with one-way traffic. As part of the project, both driveways of this lot would be reconfigured to allow ingress and egress at both points. In order to accommodate bi-directional vehicular movements, the central median would be reconfigured and 19 of the 37 parking stalls in this lot would be removed, resulting in 18 future stalls.

Parking Lot Connection

The project would also connect the central parking area to the adjacent parking lot via a one-way right-of-way out of the central parking lot (see Figure 3-6). As part of this proposed change in circulation, approximately 26 existing parking stalls on the interior side of the southern parking lot would be removed to accommodate a new drop-off area, resulting in 17 future parking stalls.

New Parking Areas

Two new parking lots located along the southwest boundary of the school, from the existing southern lot to athletic fields at the rear of the campus, would be developed as part of the project. The lots would be accessed via the southern parking lot or the existing driveway into the southern parking lot. A two-lane, two-way driveway would provide access to these parking areas, including a 14-stall parking lot and drop-off loop; 5 parallel and 10 pull-in parking stalls, and 3 ADA stalls along the driveway; and an 83-stall rear parking lot. In total, proposed new parking areas would provide 115 new parking stalls. As shown in Table 3-4, the proposed project would result in 68 new parking stalls on the campus.

The proposed project would install 140,000 square feet of new asphalt concrete pavement on the northwestern portion of the project site with the intention of creating a fire lane.

TABLE 3-4 PROPOSED PARKING SUMMARY

Project Component	Existing Stalls	Proposed Stalls	Net Stalls
Central Parking Lot	37	18	-19
Southern Parking Lot	45	17	-28
Proposed parking Areas	0	115	115
Total	**81**	**147**	**68**

Source: Fremont Unified School District

3.5.2.4 PEDESTRIAN AND BICYCLE

As shown on Figure 3-6, the project would shift the existing crosswalk through the central parking area to the east. The project would install new concrete pedestrian walkways throughout the site, while existing walkways would be updated in select areas to highlight significant features on the project site. The proposed project would also install a new, in-ground mounted stainless steel bike rack on the campus.

3.5.2.5 RECREATIONAL SITE IMPROVEMENTS

As shown in the proposed site plan (Figure 3-6), the project would include the reorganization and redevelopment of the school's hardtop area and playing fields. The running track would be rotated about 45 degrees, the baseball diamond repositioned into the northeast corner of the campus, and unused turf area removed, allowing for the expansion of the asphalt hardcourt area. The new 140,000 square-foot

hardcourt area would include six new basketball courts, three new ball walls, eight new tetherball courts and a fitness section.

3.5.3 UTILITIES AND INFRASTRUCTURE

The following utilities improvements and conditions associated with the proposed project. A utilities plan is illustrated on Figure 3-12.

3.5.3.1 STORMWATER

As shown in Table 3-5, the proposed project would result in approximately 175,000 square feet of new impervious surface area on the campus. The City of Fremont would provide stormwater drainage and collection services to the project site. Stormwater would be collected via existing, relocated, and new storm drains throughout the project site, and then conveyed either to stormwater retention basins or off-site by a 24-inch storm drainpipe under the school sports fields. The project would include at least 10,000 square feet of stormwater treatment areas installed along and around proposed impervious areas to minimize stormwater runoff from the proposed hardtop concrete sport courts and roofs. The project site would require approximately 400 feet of storm drains to drain the stormwater treatment area. All new impervious surfaces would be graded to divert water away from structures. Additional storm drains would be installed relocated to other areas of the project site in anticipation of stormwater runoff.

TABLE 3-5 PROPOSED IMPERVIOUS SURFACES

Proposed Project Component	New Impervious Area (SF)
Vehicular AC Pavement	35,000
Pedestrian AC Pavement	140,000
Total	**175,000**

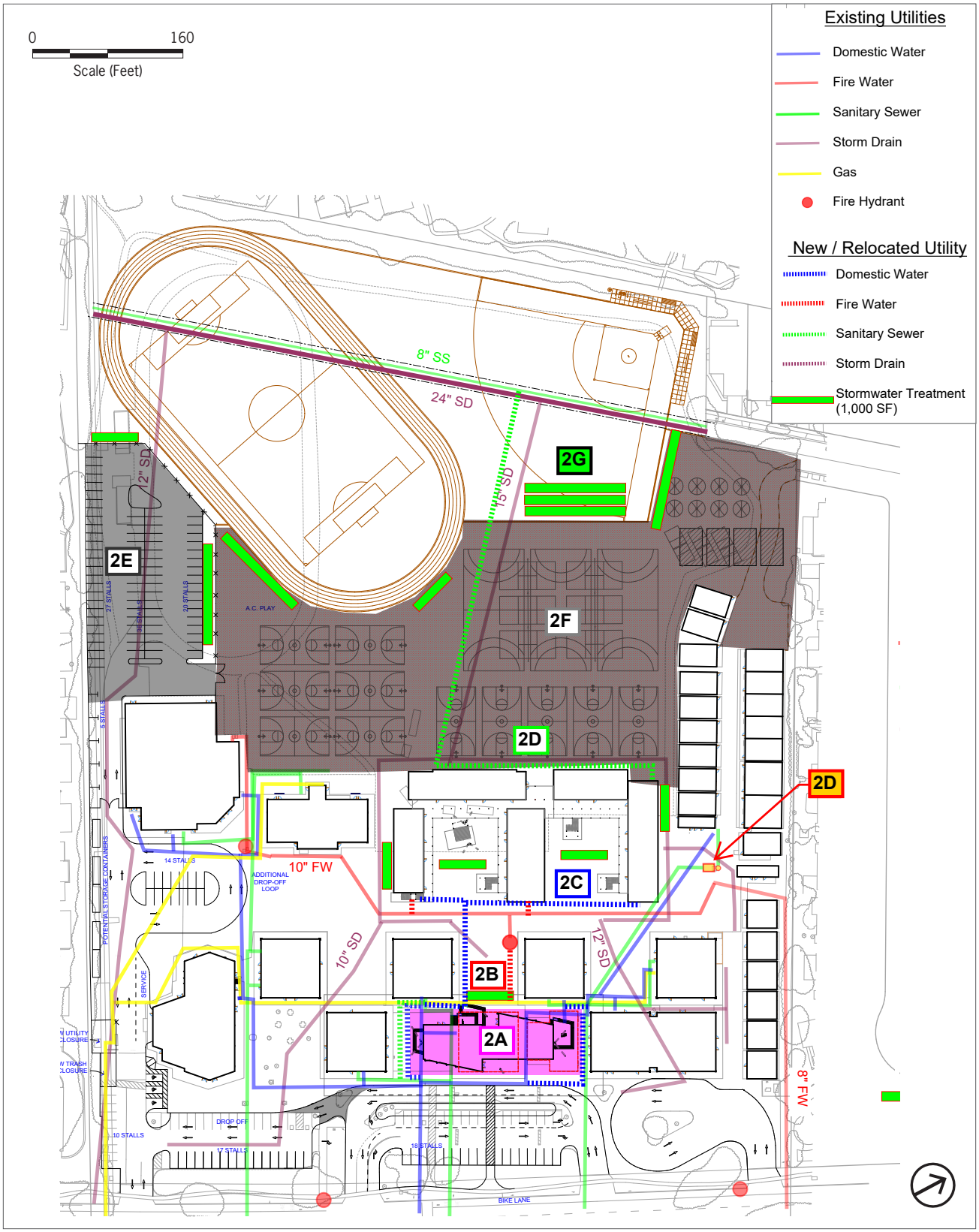
Source: Quattrocchi Kwok Architects, 2019

3.5.3.2 WATER SUPPLY

The Alameda County Water District would supply potable water service to the project via an existing on-site water line. The proposed project would connect to the existing water main beneath Thornton Avenue. Approximately 350 feet of new water lines are proposed to service new buildings on the project site and would connect to existing water lines. Approximately 150 feet of new fire water lines would service proposed new buildings.

3.5.3.3 SANITARY SEWER

Wastewater generated on the project site would be treated by the Union Sanitary District at the Alvarado Treatment Plant located north of the project site in Union City. The proposed project would connect to the existing sewer system line beneath Thornton Avenue.



Source: Quattrocchi Kwok Architects; January 10, 2019.

Figure 3-12
Utilities Plan

It would include installation of 650 feet of 6-inch lines to serve new buildings. The project would also replace the existing sanitary sewer pump station on the campus to accommodate a larger load.

3.5.3.4 GAS AND ELECTRICITY

In 2018, Alameda County and the City of Fremont began service under local Community Choice Energy (CCE) program East Bay Community Energy (EBCE). EBCE was formed as a Joint Power Authority (JPA) by Alameda County and 11 of its cities and operates as a not-for-profit public agency. The electric energy provided by EBCE is conveyed to customers through Pacific Gas & Electric's (PG&E) existing infrastructure. PG&E continues to maintain the grid, repair lines, and conduct customer billing within the EBCE service area.

On-site pipelines would be expanded a part of the project. No new gas pipelines would be installed.

3.5.3.5 SOLID WASTE

Solid waste and recyclables are collected within the city by Republic Services. Fremont's solid waste and recyclables are taken to the Fremont Recycling & Transfer Station and then to the Republic Services Newby Island Landfill in Milpitas, California. The proposed project would be serviced by municipal waste and recycling providers. New, additional trash and recycling receptacles would be placed throughout the site. In addition, the proposed project would install a new trash enclosure on the southern edge of the school site.

3.5.4 LANDSCAPING

The project would result in the loss of fewer than five small trees in the current circulation areas of the campus. The campus would be landscaped primarily with small flowering trees and accent trees in courtyard areas between buildings and in outdoor assembly areas, as well as along the school entrance pathway and Thornton Avenue pedestrian entrance. This would result in a net increase in trees. In addition, a series of bioretention areas would be installed in or near new hardscaped areas to control stormwater runoff. A small educational garden would be located to the north of the existing bus loop.

3.5.5 LIGHTING

Project lighting would be typical for human-scale orientation and safety. The project would include new interior and exterior lighting and lighting controls for the modernization of existing buildings and construction of the new entryway and classroom buildings. Exterior lighting fixtures for the new and modernized buildings would utilize LED lamp sources and be designed in accordance with Title 24, architectural design criteria, and the recommendations of The Illuminating Engineering Society (IES) of North America. Parking areas will be illuminated with pole mounted full cutoff LED area lights with IES optical patterns appropriate for the area, as well as shielding to mitigate light trespass. Campus interior walkways will be illuminated with pole mounted full cutoff "post top" LED area lights with appropriate IES optical patterns.

Lighting controls for all new buildings would include multi-zone and dimming features to allow for local and Title 24 required control. All exterior lighting shall be programmed per Title 24 requirements, with exterior lights over 30 watts provided with additional motion sensing controls to reduce overall light output.

3.6 CONSTRUCTION PHASING

As described in Section 3.5, above, project construction would occur in two main increments: 1) Site Preparation, and 2) New Construction and Modernization. This phasing is intended to ensure that classroom buildings are ready for occupancy by August 2021, to coincide with the start of the 2021-2022 calendar school year.

The Division of the State Architect (DSA) and California Department of Education (CDE) will review the school site plans from July of 2019 to May of 2020. Following this review phase, project construction would progress as follows:

1. Final Construction Pricing: January 2020 to July 2020
2. Classroom Buildings and Site Preparation: February 2020 to June 2020
3. New Construction and Modernization: August 2020 to August 2022
4. Beneficial Occupancy: August 1, 2021
5. Construction of New Administration & Library Building: August 2021 to August 2022.
6. Modernization of Classroom Building I: June 2022 to August 2022.

3.7 INTENDED USES OF THIS EIR

This project-level EIR is intended to review the potential, specific environmental impacts associated with the adoption and implementation of the proposed project, determine corresponding mitigation measures, as necessary, and facilitate public disclosure and review of those impacts and potential mitigation measures.

3.8 PROJECT PERMITS AND APPROVALS

The proposed project would require a series of permits and approvals from various agencies with discretionary authority related to the project. These agencies and potential permits and approvals are listed below.

- Approval and EIR certification by the Fremont Unified School District Board of Trustees.
- Approval of construction plans by the State of California Division of the State Architect.
- Hazardous materials review by the State of California Division of Toxic Substances Control.
- Plan approval by the California Department of Education.
- Approval of fire truck access and fire flow design by the Fremont Fire Department.
- Approval of water system connection by the Alameda County Water District.
- Connections to wastewater and stormwater systems by the Union Sanitary District.

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3.5.2.2 IMPROVEMENTS AND MODERNIZATION

In addition to the new building construction described above, the project would include various levels of physical improvements and facility modernizations to a number of existing buildings. These range from full structural upgrades to minor technological improvements. None of the following components would increase the footprints of existing buildings.

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A collection of 24 solar tubes would also be installed on the ceiling of the locker room as part of the project. These 16-inch tubes would be evenly spaced across the ceiling and protrude from the building roof.

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- Combine the central parking and vehicular entrance area with the adjacent parking lot.
- Develop two additional parking lots along the southwest boundary of the campus.

4. Environmental Analysis

This chapter of the Draft EIR is made up of 18 sub-chapters. This introduction describes the organization of the Draft EIR and the assumptions and methodology of the cumulative impact analysis. The remaining 17 sub-chapters evaluate the direct, indirect, and cumulative environmental impacts of the proposed project.

In accordance with Appendix G, Environmental Checklist, of the 2019 CEQA Guidelines, as amended per Assembly Bill 52 (Tribal Cultural Resources) and the California Supreme Court in a December 2015 opinion [California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD), 62 Cal. 4th 369 (No. S 213478)], the potential environmental effects of the proposed project are analyzed for potential significant impacts in the following 17 environmental issue areas, which are organized with the listed abbreviations:

- Aesthetics (AES)
- Air Quality (AQ)
- Biological Resources (BIO)
- Cultural Resources (CULT)
- Energy (ENERGY)
- Geology and Soils (GEO)
- Greenhouse Gas Emissions (GHG)
- Hazards and Hazardous Materials (HAZ)
- Hydrology and Water Quality (HYDRO)
- Land Use and Planning (LU)
- Noise (NOISE)
- Population and Housing (POP)
- Public Services (PS)
- Recreation (REC)
- Transportation (TRANS)
- Tribal Cultural Resources (TCR)
- Utilities and Service Systems (UTIL)

Due to the urban location and past and current uses of the project site, and its location outside state responsibility areas or lands classified as very high fire hazard severity zones, no environmental impacts associated with agricultural and forestry resources or mineral resources are expected to occur as a result of the proposed project. In addition, according to the California Board of Forestry and Fire Protection, the project site is not within a State Responsibility Area, which are areas where CAL FIRE is the primary

emergency response agency responsible for fire suppression and prevention.[1] There are no very high fire hazard severity zones within the Local Responsibility Area for the City of Fremont, including the project site. There are also no moderate, high, and very high fire hazard severity zones in the State Responsibility Area in the vicinity of the City of Fremont, including the project site.[2] Therefore impacts associated with wildfire will also not be assessed. These three topics have been summarily dismissed in this EIR.

Each subchapter is organized into the following sections:

- Environmental Setting offers a description of the existing environmental conditions, providing a baseline against which the impacts of the proposed project can be compared, and an overview of federal, State, regional, and local laws and regulations relevant to each environmental issue.
- Thresholds of Significance refer to the quantitative or qualitative standards, performance levels, or criteria used to evaluate the existing setting with and without the proposed project to determine whether the impact is significant. These thresholds are based primarily on the 2019 CEQA Guidelines and may reflect established health standards, ecological tolerance standards, public service capacity standards, or guidelines established by agencies or experts.
- Impact Discussion gives an overview of the potential impacts of the proposed project and explains why impacts are found to be significant or less than significant prior to mitigation. This subsection also includes a discussion of cumulative impacts related to the proposed project. Impacts and mitigation measures are numbered consecutively within each topical analysis and begin with an acronym or abbreviated reference to the impact section.

THRESHOLDS OF SIGNIFICANCE

As noted above, significance criteria are identified before the impact discussion subsection, under the subsection, "Thresholds of Significance." For each impact identified, a level of significance is determined using the following classifications:

- *Significant (S)* impacts include a description of the circumstances where an established or defined threshold would be exceeded.
- *Less-than-significant (LTS)* impacts include effects that are noticeable, but do not exceed established or defined thresholds, or can mitigated below such thresholds.
- *No impact (NI)* describes circumstances where there is no adverse effect on the environment.

For each impact identified as being significant, the Draft EIR identifies mitigation measures to reduce, eliminate, or avoid the adverse effect. If one or more mitigation measure(s) would reduce the impact to a less-than-significant level successfully, this is stated in the Draft EIR. *Significant and unavoidable (SU)* impacts are described where mitigation measures would not diminish these effects to less-than-significant levels. The identification of a project-level significant and unavoidable impact does not preclude the

[1] California Board of Forestry and Fire Protection, State Responsibility Area Viewer, https://bof.fire.ca.gov/projects-and-programs/state-responsibility-area-viewer/, accessed March 1, 2019.

[2] California Department of Forestry and Fire Resources, FHSZ Viewer. http://egis.fire.ca.gov/FHSZ/, accessed March 1, 2019.

finding of less-than-significant impacts for subsequent projects that comply with the applicable regulations and meet applicable thresholds of significance.

ASSUMPTIONS AND METHODOLOGY REGARDING CUMULATIVE IMPACTS

A cumulative impact consists of an impact created as a result of the combination of the project evaluated in the EIR, together with other reasonably foreseeable projects causing related impacts. Section 15130 of the CEQA Guidelines requires an EIR to discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable."

Where the incremental effect of a project is not "cumulatively considerable," a Lead Agency need not consider that effect significant but must briefly describe its basis for concluding that the incremental effect is not cumulatively considerable. Where the cumulative impact caused by the project's incremental effect and the effects of the other projects is not significant, the EIR must briefly indicate why the cumulative impact is not significant.

The cumulative discussions in Chapters 4.1 through 4.17 of this Draft EIR explain the geographic scope of the area affected by each cumulative effect (e.g., immediate project vicinity, county, watershed, or air basin). The geographic area considered for each cumulative impact depends upon the impact that is being analyzed. For example, in assessing macro-scale air quality impacts, all development within the air basin contributes to regional emissions of criteria pollutants, and basin-wide projections of emissions are the best tool for determining the cumulative impact. In assessing aesthetic impacts, on the other hand, only development within the localized area of change would contribute to a cumulative visual effect since the area of change is only visible within the vicinity of that area.

The CEQA Guidelines provide two approaches to analyzing cumulative impacts. The first is the "list approach," which requires a listing of past, present, and reasonably anticipated future projects producing related or cumulative impacts. The second is the projections-based approach wherein the relevant growth projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions are summarized. A reasonable combination of the two approaches may also be used.

The cumulative impact analysis in this Draft EIR relies on a combination of the two permissible approaches, with the applicable list of projects shown in Table 4-1. The cumulative analysis discussions contained in Chapters 4.1 through 4.14 include a discussion of the growth projections and references to specific projects as relevant to the impact analysis as of January 2019.

The following provides a summary of the cumulative impact setting for each impact area:

- Aesthetics: The cumulative setting for visual impacts includes the effects of the proposed project together with other cumulative development projects in the vicinity of the project site.

TABLE 4-1 CUMULATIVE PROJECTS WITHIN THE VICINITY OF THE PROPOSED PROJECT

Project Location	Project Name	Description and Status
Residential Projects		
37350 Sequoia Road	Montecito Townhomes and Apartments	130 multi-family units; townhomes under construction, apartments pending building permit review
3550 Peralta Blvd.	Centerville Junction	52 multi-family units; under construction
4140 Central Avenue	Aurora Spring Townhouses	15 multi-family units; building permit review
4369 Central Avenue	Central Commons	30 multi-family units; under construction
4133 & 4167 Peralta Blvd.	Peralta Crossing	43 multi-family units; under construction
37343-37359 Blacow Road	The Cottages	37 single family units; entitlement approved
3858 Bonde Way	Centerville Pioneer	8 multi-family units; building permit review
3853 Decoto Road	Decoto Villas	18 multi-family units; under construction
Mixed-Use Projects		
3900 Thornton Avenue	Thornton Avenue Mixed-Use	54 multi-family units; 7,124 net commercial SF; building permit review
37358 Fremont Blvd.	Silicon Sage Mixed-Use Project	165 multi-family units; 15,000 net commercial SF; open for public comment
3704 Maple Street	Maple Commons	11 multi-family units; 2,820 net commercial SF; entitlement approved
36551 Fremont Blvd.	Fremont Habitat	18 multi-family units; 4,501 net commercial SF; open for public comment
38239 Fremont Blvd.	Universal Dragon Mixed-Use	6 multi-family units; 3,028 net commercial SF; approved by Planning Commission
School Projects		
37720 Fremont Blvd.	Centerville Middle School Conversion	Building and modernization for 700-student increase
Total Residential		**587 units**
Total Net Commercial		**32,473 net SF**

Source: City of Fremont.

- **Air Quality:** The project's potential contribution to cumulative impacts is assessed utilizing the same significance criteria as those for project-specific impacts. Individual development projects that generate construction or operational emissions that exceed the Air District screening thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the San Francisco Bay Area Basin is in nonattainment.
- **Biological Resources:** The geographic scope of the cumulative analysis is the 2-mile radius around the project site, which is contained in the flat, largely built out Centerville, Cabrillo, and Glenmore neighborhoods of the City.
- **Cultural Resources and Tribal Cultural Resources:** Cumulative impacts to cultural resources occur when a series of actions leads to the loss of a substantial type of site, building, or resource.

- Geology, Soils, and Seismicity: The cumulative setting for impacts related to geology and soils is site specific and addressed in each project's geotechnical investigation.
- Greenhouse Gas Emissions: Because GHG emissions are not confined to a particular air basin but are dispersed worldwide, the cumulative analysis focuses on the global impacts.
- Hazards and Hazardous Materials: The cumulative setting for impacts related to hazards and hazardous materials includes Alameda County, which is the service area for the Alameda County Department of Environmental Health.
- Hydrology and Water Quality: The geographic context used for the cumulative assessment of hydrology and water quality impacts includes the areas within the City of Fremont that discharge stormwater to the same storm drain system as the project site, with ultimate discharge into the lower San Francisco Bay.
- Land Use and Planning: The cumulative setting for land use and planning considers the effects of the proposed project and several concurrent developments in the same area of Fremont.
- Noise: The traffic noise levels are based on cumulative projects and traffic conditions used for the traffic impact analysis, which considers cumulative effects of the proposed project.
- Population and Housing: Impacts of cumulative growth are considered in the context of potential impacts to population and housing that could occur from a combination of the proposed project and other projects that are pending in Fremont.
- Public Services and Recreation: Cumulative impacts are considered in the context of the growth from the proposed project combined with the estimated growth in the service areas of each service provider.
- Transportation: The cumulative setting for traffic and circulation applies the regional transportation demand model and incorporates regional growth projections to the transportation network in Fremont and the proposed project.
- Utilities and Service Systems: Cumulative impacts are considered in the context of the growth from the proposed project combined with the estimated growth in the service areas of each utility's service area.

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4.1 AESTHETICS

This chapter describes the regulatory framework and existing conditions on the project site related to aesthetics, and the potential impacts of the project on aesthetics and visual resources

4.1.1 ENVIRONMENTAL SETTING

4.1.1.1 REGULATORY FRAMEWORK

This section summarizes key State regulations related to aesthetics concerning the proposed project. There are no federal regulations pertaining to aesthetics that directly apply to the proposed project.

State Regulations

California State Scenic Highway Program

In 1963, the California Legislature created the scenic highway program to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to state highways. The state regulations and guidance governing the scenic highway program are found in the Streets and Highways Code, Section 260 et seq. Sections 260 through 263. The Code authorizes the California State Scenic Highways Program and set forth criteria and procedures for the designation of scenic highways.

There are two officially designated State Scenic Corridors within 5 miles of the project site. A designated portion of Interstate 680 runs 4.2 miles east of the project site, and a portion of east-west running State Route 84 begins 2.8 miles east of the site.[1]

Local Regulations

Although City of Fremont regulations do not apply to lands under Fremont Unified School District (FUSD or District) jurisdiction, the District will consider the following local regulations during project implementation and implement them as best practices when deemed necessary.

City of Fremont General Plan

The City's General Plan contains a Community Character Element with goals for well-designed public schools. This policy document highlights the role of public schools and other public gathering spaces in the overall quality and character of neighborhoods. Goal 4-4: Public Space, highlights the value of public spaces such as schools that contribute to Fremont's sense of place and visual quality. The Element explicitly states that public spaces such as schools should "showcase exemplary design"[2] in order to accomplish this role.

[1] California Scenic Highway Mapping Program. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/, accessed January 5, 2019.

[2] City of Fremont, 2011, City of Fremont 2030 General Plan, Community Character Element, page 4-47.

The Community Character Element of the City's General Plan, which identifies scenic routes and scenic gateways, does not identify scenic resources within this central area of the city.

City of Fremont Municipal Code

Title 18, Planning and Zoning, of the city's Municipal Code establishes development standards for all land use zones in the city. These include use and accessory structures standards, as well as building, site and height standards for P-F Public Facilities District. The code promotes good design and planning of development projects to enhance the visual environment of Fremont.

City of Fremont Design Guidelines

The City adopted comprehensive Citywide Design Guidelines in 2017. The purpose of the document is to guide future development on sites outside of areas governed by existing planning documents and targeted design guidelines. The project site lies outside of all such planning areas.

The document provides descriptive design guidelines that are intended to enhance existing neighborhoods, encourage high quality design and construction, promote sustainable landscaping, and create a safe urban environment. The Design Guidelines also contain standards related to low-impact outdoor lighting, including standards for shielding, safety, aesthetic compatibility and height.

4.1.1.2 EXISTING CONDITIONS

Visual Character

Visual Features of the Project Neighborhood

The area surrounding Thornton Junior High School contains the visual features typical of a residential neighborhood in an urban area, with multiple architecture styles based on time of construction and development types.

The area is a flat suburban neighborhood, comprised of single-family and low-density multi-family homes, schools and strip mall style commercial businesses. A mix of small one- and two-story homes and apartments with 1960s ranch-style architecture is adjacent the school to the west. A newer neighborhood of single-family homes and cul-de-sacs is located immediately to the east. To the north of the school, a small cluster of single-family homes is adjacent to a condominium complex consisting of simple, box-style units. Oliveira Elementary School, similar in aesthetic to the project site, lies immediately to the northeast.

Visual Features of the Project Site

The project site is the 18-acre junior high school campus built in 1963. Thornton Junior High School is a low-lying neighborhood public school defined primarily by muted and well-worn colors and features. The original single-story, wood frame school buildings are situated at the front (south side) of the campus, along Thornton Avenue. Outdoor recreational hardtop areas and a large turf field with running track comprise most of the rear (north side) of the campus. Rows of modular and portable classroom buildings line the east boundary of the campus.

The school currently has low visual quality. Like many mid-century public schools this is the result of a "run down" aesthetic. The combination of the original, 56-year-old buildings, one building constructed later and multiple portable classrooms results in an uncoordinated visual sensibility. Many building facades require new painting and window treatments. Outdoor areas of the campus need upgrading, with yellowing turf and faded striping on asphalt play areas. Landscaping and fencing in the front of the school is minimal, resulting in an unwelcoming aesthetic.

Scenic Vistas

A scenic vista is generally defined as a public vantage point with an expansive view of a significant landscape feature. In Fremont, most designated vistas provide views of the foothills of Mission Peak to the northeast or Bayland water features to the west. The Community Character Element of the General Plan does not identify any scenic views or vistas, or City Gateways, in the area of the project site.

4.1.2 STANDARDS OF SIGNIFICANCE

Would the project:

1. Have a substantial adverse effect on a scenic vista?
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
3. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings, or in urbanized areas, conflict with applicable zoning and other regulations governing scenic quality?
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

4.1.3 IMPACT DISCUSSION

AES-1 The proposed project would not have a substantial adverse effect on a scenic vista.

A scenic vista is defined in this analysis as a viewpoint designated by a local, State, or federal entity that provides a rare, unique, or in other ways special viewpoint for the benefit of the general public. The proposed project site is in the flat, low-lying central area of the City of Fremont. The Community Character Element of the City's General Plan, which identifies scenic routes and scenic gateways, does not identify scenic resources within this central area of the city. The nearest city-designated scenic corridor, Paseo Padre Parkway, is about 4,000 feet northeast of the project site, and affords views to the east-northeast of the Mission Foothills. The project would be located west of that corridor, with proposed new construction that is constrained to a currently developed campus footprint. Therefore, development of the proposed project would not detract from a scenic vista and would have *no impact*.

Significance without Mitigation: No impact.

AESTHETICS

AES-2 The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

The project site is not within the viewshed of a state scenic highway. There are no state scenic highways near enough to the project site that the proposed, low-lying development would impact associated scenic resources. A designated portion of Interstate 680 runs 4.2 miles east of the project site, and a portion of east-west running State Route 84 begins 2.8 miles east of the site. As such, the project would have *no impact* on scenic highway resources.

Significance without Mitigation: No impact.

AES-3 The project would not conflict with applicable zoning and other regulations governing scenic quality.

As explained in Chapter 1 of this Draft EIR FUSD, like all school districts is an independent local agency that is exempt from City of Fremont land use regulations. However, the proposed project would not conflict with local regulation governing scenic quality. The central purpose of the P-F District is to "promote orderly development"[3] within the District. Proposed project construction is consistent with this purpose, as it would increase visual order and modernized aesthetic on the project site. New buildings would be located at the center of the campus and at the campus gateway, improving visual organization. The tallest proposed building would reach a maximum 37 feet 2 inches, well under the code maximum of 60 feet.

The proposed project is also consistent with the promotion of "complete neighborhoods" established in the Community Character Element of the General Plan. The Plan identifies schools as a central feature of strong neighborhoods. Goal 4-4: Public Space, highlights the value of public spaces such as schools that contribute to Fremont's sense of place and visual quality. The physical improvements, renovations and modernization components of the proposed project would both increase the visual quality of the school and contribute to the surrounding aesthetic of the neighborhood. The result would be a *less-than-significant* impact related to zoning and regulations.

Significance without Mitigation: Less than significant.

AES-4 The project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The proposed project would be limited to the existing campus footprint. Exterior lighting is currently installed around the existing buildings, parking lots, and in surrounding residential areas. The proposed project would include new exterior lighting and lighting controls for the modernization of existing buildings and construction of the new entryway and classroom buildings. The proposed lighting controls would be state-of-the-art, allowing for flexible, appropriate intensity. Exterior lighting fixtures for the new

[3] City of Fremont Municipal Code, 18.60.050 Building and site standards (d).

and modernized buildings would utilize LED sources and be designed in accordance with Title 24, architectural design criteria, and the recommendations of The Illuminating Engineering Society (IES) of North America.

The proposed parking areas would be illuminated with pole mounted full cutoff LED area lights with optics and intensity that are appropriate for the area. These lights would also include shielding to mitigate light trespass onto surrounding areas. Campus interior walkways will be illuminated with pole mounted full cutoff "post top" LED area lights with appropriate IES optical patterns. In summary, the lighting plan would be an upgrade to existing campus lighting, utilizing technologies and design advances that would decrease unwanted light spillover.

The proposed project would not include highly reflective building materials that would impact surrounding land uses. The project includes no glass curtains, oversized windows or reflective coatings. Therefore, the project would not create substantial new sources of light or glare that adversely affect day or nighttime views in the area. This impact would be *less than significant*.

Significance without Mitigation: Less than significant.

4.1.4 CUMULATIVE IMPACTS

AES-5	**The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to aesthetics.**

This cumulative analysis considers the effects of the proposed project together with other cumulative development projects in the vicinity of the project site. As described in Chapter 4, Environmental Evaluation, the cumulative development projects included within a 2-mile radius of the school include the Centerville Middle School Conversion Project, eight residential projects and five mixed-use projects. None of these projects are immediately visible from the project site.

The project site is in an urban area. It is not visible from a State-designated scenic highway nor within any designated Fremont scenic viewshed. Therefore, the project would not contribute to any cumulative impacts associated with scenic highways or scenic vistas. As local regulations do not apply to lands under FUSD jurisdiction, the project would not contribute to regulatory conflict.

The proposed project would modernize an aging lighting plan with new light controls and hardware, resulting in decreased light spillover and flexible uses. The use of typical, low-impact school exterior finishes and the proposed 37-foot height maximum would not contribute to cumulative glare impacts.

These improved aesthetic elements would be consistent with the parallel FUSD Centerville Middle Conversion project. As such the two would not result in cumulative visual impacts, nor contribute to potential cumulative impacts of the other City-led residential and mixed-use projects identified in this EIR. In addition, the thirteen residential and mixed-use projects would be subject to discretionary review

procedures by the City and would be required to use high-quality building materials, reduce lighting and glare, and provide landscaping and screening that enhance the visual character of their respective sites.

While these cumulative projects may together result in aesthetics-related impacts, the proposed project would not contribute to those impacts.

Significance without Mitigation: Less than significant.

4.2 AIR QUALITY

This chapter describes the existing air quality in the area of the project site and evaluates the potential environmental consequences of construction and operation of the proposed project. Additionally, this chapter describes the environmental setting, including regulatory framework and the existing air quality setting and baseline conditions, and identifies mitigation measures, if required, that would avoid or reduce significant impacts.

This chapter is based on the methodology recommended by the Bay Area Air Quality Management District (Air District) for project-level review. The analysis focuses on air pollution from regional emissions and localized pollutant concentrations from buildout of the proposed project. In this chapter "emissions" refers to the actual quantity of pollutant, measured in pounds per day or tons per year (tpy) and "concentrations" refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm), parts per billion (ppb), or micrograms per cubic meter ($\mu g/m^3$). Construction criteria air pollutant emissions and health risk assessment (HRA) modeling are included in Appendix B, Air Quality, Greenhouse Gas and Health Risk Modeling, of this Draft EIR.

4.2.1 ENVIRONMENTAL SETTING

4.2.1.1 AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

Pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law under the federal Clean Air Act ("National") and California Clean Air Act, respectively. The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. ROG and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants. Each of the primary and secondary criteria air pollutants and its known health effects is described here.

- Carbon Monoxide (CO) is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people

exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.[1]

- **Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)** are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O_3. There are no AAQS established for ROGs. However, because they contribute to the formation of O_3, the Air District has established a significance threshold for this pollutant.
- **Nitrogen Oxides (NO_x)** are a by-product of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major components of NO_x are nitric oxide (NO) and NO_2. The principal component of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure.[5] NO_2 acts as an acute irritant and in equal concentrations is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million (ppm).[5]
- **Sulfur Dioxide (SO_2)** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When SO_2 forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue.[2]
- **Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. In the San Francisco Bay Area Air Basin (SFBAAB or Air Basin), most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch). Diesel particulate matter (DPM) is also classified a carcinogen.

  Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The EPA scientific review concluded that $PM_{2.5}$ penetrates even more deeply into the lungs,

[1] Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.
[2] Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.

and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates.[7]

- **Ozone (O_3)** is commonly referred to as "smog" and is a gas that is formed when ROGs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions to the formation of this pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O_3 levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O_3 can also damage plants and trees and materials such as rubber and fabrics.[3]
- **Lead (Pb)** is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phasing out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Because emissions of lead are found only in projects that are permitted by the Air District, lead is not an air quality of concern for the proposed project.

Toxic Air Contaminants

At the time of the last update to the toxic air contaminants (TACs) list in December 1999, the California Air Resources Board (CARB) had designated 244 compounds as TACs.[4] Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control measures. The majority of the estimated health risks from TACs can be attributed to relatively few compounds; the most important compounds being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs. According to the Air District, PM emitted from diesel engines contributes to

[3] Bay Area Air Quality Management District, 2017. Revised California Environmental Quality Act Air Quality Guidelines.
[4] California Air Resources Board, 1999. Final Staff Report: Update to the Toxic Air Contaminant List.

more than 85 percent of the cancer risk within the SFBAAB and cancer risk from TACs is highest near major diesel PM sources.[5]

4.2.1.2 REGULATORY FRAMEWORK

Federal, state, and local air districts have passed laws and regulations intended to control and enhance air quality. Land use in the city is subject to the rules and regulations imposed by the United States Environmental Protection Agency (USEPA), CARB, the California Environmental Protection Agency and BAAQMD. The regulatory framework that is potentially applicable to the proposed project is also summarized below.

Federal and State Regulations

Ambient air quality standards have been adopted at federal and State levels for criteria air pollutants. In addition, both the federal and State governments regulate the release of TACs. The City of Fremont is in the SFBAAB and is subject to the rules and regulations imposed by the Air District, the National AAQS adopted by the EPA, and the California AAQS adopted by the CARB. Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the United States Congress and has been amended several times. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Clean Air Act allows states to adopt more stringent standards or to include other pollutants. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

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

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 4.2-1. These pollutants are O_3, NO_2, CO, SO_2, coarse inhalable PM_{10}, $PM_{2.5}$, and Pb. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

[5] Bay Area Air Quality Management District, 2014, Improving Air Quality & Health in Bay Area Communities, Community Air Risk Evaluation Program Retrospective & Path Forward (2004-2013).

TABLE 4.2-1 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard[a]	Federal Primary Standard[b]	Major Pollutant Sources
Ozone (O_3)[c]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[d]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[e]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.

TABLE 4.2-1 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard[a]	Federal Primary Standard[b]	Major Pollutant Sources
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Notes: ppm: parts per million; $\mu g/m^3$; micrograms per cubic meter; *Standard has not been established for this pollutant/duration by this entity.
a. California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
b.National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
c. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
d. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
e. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
Source: California Air Resources Board, 2017, March, Short-Lived Climate Pollutant Reduction Strategy, https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf, accessed December 5, 2018.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- Assembly Bill (AB) 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

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

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

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets up a formal procedure for

CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a HRA, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools.
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate.

Regional Regulations

Bay Area Air Quality Management District

The Air District is the agency responsible for assuring that the National and California AAQS are attained and maintained in the Air Basin. Air quality conditions in the Air Basin have improved significantly since the Air District was created in 1955. The Air District prepares air quality management plans (AQMP) to attain ambient air quality standards in the Air Basin. The Air District prepares ozone attainment plans for the National O3 standard and clean air plans for the California O_3 standard. The Air District prepares these air quality management plans in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). The Air District adopted the 2017 Clean Air Plan, Spare the Air, Cool the Climate (2017 Clean Air Plan) on April 19, 2017, making it the most recent adopted comprehensive plan. The 2017 Clean Air Plan incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

Bay Area Air Quality Management District 2017 Clean Air Plan

The 2017 Clean Air Plan serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues in providing the framework for SFBAAB to achieve attainment of the California and National AAQS. The 2017 Clean Air Plan updates the Bay Area's ozone plan, which is based on the "all feasible measures" approach to meet the requirements of the California Clean Air Act. Additionally, it sets a goal of reducing health risk impacts to local communities by 20 percent by 2020. Furthermore, the 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target

and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A comprehensive multipollutant control strategy has been developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, TACs, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

Air District Community Air Risk Evaluation Program

The Air District Community Air Risk Evaluation program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—diesel PM, 1,3 butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory accounted for the Air Resources Board's diesel regulations. Overall, cancer risk from TAC dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.

Modeled cancer risks from TAC in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. Peak modeled risks were found to be located east of San Francisco, near West Oakland, and near the Maritime Port of Oakland. The Air District has identified seven impacted communities in the Bay Area; however, Fremont lies outside of these seven impacted communities.

The major contributor to acute and chronic non-cancer health effects in the Air Basin is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports.[6] Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the Air District does not conduct health risk screening analysis for acrolein emissions.[7]

Air District Rules and Regulations

Regulation 7, Odorous Substances

Sources of objectionable odors may occur within the City. The Air District's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under the Air District Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall 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 the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." Under the Air District's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

Other Air District Regulations

In addition to the plans and programs described above, Air District administers a number of specific regulations on various sources of pollutant emissions that would apply to individual development projects allowed under the proposed project, including:

- Regulation 2, Rule 2, New Source Review
- Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- Regulation 6, Rule 1, General Requirements
- Regulation 6, Rule 2, Commercial Cooking Equipment
- Regulation 8, Rule 3, Architectural Coatings
- Regulation 8, Rule 4, General Solvent and Surface Coatings Operations
- Regulation 8, Rule 7, Gasoline Dispensing Facilities
- Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing)

[6] Bay Area Air Quality Management District, 2006. Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area. http://www.baaqmd.gov/Divisions/Planning-and-Research/Planning-Programs-and-Initiatives/CARE-Program/~/media/54D434A0EB8348B78A71C4DE32831544.ashx, June 23, 2019.

[7] Bay Area Air Quality Management District, 2010, Air Toxics NSR Program, Health Risk Screening Analysis Guidelines. http://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx, June 23, 2019.

Alameda County Transportation Commission

The Alameda County Transportation Commission (Alameda CTC) is the congestion management agency for Alameda County, tasked with developing a comprehensive transportation improvement program among local jurisdictions that will reduce traffic congestion and improve land use decision-making and air quality. Alameda CTC's latest congestion management program (CMP) is called the 2017 Congestion Management Program. Alameda CTC's countywide transportation model must be consistent with the regional transportation model developed by the MTC with ABAG data. The countywide transportation model is used to help evaluate cumulative transportation impacts of local land use decisions on the CMP system. In addition, Alameda CTC's updated CMP includes multimodal performance measures and trip reduction and transportation demand management strategies consistent with the goals of reducing regional vehicle miles traveled (VMT) in accordance with Senate Bill 375 (SB 375). The 2017 CMP update incorporates several actions identified as next steps in the 2015 CMP and closely aligns the CMP with the 2016 Countywide Transportation Plan, the 2040 Plan Bay Area, and other related efforts and legislative requirements (e.g., AB 32 and SB 375) to better integrate transportation and land use for achieving GHG reductions.

Plan Bay Area

Plan Bay Area is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy. The 2040 update to Plan Bay Area was adopted jointly by the ABAG and MTC on July 26, 2017. The 2040 Plan Bay Area update serves as a limited and focused update to the 2013 Plan Bay Area, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years. It lays out a development scenario for the region, which when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by the Air Resources Board. Plan Bay Area is discussed in greater detail in Chapter 4.6, Greenhouse Gas Emissions, of this Draft EIR.

4.2.1.3 EXISTING CONDITIONS

San Francisco Bay Area Air Basin Conditions

The Air Basin comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. Air quality in the SFBAAB is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.[8] The following are the natural factors in the SFBAAB that affect air pollution:

- Meteorology: The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range[9] splits in the Bay Area, creating a western coast gap, the Golden Gate, and an eastern coast gap, the Carquinez Strait,

[8] Bay Area Air Quality Management District, 2017. Revised, California Environmental Quality Act Air Quality Guidelines.
[9] The Coast Ranges traverses California's west coast from Humboldt County to Santa Barbara County.

which allows air to flow in and out of the Bay Area and the Central Valley. The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

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

  The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon and the sea breeze deepens and increases in velocity while spreading inland. Under normal atmospheric conditions, the air in the lower atmosphere is warmer than the air above it. In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes (i.e., conditions where there is little mixing, which occurs when there is a lack of or little wind) are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

- Temperature: Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. On summer afternoons, the temperatures at the coast can be 35 degrees Fahrenheit cooler than temperatures 15 to 20 miles inland; at night, this contrast usually decreases to less than 10 degrees Fahrenheit. In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

- Precipitation: The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys. During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e., air pollutants are dispersed more readily into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, where mixing and ventilation are low and pollutant levels build up.

- Wind Circulation: Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commuter traffic (early morning) and wood-burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants up-valley during the day, and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.
- Inversions: An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth (i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground). There are two types of inversions that occur regularly in the SFBAAB. Elevation inversions[10] are more common in the summer and fall, and radiation inversions[11] are more common during the winter. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

Attainment Status of the SFBAAB

The AQMP provides the framework for air quality basins to achieve attainment of the State and federal AAQS through the State Implementation Plan. Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme.

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

The attainment status for the SFBAAB is shown in Table 4.2-2. The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

[10] When the air blows over elevated areas, it is heated as it is compressed into the side of the hill/mountain. When that warm air comes over the top, it is warmer than the cooler air of the valley.

[11] During the night, the ground cools off, radiating the heat to the sky.

TABLE 4.2-2 ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SAN FRANCISCO BAY AREA AIR BASIN

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment	Classification revoked (2005)
Ozone – 8-hour	Nonattainment (serious)	Nonattainment (marginal)[a]
PM_{10} – 24-hour	Nonattainment	Unclassified/Attainment[b]
$PM_{2.5}$ – 24-hour	Nonattainment	Nonattainment
CO – 8-hour and 1-hour	Attainment	Attainment
NO_2 – 1-hour	Attainment	Unclassified
SO_2 – 24-hour and 1-hour	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

a. Severity classification current as of February 13, 2017.
b. In December 2014, US EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ National AAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.
Source: California Air Resources Board, 2017, Area Designations Maps: State and National, http://www.arb.ca.gov/desig/adm/adm.htm, accessed October 24, 2018; Bay Area Air Quality Management District. 2017. Air Quality Standards and Attainment Status. http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status#thirteen, accessed October 22, 2018.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project area have been documented and measured by the BAAQMD. BAAQMD has 24 permanent monitoring stations located around the Bay Area. The nearest station is the Hayward-La Mesa Monitoring Station but it only monitors O_3; therefore, data from Oakland Monitoring Station was used. Data from these monitoring stations are summarized in Table 4.2-3. The data show regular violations of the State and federal O_3 standards and federal $PM_{2.5}$ standard.

Existing Emissions

The existing school uses currently generate criteria air pollutant emissions from natural gas use for energy, heating and cooking, vehicle trips associated with student drop-off and pick-up and employees, and area sources such as landscaping equipment and consumer cleaning products.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are

TABLE 4.2-3 AMBIENT AIR QUALITY MONITORING SUMMARY

	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations				
Pollutant/Standard	2013	2014	2015	2016	2017
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm	0	1	2	0	2
State 8-hour ≥ 0.07 ppm	1	4	2	0	3
Federal 8-Hour > 0.075 ppm[c]	0	0	2	0	2
Maximum 1-Hour Conc. (ppm)	0.085	0.096	0.103	0.083	0.139
Maximum 8-Hour Conc. (ppm)	0.075	0.075	0.084	0.064	0.110
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	0.0603	0.0821	0.0480	0.0592	0.0649
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m^3	2	1	1	0	7
Maximum 24-Hour Conc. (µg/m^3)	37.9	37.6	44.7	15.5	70.2

Notes: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; * = insufficient data; NA = Not Available
Data for O_3 was obtained from the Hayward-La Mesa Monitoring Station. Data for NO_2 and $PM_{2.5}$ was obtained from the Oakland-9925 International Boulevard Monitoring Station.
Source: California Air Resources Board, 2018. Air Pollution Data Monitoring Cards (2013, 2014, 2015, 2016, and 2017). http://www.arb.ca.gov/adam/index.html, accessed March 11, 2019.

considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the population. Sensitive receptors to the proposed project include the single- and multi-family residences surrounding the Thornton school campus, children at day-care facilities within 1,000 feet of the site (e.g., Fremont Kid's Academy and Little Genius Family Day Care), and students and staff at Oliveira Elementary School. Sensitive receptors also include the students and staff on-site during the construction phases.

4.2.2 STANDARDS OF SIGNIFICANCE

Would the project:

1. Conflict with or obstruct implementation of the applicable air quality plan?
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?
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?

4.2.2.1 BAY AREA AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. These thresholds are designed to establish the level at which the District believed air pollution emissions would cause significant environmental impacts under CEQA.

In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts; however, this later amendment regarding risk and hazards was the subject of the December 17, 2015, California Supreme Court decision (*California Building Industry Association v BAAQMD*), which clarified that CEQA does not require an evaluation of impacts of the environment on a project.[12] The Supreme Court also found that CEQA requires the analysis of exposing people to environmental hazards in specific circumstances, including the location of development near airports, schools near sources of toxic contamination, and certain exemptions for infill and workforce housing. The Supreme Court also held that public agencies remain free to conduct this analysis regardless of whether it is required by CEQA. To account for these updates, BAAQMD published a new version of the Guidelines dated May 2017, which includes revisions made to address the Supreme Court's opinion. This latest version of the BAAQMD CEQA Guidelines was used to prepare the analysis in this EIR.

Criteria Air Pollutant Emissions and Precursors

Regional Significance Criteria

The BAAQMD's criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4.2-4. Criteria for both the construction and operational phases of the project are shown.

[12] On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. The court did not rule on the merits of the thresholds of significance, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. Following the court's order, the BAAQMD released revised CEQA Air Quality Guidelines in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and which set aside the significance thresholds. The Alameda County Superior Court, in ordering BAAQMD to set aside the thresholds, did not address the merits of the science or evidence supporting the thresholds, and in light of the subsequent case history discussed below, the science and reasoning contained in the BAAQMD 2017 CEQA Air Quality Guidelines provide the latest state-of-the-art guidance available. On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's CEQA Guidelines. (California Building Industry Association versus BAAQMD, Case Nos. A135335 and A136212 (Court of Appeal, First District, August 13, 2013)).

TABLE 4.2-4 BAAQMD REGIONAL (MASS EMISSIONS) CRITERIA AIR POLLUTANT SIGNIFICANCE THRESHOLDS

	Construction Phase	Operational Phase	
Pollutant	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Source: Bay Area Air Quality Management District, 2017, CEQA Guidelines May 2017.

If projects exceed the emissions in Table 4.2-4, emissions would cumulatively contribute to the nonattainment status and would contribute in elevating health effects associated to these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 4.2-4, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited above. The Air District is the primary agencies responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the Air Basin and at the present time, it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978* (Friant Ranch). Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that details regional programs to attain the AAQS. However, if a project within the Plan Area exceed the regional significance thresholds, the project could contribute to an increase in health effects in the basin until such time the attainment standard are met in the Air Basin.

CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which are 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). With the turnover of older vehicles, introduction of

cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, the BAAQMD does not require a CO hotspot analysis if the following criteria are met:

- The project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Community Risk and Hazards

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. The proposed Thornton Middle School Expansion would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the nearby residential, day care, and school-based sensitive receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. The BAAQMD has adopted screening tables for air toxics evaluation during construction.[13] Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site and on-site receptors, as applicable.[14]

Community Risk and Hazards: Project

Project-level emissions of TACs or $PM_{2.5}$ from individual sources that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- An excess cancer risk level of more than 10 in one million, or a noncancer (i.e., chronic or acute) hazard index greater than 1.0 would be a significant project contribution.
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant project contribution.[15]

[13] Bay Area Air Quality Management District, 2010. Screening Tables for Air Toxics Evaluations during Construction.

[14] Bay Area Air Quality Management District, 2017, Revised, California Environmental Quality Act Air Quality Guidelines, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed October 25, 2018.

[15] Bay Area Air Quality Management District, 2017, Revised. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed October 25, 2018.

Community Risk and Hazards: Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone. A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds any of the following:

- An excess cancer risk level of more than 100 in one million or a chronic noncancer hazard index (from all local sources) greater than 10.0.
- 0.8 µg/m3 annual average $PM_{2.5}$.[16]

In February 2015, Office of Environmental Health Hazard Assessment (OEHHA) adopted new health risk assessment guidance that includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer causing chemicals, and age-specific breathing rate.[17]

Odors

BAAQMD's thresholds for odors are qualitative based on BAAQMD's Regulation 7, Odorous Substances. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that no person shall 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 the public; or which endangers the comfort, repose, health, or safety of any such persons or the public, or which cause, or has a natural tendency to cause, injury, or damage to business or property. Under BAAQMD's Rule 1-301. BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.[18] For a plan-level analysis, BAAQMD requires:

- Identification of potential existing and planned location of odors sources.
- Policies to reduce odors.

4.2.3 IMPACT DISCUSSION

4.2.3.1 METHODOLOGY

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur with the proposed Thornton Middle School Expansion.

[16] Bay Area Air Quality Management District, 2017, Revised. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed October 25, 2018.

[17] Office of Environmental Health Hazard Assessment, 2015, February. Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.

[18] Bay Area Air Quality Management District, 2017, May. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed October 25, 2018.

The Air District has published the CEQA Air Quality Guidelines that provides local governments with guidance for analyzing and mitigating air quality impacts and was used in this analysis. Construction criteria air pollutant emissions modeling is included in Appendix B of this Draft EIR. The Thornton Middle School criteria air pollutant emissions inventory was modeled utilizing the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 and includes the following sectors:

- On-Road Transportation. Transportation emissions are based on the trip generation and average student trip length of one-mile provided by Kittelson & Associates, Inc. (see Appendix G of this Draft EIR). The fleet mix in CalEEMod was adjusted to reflect a higher proportion of passenger vehicles used for student drop off and employee vehicles.
- Area Sources. Area sources generated from use of consumer products and cleaning supplies are based on California Emissions Estimator Model (CalEEMod), Version 2016.3.2 default emission rates and on the assume building square footages.
- Energy. Criteria air pollutant emissions from energy use (natural gas used for cooking, heating, etc.) are based on the CalEEMod defaults for natural gas usage for school land uses. New buildings are assumed to comply with the 2019 Building Energy Efficiency Standards, which are 30 percent more energy efficient for nonresidential buildings than 2016 Standards (CEC 2018). Since existing uses are assumed to be less efficient than the proposed buildings, the net emissions were based on the proposed building square footage minus the existing. Therefore, emissions from energy use are conservative.
- Construction. Modeling is based on the construction schedule provided for Increment 1 (site preparation, February 2020 to June 2020), and Increment 2 (new construction and modernization, August 2020 to August 2022) provided by the District. The duration of the construction subphases was normalized based on the CalEEMod defaults. Modeling assumes 50,000 square feet of asphalt removal (741 tons) during Increment 1 and 13,000 square feet of hardscape/asphalt removal (193 tons) during increment 2 for a total of 63,000 square feet of asphalt removal (933 tons). Modeling assuming 2,931 square feet of building demolition (135 tons) during Increment 1 and 4,109 square feet of building demolition (189 tons) during Increment 2 for a total of 7,040 square feet of buildings removed (324 tons). The construction equipment mix is based on the CalEEMod defaults associated with up to 12.33 acres of disturbed area on the campus. However, concrete crushing and processing equipment was added to the demolition phase to account for reuse of the asphalt demolished as aggregate base during grading activities. Construction worker and vendor trips are based on the CalEEMod defaults for the 45,441 square feet of new construction and 56,743 square feet of building modernization and account for watering trucks during ground disturbance to reduce fugitive dust.

A construction health risk assessment (HRA) from TACs and $PM_{2.5}$ associated with construction equipment exhaust was prepared for the project. The results are also included in Appendix B of this Draft EIR. Sources evaluated in the HRA include off-road construction equipment and heavy-duty diesel trucks along the truck route. Modeling is based on the EPA's AERMOD air dispersion modeling program and the latest HRA guidance from the Office of Environmental Health Hazard Assessment (OEHHA) to estimate excess lifetime cancer risks, chronic non-cancer hazard indices, and the $PM_{2.5}$ maximum annual concentrations at the nearest maximum exposed off-site and on-site sensitive receptors and assumes 24-hour outdoor exposure with risks averaged over a 70-year lifetime.

DPM emissions were based on the CalEEMod construction runs, using annual exhaust PM_{10} construction emissions presented in pounds (lbs) per day. The $PM_{2.5}$ emissions were taken from the CalEEMod output for exhaust $PM_{2.5}$ also presented in lbs per day. The project was assumed to take place over 2.5 years (649 work days) from beginning of February 2020 to August 2022. The average daily emission rates from construction equipment used during the proposed project were determined by dividing the annual average emissions for each construction year by the number of construction days per year for each calendar year of construction (i.e., 2020 through 2022). The off-site hauling emission rates were adjusted to evaluate localized emissions from the 0.40-mile haul route within 1,000 feet of the project site.

Air dispersion modeling using the EPA's AERMOD program was conducted to assess the impact of emitted compounds on sensitive receptors. The model is a steady state Gaussian plume model and is an approved model by BAAQMD for estimating ground level impacts from point and fugitive sources in simple and complex terrain. Meteorological data obtained from the BAAQMD for the nearest representative meteorological station (N.Y. Mineta San Jose International Airport) with the five latest available years (2009 to 2013) of record were used to represent local weather conditions and prevailing winds.

For all modeling runs, a unit emission rate of 1 gram per second was used. The unit emission rates were proportioned over the poly-area sources for on-site construction emissions and divided between the volume sources for off-site hauling emissions. The maximum modeled concentrations at each sensitive receptor were then multiplied by the construction emission rates to obtain the maximum concentrations at the off-site and on-site maximum exposed receptors (MER). The MER location is the receptor location associated with the maximum predicted AERMOD concentrations from the on-site construction emission source.[19] The off-site MER are the residences immediately northwest of the site. The on-site MER (i.e., location on the existing Thornton Junior High School which may be exposed to highest construction emissions) was predicted to be at Building 6 near the central portion of the school site.

AQ-1 The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.

The Air District is directly responsible for reducing emissions from area, stationary, and mobile sources in the SFBAAB to achieve National and California AAQS. The Air District's 2017 Clean Air Plan is a regional and multiagency effort to reduce air pollution in the SFBAAB. A consistency determination with the air quality management plan plays an important role in local agency project review by linking local planning and individual projects to the 2017 Clean Air Plan. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals in the 2017 Clean Air Plan.

The regional emissions inventory for the SFBAAB is compiled by the Air District. Regional population, housing, and employment projections developed by ABAG are based, in part, on cities' general plan land

[19] The calculated on-site emission rates are approximately 2 to 3 orders of magnitude higher than the calculated off-site (hauling) emission rates (see Appendix B). Therefore, the maximum concentrations associated with the on-site emission sources produce the highest overall ground-level MER concentrations and, consequently, higher calculated health risks.

use designations. These projections form the foundation for the emissions inventory of the 2017 Clean Air Plan. These demographic trends are incorporated into Plan Bay Area, compiled by ABAG and the MTC to determine priority transportation projects and vehicle miles traveled in the Bay Area. The 2017 Clean Air Plan strategy is based on projections from local general plans. Projects that are consistent with the local general plan are considered consistent with the air quality-related regional plan. Large projects that exceed regional employment, population, and housing planning projections have the potential to be inconsistent with the regional inventory compiled as part of the 2017 Clean Air Plan.

As identified in impact discussion POP-1 in Chapter 4.12, Population and Housing, of this Draft EIR, the proposed project would not substantially affect housing, employment, or population projections within the region, which are the basis of the 2017 Clean Air Plan projections. Additionally, under CEQA Guidelines Section 15206,[20] the proposed project is not considered a regionally significant project that would affect regional vehicle miles traveled and warrant intergovernmental review by ABAG and MTC. Lastly, the net increase in regional emissions generated by the proposed project would not exceed the Air District's emissions thresholds (see impact discussion AQ-2 below). These thresholds are established to identify projects that have the potential to generate a substantial amount of criteria air pollutants. Because the proposed project would not exceed these thresholds, the proposed project would not be considered by the Air District to be a substantial emitter of criteria air pollutants. Therefore, the proposed project would not conflict with or obstruct implementation of the 2017 Clean Air Plan, and impacts would be considered *less than significant*.

Significance without Mitigation: Less than significant.

AQ-2	**The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under applicable federal or State ambient air quality standards.**

The Air District has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO, PM_{10}, and $PM_{2.5}$. Development projects below these significant thresholds (listed in Table 4.2-4) are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Construction Emissions

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM_{10} and $PM_{2.5}$) from demolition and soil-disturbing activities, such as grading and excavation. Air pollutant emissions from construction activities on-site would vary daily as construction activity levels change. Construction

[20] Pursuant to CEQA Guidelines Section 15206, a proposed commercial office building employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space would be considered a project of statewide, regional, or areawide significance.

activities associated with the proposed project would result in emissions of ROG, NOx, CO, PM_{10}, and $PM_{2.5}$. An estimate of construction emissions associated with the proposed project are show in Table 4.2-5.

TABLE 4.2-5 CONSTRUCTION-RELATED CRITERIA AIR POLLUTANT EMISSIONS ESTIMATE

	Criteria Air Pollutants (Tons/Year)[a]					
Year	ROG	NO_x	Fugitive PM_{10}[b]	Exhaust PM_{10}	Fugitive $PM_{2.5}$[b]	Exhaust $PM_{2.5}$
2020 Construction	2	17	2	1	1	1
2021 Construction	1	12	1	<1	<1	<1
2022 Construction	3	8	1	<1	<1	<1

	Criteria Air Pollutants (Average lbs/day)[a]					
	ROG	NO_x	Fugitive PM_{10}[b]	Exhaust PM_{10}	Fugitive $PM_{2.5}$[b]	Exhaust $PM_{2.5}$
Average Daily Construction Emissions at all Construction Phases[c]	5	36	4	1	2	1
Air District Average Daily Project-Level Threshold	54	54	Implement BMPs	82	Implement BMPs	54
Exceeds Average Daily Threshold	**No**	**No**	**NA**	**No**	**NA**	**No**

Notes: BMP = Best Management Practices; NA = not applicable; emissions may not total to 100 percent due to rounding; Shading represents the fugitive dust component of the emissions that are mitigated through the Air District's BMPs.
a. Construction phasing is based on the preliminary information provided by the project applicant. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast Air Quality Management District of construction equipment and phasing for comparable projects.
b. Includes implementation of best management practices for fugitive dust control required by the Bay Area Air Quality Management District. Implementation of the Air District construction best management practices is considered to result in construction-related fugitive dust emissions that are acceptable. See Mitigation Measure AQ-2.
c. Average daily emissions are based on the construction emissions divided by the total number of active construction days. The total number of construction days is estimated to be 649 days.
Source: CalEEMod 2016.3.2.

Construction Exhaust Emissions

Construction emissions are based on the preliminary construction schedule developed for the proposed project. Activities that would take place are demolition, hauling, site preparation, grading, building construction, paving, and architectural coating. To determine potential construction-related air quality impacts, criteria air pollutants generated by project-related construction activities are compared to the Air District's significance thresholds. Average daily emissions are based on the annual construction emissions divided by the total number of active construction days. As shown in Table 4.2-5, criteria air pollutant emissions from construction equipment exhaust would not exceed the Air District's average daily thresholds. Therefore, construction-related criteria pollutant emissions from exhaust would be *less than significant*.

Significance without Mitigation: Less than significant.

Fugitive Dust

Ground-disturbing activities during project construction could generate fugitive dust (PM_{10} and $PM_{2.5}$) that, if left uncontrolled, could expose the areas downwind of the construction site to air pollution from the construction dust. Fugitive PM_{10} is typically the most significant source of air pollution from the dust generated from construction. The amount of fugitive dust generated during construction would be highly variable and is dependent on the amount of material being demolished, the type of material, moisture content, and meteorological conditions. As described under Section 4.2.2, Thresholds of Significance, the Air District does not provide a quantitative threshold for construction-related fugitive dust emissions, and a project's fugitive dust emissions are considered to be acceptable with implementation of the Air District's best management practices. In other words, there could be a significant impact if the best management practices are not enforced. For this reason, the project's fugitive dust emissions with the incorporation of the Air District's best management practices are quantified for reference in Table 4.2-5.

As described in Section 4.2.1.1, extended exposure to particulate matter can increase the risk of chronic respiratory disease, which would be a *significant* impact. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. Health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing).

Significance without Mitigation: Significant.

Impact AQ-2: Uncontrolled fugitive dust (PM_{10} and $PM_{2.5}$) could expose the areas that are downwind of construction sites to air pollution from construction activities without the implementation of the Air District's best management practices.

> **Mitigation Measure AQ-2:** The Fremont Unified School District shall specify in the construction bid that the project contractor shall comply with the following the Bay Area Air Quality Management District's best management practices for reducing construction emissions of uncontrolled fugitive dust (coarse inhalable particulate matter [PM_{10}] and fine inhalable particulate matter [$PM_{2.5}$]):
>
> - Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering shall be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water shall be used whenever possible.
> - Pave, apply water twice daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
> - Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
> - Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads, parking areas, and staging areas at the construction site to control dust.

- Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.
- Hydro-seed or apply non-toxic soil stabilizers to inactive construction areas.
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt, sand).
- Limit vehicle traffic speeds on unpaved roads to 15 miles per hour.
- Replant vegetation in disturbed areas as quickly as possible.
- Install sandbags or other erosion control measures to prevent silt runoff from public roadways.

These measures shall be noted on grading plans prepared by the District. The construction contractor shall implement these measures during ground disturbing activities. The Fremont Unified School District shall verify compliance that these measures have been implemented during normal construction site inspections.

Significance with Mitigation: Less than significant. Mitigation Measure AQ-2 would ensure that the construction contractor complies with the Air District's best management practices to reduce fugitive dust to less than significant levels.

Operational Emissions

The existing school generates criteria air pollutant emissions from the burning of fossil fuels in cars (mobile sources); energy use for cooling, heating, and cooking (energy); and landscape equipment use and household products (area sources). The proposed project would result in an increase in development intensity at the project site and an increase in emissions from these sectors. The proposed project would increase the Thornton school student capacity from 1,259 students to 2,176 students. BAAQMD's screening threshold for a full, quantitative analysis, is for a junior high school to have a net increase of 2,460 students (BAAQMD 2017). The proposed project would experience a 917-student increase and therefore would not warrant further analysis to analysis if the project would exceed BAAQMD's average daily emissions thresholds. Consequently, the proposed project would not cumulatively contribute to the nonattainment designations of the SFBAAB, and regional operational phase air quality impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

AQ-3 Construction of the proposed project could expose sensitive receptors to substantial pollutant concentrations.

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

Construction

The project would elevate concentrations of TACs and construction exhaust $PM_{2.5}$ in the vicinity of sensitive residential land uses (i.e., receptors) during construction activities. The nearest off-site sensitive receptors proximate to the project site include the residences surrounding the project site and the students and staff at on-site. Construction activities would occur near these sensitive receptor locations. The health risk assessment (HRA) of TACs and construction exhaust $PM_{2.5}$ was prepared for the project and is included in Appendix B of this Draft EIR.

Results of the analysis are shown in Table 4.2-6.

TABLE 4.2-6 CONSTRUCTION HEALTH RISK ASSESSMENT RESULTS – UNMITIGATED

	Project Level Risk[a,b]		
Receptor	Cancer Risk (per million)	Chronic Hazards	Construction Exhaust $PM_{2.5}$ ($\mu g/m^3$)[a]
Maximum Exposed Off-Site Resident	**23**	0.047	0.12
Maximum Exposed Off-Site Day Care	0.7	0.001	0.003
Maximum Exposed Off-Site Elementary School Student	0.3	0.005	0.002
Maximum Exposed On-site Receptor (Junior High School Student)	8.3	0.174	**0.44**
Threshold	10	1.0	0.3 $\mu g/m^3$
Exceeds Threshold	**Yes**	**No**	**Yes**

Notes: Cancer risk calculated using the 2015 Office of Environmental Health Hazard Assessment (OEHHA) Health Risk Assessment guidance.
a. Construction phasing are based on the preliminary information provided by the District. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast Air Quality Management District of construction equipment and phasing for comparable projects.
b. Average daily emissions are based on the total construction emissions divided by the total number of active construction days. The total number of construction days is estimated to be 649.
Source: Lakes AERMOD Version 9.6.5, CalEEMod Version 2016.3.2.

The results of the HRA are based on the maximum sensitive receptor concentration over the approximately 2.5-year construction exposure period for off-site and on-site receptors, assuming 24-hour outdoor exposure, and averaged over a 70-year lifetime. Risk is based on the updated Office of Environmental Health Hazard Assessment (OEHHA) Guidance as follows:

Cancer risk for the maximum exposed off-site resident (MER), which would be the residents immediately northwest of the site, from unmitigated construction activities related to the project were calculated to be 23 in a million and would exceed the 10 in a million significance threshold. The calculated total cancer risk for the off-site residents incorporates the individual risk for infant and childhood exposures into one risk value. However, the incremental cancer risks for the maximum exposed off-site day care (Little Genius Family Day Care) and for students at Oliveira Elementary School were calculated to be less than the 10 in a

million significance threshold. Additionally, the cancer risks to students on-site at Thornton Junior High School were also calculated to be less than the 10 in a million significance threshold.

- For non-carcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than 1 for both on-site and off-site sensitive receptors from the project. Therefore, chronic non-carcinogenic hazards would not exceed acceptable limits.
- The highest construction exhaust $PM_{2.5}$ annual concentration of 0.44 µg/m^3 at the on-site MER location would exceed the 0.3 µg/m^3 significance threshold. However, the $PM_{2.5}$ annual concentrations at the off-site MER locations (i.e., residences, Oliveira Elementary School, and day care facilities) were all calculated to be less than the 0.3 µg/m^3 significance threshold.

Consequently, prior to mitigation, cancer risk impacts to off-site residences and $PM_{2.5}$ impacts to on-site students and staff would be *significant* because the project would expose sensitive receptors to substantial concentrations of air pollutant emissions during construction.

Impact AQ-3: Construction activities of the project could expose sensitive receptors to substantial concentrations of TAC, exceeding the applicable cancer risk threshold.

Mitigation Measure AQ-3: The Fremont Unified School District shall specify in the construction bid that construction contractors shall use equipment that is retrofitted with Level 3 diesel particulate filters (DPFs) for off-road diesel-powered construction equipment with more than 50 horsepower for all construction activities. Prior to construction, the project contractor shall ensure that all construction (e.g., demolition and grading) plans clearly show the requirement for Level 3 DPFs for construction equipment over 50 horsepower. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the Freemont Unified School District. The construction equipment list shall state the makes, models, and numbers of construction equipment onsite in addition to the engine tier rating and California Air Resources Board engine identification number for each piece of construction equipment. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to 5 minutes or less in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.

Significance with Mitigation: Less than significant. Mitigation Measure AQ-3 would require use of level 3 diesel particulate filters on all equipment with more than 50 horsepower and would reduce cancer risk impacts to the off-site residential MER from 23 in a million to 4.4 in a million. Thus, cancer risk at the off-site residential MER would be reduced to below the Air District cancer risk threshold of 10 in a million. Additionally, Mitigation Measure AQ-3 would reduce the $PM_{2.5}$ annual concentrations at the on-site MER from 0.44 µg/m^3 to 0.07 µg/m^3, and therefore below the 0.3 µg/m^3 significance threshold. The mitigated health risk values were calculated and are summarized in Table 4.2-7. Therefore, cancer risk impacts from project-related construction activities would be reduced to less-than-significant levels with incorporation of mitigation.

TABLE 4.2-7 CONSTRUCTION HEALTH RISK ASSESSMENT RESULTS – MITIGATED

	Project Level Risk[a,b,c]		
Receptor	Cancer Risk (per million)	Chronic Hazards	Construction Exhaust $PM_{2.5}$ ($\mu g/m^3$)[a]
Maximum Exposed Off-Site Resident	4.4	0.009	0.02
Maximum Exposed Off-Site Day Care	0.1	<0.001	0.001
Maximum Exposed Off-Site Elementary School Student	0.1	0.001	0.002
Maximum Exposed On-site Receptor (Junior High School Student)	1.6	0.033	0.07
Threshold	10	1.0	0.3 $\mu g/m^3$
Exceeds Threshold	**No**	**No**	**No**

Notes: Cancer risk calculated using the 2015 Office of Environmental Health Hazard Assessment (OEHHA) Health Risk Assessment guidance.
a. Construction phasing are based on the preliminary information provided by the District. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast Air Quality Management District of construction equipment and phasing for comparable projects.
b. Includes implementation of BMPs for fugitive dust control required by the Air District as mitigation (Mitigation Measure AQ-2), including watering disturbed areas a minimum of 2 times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, and street sweeping. Also includes implementation of Mitigation Measure AQ-3, which requires all off-road equipment of 50 horsepower to be fitted with Level 3 diesel particulate filters (DPF).
c. Average daily emissions are based on the total construction emissions divided by the total number of active construction days. The total number of construction days is estimated to be 649.
Source: Lakes AERMOD Version 9.6.5, CalEEMod Version 2016.3.2.

Operation

Health Risk

Exposure to elevated concentrations of vehicle-generated $PM_{2.5}$ and TACs at sensitive land uses have been identified by CARB, the California Air Pollution Control Officer's Association, and the Air District as a potential air quality hazard. The project would not create new major sources of TACs, which are more commonly associated with industrial manufacturing or warehousing. Therefore, operation-related health risk impacts associated with the project are considered *less than significant*.

CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO, called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. Because CO is produced in the greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for periods of time and are subject to reduced speeds.

Congestion Management Plans (CMP) must align with *Plan Bay Area 2040*, and an overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth in outlying areas where substantial transportation investments would be

necessary to achieve the per capita passenger vehicle miles traveled and associated GHG emissions reductions under SB 375. The proposed project increase student density at the existing Thornton school campus and would be consistent with the overall goals of the MTC/ABAG's *Plan Bay Area 2040*. Additionally, the project would not conflict with the CMP because it would not hinder the capital improvements outlined in Alameda County's 2017 CMP or alter regional travel patterns.[21] Furthermore, under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—in order to generate a significant CO impact.[22] Based on the traffic analysis conducted as part of this environmental analysis, the project would generate a net increase of 532 peak hour trips during the AM peak hour and 109 peak hour trips during the PM peak hour and would not increase traffic volumes at affected intersections by more than the Air District's screening criteria of 44,000 vehicles per hour, or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited.[23] Therefore, the project would not have the potential to substantially increase CO hotspots at intersections in the project vicinity. Localized air quality impacts related to mobile-source emissions would therefore be *less than significant*.

Significance without Mitigation: Less than significant.

AQ-4 The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The project would accommodate additional students at the existing Thornton school campus and would not generate substantial odors that would affect a substantial number of people. The type of facilities that are typically considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. School uses are not associated with foul odors that constitute a public nuisance.

During project-related construction activities on the project site, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reach any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Impacts would be *less than significant*.

Significance without Mitigation: No impact.

[21] Alameda County Transportation Commission. 2017, December. 2017 Congestion Management Program Report. https://www.alamedactc.org/planning/congestion-management-program/

[22] Bay Area Air Quality Management District, 2017, California Environmental Quality Act Air Quality Guidelines, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf, accessed on July 16, 2018.

[23] Kittelson & Associates. 2019. Thornton Middle School Conversion Transportation Impact Analysis.

4.2.4 CUMULATIVE IMPACTS

A project that exceeds the Air District's significance criteria in the context of emissions from all other development projected within the entire Air Basin would cumulatively contribute to impacts. Project-related construction activities would not generate exhaust emissions that exceed the Air District's regional significance thresholds for criteria air pollutants but would generate fugitive dust during ground-disturbing activities and could expose sensitive receptors to substantial pollutant concentrations of TACs. Therefore, in combination with past, present, and reasonably foreseeable projects, the project would result in a *significant* cumulative impact with respect to air quality.

Significance without Mitigation: Significant

AQ-5 Implementation of the project would cumulatively contribute to air quality impacts in the Air Basin.

Mitigation Measure AQ-5: Implement Mitigation Measures AQ-2 and AQ-3.

Significance with Mitigation: Less than significant. Mitigation Measure AQ-2 would reduce fugitive dust generated during ground-disturbing activities while Mitigation Measure AQ-3 would reduce diesel particulate matter from off-road construction equipment. With these mitigation measures, regional and localized construction emissions would not exceed the Air District significance thresholds. Consequently, the project would not cumulatively contribute to the nonattainment designations of the Air Basin and impacts would be less than significant following mitigation.

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4.3 BIOLOGICAL RESOURCES

This chapter describes the regulatory framework, existing conditions on the project site, and potential impacts of the project related to biological resources.

4.3.1 ENVIRONMENTAL SETTING

4.3.1.1 REGULATORY FRAMEWORK

Laws and regulations protecting waters, wetlands, and riparian habitats (that is, habitats along the banks of rivers and streams), are omitted here, as no such resources are present on or next to the project site. Federal and State laws and regulations protecting water quality are described in Chapter 4.8, Hydrology and Water Quality, of this Draft EIR.

Federal Regulations

Federal Endangered Species Act

The United States Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) is responsible for implementation of the Federal Endangered Species Act (FESA) (16 United States Code Section 1531 et seq.). The Act protects fish and wildlife species that are listed as threatened or endangered and their habitats. "Endangered" species, subspecies, or distinct population segments are those that are in danger of extinction through all or a significant portion of their range, and "threatened" species, subspecies, or distinct population segments are likely to become endangered soon.

If a listed species or its habitat is found to be affected by a project, then according to Section 7 of the FESA, all federal agencies are required to consult with USFWS and NOAA Fisheries. The purpose of consultation with USFWS and NOAA Fisheries is to ensure that the federal agencies' actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species.

Section 9 of the FESA prohibits the take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. "Take" is defined as an action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to taking at the time of listing.

Under Section 9 of the FESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in non-federal areas in knowing violation of any State law or in the course of criminal trespass. Section 9 does not provide any protection for candidate species and species that are proposed or under petition for listing.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 US Code 703 *et seq.*) governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. Moreover, the MBTA prohibits the take, possession, import, exports, transport, selling, purchase, barter—or offering for sale, purchase, or barter—any migratory bird, their eggs, parts, or nests, except as authorized under a valid permit.[1] The MBTA's prohibitions on take apply only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs, and do not apply to take that is incidental to, and not the purpose of, a lawful activity.[2]

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) establishes State policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a species that is on the federal and State lists, compliance with the FESA satisfies the CESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is consistent with the CESA under California Fish and Game Code Section 2080.1. For projects that would result in the taking of a species that is only State listed, the project proponent must apply for a take permit under Section 2081(b).

California Fish and Game Code

Under the California Fish and Game Code, the CDFW provides protection from take for a variety of species. California Fish and Game Code Section 3503.5 prohibits take, possession, or destruction of any raptor (bird of prey species in the orders Falconiformes and Strigiformes), including their nests or eggs. Violations of this law include destruction of active raptor nests as a result of tree removal and disturbance to nesting pairs by nearby human activity that causes nest abandonment and reproductive failure.

Regional Regulations

Santa Clara Valley Habitat Plan

The Santa Clara Valley Habitat Plan (Habitat Plan) is a habitat conservation plan (HCP) and natural community conservation plan (NCCP) encompassing about two thirds of Santa Clara County consisting mainly of the southern and central portions of the county and including much of the central, southern, and eastern parts of the metropolitan San José area. While the project site is outside the Habitat Plan

[1] Code of Federal Regulations Title 50 Section 21.11.

[2] United States Department of the Interior, 2017, Memorandum, Subject: The Migratory Bird Treaty Act Does Not Prohibit Incidental Take, dated December 22, 2017, https://www.doi.gov/sites/doi.gov/files/uploads/m-37050.pdf, accessed January 28, 2019.

Study Area and Permit Area, it is in the Expanded Study Area and Permit Area for Burrowing Owl Conservation.

4.3.1.2 EXISTING CONDITIONS

Vegetation

Vegetation on-site is ornamental landscape vegetation consisting of trees, shrubs, and some forbs (flowering plants lacking woody stems, other than grasses). There is no native habitat on-site. Nearly the entire site is developed with the existing buildings, recreational hardscapes, parking and circulation areas, and play fields. Non-recreational landscaping on the site is sparse and limited to small median strips and parking lot planters fronting Thornton Avenue.

Multiple trees of heights of from 5 to about 30 feet are located at the front of the campus, in the bus turnaround loop and fronting Thornton Avenue sidewalks. There are no City of Fremont landmark trees on or around the project site.[3]

Sensitive Resources

There is no suitable habitat for sensitive plant or animal species on-site; periodic landscape maintenance activities also render the site unsuitable for sensitive species.

A search of the California Natural Diversity Database (CNDDB) for the Newark quadrangle, within which the project site is located, yielded documented occurrences of 46 sensitive species in the quadrangle consisting of three amphibians, 22 birds, two fish, two insects, three mammals, one mollusk, two reptiles, one terrestrial community, and ten plants.[4]

Wetlands and Riparian Habitats

Wetlands are defined under the federal Clean Water Act as land that is flooded or saturated by surface water or groundwater at a frequency and duration enough to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include playas, ponds, and wet meadows; lakes and reservoirs; rivers, streams, and canals; estuaries; and beaches and rocky shores. The project site is built out with a building, a parking lot, and small landscaped areas. There are no wetlands on or next to the site. The nearest wetlands to the project site mapped on the National Wetlands Mapper maintained by the US Fish and Wildlife Service are Freshwater Ponds. One system of ponds is located about 0.9 miles to the northeast. Another, Tule Pond, is located 2 miles to the east.[5]

[3] City of Fremont, Landmark Trees. https://www.fremont.gov/2153/Landmark-Trees, accessed February 16, 2019.

[4] California Department of Fish and Wildlife BIOS database. https://apps.wildlife.ca.gov/bios/?tool=cnddbQuick, accessed January 22, 2019.

[5] US Fish and Wildlife Service, 2012. National Wetlands Mapper. https://www.fws.gov/wetlands/data/mapper.html, accessed January 22, 2019.

Riparian habitats are those occurring along the banks of rivers and streams. There is no riparian habitat on-site and none nearby mapped on the National Wetlands Mapper.

Wildlife Movement

The site is built-out, fenced, and in a built-out urban environment. Thus, the site is not available for overland wildlife movement. Trees and shrubs on-site could be used for nesting by birds protected under State laws.

4.3.2 STANDARDS OF SIGNIFICANCE

Would the project:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

4.3.3 IMPACT DISCUSSION

BIO-1	**The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.**

The proposed project would involve focused demolition, site preparation and construction within the footprint of a fully developed junior high school campus.

A search of the CNDDB for the Newark database quadrangle within which the project site is located yielded documented occurrences of 46 sensitive species.[6] However, there is no suitable habitat for sensitive plant or animal species on-site aside. Periodic landscape maintenance activities would further render the site unsuitable for sensitive species. Suitable habitat for protected species in limited to campus trees that may allow for protected bird species to nest. Impacts to protected bird species and their potential to nest in existing trees on-site is discussed under impact discussion BIO-4 below.

Trees and other ornamental landscape vegetation in developed urban land uses could be used for incidental foraging by sensitive bird and bat species. However, incidental foraging use does not constitute habitation per the CDFW definition of habitat, defined as the area in which a given plant or animal species meets its requirements for food, cover, and water in both space and time.[7] Impacts to vegetation on-site would be temporary during demolition and construction, and project development would involve planting a net increase of trees on-site. Therefore, the impact would be *less than significant*.

Significance without Mitigation: Less than significant.

BIO-2 The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.

The project site is built out with an existing, occupied junior high school. There is no riparian habitat or sensitive natural community on or adjacent to the project site. Therefore, *no impact* would occur.

Significance without Mitigation: No impact.

BIO-3 The proposed project would not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

The project site is built out with an existing, occupied junior high school. There are no wetlands on or adjacent to the project site. Therefore, *no impact* would occur.

Significance without Mitigation: No impact.

[6] California Department of Fish and Wildlife, BIOS Mapping. https://apps.wildlife.ca.gov/bios/?tool=cnddbQuick, accessed January 20, 2019.

[7] California Department of Fish and Wildlife, 2015. *State Wildlife Action Plan*: Chapter 11: Glossary.

BIO-4 The proposed project could interfere with the movement of a native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

There is no suitable habitat for sensitive plant or animal species on the project site. Regardless, trees and shrubs on-site could be used by nesting birds protected under California Fish and Game Code Sections 3503 *et seq*. As noted in Chapter 3, Project Description, project development would involve removal of some vegetation and trees on-site during construction. Although new trees planted as part of the project would result in a net addition of trees on the project site, the construction process could interfere with nesting, including destruction of active nests. This possibility represents a *significant* impact.

Significance without Mitigation: Significant.

Impact BIO-4: Site clearance and tree removal could destroy active nests, and/or otherwise interfere with nesting, of birds protected under State laws.

Mitigation Measure BIO-4: Prior to vegetation clearance activities, the project applicant shall retain a qualified biologist to conduct preconstruction nesting bird surveys as follows: If tree removal would occur during the nesting season (February 1 to August 31), preconstruction surveys shall be conducted no more than 14 days prior to the start of tree removal or construction. Preconstruction surveys shall be repeated at 14-day intervals until construction has been initiated in the area after which surveys can be stopped. Locations of active nests containing viable eggs or young birds of protected bird species shall be documented and protective measures implemented under the direction of the qualified biologist until the nests no longer contain eggs or young birds. Protective measures shall include establishment of clearly delineated exclusion zones (i.e., demarcated by identifiable fencing, such as orange construction fencing or equivalent) around each nest location as determined by a qualified biologist, account for species, tolerance for disturbance, and proximity to existing development. Exclusion zones shall be a minimum of 300 feet for raptors and 75 feet for passerines and other birds. The active nest within an exclusion zone shall be monitored on a weekly basis throughout the nesting season to identify signs of disturbance and confirm nesting status. The radius of an exclusion zone may be increased by the qualified biologist if project activities are determined to be adversely affecting the nesting birds. Exclusion zones may be reduced by the qualified biologist only in consultation with CDFW. The protection measures shall remain in effect until the young have left the nest and are foraging independently or the nest is no longer active.

No surveys are required before vegetation disturbance between September 1 and January 31, that is, outside of the nesting season.

Significance with Mitigation: Less than significant.

BIO-5 The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The proposed project would maintain all the large existing trees at the front of the campus and would result in the planting of net additional parking lot, decorative and enhancement trees throughout the campus. As noted, there are no protected or landmark trees on or near the campus.

The City of Fremont require permits for tree removals, as described in Title 18.125 of the City's Municipal Code. However, the District, as a State entity, has exempted itself from the City's ordinances, including its tree permitting requirements. As such, there would be *no impact* related to local policies concerning biological resources.

Significance without Mitigation: No impact.

BIO-6 The proposed project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.

The proposed project is within the Expanded Study Area and Permit Area for Burrowing Owl Conservation, but outside of the Habitat Plan Study Area and Permit Area of the Santa Clara Valley Habitat Plan. However, the District is not a participating agency in the Habitat Plan, and therefore would not be subject to the Habitat Plan. Thus, the proposed project would have *no impact* related to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved, local, regional, or State habitat conservation plan.

Significance without Mitigation: No impact.

4.3.4 CUMULATIVE IMPACTS

BIO-7 The proposed project would not result in significant cumulative impacts with respect to biological resources.

The area considered for cumulative impacts is the two-mile radius around the project site, which is contained in the flat, largely developed Centerville, Cabrillo and Glenmore neighborhoods of the City, located on the floor of the Santa Clara Valley. This area is almost fully built out with urban uses. Nearly all the cumulative development projects listed in Chapter 4, Environmental Evaluation, of this Draft EIR, would be infill-based redevelopment or reuse projects. The potential for biological impacts of any single project, and thus cumulative effects, is limited.

The proposed project would have no impacts related to sensitive natural communities, protected wetlands, local conservation policies or provisions of an adopted conservation plan. As such, it would not contribute to cumulative impacts regarding these topics.

As noted under Impact BIO-4, tree removal associated with the project could interfere with the movement of a native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors. Mitigation Measure BIO-4 would ensure that tree removal during nesting season does not disturb bird nests.

All cumulative projects assessed in this EIR are City of Fremont projects, except for the Centerville Middle School Conversion project. Like the proposed project, the Centerville project would be limited to construction and modernization on an existing, developed school footprint, would be located in the same built-out neighborhood and would be guided by the District as lead agency. For the same reasons as the proposed project, biological impacts would be restricted to bird habitat and similar mitigation would reduce this impact to a less-than-significant level.

Other City-led projects in the cumulative area could impact bird nesting sites due to the removal of trees and other ornamental landscape vegetation in developed urban land uses. Trees and shrubs in surrounding urban land uses could be used by nesting birds protected under State law. However, as noted under BIO-1, incidental foraging use does not constitute habitation per the CDFW definition of habitat, and projects in Fremont would be required to either schedule vegetation clearance outside of the bird nesting season or have preconstruction nesting bird surveys conducted before vegetation clearance and prohibit disturbances within buffer zones surrounding active nests. Therefore, a *less-than-significant* cumulative impact would occur.

Significance without Mitigation: Less than significant.

4.4 CULTURAL RESOURCES

This chapter describes existing cultural resources on the project site and evaluates the potential environmental consequences on cultural resources from development of the proposed project. A summary of the relevant regulatory setting and existing conditions is followed by a discussion of the proposed project and cumulative impacts.

4.4.1 ENVIRONMENTAL SETTING

4.4.1.1 REGULATORY FRAMEWORK

Federal Regulations

Paleontological Resources Preservation Act

The federal Paleontological Resources Preservation Act of 2002 limits the collection of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers who have obtained a permit from the appropriate state or federal agency. Additionally, it specifies these researchers must agree to donate any materials recovered to recognized public institutions, where they will remain accessible to the public and other researchers. This Act incorporates key findings of a report, *Fossils on Federal Land and Indian Lands*, issued by the Secretary of Interior in 2000, which establishes that most vertebrate fossils and some invertebrate and plant fossils are considered rare resources.[1]

State Regulations

California Environmental Quality Act

California State law provides for the protection of cultural resources by requiring evaluations of the significance of prehistoric and historic resources identified in documents prepared consistent with California Environmental Quality Act (CEQA). The CEQA Statute is contained in Public Resources Code (PRC) 21000 to 21177 and the CEQA Guidelines are contained in California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, Sections 15000 to 15387.

Under CEQA, a cultural resource is considered a "historical resource" if it meets any of the criteria found in Section 15064.5(a) of the CEQA Guidelines. Under CEQA, the lead agency determines whether projects may have a significant effect on archaeological and historical resources. CEQA Guidelines Section 15064.5 defines what constitutes a historical resource, including: (1) a resource determined by the State Historical Resources Commission to be eligible for the California Register of Historical Resources (California Register) (including all properties on the National Register); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k); (3) a resource identified as significant in a historical

[1] U.S. Department of the Interior, 2000. *Fossils on Federal & Indian Lands, Report of the Secretary of the Interior*. https://www.blm.gov/sites/blm.gov/files/programs_paleontology_quick%20links_Assessment%20of%20Fossil%20Management%20on%20Federal%20&%20Indian%20Lands,%20May%202000.pdf, accessed July 31, 2018.

resource survey meeting the requirements of PRC Section 5024.1(g); or (4) any object, building, structure, site, area, place, record, or manuscript that the City determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the City's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered historically significant if it meets the criteria for listing on the California Register.

If the lead agency determines that a project may have a significant effect on a historical resource, the project is determined to have a significant effect on the environment, and these effects must be addressed. However, no further environmental review needs to be completed if, under the qualifying criteria, a cultural resource is not found to be a historical resource or unique archaeological resource.

In addition, PRC Section 21083.2 and Section 15126.4 of the CEQA Guidelines specify lead agency responsibilities to determine whether a project may have a significant effect on archaeological resources. If it can be demonstrated that a project would damage a unique archaeological resource, the lead agency may require reasonable efforts for the resources to be preserved in place or left in an undisturbed state. Preservation in place is the preferred approach to mitigation. The PRC also details required mitigation if unique archaeological resources are not preserved in place.

Section 15064.5 of the CEQA Guidelines specifies procedures to be used in the event of an unexpected discovery of Native American human remains on non-federal land. These codes protect such remains from disturbance, vandalism, and inadvertent destruction, establish procedures to be implemented if Native American skeletal remains are discovered during construction of a project, and establish the Native American Heritage Commission (NAHC) as the authority to identify the most likely descendant and mediate any disputes regarding disposition of such remains.

California Health and Safety Code

California Health and Safety Code (CHSC) Section 7052 states that it is a felony to disturb Native American cemeteries. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the County Coroner can determine whether the remains are those of a Native American. Section 7050.5(b) outlines the procedures to follow should human remains be inadvertently discovered in any location other than a dedicated cemetery. The section also states that the County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact NAHC within 24 hours. The NAHC has various powers and duties to provide for the ultimate disposition of any Native American remains, as does the assigned Most Likely Descendant.

Public Resources Code

PRC Section 5097.5 prohibits “knowing and willful” excavation or removal of any “vertebrate paleontological site… or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands.” Public lands are defined to include lands owned by or under the jurisdiction of the State or any city, county, district, authority, or public corporation, or any agency thereof.

State Laws Pertaining to Human Remains

Any human remains encountered during ground-disturbing activities are required to be treated in accordance with CCR Section 15064.5(e) (CEQA), PRC Section 5097.98, and the CHSC Section 7050.5. California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Specifically, Section 7050.5 of the CHSC states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are determined to be of Native American origin, the county coroner must contact the California NAHC within 24 hours of this identification. An NAHC representative will then identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. In addition, CEQA Guidelines Section 15064.5 specifies the procedures to be followed in case of the discovery of human remains on non-federal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

Local Regulation

City of Fremont General Plan

Historic cultural resources are one of the six key topics of the Community Character Element of the City's General Plan. GOAL 4-6: Historic Preservation and Cultural Resources, includes policies and implementation statements to:

- Protect historic resources.
- Regulate construction and alterations within historic areas.
- Document historic properties.
- Ensure that new design is compatible with historic settings.

City of Fremont Historical Parks & Facilities Inventory

The City of Fremont Department of Recreation Services maintains a Historical Parks & Facilities list. This list includes public parks and sites in the City of Fremont deemed significant to the history and culture of the City.

4.4.1.2 EXISTING CONDITIONS

This section provides an overview of the history of Fremont and resources of cultural significance that may be affected by the proposed project. Archeological evidence indicates that humans began to settle in the Fremont area at least 12,000 years ago. Prehistoric occupation of California is broken into three broad periods: the Paleoindian period (10,000 – 6,000 B.C.), the Archaic period (6,000 B.C. – A.D. 500), and the Emergent period (A.D. 500 – 1800). Early occupants depended mainly on big game and minimally processed plant foods for survival. Later, as trade networks became increasingly complex, and an economy based on clam disk bead money became more prevalent, inhabitants' social status became recognizably linked to wealth.

The development of the area that would become the modern City of Fremont began with the founding of Mission San Jose in 1797. The area became established as an agricultural community, ultimately developing into five unincorporated townships in the early 20th century. Transportation infrastructure such as the Southern Pacific Railroad in 1869 and the Nimitz Freeway in the 1950 further linked industry and agriculture and solidified the groundwork for incorporation of the five townships into the City of Fremont in 1956.[2]

Paleontological Resources

Paleontological resources (fossils) are the remains and/or traces of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and wood are found in the geologic deposits (rock formations) in which they were originally buried. Paleontological resources represent a limited, non-renewable, sensitive scientific and educational resource.

The potential for fossil remains at a location can be predicted through previous correlations that have been established between the fossil occurrence and the geologic formations within which they are buried. For this reason, knowledge of the geology of a particular area and the paleontological resource sensitivity of rock formations make it possible to predict where fossils will or will not be encountered.

According to the Fremont General Plan Update EIR, no paleontological resources are currently known to exist in developed portions of the City or where development is anticipated to occur. No known paleontological resources exist within the project site. Although this is true, it is possible that undiscovered paleontological resources could be buried on the project site.

Archaeological Resources

Archaeological resources may be considered either "unique archeological resources" or "historical resources" as defined by CEQA and described previously. CEQA Section 21083.2 defines a "unique archeological resource" as an archeological artifact, object, or site for which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

- Contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information;
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type; and/or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

The area that is now known as Fremont was originally populated by the Ohlone of Costanoan people who lived throughout the region. The archaeological record of culture, religion, social behavior and ceremonial events shows that the Ohlone Indians can be traced back to 4,500 years within the greater Bay Area.

[2] City of Fremont, 2017. *Postwar Development and Architecture Historic Context Statement, 1945-1970*. https://fremont.gov/DocumentCenter/View/37671/PLN2018_00236-Info-1, accessed February 1, 2019.

According to the 2011 City of Fremont Draft General Plan Update EIR, no archeological resources are currently known to exist in developed portions of the City or where development is anticipated to occur. No known archeological resources exist within the project site. Although this is true, it is possible that undiscovered archeological resources could be buried on the project site.

Historical Resources

The National Register includes buildings at least 50 years old, unless deemed to be of exceptional importance. The California State Office of Historic Preservation includes buildings, structures and objects 45 years or older on the California Register. There are no local, State, or federally recognized historic properties within or near the project site.[3,4] According to the City's Historical Parks & Facilities Inventory, there are no historic facilities on the project site.[5]

4.4.2 STANDARDS OF SIGNIFICANCE

Would the project:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?
2. Cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section 15064.5?
3. Disturb any human remains, including those interred outside of dedicated cemeteries?

4.4.3 IMPACT DISCUSSION

CULT-1 The proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.

The types of cultural resources that meet the definition of historical resources under PRC Section 21084.146[6] generally consist of districts, sites, buildings, structures, and objects that are significant for their traditional, cultural, and/or historical associations. Under CEQA, both prehistoric and historic-period archaeological sites may qualify based on historical associations.[7] As such, the two main historical resources that are subject to impact, and that may be impacted by development allowed under the

[3] California State Office of Historic Preservation, California Historic Resources. http://ohp.parks.ca.gov/ListedResources/?view=county&criteria=1, accessed January 12, 2019.

[4] National Parks Service, U.S. Department of the Interior, National Register of Historic Places. http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome, accessed January 12, 2019.

[5] City of Fremont, Historical Parks & Facilities. https://www.fremont.gov/325/Historical-Parks-Facilities, accessed January 12, 2019.

[6] The CEQA Statute is contained in Sections 21000 et seq. of the Public Resource Code.

[7] California Code of Regulations, Title 14, Chapter 3, Section 15064.5(c), Determining the Significance of Impacts on Historical and Unique Archaeological Resources.

proposed project, are historical archaeological deposits and historical architectural resources. Impacts to archaeological resources are discussed under impact discussion CULT-2 below.

The federal, State, and City historic registers do not indicate any historically or architecturally significant buildings designated on the project site. Therefore, with no historical resource on the project site, there would be *no impact* as a result of project implementation.

Significance without Mitigation: No impact.

CULT-2 The proposed project would have the potential to cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section 15064.5.

Archaeological deposits that meet the definition of unique archaeological resources under PRC Section 21083.2(g) could be damaged or destroyed by ground-disturbing construction activities (e.g., site preparation, grading, excavation, and trenching for utilities) associated with development allowed under the proposed project. Should this occur, the ability of the deposits to convey their significance, either as containing information in prehistory or history, or as possessing traditional or cultural significance to Native American or other descendant communities, would be materially impaired. It is possible that some significant archaeological deposits may exist on the project site.

Prior grading and development on the developed project site suggests a low possibility of unearthing archaeological artifacts. Additionally, the proposed project does not include any major excavation component, such as underground parking, and therefore, would not involve substantially more ground-disturbing activities than previous uses. However, it remains possible that a currently unknown cultural resource, as defined by CEQA Guidelines Section 15064.5, could be encountered during construction activities. Without mitigation, potentially unearthing archaeological artifacts on the project site would result in a *significant* impact.

Significance without Mitigation: Significant.

Impact CULT-2: Implementation of the proposed project would have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

> Mitigation Measure CULT-2: If archaeological resources are encountered during excavation or construction, construction personnel shall be instructed to immediately suspend all activity in the immediate vicinity of the suspected resources and the District and a licensed archeologist shall be contacted to evaluate the situation. A licensed archeologist shall be retained to inspect the discovery and make any necessary recommendations to evaluate the find under current CEQA Guidelines prior to the submittal of a resource mitigation plan and monitoring program to the District for review and approval prior to the continuation of any on-site construction activity.

Significance with Mitigation: Less than significant.

CULT-3 The proposed project would have the potential to disturb human remains, including those interred outside of dedicated cemeteries.

Human remains associated with pre-contact archaeological deposits may exist on the project site, as sometimes previously unrecorded human remains are encountered during development projects. The proposed project would allow new construction, and the associated ground-disturbing activities would have the potential to uncover and adversely affect human remains. Descendant communities may ascribe religious or cultural significance to such remains and may view their disturbance as an immitigable impact.

Any human remains encountered during ground-disturbing activities associated with the proposed project would be subject to federal and State regulations, such as the CHSC Section 7050.5, PRC Section 5097.98, and the CCR Section 15064.5(e) (CEQA), which state the mandated procedures of conduct following the discovery of human remains. According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken.

Without mitigation, potentially unearthing human remains on the project site would result in a *significant* impact.

Significance without Mitigation: Significant.

Impact CULT-3: Implementation of the proposed project would have the potential to disturb human remains, including those interred outside of formal cemeteries.

> Mitigation Measure CULT-3: In the event a human burial or skeletal element is identified during excavation or construction, work in that location shall stop immediately until the find can be properly treated. The City and the Alameda County Coroner's office shall be notified. If deemed prehistoric, the Coroner's office would notify the Native American Heritage Commission who would identify a "Most Likely Descendant (MLD)." The archeological consultant and MLD, in conjunction with the project sponsor, shall formulate an appropriate treatment plan for the find, which might include, but not be limited to, respectful scientific recording and removal, being left in place, removal and reburial on-site, or elsewhere. Associated grave goods are to be treated in the same manner.

Significance with Mitigation: Less than significant.

4.4.4 CUMULATIVE IMPACTS

CULT-4 The proposed project would not result in significant cumulative impacts with respect to cultural resources.

Cumulative cultural resource impacts would occur when a series of actions leads to the loss of a substantial type of site, building, or resource. For example, while the loss of a single historic building may not be significant to the character of a neighborhood or streetscape, continued loss of such resources on

a project-by-project basis could constitute a significant cumulative effect. This is most obvious in historic districts, where destruction or alteration of a percentage of the contributing elements may lead to a loss of integrity for the district overall. For example, changes to the setting or atmosphere of an area by adding modern structures on all sides of a historically significant building, thus altering the aesthetics of the streetscape, would create a significant impact. Destruction or relocation of historic buildings would also significantly impact the setting.

The project site does not contain any designated historic resources. As there are no significant historic structures and no known archaeological resources, paleontological resources, or human remains on the project site, development of the proposed project would not create or contribute to a cumulative impact to cultural resources. Mitigation Measure CULT-1 would ensure that any buried archaeological resources, if encountered, would be properly handled. Additionally, Mitigation Measure CULT-2 would ensure that any potential human remains encountered during site excavation would be properly handled. Additionally, the existing federal, State, and local regulations and policies described throughout this chapter serve to protect any as-yet-undiscovered cultural resources in Fremont. Continued compliance with these regulations and implementation of existing City policies and requirements would preclude impacts to the maximum extent practicable.

Therefore, in combination with past, present, and reasonably foreseeable projects, the proposed project would result in a *less-than-significant* cumulative impact with respect to all cultural resources.

Significance without Mitigation: Less than significant.

4.5 ENERGY

This chapter describes the regulatory framework and existing conditions in Fremont related to energy, and the potential impacts of the Thornton Middle School Conversion Project on electric and natural gas services and infrastructure, supply and demand, as well as potential impacts of the proposed project regarding energy.

4.5.1 ENVIRONMENTAL SETTING

4.5.1.1 REGULATORY FRAMEWORK

This section summarizes key Federal, State and regional regulations related to energy use and energy conservation.

Federal Regulations

Energy Independence and Security Act of 2007

Signed into law in December 2007, the Energy Independence and Security Act contains provisions designed to increase energy efficiency and availability of renewable energy. The Act contains provisions for increasing fuel economy standards for cars and light trucks, while establishing new minimum efficiency standards for lighting as well as residential and commercial appliance equipment.

Energy Policy Act of 2005

Passed by Congress in July 2005, the Energy Policy Act includes a comprehensive set of provisions to address energy issues. This Act includes tax incentives for energy conservation improvements in commercial and residential buildings, fossil fuel production and clean coal facilities, and construction and operation of nuclear power plants, among other things. Subsidies are also included for geothermal, wind energy, and other alternative energy producers.

National Energy Policy

Established in 2001 by the National Energy Policy Development Group, the National Energy Policy is designed to help the private sector and state and local governments promote dependable, affordable, and environmentally sound production and distribution of energy for the future. Key issues addressed by the energy policy are energy conservation, repair and expansion of energy infrastructure, and ways of increasing energy supplies while protecting the environment.

Natural Gas Pipeline Safety Act of 1968

The Natural Gas Pipeline Safety Act of 1968 authorizes the United States Department of Transportation to regulate pipeline transportation of flammable, toxic, or corrosive natural gas and other gases as well as the transportation and storage of liquefied natural gas. The Pipeline and Hazardous Materials Safety Administration within the Department of Transportation develops and enforces regulations for the safe,

reliable, and environmentally sound operation of the nation's 2.6-million-mile pipeline transportation system.

State Regulations

California Public Utilities Commission

In September 2008, the California Public Utilities Commission (CPUC) adopted the Long-Term Energy Efficiency Strategic Plan, which provides a framework for energy efficiency in California through the year 2020 and beyond. It articulates a long-term vision, as well as goals for each economic sector, identifying specific near-term, mid-term, and long-term strategies to assist in achieving these goals. This Plan sets forth the following four goals, known as Big Bold Energy Efficiency Strategies, to achieve significant reductions in energy demand:

- All new residential construction in California will be zero net energy by 2020;
- All new commercial construction in California will be zero net energy by 2030;
- Heating, Ventilation and Air Conditioning (HVAC) will be transformed to ensure that its energy performance is optimal for California's climate; and
- All eligible low-income customers will be given the opportunity to participate in the low-income energy efficiency program by 2020.

With respect to the commercial sector, the Long-Term Energy Efficiency Strategic Plan notes that commercial buildings, which include schools, hospitals, and public buildings, consume more electricity than any other end-use sector in California. The commercial sector's five billion-plus square feet of space accounts for 38 percent of the State's power use and over 25 percent of natural gas consumption. Lighting, cooling, refrigeration, and ventilation account for 75 percent of all commercial electric use, while space heating, water heating, and cooking account for over 90 percent of gas use. In 2006, schools and colleges were in the top five facility types for electricity and gas consumption, accounting for approximately 10 percent of State's electricity and gas use.

The CPUC and the California Energy Commission have adopted the following goals to achieve zero net energy (ZNE) levels by 2030 in the commercial sector:

- Goal 1: New construction will increasingly embrace zero net energy performance (including clean, distributed generation), reaching 100 percent penetration of new starts in 2030.
- Goal 2: 50 percent of existing buildings will be retrofit to zero net energy by 2030 through achievement of deep levels of energy efficiency and with the addition of clean distributed generation.
- Goal 3: Transform the commercial lighting market through technological advancement and innovative utility initiatives.

California Building Code: Building Energy Efficiency Standards

The State provides a minimum standard for energy conservation through Title 24 of the California Code of Regulations, commonly referred to as the "California Energy Code". The California Energy Code was adopted in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations) as the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017. Title 24 requires the design of building shells and building components to conserve energy.

The 2016 Standards continue to improve upon the previous 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Under the 2016 Standards, residential and nonresidential buildings are 28 and 5 percent more energy efficient than the 2013 Standards, respectively.[1] While the 2016 Standards do not achieve zero net energy, they do get very close to the State's goal and make important steps toward changing residential building practices in California. The 2019 Standards will take the final step to achieve zero net energy for newly constructed residential buildings throughout California.[2] The 2019 Standards go into effect starting January 1, 2020, and all new construction that begins after January 2020 must follow the 2019 Standards.

California Building Code: CALGreen

CALGreen establishes standards that apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout the State of California, unless otherwise indicated in the California Building Standards Code. The purpose of CALGreen is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in energy efficiency, amongst others. Compliance with the CALGreen Code is not a substitution for meeting the certification requirements of any green building program.

Green Building Executive Order

In 2004, Executive Order (EO) S-20-04 was signed by the Governor, committing the State to take aggressive action to reduce State building electricity usage by retrofitting, building, and operating the most energy- and resource-efficient buildings by taking all cost-effective measures described in the Green Building Action Plan for facilities owned, funded, or leased by the State and to encourage cities, counties, and schools to do the same. It also calls for State agencies, departments, and other entities under the direct executive authority of the Governor to cooperate in taking measures to reduce grid-based energy purchases for State-owned buildings by 20 percent by 2015, through cost-effective efficiency measures and distributed generation technologies. These measures should include, but are not limited to:

[1] California Energy Commission, 2015. 2016 Building Energy Efficiency Standards, Adoption Hearing Presentation. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/ , accessed May 7, 2019.

[2] California Energy Commission, 2015. 2016 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf accessed May 3, 2019.

- Designing, constructing and operating all new and renovated State-owned facilities paid for with State funds as "LEED Silver" or higher certified buildings;
- Identifying the most appropriate financing and project delivery mechanisms to achieve these goals;
- Seeking out office space leases in buildings with a U.S. Environmental Protection Agency (USEPA) Energy Star rating; and
- Purchasing or operating Energy Star electrical equipment whenever cost-effective.

Renewable Portfolio Standard

Established in 2002 under Senate Bill (SB) 1078 and accelerated by several laws, most recently SB 100 in 2018, California's Renewables Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from eligible renewable energy sources by 2020, 60 percent from eligible renewable energy sources by 2030, and 100 percent from eligible renewable energy or other carbon-free sources by 2045.

Senate Bill 350

Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the California Independent System Operator to those markets, pursuant to a specified process.

Recent CEQA Litigation

Recent case law has clarified the requirements to satisfy Public Resources Code Section 21100(b)(3) and CEQA Guidelines Appendix F: Energy Conservation, holding that an EIR must quantify energy use during construction and operations, including energy associated with transportation associated with the project, and also consider the availability of measures to reduce reliance on fossil fuels.[3] Mere reliance on compliance with the California Building Code and other green building requirements is not sufficient to meet an agency's burden under Appendix F and Public Resources Code Section 21100(b)(3); an agency must also consider, where appropriate, whether a building should be constructed at all, how large it should be, where it should be located, and whether it should incorporate renewable energy resources.

[3] *California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173.

Regional Regulations

Plan Bay Area: Strategy for a Sustainable Region

Plan Bay Area 2040 is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). Plan Bay Area 2040 was adopted jointly by ABAG and MTC July 26, 2017. This document describes how the San Francisco Bay Area will develop over the next two decades and the SCS integrates transportation, land use, and housing to meet greenhouse gas (GHG) reduction targets set by CARB. Plan Bay Area 2040 provides guidance for transportation investment and land use investment strategies that local jurisdictions can use to reach per capita GHG reduction goals. Plan Bay Area 2040 proposes the Climate Initiatives Program, which promotes the densification of land use and a relative decrease in per capita energy consumption, in addition to a net reduction in vehicle fuel use while also allowing growth within the region.

4.5.1.2 EXISTING CONDITIONS

Energy Providers

East Bay Community Energy

In 2018, Alameda County and the City of Fremont shifted to local Community Choice Energy (CCE) program East Bay Community Energy (EBCE). EBCE was formed as a Joint Power Authority (JPA) by Alameda County and 11 of its cities, and operates as a not-for-profit public agency. EBCE offers three program options; the Brilliant Choice which provides 38 percent renewable and 47 percent carbon-free power service; the Brilliant 100 program which provides at least 40 percent renewable and an additional 60 percent carbon-free 100 percent renewable power service from solar, wind, and hydroelectric in California; and the Renewable 100 program which provides 100 percent renewable energy from solar and wind source.[4] The electric energy provided by EBCE is conveyed to customers through PG&E's existing infrastructure. PG&E continues to maintain the grid, repair lines, and conduct customer billing within the EBCE service area. Participation in EBCE is consistent with policies established in the City of Fremont's Climate Action Plan, to transition to a City-wide environmentally sustainable community.

Pacific Gas and Electric

Pacific Gas and Electric (PG&E) delivers electricity and natural gas services to the City, although the City recently shifted to energy provider East Bay Community Energy (EBCE) (see below). PG&E is a publicly traded utility company which generates, purchases, and transmits energy under contract with the CPUC. PG&E owns and maintains above and below ground networks of electric and gas transmission and distribution facilities throughout the city. Both gas and electrical service is available at the project site.

PG&E's service territory is 70,000 square miles in area, roughly extending north to south from Eureka to Bakersfield, and east to west from the Sierra Nevada mountain range to the Pacific Ocean. PG&E's electricity distribution system consists of 106,681 circuit miles of electric distribution lines and 18,466

[4] East Bay Community Energy, 2019. Power Mix. https://ebce.org/power-mix/ accessed June 25, 2019.

circuit miles of interconnected transmission lines. PG&E electricity is generated by a combination of sources such as coal-fired power plants, nuclear power plants, and hydro-electric dams, as well as newer sources of energy, such as wind turbines and photovoltaic plants or "solar farms." "The Grid," or bulk electric grid, is a network of high-voltage transmission lines, linked to power plants within the PG&E system. The distribution system, comprised of lower voltage secondary lines, is at the street and neighborhood level, and consists of overhead or underground distribution lines, transformers, and individual service "drops" that connect to the individual customer.

PG&E produces or buys its energy from several conventional and renewable generating sources, which travel through PG&E's electric transmission and distribution systems. The power mix PG&E provided to customers in 2017 consisted of non-emitting nuclear generation (27 percent), large hydroelectric facilities (18 percent) and eligible renewable resources (33 percent), such as wind, geothermal, biomass, solar and small hydro.[5] The remaining portion came from natural gas/other (20 percent) and unspecified power (2 percent). Unspecified power refers to electricity that is not traceable to specific generation sources by any auditable contract trail. In addition, PG&E has plans to increase the use of renewable power. For instance, PG&E purchases power from customers that install small scale renewable generators (e.g., wind turbines or photovoltaic cells) up to 1.5 megawatts in size.

PG&E gas transmission pipeline systems serve approximately 4.3 million gas customers in northern and central California. The system is operated under an inspection and monitoring program. The system operates in real time on a 24-hour basis, and includes leak inspections, surveys, and patrols of the pipelines. A new program, the Pipeline 2020 program, aims to modernize critical pipeline infrastructure, expand the use of automatic or remotely-operated shut-off valves, catalyze development of next-generation inspection technologies, develop industry-leading best practices, and enhance public safety partnerships with local communities, public officials, and first responders.

Regulatory requirements for efficient use of electricity and gas are contained in Title 24, Part 6, of the CCR, entitled "Energy Efficiency Standards for Residential and Nonresidential Buildings." These regulations specify the State's minimum energy efficiency standards and apply to new construction of both residential and nonresidential buildings. The standards regulate energy consumed for heating, cooling, ventilation, water heating, and lighting.

Existing Energy Use

Operation of the existing school uses electricity for primarily lighting, cooling, office equipment, and ventilation; natural gas for space heating, water heating, and cooking; and gasoline and diesel fuels for student pick-up and drop-off.[6] Based on average junior high school energy use in the U.S., the existing school uses approximately has an energy intensity of approximately 68,700 Btu per

[5] Pacific Gas and Electric Company, 2018, PG&E's 2017 Power Mix, https://www.pge.com/pge_global/common/pdfs/your-account/your-bill/understand-your-bill/bill-inserts/2018/10-18_PowerContent.pdf, accessed April 3, 2019.

[6] E Source Customer Direct, 2008. Managing Energy Costs in Schools. http://dsoelectric.coopwebbuilder2.com/sites/dsoelectricdsoelectric/files/images/Business/schools.pdf, accessed June 25, 2019.

square foot (USEPA, 2008) 834,620 kWh of electricity per year and 4,173,100 ft^3 of natural gas per year. Thornton Junior High School currently generates approximately 4,410 daily vehicle miles travelled (VMT)[7] which, as shown in Table 4.5-1, uses about 170 gallons per day (gpd) of gasoline and 131 gpd of diesel.[8]

TABLE 4.5-1 EXISTING VEHICLE FUEL USE

Vehicle Type	Gasoline (gpd)	Diesel (gpd)
Passenger Cars	92.00957	61.175658
Light Duty Trucks (0-3750 lbs)	10.72628	0.429371
Light Duty Trucks (3,751-5,750 lbs)	39.69622	14.690748
Medium Density Trucks	27.78154	41.839610
School Buses	0.036294	12.500829
Total	**170.24991**	**130.63622**

Note: gpd = gallons per day
Source: California Air Resources Board, 2019. EMFAC2017 (v1.0.2) Emissions Inventory calculator.

4.5.2 STANDARDS OF SIGNIFICANCE

Would the project:

1. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

4.5.3 IMPACT DISCUSSION

ENERGY-1 The proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Project Construction

The construction phase ends once the proposed project is built and construction activities are completed. The proposed project would include demolition of about 7,040 square feet of existing permanent and modular structures and construction of approximately 43,360 square feet of new buildings and building additions. Construction activities would use energy in the form of fuel from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles

[7] Kittelson & Associates, 2019. Thornton Middle School Conversion Transportation Impact Analysis.
[8] California Air Resources Board, 2019. EMFAC2017 (v1.0.2) Emissions Inventory.

transporting the construction crew. As shown in Table 4.5-2. Below, construction of the project would use about 74,500 gallons of diesel fuel throughout the three-year process (see Appendix C for greater details).

TABLE 4.5-2 TOTAL FUEL CONSUMPTION, PROJECT CONSTRUCTION

Construction Year	Gasoline (gallons)	Diesel (gallons)
2020	O	47,956
2021	0	23,222
2022	0	3,350
TOTAL	**0**	**74,528**

Source: California Air Resources Board (CARB). OFFROAD2017, Version 1.0.1. https://www.arb.ca.gov/orion/, accessed July 19, 2019. PlaceWorks.

While construction activities require a commitment of energy sources, construction represents a one-time, short-term energy usage that would not significantly contribute to the long-term cumulative energy impacts of the proposed project nor represent a wasteful use of energy. The commitment of fuel identified in Table 4.5-2 is not unusual for a three-year construction effort, and there are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or State.

Project Operation

Although the proposed project would result in a larger school with a larger student body, the project would modernize a nearly 60-year-old facility. The new school would adhere to the energy efficiency requirements outlined in Section 4.5.1, resulting in a facility that is more sustainable. New buildings are assumed to comply with the 2019 Building Energy Efficiency Standards, which are 30 percent more energy efficient for nonresidential buildings than 2016 Standards.[9] Moreover, the proposed additional student body would be transferred from other District schools, resulting in decreased vehicle-based and operational energy use at those schools.

Operation of the proposed school expansion, which would result in 36,320 net square feet of new building space, would use additional electricity for lighting, cooling, and plug loads such as computers and copiers; as well as natural gas for additional space heating energy for cooling. The proposed project would also generate new VMT (see Chapter 4.15, Transportation) which would use additional regular gasoline and diesel fuels. Table 4.5-3, below, includes total net electricity increases associated with the operation of new buildings and project VMT (see Appendix C for additional detail).

[9] California Energy Commission, 2018.

TABLE 4.5-3 NET OPERATIONAL ENERGY USE

Use Type	Natural Gas (kBTU/yr)	Electricity (kWh/yr)	Gasoline Fuel	Diesel Fuel
New Buildings and Facilities	510,758	180,327		
New VMT		7,441	27,162	3,588
Total	**510,758**	**187,768**	**27,162**	**3,588**

Note: Assumes and average electricity efficiency of 0.40 Kwh/Mile.
Source: EMFAC, 2017; USDOT, 2017; PlaceWorks.

A net increase of 187,768 kWh/yr of electrical use and 510,758 kBTU/yr of natural gas are not considered wasteful, inefficient or unnecessary uses of energy. It should also be noted that VMT increase associated with proposed new students would be partially offset by VMT decreases at the elementary schools from which those students would transfer.

As noted, the proposed school modernization would be required to meet the 2019 Building and Energy Efficiency Standards of the California Public Resources Code, Title 24, Part 6 that will take effect on January 1, 2020. The 2019 Building Energy Efficiency Standards improve upon the 2016 Standards and require 30 percent or more energy efficiency for non-residential buildings.[10] On January 28, 2015, Fremont Unified School District (FUSD) mandated via formal resolution that all new construction and major modernization projects achieve minimum criteria for certification by the Collaborative for High Performance Schools (CHPS). Specifically, "…the Board of Education directs staff, during the design phase of future projects, to require architects and staff to verify that their District projects have met or exceeded the minimum requirements for CHPS certification."[11] As such, new projects must commit to energy, material, and water efficiency standards that contribute to student safety, reduced operating costs, and reduced environmental impact.[12] As a result, buildings built in 1963 would also receive energy efficiency upgrades, which would lower the total energy use for operation of the school.

The proposed project would include the following green building and energy efficiency measures to reduce energy as follows:

- Window Glazing made of preassembled insulated glass units consisting of organically sealed panes of glass enclosing a hermetically sealed dehydrated air space. The windows would be fully tempered clear float glass or safety glass, nominal ¼" thick, with PPG/SolarBan 60 low emissivity coating on No. 2 surface.

[10] California Energy Commission, 2018. 2019 Building Energy Efficiency Standards. https://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf, accessed June 25, 2019.

[11] Fremont Unified School District, 2015. Resolution No. 010-1415 Sustainability & Design and Construction of High Performance Schools, January 28.

[12] The Collaborative for High Performing Schools, 2006. Best Practices Manual, Volume I, Planning. https://chps.net/sites/default/files/CHPS_I_2006_1.pdf, accessed March 4, 2019.

- Removal of the solar tubes on roof of Building 9, as well as the existing boiler, water heater, flues and related equipment. The newly modernized locker rooms would be conditioned with new roof mounted, single zone high efficiency packaged gas/electric energy recovery units. Units would have an energy recovery heat wheel, 4 stage gas furnace with stainless steel heat exchanger, digital scroll compressor, MERV 8 filters, with 100% exhaust/supply and would be curb mounted. One Greenheck model ERCH-20-15H-5P-IG, would be installed per locker room.
- Windows exposed to direct sunlight would be provided with shades, either MechoShade brand or equivalent. Large windows and skylights in Building 2 would have fixed, louvered light-control systems or electrically operated window coverings by MechoShade brand or equivalent.
- New duct units and ceiling cassette units in Building 2 would have automatically adjusting fans based on room temperature.
- All classrooms would be updated to Carrier Corporation air conditioners, which meet the Energy Star guidelines for energy efficiency.

New buildings constructed in accordance with the standards identified above would not result in wasteful, inefficient, or unnecessary consumption of energy resources. Accordingly, impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

ENERGY-2 The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

As discussed in Chapter 3, Project Description, of this Draft EIR, the proposed project would construct new buildings on an already developed site. Implementation of the proposed project would include replacing aging transformers. It would not require any new gas lines. The proposed project would not conflict with any state or local plans for renewable energy or energy efficiency. The project would use existing PG&E connections, with 85 percent of the power being carbon-free power provided by EBCE, which is consistent with the City of Fremont's Climate Action Plan, and which further enforces the City's goal of reducing community-wide GHG emissions. Furthermore, the project would be required to meet the building standards of federal, and State regulations regarding energy efficient design and construction. Therefore, the impact the project would have on state or local plans for renewable energy or energy efficiency is *less than significant*.

Significance without Mitigation: Less than significant.

4.5.4 CUMULATIVE IMPACTS

ENERGY-3 The proposed project would not result in significant cumulative impacts with respect to energy.

While development of a single project may not be significant in impacting energy use in any given area, several concurrent developments in the same area of a city could constitute a significant cumulative effect. This analysis of cumulative impacts to energy is based on the list of 14 related projects, ranging from residential to mixed-use to schools, presented in Table 4-1 in Chapter 4, Environmental Analysis, of this Draft EIR. The related projects range from 0.4 to 1.4 miles from the project site.

As discussed above, the proposed project would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources and would not conflict with any applicable state or local plan regarding renewable energy or energy efficiency. Approval of the cumulative projects by the City of Fremont and surrounding jurisdictions would be contingent on those projects conforming to all adopted plans at the local level, as well as all regulations adopted by federal and State agencies. The other projects on the City's cumulative projects list are either infill development or are near existing development, which would not require a significant extension of energy resources and would not significantly increase the demand for energy. Furthermore, all development would be required to comply with energy efficiency regulations adopted by federal, state, and local agencies, which would significantly reduce the amount of energy used for the proposed developments. Therefore, cumulative impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

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4.6 GEOLOGY AND SOILS

This chapter describes the regulatory framework and existing conditions on the project site related to geology and soils and contains an evaluation of the potential environmental consequences associated with the construction and operation of the proposed project that are related to geology and soils.

The information in this section is based on the following technical study: Geotechnical Investigation and Geologic Hazards Assessment, Thornton Middle School Conversion Project, 4357 Thornton Avenue, Fremont, California, completed by Ninyo & Moore on December 28, 2018. A complete copy of this report is included in Appendix D to this Draft EIR.

4.6.1 ENVIRONMENTAL SETTING

4.6.1.1 REGULATORY FRAMEWORK

Federal Regulations

International Building Code

The International Building Code (IBC) has been adopted throughout the United States and has been in use since 2007. The purpose of the IBC is to establish minimum regulations for building systems, including fire safety, building safety, foundation, wall and roof constructions, materials used in construction, elevators and escalators, and existing structures.

National Pollutant Discharge Elimination System

The State Water Resources Control Board has implemented a National Pollutant Discharge Elimination System (NPDES) general construction permit for Alameda County. For properties of one or more acres, a Notice of Intent (NOI) and a stormwater pollution prevention plan (SWPPP) must be prepared prior to commencement of construction. Construction activities subject to this permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation. The San Francisco Bay Regional Water Quality Control Board (RWQCB) issued a Municipal Storm Water NPDES Permit to the San Francisco Bay Region, including the counties of Alameda, Contra Costa, Santa Clara, and San Mateo, and the cities of Fairfield, Suisun City and Vallejo (Permit Number CAS612008).

State Regulations

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures used for human occupancy.[1] The chief purpose of the Act is to prevent the construction of buildings used for human occupancy on top of active faults. The Act addresses the hazard

[1] Originally known as the Alquist-Priolo Special Studies Zones Act until renamed in 1993.

of surface fault rupture. It does not address other earthquake-related hazards, such as ground shaking or seismically induced landslides or liquefaction.[2]

The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults, and to issue appropriate maps.[3] The maps are then distributed to the affected cities, counties, and State agencies for their use in planning and controlling new or renewed construction. In general, construction within 50 feet of an active fault zone is prohibited.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was passed in 1990 to address earthquake hazards such as seismically induced liquefaction and land sliding. Under the Act, seismic hazard zones are mapped through the California Geological Survey's Seismic Hazards Zonation Program to identify areas prone to earthquake-induced liquefaction, landslides, and amplified ground shaking. The purpose of the Act is to reduce the threat to public health and safety and to minimize the loss of life and property that may result from earthquake-triggered ground failure. More specifically, Section 2691(c) of the Act states: "It is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety."[4] Section 2697(a) of the Act states: "Cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard."[5]

California Building Code

The California Building Code (CBC) is included in Title 24, known as the California Building Standards Code, of the California Code of Regulations (CCR). The CBC incorporates the International Building Code, a model building code adopted across the United States. The CBC is updated every three years, and the current 2016 version took effect January 1, 2017.

Title V, California Code of Regulations

Title V of the CCR regulates school facilities construction in the State. Title V includes standards to ensure school safety and student comfort, specifically, including standards for school site selection to reduce susceptibility to geologic events such as landslides. Adherence to Title V requires pre-construction studies of proposed school sites, including assessments of existing geological, soils-related, flooding and landslide hazards.

[2] California Geological Survey, 2017. Alquist-Priolo Earthquake Fault Zones, https://www.conservation.ca.gov/cgs/alquist-priolo, accessed November 15, 2018.

[3] Earthquake Fault Zones are regulatory zones around active faults. The zones vary in width, but average about 0.25 miles wide.

[4] California Public Resource Code, Division 2, Chapter 7.8, Section 2691(c).

[5] California Public Resource Code, Division 2, Chapter 7.8, Section 2697(a).

Statewide General Construction Permit

Construction projects of one acre or more are regulated under the General Construction Permit, Order No. 2012-0006-DWQ, issued by the State Water Resources Control Board in 2012. Projects obtain coverage by developing and implementing a Stormwater Pollution Prevention Plan estimating sediment risk from construction activities to receiving waters, and specifying Best Management Practices (BMPs) that would be used by the project to minimize pollution of stormwater.

4.6.1.2 EXISTING CONDITIONS

Regional Geology

The project area and site are located east of the San Francisco Bay within the Coast Ranges Geomorphic Province of California. The Coast Ranges are composed of several mountain ranges and structural valleys formed by tectonic processes. Mountain ranges are northwest-trending and generally run parallel to major strike-slip faults such as the San Andreas, Hayward and Calaveras. Major tectonic activity within this regional framework generally consists of a type of movement known as right-lateral, strike-slip, in which the area or "block" to the right of a vertical fault moves in one horizontal direction, and the left block moves in the other horizontal direction.

Project Site

The site is occupied by an existing junior high school. The site is relatively level with no major changes in grade. Concrete curbs, gutters, sidewalks, and landscaping consisting of small to medium size trees and shrubs are located along the edges of the site and throughout portions of the site.

The site is located within the Niles Cone, an alluvial fan that is the primary groundwater basin for Alameda County. The site is underlain by Holocene age levee deposits that consist of moderately to well-sorted sandy or clayey silt that become coarser with depth. These upper deposits are underlain by layers of sand and gravel.

Subsurface investigations completed as part of the geotechnical study encountered layers of asphalt and aggregate followed by about six feet of clay and sand-based fill. Beneath the fill. A layer of alluvium consisting of poorly graded silt and gravel and varying from loose to very dense was encountered beneath the fill.[6]

Groundwater was encountered at approximately 26.5 to 43 feet below ground surface (bgs).[7] As noted in the geotechnical evaluation, records indicate that the historical high of groundwater at the site is 25 feet bgs.

[6] Ninyo & Moore, December 28, 2018, Geotechnical Evaluation and Geologic Hazard Assessment, Thornton Middle School Conversion Project, Project No. 403402001, page 5.

[7] Ibid, page 5.

Seismic Hazards

Faults

There are five major faults within about 15 miles of the project site:

- Hayward (South segment): 3.2 miles from the project site.
- Silver Creek: 5.1 miles from the project site.
- Calaveras 12.9 miles from the project site.
- Hayward (North segment): 13 miles from the project site.
- Pleasanton: 15.8 miles north of the project site.

Although the site is near several faults, the site is not within a State of California Alquist-Priolo Earthquake Fault Zone or Special Study Zone for faulting.

Ground Shaking

The San Francisco Bay region is seismically active. Impacts from ground shaking could occur many miles from an earthquake epicenter. The potential severity of ground shaking depends on many factors, including the distance from the originating fault, the earthquake magnitude, and the nature of the earth materials beneath a given site. There are several known faults in the San Francisco Bay region. As with other areas in northern California, it is anticipated that the project site will likely be subject to strong ground shaking due to earthquakes on nearby faults.

As part of the geotechnical evaluation, a site-specific ground motion analysis was completed. The results of the analysis indicate that the Maximum Considered Earthquake Geometric Mean (MCEG) peak ground acceleration at the project site is 0.80 g. This is consistent with historic seismic activity and expected significant potential for strong ground motion at the site, which is rated 9 on the Modified Mercalli Intensity Scale,[8] a tool used to rate shaking intensity on a scale of 1 to 10. The study found that a magnitude 7.3 earthquake could result in significant dynamic soil settlement, in which soils beneath the site settle by as much as 11 inches[9] (see Other Geologic Hazards, below).

Liquefaction

Liquefaction refers to loose, saturated sand or silt deposits that behave as a liquid and lose their load-supporting capability when strongly shaken. Loose granular soils and silts that are saturated by relatively shallow groundwater are susceptible to liquefaction.

The site is not located in a high liquefaction hazard zone established by the state geologist.[10] The site is in area of medium liquefaction susceptibility, adjacent an area High susceptibility associated with the Quarry

[8] U.S. Geological Survey, 2014 Long-term Model webpage, mapping resource, https://earthquake.usgs.gov/static/lfs/nshm/conterminous/2014/2014pga2pct.pdf, accessed may 23, 2019.

[9] Ninyo & Moore, December 28, 2018, Geotechnical Evaluation and Geologic Hazard Assessment, Thornton Middle School Conversion Project, Project No. 403402001, page 9.

[10] U.S. Geological Survey, 2006. U.S. Geological Survey Open-File Report 2006-1037, "Liquefaction Susceptibility, Central San Francisco Bay Region, California."

Lakes to the northeast. Per the geotechnical evaluation completed for the project, the potential for liquefaction-induced reduction in the bearing capacity of shallow foundations is not a design consideration. The potential for dynamic settlement of loose soils due to liquefaction and ground shaking is discussed in Dynamic Settlement, below.

Landslides

Landslides are the downslope movement of geologic materials. Slope failures in the form of landslides are common during strong seismic shaking in areas of steep hills. The project site is nearly level and located within a valley basin. It is not within any landslide hazard zone.

Other Geologic Hazards

Ground Subsidence

Land subsidence refers to the lowering of the ground surface due to extraction or lowering of water levels or other stored fluids within the subsurface soil pores, or due to seismic activity that can cause alluvial sediments to compact. Due to the density, thickness and depth of saturated, loose, granular soil below the site, ground subsidence is unlikely.

Dynamic Settlement

Dynamic settlement refers to the compacting of loose soils as a result of liquefaction and/or strong vibratory motion, such as those associated with a strong earthquake. Dynamic settlement can occur at multiples levels beneath the ground surface.

The cohesionless, gravelly soils beneath the project site are prone to dynamic settlement. Tests performed as part of the geotechnical investigation indicate that there is significant potential for such settlement at the project site in the event of a major earthquake. Testing concluded that settlement of up to 11 inches, with differential settlement of 5.5 inches over approximately 30 feet, could occur in a magnitude 7.3 earthquake.[11]

Expansive Soils

Expansive soils contain substantial amounts of clay that swells when wetted and shrinks when dried; the swelling or shrinking can shift, crack, or break structures built on such soils. Laboratory testing performed during the geotechnical investigation indicates that the expansion index of soils in the vicinity of proposed buildings is 63 on the scale of 0 to 130, a medium-level expansion characteristic.[12]

[11] Ninyo & Moore, December 28, 2018, Geotechnical Evaluation and Geologic Hazard Assessment, Thornton Middle School Conversion Project, Project No. 403402001, page 12.

[12] Ibid, page 10.

Erosion

Erosion is the movement of soil from place to place and is a natural process. The main natural agents of erosion in the region are wind and flowing water. Erosion can be accelerated dramatically by ground-disturbing activities if effective erosion control measures are not used. Soil can be carried off construction sites or bare land by wind and water and tracked off construction sites by vehicles.

The project site is fully developed with very little exposed soils and no water courses on-site. Therefore, the potential for soil erosion on the site is negligible.

4.7 STANDARDS OF SIGNIFICANCE

Would the project:

1. Directly or indirectly cause potential substantial loss, injury, or death involving:
    a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?
    b. Strong seismic ground shaking?
    c. Seismic- related ground failure, including liquefaction?
    d. Landslides?
2. Result in substantial soil erosion or the loss of topsoil?
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off- site landslide, lateral spreading, subsidence, liquefaction or collapse?
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial director indirect risks to life or property?
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

4.7.1 IMPACT DISCUSSION

GEO-1	**The proposed project could directly or indirectly cause potential substantial loss, injury, or death involving: a) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; b) strong seismic ground shaking; c) seismic-related ground failure, including liquefaction; d) landslides.**

Fault Rupture

As noted in Section 4.6.1.2, Existing Conditions, the project site is outside State Earthquake Fault Zones or any Special Study Zone for faulting. The nearest fault, the south segment of the Hayward Fault, is approximately 3.2 miles from the project site.

The project would include modernization and new construction within the footprint of an existing school campus. These improvements would be required to adhere to the current safety standards established in the 2016 CBC and Title V of the CCR. As such, project construction and modernization would be an improvement over original site constriction dating to 1963 and would reduce the potential for direct or indirect bodily harm involving fault rupture. As such, the impact would be *less-than-significant.*

Significance without Mitigation: Less than significant.

Ground Shaking

As explained in Section 4.6.1.2, above, Thornton Junior High School is located in a seismically active region atop upper layers of soil that are generally loose, composed of granular sand and gravels. The underlying soils lack cohesion, and as a result are susceptible to significant settlement from the shaking motions of a strong earthquake. As noted in Section 4.6.1.2, tests performed as part of the geotechnical investigation found that settlement of up to 11 inches could occur in the event of ground shaking associated with a large earthquake. This degree of movement could impair the integrity of overlaying structures and facilities. The safety of building occupants and individuals on the site could be compromised, resulting in an indirect but *significant* impact.

Significance without Mitigation: Significant.

Impact GEO-1a: The proposed project would result in the placement of new buildings in, and relocation of students to, areas susceptible to ground shaking and resulting ground failure in the form of dynamic soils settlement, potentially resulting in significant loss, injury, or death.

> Mitigation Measure GEO-1: Fremont Unified School District and the project contractor shall implement one, or if required a combination of, the ground improvement strategies identified in the geotechnical investigation to mitigate earthquake-inducement dynamic settlement. Based on a pre-construction conference with a certified geotechnical consultant and ongoing observation by the geotechnical consultant during the ground improvement process, the project shall implement one or more of the following techniques:
>
> - Compaction Grouting. This process refers to the injection of mortar-like grout under high pressure to compact and displace adjacent loose soils. Grout is injected at target soil zones and at incremental depths. Grout flow rate, grout pressure and grout volume shall be closely monitored throughout the process.
> - Deep Soil Mixing. This ground treatment method involves blending soils with cement or other bonding materials to improve strength and compressibility. Deep soil mixing shall be performed in accordance with Federal Highway Administration (FHWA) design standards.

- Vibro Stone Columns. This construction technique involves the insertion of crushed stone in a grid pattern beneath structural footings, using a vibratory probe. This increases the strength of soil due to reinforcement of crushed stone and resulting densification of surrounding soils.
- Rammed Aggregate Piers (RAP). This technique can be used to provide support beneath shallow foundations. RAPs are designed by specialty contractors and constructed by inserting compacted aggregate into strategically placed drill- or mandrel- dug openings beneath footings.

Significance with Mitigation: Less than significant.

Ground Failure or Liquefaction

As explained in Section 4.6.1.2, above, Thornton Junior High School is located in a seismically active region atop upper layers of soil that are generally loose, composed of granular sand and gravels. While the site is outside designated liquefaction hazard zones, the underlying soils lack cohesion, and as a result are susceptible to significant settlement with the strong motions associated with an earthquake. As noted in Section 4.6.1.2, tests performed as part of the geotechnical investigation found that settlement of up to 11 inches could occur as in indirect effect of liquefaction in the event of a large earthquake. This degree of movement could impair the integrity of overlaying structures and facilities. The safety of building occupants and individuals on the site could be compromised, resulting a *significant* impact.

Significance without Mitigation: Significant.

Impact GEO-1b: The proposed project would result in the placement of new buildings in, and relocation of students to, areas susceptible to liquefaction and resulting ground failure in the form of significant dynamic soils settlement, potentially resulting in significant loss, injury, or death.

Mitigation Measure GEO-1b: Implementation of Mitigation Measure GEO-1a.

Significance with Mitigation: Less than significant.

Landslides

As noted in Section 4.6.1.2, above, the project site is not within a landslide hazard zone, as it is nearly level and located within a valley basin. Moreover, proposed project components do not include grading of slopes that are significant enough to exacerbate landslide conditions. As such, the impact would *be less-than-significant.*

GEO-2 The proposed project would not result in substantial soil erosion or the loss of topsoil.

As has been stressed, the proposed project site is generally level, located within an urbanized area, and would not significantly increase the quantity of impervious surfaces. However, clearing, grading, excavation, demolition, and construction activities associated with the proposed project could cause soil erosion and increase the amount of silt and debris carried in runoff.

To minimize these potential impacts, the proposed project would be required to comply with the Statewide General Construction Permit as well as prepare a stormwater pollution prevention plan that requires the incorporation of BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. Because the project would disturb one or more acres, coverage under the Statewide General Construction Permit would apply. The General Construction Permit also requires that, prior to the start of construction activities, the project applicant must file Permit Registration Documents with the State Water Resources Control Board, which includes a Notice of Intent, risk assessment, site map, annual fee, signed certification statement, stormwater pollution prevention plan, and post-construction water balance calculations.

Adherence to applicable water quality regulations, preparation of a stormwater pollution prevention plan, and compliance with the City of Fremont's Municipal Code would ensure that soil erosion is minimized during construction. Consequently, soil erosion impacts would *be less than significant*.

Significance without Mitigation: Less than significant.

GEO-3 The proposed project could be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

As explained under Impact GEO-1, soils beneath the project site lack cohesion and are susceptible to significant settlement resulting from the motions associated with a strong earthquake. Settlement of up to 11 inches could impair the integrity of overlaying structures and facilities. The safety of building occupants and individuals on the site could be compromised, resulting a *potentially significant* impact.

Significance without Mitigation: Potentially significant.

Impact GEO-3: The proposed project would result in the placement of new buildings in, and relocation of students to, an area of unstable soils that is susceptible to significant dynamic soils settlement, potentially resulting in significant loss, injury, or death.

Mitigation Measure GEO-3: Implementation of Mitigation Measure GEO-1a.

Significance with Mitigation: Less than significant.

GEO-4 The proposed project may be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994).

Th proposed project may also be susceptible to the impact of expansive soils. Expansion refers to volume changes that can occur in some clay minerals upon wetting or drying. This change in volume can exert significant outward pressure, enough to damage existing structures and foundation work in some cases.

Expansion Index testing was performed as part of the project geotechnical investigation, and the results indicated that soils in the vicinity of the proposed new buildings have a medium expansion characteristic. According to the authors of the geotechnical investigation, this expansion index should be mitigated at new building site. This is a *potentially significant* impact.

Significance without Mitigation: Potentially significant.

Impact GEO-4: The proposed project would result in the placement of new buildings atop areas of soils that are susceptible to expansion, potentially damaging structures and resulting in significant loss, injury, or death.

> Mitigation Measure GEO-4: The project applicant shall create a zone of low expansion utilizing one of the following two methods recommended in the geotechnical investigation attached as Appendix D. Based on a pre-construction conference with a certified geotechnical consultant and ongoing observation by the geotechnical consultant during the ground improvement process, the project shall implement one or more of the following techniques:
>
> - Imported Fill. Expansive soils shall be replaced with non-expansive imported fill consistent with the expansion and plasticity requirements established in the geotechnical report; or
> - Chemical Treatment. Expansive soils shall be chemically treated by a specialized contractor. Chemicals shall be limited to quicklime and cement that conform to appropriate American Society of Testing and Materials (ASTM) standards.

Significance with Mitigation: Less than significant.

GEO-5	**The proposed project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.**

Th proposed project includes modernization and new construction at an existing school campus that is fully supported by existing, modern sewer systems. As explained in Chapter 3, Project Description, the proposed project would connect to the existing sewer system line beneath Thornton Avenue. It would include installation of 650 feet of 6-inch lines to serve new buildings. The project would also replace the existing sanitary sewer pump station on the campus to accommodate the larger load associated with the addition of 917 students.

No septic tanks or alternative wastewater disposal systems would be required, and the impact would be *less than significant*.

Significance without Mitigation: Less than significant.

GEO-6 The proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Paleontological resources have not been identified on the project site, a previously disturbed urban area. However, because the proposed project requires ground disturbing activities, there could be fossils of potential scientific significance and other unique geologic features that are not recorded. Such ground-disturbing construction associated with development permitted under the proposed project could cause damage to, or destruction of, paleontological resources or unique geologic features. This represents a *potentially significant* impact.

Significance without Mitigation: Potentially significant.

Mitigation Measure GEO-6: If fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery, as needed, in accordance with Society of Vertebrate Paleontology standards, evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction can resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the District for review and approval prior to implementation.

Significance with Mitigation: Less than significant.

4.7.2 CUMULATIVE IMPACTS

GEO-7 The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to geology and soils.

Geology and soils impacts are site specific and generally do not combine to result in cumulative impacts. Additionally, CEQA is concerned with whether project implementation exacerbates existing hazards on-site. Future development projects would be required to comply with applicable State and local building regulations including the CBC and the City of Fremont Municipal Code. Site-specific geologic hazards would be addressed in each project's geotechnical investigation. Therefore, no significant cumulative impact would occur. The impact is *less than significant*.

Significance without Mitigation: Less than significant.

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4.7 GREENHOUSE GAS EMISSIONS

This chapter describes the existing greenhouse gas (GHG) emissions in the area of the project site and evaluates the potential environmental consequences of construction and operation of the proposed project. Additionally, this chapter describes the environmental setting, including regulatory framework and the existing GHG setting and baseline conditions, and identifies mitigation measures, if required, that would avoid or reduce significant impacts. This evaluation is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD or Air District). GHG emissions modeling was conducted using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2, and model outputs are in Appendix B, Air Quality, Greenhouse Gas and Health Risk Modeling, of this Draft EIR.

TERMINOLOGY

The following are definitions for terms used throughout this section.

- **Greenhouse gases (GHG).** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **Global warming potential (GWP).** Metric used to describe how much heat a molecule of a GHG absorbs relative to a molecule of carbon dioxide (CO_2) over a given period of time (20, 100, and 500 years). CO_2 has a GWP of 1.
- **Carbon dioxide-equivalent (CO_2e)**. The standard unit to measure the amount of GHGs in terms of the amount of CO_2 that would cause the same amount of warming. CO_2e is based on the GWP ratios between the various GHGs relative to CO_2.
- **$MTCO_2e$.** Metric ton of CO_2e.
- **$MMTCO_2e$.** Million metric tons of CO_2e.

4.7.2 ENVIRONMENTAL SETTING

4.7.2.1 GREENHOUSE GASES AND CLIMATE CHANGE

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are likely cause of an increase in global average temperatures observed in the 20th and 21st centuries. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent are nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[1,2,3]

[1] Intergovernmental Panel on Climate Change, 2001. Third Assessment Report: Climate Change 2001, New York: Cambridge University Press.

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

The major GHGs are briefly described as follows:

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high GWP gases. The GWP of applicable GHG emissions are shown in Table 4.7-1. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR4) GWP values for methane (CH_4), a project that generates 10 metric tons (MT) of CH_4 would be equivalent to 250 MT of CO_2.[4]

California's GHG Sources and Relative Contribution

In 2018, the statewide GHG emissions inventory was updated for 2000 to 2016 emissions using the GWPs in IPCC's AR4.[5] Based on these GWPs, California produced 429.4 $MMTCO_2e$ GHG emissions in 2016. California's transportation sector was the single largest generator of GHG emissions, producing 40.5 percent of the state's total emissions. Industrial sector emissions made up 23.4 percent, and electric power generation made up 16.1 percent. Other major sectors of GHG emissions include commercial and residential (12.0 percent), agriculture and forestry (7.9 percent) and others (solvents and chemicals) at 0.2 percent.[6]

[3] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (California Air Resources Board, 2017, March 14. Short-Lived Climate Pollutant Reduction Strategy, https://www.arb.ca.gov/cc/shortlived/shortlived.htm). However, State and national GHG inventories do not include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

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

[5] Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (2006).

[6] California Air Resources Board. 2018, July 11. 2018 Edition California Greenhouse Gas Inventory for 2000-2016: By Category as Defined in the 2008 Scoping Plan, https://www.arb.ca.gov/cc/inventory/data/data.htm, accessed on May 8, 2018.

TABLE 4.7-1 GHG EMISSIONS AND THEIR RELATIVE GLOBAL WARMING POTENTIAL COMPARED TO CO_2

GHGs	Second Assessment Report (SAR) Global Warming Potential Relative to CO_2[a]	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO_2[a]	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO_2[a]
Carbon Dioxide (CO_2)	1	1	1
Methane[b] (CH_4)	21	25	28
Nitrous Oxide (N_2O)	310	298	265

Notes: GWP values identified in AR4 are used by BAAQMD to maintain consistency in statewide GHG emissions modeling.
a. Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.
b. The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.
Sources: Intergovernmental Panel on Climate Change, 1995, Second Assessment Report: Climate Change 1995; Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press; Intergovernmental Panel on Climate Change. 2014. Fifth Assessment Report: Climate Change 2014. New York: Cambridge University Press.

California's GHG emissions have followed a declining trend since 2007. In 2016, emissions from routine GHG emitting activities statewide were 429 $MMTCO_2e$, 12 $MMTCO_2e$ lower than 2015 levels. This represents an overall decrease of 13 percent since peak levels in 2004 and 2 $MMTCO_2e$ below the 1990 level and the state's 2020 GHG target. During the 2000 to 2016 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14.0 $MTCO_2e$ per capita to 10.8 $MTCO_2e$ per capita in 2016, a 23 percent decrease. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product) is declining, representing a 38 percent decline since the 2001 peak, while the state's gross domestic product has grown 41 percent during this period.[7]

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation.[8] These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.[9] In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental

[7] California Air Resources Board, 2018. California Greenhouse Emissions for 2000 to 2016 – Trends of Emissions and Other Indicators. https://www.arb.ca.gov/cc/inventory/data/data.htm, accessed October 24, 2018.
[8] Intergovernmental Panel on Climate Change, 2007. *Fourth Assessment Report: Climate Change 2007*, New York: Cambridge University Press.
[9] California Climate Action Team, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime.[10]

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty—for example, on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide average temperatures increased by about 1.7 degrees Fahrenheit (°F) from 1895 to 2011, and warming has been greatest in the Sierra Nevada.[11] The years from 2014 through 2016 have shown unprecedented temperatures with 2014 being the warmest.[12] By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1 to 8.6°F, depending on emissions levels.[13]

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) advanced shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to

[10] Intergovernmental Panel on Climate Change, 2007. *Fourth Assessment Report: Climate Change 2007*, New York: Cambridge University Press.

[11] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

[12] Office of Environmental Health Hazards Assessment, 2018. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf, accessed July 16, 2018.

[13] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

30 days earlier) in the timing of spring flower blooms.[14] Overall, California has become drier over time, with five of the eight years of severe to extreme drought occurring between 2007 and 2016, and unprecedented dry years in 2014 and 2015. Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years occurring from 2012 to 2015.[15]

According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 4.7-1), and the inertia of the Earth's climate system could produce as much as 0.6 degrees Celsius (°C) (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are described below and shown in Table 4.7-2.

- Water Resources Impacts. By late this century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. Even in projections with relatively little or no decline in precipitation, central and southern parts of the state are expected to be drier from the warming effects alone because the spring snowpack will melt sooner, and the moisture in soils will evaporate during long dry summer months.[16]
- Wildfire Risks. Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide is estimated to increase by 58 percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location.[17]
- Health Impacts. Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession, and simultaneous heat waves in several regions throughout the state. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California.[18]

[14] California Climate Action Team, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

[15] Office of Environmental Health Hazards Assessment, 2018. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf, accessed April 3, 2019.

[16] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. http://www.ccst.us/publications/2012/2012ghg.pdf, accessed April 3, 2019.

[17] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. http://www.ccst.us/publications/2012/2012ghg.pdf, accessed April 3, 2019.

[18] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. http://www.ccst.us/publications/2012/2012ghg.pdf, accessed April 3, 2019.

TABLE 4.7-2 SUMMARY OF GHG EMISSIONS RISK TO CALIFORNIA

Impact Category	Potential Risks
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Poor air quality made worse Higher temperatures increase ground-level ozone (i.e., smog) levels
Water Resource Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species

Sources: California Climate Change Center, 2012, Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. California Energy Commission, 2006. Our Changing Climate: Assessing the Risks to California, 2006 Biennial Report, CEC-500-2006-077. California Energy Commission, 2009. The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California. CEC-500-2008-0077. California Natural Resources Agency, 2014. Safeguarding California: Reducing Climate Risk, An Update to the 2009 California Climate Adaptation Strategy.

- Increase Energy Demand. Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the state will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand.[19]

[19] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. http://www.ccst.us/publications/2012/2012ghg.pdf.

4.7.2.2 REGULATORY FRAMEWORK

This section summarizes key federal, State, regional, and City regulations and programs related to GHG emissions resulting from the proposed Thornton Middle School Expansion.

Federal Regulations

The United States Environmental Protection Agency (USEPA) announced on December 7, 2009 that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The USEPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements, but allowed the USEPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[20]

To regulate GHGs from passenger vehicles, the USEPA was required to issue an endangerment finding.[21] The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, HCFCs, PFCs, and SF_6— that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions and, per BAAQMD guidance, they are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

- US Mandatory Report Rule for Greenhouse Gases (2009). In response to the endangerment finding, the USEPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 $MTCO_2e$ per year are required to submit an annual report.
- Update to Corporate Average Fuel Economy Standards (2010 to 2012). The current Corporate Average Fuel Economy (CAFE) standards (for models 2011 to 2016) incorporate stricter fuel economy requirements into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon by 2016). Rulemaking to adopt these new standards was completed in 2010. The federal government issued new standards in 2012 for model years 2017 to 2025, which will require a fleet average of 54.5 miles per gallon in 2025. The USEPA is reexamining the 2017 to 2025 emissions standards.
- USEPA Regulation of Stationary Sources under the Clean Air Act (Ongoing). Pursuant to its authority under the Clean Air Act, the USEPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to the 2013 Climate Action Plan, the USEPA was directed to also develop regulations for existing stationary sources. However, the USEPA is reviewing the Clean Power Plan under the current Energy Independence Executive Order.

[20] U.S. Environmental Protection Agency, 2009. EPA: Greenhouse Gases Threaten Public Health and the Environment. https://yosemite.epa.gov/opa/admpress.nsf/0/08d11a451131bca585257685005bf252, accessed May 10, 2018.

[21] U.S. Environmental Protection Agency, 2009. EPA: Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act. https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean, accessed May 8, 2018.

State Regulations

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05, AB 32, SB 32, Executive Order B-30-15, and SB 375. These are summarized as follows:

- Executive Order S-03-05. Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the state:
  - 2000 levels by 2010.
  - 1990 levels by 2020.
  - 80 percent below 1990 levels by 2050.
- Assembly Bill 32. Also known as the Global Warming Solutions Act (2006), AB 32 was signed August 31, 2006, in order to reduce California's contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05. Under AB 32, California Air Resources Board (CARB) prepared the *2008 Climate Change Scoping Plan*, the *2014 Climate Change Scoping Plan,* and the *2017 Climate Change Scoping Plan,* which is discussed below.
  - CARB 2008 Scoping Plan. The 2008 Scoping Plan, adopted by CARB on December 11, 2008, identified that GHG emissions in California are anticipated to be 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state. To effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

    First Update to the Scoping Plan. CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan, adopted May 22, 2014, highlights California's progress toward meeting the near-term 2020 GHG emission reduction goal defined in the 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, are slightly higher at 431 $MMTCO_2e$.[22] As identified in the Update to the Scoping Plan, California is on track to meet the goals of AB 32. The update also addresses the state's longer-term GHG goals in a post-2020 element. The post-2020 element provides a high-level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the State to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals.[23] CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets

[22] California Air Resources Board, 2014. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006.

[23] California Air Resources Board, 2014. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006.

will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit.[24]

- Executive Order B-30-15. Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.
- Senate Bill 32 and Assembly Bill 197. In September 2016, SB 32 and AB 197 were signed into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.
  - 2017 Climate Change Scoping Plan Update. Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan Update (2017 Scoping Plan) to address the 2030 target for the State. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.[25]

    California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (i.e., methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and toxic air contaminants (TACs) emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

    - Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZE vehicle buses and trucks.
    - Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
    - Implementation of SB 350, which expands the Renewables Portfolios Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.

[24] California Air Resources Board, 2014. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006.

[25] California Air Resources Board, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed May 10, 2018.

- California Sustainable Freight Action Plan, which improves freight system efficiency, and utilizes near-zero emissions technology, and deployment of ZE vehicle trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to the statewide strategies listed above, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the State's long-term GHG reduction goals and recommended local actions to reduce GHG emissions; for example, statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the State's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have the discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population)—consistent with the Scoping Plan and the State's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the business-as-usual (BAU) yardstick—that is, what would the GHG emissions look like if the State did nothing at all beyond the policies that are already required and in place to achieve the 2020 limit, as shown in Table 4.7-3. It includes the existing renewables requirements, advanced clean cars, the "10 percent" LCFS, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

TABLE 4.7-3 2017 CLIMATE CHANGE SCOPING PLAN EMISSIONS REDUCTIONS GAP TO ACHIEVE THE 2030 GHG TARGET

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	**260**
Gap to 2030 Target with Known Commitments	**60**

Source: California Air Resources Board, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed on August 28, 2018.

Table 4.7-4 provides GHG emissions by sector, for 1990, and the range of GHG emissions for each sector estimated for 2030, and the percent change compared to 1990 levels.

TABLE 4.7-4 2017 CLIMATE CHANGE SCOPING PLAN EMISSIONS BY SECTOR TO ACHIEVE THE 2030 GHG TARGET

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24-25	-8% to -4%
Residential and Commercial	44	38-40	-14% to -9%
Electric Power	108	30-53	-72% to -51%
High GWP	3	8-11	267% to 367%
Industrial	98	83-90	-15% to -8%
Recycling and Waste	7	8-9	14% to 29%
Transportation (including TCU)	152	103-111	-32% to -27%
Net Sink[a]	-7	TBD	TBD
Sub Total	431	294-339	-32% to -21%
Cap-and-Trade Program	NA	24-79	NA
Total	**431**	**260**	**-40%**

Notes: TCU = Transportation, Communications, and Utilities; TBD = To Be Determined.
a. Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.
Source: California Air Resources Board. 2017, California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed on August 28, 2018.

- **Senate Bill 375.** In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to

establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. Pursuant to the recommendations of the Regional Transportation Advisory Committee (RTAC), CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target.

- 2017 Update to the SB 375 Targets. CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018.[26] The updated targets become effective on October 1, 2018. The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies, and any potential future state strategies, such as statewide road user pricing.

  The proposed targets call for greater per-capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCS to achieve the SB 375 targets. For next SCS update, CARB's updated targets for the MTC/ABAG region are a 10 percent per capita GHG reduction in 2020 from 2005 levels (compared to 7 percent under the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 15 percent). CARB foresees that the additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies.[27]

- Transportation Sector Regulations – Assembly Bill 1493. Also known as Pavley I, AB 1493 is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the USEPA. In 2012, the USEPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles (see also the discussion on the update to the CAFE standards under the heading for Federal Regulations, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.[28]

[26] California Air Resources Board, 2018. Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emissions Reduction Targets.

[27] California Air Resources Board, 2018. Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emissions Reduction Targets.

[28] See also the discussion on the update to the CAFE standards under Federal Laws, above. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single

- **Transportation Sector Regulations – Executive Order S-01-07.** On January 18, 2007, the state set a new LCFS for transportation fuels sold in California. Executive Order S-01-07 sets a declining standard for GHG emissions measured in CO_2e gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The LCFS applies to refiners, blenders, producers, and importers of transportation fuels and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle," using the most economically feasible methods.
- **Transportation Sector Regulations – Executive Order B-16-2012.** Signed on March 23, 2012, the State required CARB, the California Energy Commission, the Public Utilities Commission, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are zero-emission by 2015 and at least 25 percent by 2020. The executive order also stabled a target for the transportation sector of reducing GHG emissions 80 percent below 1990 levels.
- **Renewable Portfolio/Carbon Neutrality Regulations – Senate Bills 1078, 107, and X1-2, and Executive Order S-14-08.** A major component of California's Renewable Energy Program is the renewable portfolios standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the RPS to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.
- **Renewable Portfolio/Carbon Neutrality Regulations – Senate Bill 350.** Signed in September 2015, SB 350 establishes tiered increases the RPS to 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.
- **Renewable Portfolio/Carbon Neutrality Regulations – Senate Bill 100.** On September 10, 2018, Governor Brown signed SB 100, which raises California's RPS requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

- Renewable Portfolio/Carbon Neutrality Regulations – Executive Order B-55-18. Executive Order B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive Order B-55-18 directs CARB to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions should be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.
- Energy Efficiency Regulations – California Building Code: Building Energy Efficiency Standards. Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, go into effect starting January 1, 2020.[29] The 2019 standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less. The 2019 standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; and 4) nonresidential lighting requirements.[30] Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards, and single-family homes will be 7 percent more energy efficient. When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards.[31]
- Energy Efficiency Regulations – California Building Code: CALGreen. On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 California Code of Regulations, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[32] The mandatory provisions of the 2016 CalGreen building standards became effective on January 1, 2017. The CEC adopted the 2019 CALGreen on May 9, 2018, and it becomes effective January 1, 2020.

[29] California Energy Commission, 2015. 2016 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf, accessed May 10, 2018.

[30] California Energy Commission, 2018. Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. News Release.

[31] California Energy Commission, 2018. 2019 Building Energy and Efficiency Standards Frequently Asked Questions. http://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf, accessed September 5, 2018.

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

- **Energy Efficiency Regulations – 2006 Appliance Efficiency Regulations.** Adopted by the California Energy Commission on October 11, 2006, the 2006 Appliance Efficiency Regulations (Title 20, California Code of Regulations, Sections 1601 through 1608) were approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business-as-usual," they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.
- **Solid Waste Regulations – Assembly Bill 939.** California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code 40050 *et seq.*) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.
- **Solid Waste Regulations – Assembly Bill 341.** AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.
- **Solid Waste Regulations – Assembly Bill 1327.** The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code Sections 42900 *et seq.*) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own..
- **Solid Waste Regulations – Assembly Bill 1826.** AB 1826, signed on October of 2014, requires businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings with five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.
- **Water Efficiency Regulations – SBX7-7.** The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009 to 2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

- Water Efficiency Regulations –Assembly Bill 1881. The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.
- Short-Lived Climate Pollutants – Senate Bill 1383. On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 requires the State board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also establishes targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the "Final Proposed Short-Lived Climate Pollutant Strategy," which identifies the State's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use.[33] In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

Regional Plans and Regulations

Plan Bay Area

Plan Bay Area is the Bay Area's RTP/SCS and was adopted jointly by ABAG and MTC on July 26, 2017. It lays out a development scenario for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by CARB. The 2040 *Plan Bay Area* is a limited and focused update to the 2013 *Plan Bay Area*, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years. As part of the implementing framework for *Plan Bay Area*, local governments have identified Priority Development Areas (PDAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas within existing communities. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 is allocated in PDAs. Per the 2040 *Plan Bay Area*, while the projected number of new housing units and new jobs within PDAs would increase to 629,000 units and 707,000 jobs compared to the 2013 *Plan Bay Area*, its overall share would be reduced to 77 percent and 55 percent.[34] However, the 2040 *Plan Bay Area* remains on track to meet a 16 percent per capita reduction of GHG emissions by 2035 and a 10 percent

[33] California Air Resources Board, 2017. Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf, accessed May 10, 2018.

[34] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017. *Plan Bay Area* 2040 Plan.

per capita reduction by 2020 from 2005 conditions.[35] The project site is within the Centerville Transit Neighborhood PDA.[36]

Bay Area Clean Air Plan

BAAQMD adopted the 2017 *Clean Air Plan, Spare the Air, Cool the Climate* on April 19, 2017. The 2017 *Clean Air Plan* also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.[37]

A comprehensive multipollutant control strategy has been developed to be implemented in the next 3 to 5 years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, toxic air contaminants, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

Bay Area Commuter Benefits Program

Under Air District Regulation 14, Model Source Emissions Reduction Measures, Rule 1, Bay Area Commuter Benefits Program, employers with 50 or more full-time employees within the BAAQMD are

[35] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017. Plan Bay Area 2040 Plan.

[36] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017. Plan Bay Area 2040 Plan. Priority Development Areas (Plan Bay Area 2040) ArcGIS. https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=56ee3b41d6a242e5a5871b043ae84dc1.

[37] Bay Area Air Quality Management District, 2017. Final 2017 *Clean Air Plan*, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans, accessed July 18, 2018.

required to register and offer commuter benefits to employees. In partnership with the BAAQMD and the Metropolitan Transportation Commission (MTC), the rule's purpose is to improve air quality, reduce GHG emissions, and decrease the Bay Area's traffic congestion by encouraging employees to use alternative commute modes, such as transit, vanpool, carpool, bicycling, and walking. The benefits program allows employees to choose from one of four commuter benefit options including a pre-tax benefit, employer-provided subsidy, employer-provided transit, and alternative commute benefit.

4.7.2.3 EXISTING CONDITIONS

Operation of the existing school generates GHG emissions from natural gas used for energy, heating, and cooking; electricity usage; vehicle trips for employees and student pick-up and drop-off; area sources such as landscaping equipment and consumer cleaning products; water demand; wastewater generation; and solid waste generation.

4.7.3 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant greenhouse gas emission impact if it would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

4.7.3.1 BAAQMD STANDARDS OF SIGNIFICANCE

BAAQMD has adopted CEQA Guidelines to evaluate GHG emissions impacts from development projects.[38] Land use development projects include residential, commercial, industrial, and public land use facilities. Direct sources of emissions may include on-site combustion of energy, such as natural gas used for heating and cooking, emissions from industrial processes (not applicable for most land use development projects), and fuel combustion from mobile sources. Indirect emissions are emissions produced off-site from energy production, water conveyance due to a project's energy use and water consumption, and nonbiogenic emissions from waste disposal. Biogenic CO_2 emissions are not included in the quantification of a project's GHG emissions, because biogenic CO_2 is derived from living biomass (e.g., organic matter present in wood, paper, vegetable oils, animal fat, food, animal, and yard waste) as opposed to fossil fuels. BAAQMD is currently updating their CEQA Guidelines. Under the 2017 CEQA Guidelines, BAAQMD identified a tiered approach for assessing GHG emissions impacts of a project:

1. Consistency with a Qualified Greenhouse Gas Reduction Strategy. If a project is within the jurisdiction of an agency that has a "qualified" GHG reduction strategy, the project can assess consistency of its GHG emissions impacts with the reduction strategy.

[38] Bay Area Air Quality Management Agency, 2017. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed May 8, 2018.

2. BAAQMD Screening Level Sizes. BAAQMD has adopted screening criteria for development projects that would be applicable for the proposed project based on the square footage, units, acreage, students, and/or employees generated by a project. Typical projects that meet the screening criteria do not generate emissions greater than 1,100 $MTCO_2e$ and would not generate significant GHG emissions.

3. Brightline Screening Threshold. BAAQMD adopted screening criteria for development projects of 1,100 $MTCO_2e$ per year that would be applicable for the proposed project. If a project exceeds the BAAQMD Guidelines' GHG screening-level sizes or screening criteria of 1,100 $MTCO_2e$.

4. Efficiency Threshold. AB 32 requires the statewide GHG emission to be reduced to 1990 levels by 2020. On a per-capita basis, that means reducing the annual emissions of 14 tons of carbon dioxide for every person in California down to about 10 tons per person by 2020.[39] Hence, BAAQMD's per capita significance threshold is calculated based on the State's land use sector emissions inventory prepared by CARB and the demographic forecasts for the 2008 Scoping Plan. The land use sector GHG emissions for 1990 were estimated by BAAQMD, as identified in Appendix D of the BAAQMD CEQA Guidelines, to be 295.53 $MMTCO_2e$ and the 2020 California service population (SP) to be 64.3 million. Therefore, the threshold that would ensure consistency with the GHG reduction goals of AB 32 is estimated at 4.6 $MTCO_2e$ per service population per year ($MTCO_2e$/SP/yr) for year 2020.[40]

4.7.4 METHODOLOGY

This GHG emissions evaluation was prepared in accordance with the requirements of CEQA to determine if significant greenhouse gas impacts are likely to occur in conjunction with future development that would be accommodated by the proposed project. The Air District has published the CEQA Air Quality Guidelines that provides local governments with guidance for analyzing and mitigating GHG emissions impacts and was used in this analysis. The project GHG emissions inventory includes the following sectors:

- On-Road Transportation. Transportation emissions are based on the trip generation and average student trip length of one mile provided by Kittelson & Associates, Inc. (see Appendix G of this Draft EIR). The fleet mix in CalEEMod was adjusted to reflect a higher proportion of passenger vehicles used for student drop off and employee vehicles.
- Area Sources. Area sources generated from use of consumer products and cleaning supplies are based on California Emissions Estimator Model (CalEEMod), Version 2016.3.2 default emission rates and on the assume building square footages.
- Energy. GHG emissions from electricity use and energy use (natural gas used for cooking, heating, etc.) are based on the CalEEMod default energy usage for school land uses. New buildings are assumed to comply with the 2019 Building Energy Efficiency Standards, which are 30 percent more energy efficient for nonresidential buildings than 2016 Standards (CEC 2018). The carbon intensity of electricity is based the power mix for the East Bay Community Energy (EBCE) data and the most recent data from the USEPA's Emissions & Generation Resource Integrated Database (eGRID).[41] Since

[39] California Air Resources Board, 2008. Climate Change Proposed Scoping Plan, a Framework for Change.
[40] Bay Area Air Quality Management Agency, 2017. California Environmental Quality Act Air Quality Guidelines.
[41] East Bay Community Energy, 2019. Power Mix. https://ebce.org/power-mix/, accessed March 22, 2019.

existing uses are assumed to be less efficient than the proposed buildings, the net emissions were based on the proposed building square footage minus the existing. Therefore, emissions from energy use are conservative.

- Solid Waste Disposal. Indirect emissions from waste generation are based on CalRecycle solid waste generation rates in CalEEMod, based on the increase in students at the Thornton school campus. Emissions calculated using CalEEMod include biogenic emissions generated from solid waste.
- Water/Wastewater: GHG emissions from this sector are associated with the embodied energy used to supply water, treat water, distribute water, and then treat wastewater and fugitive GHG emissions from wastewater treatment. Emissions are based on the CalEEMod default rates associated with the increase in students onsite for indoor water use. No increase in exterior water use is anticipated at the Thornton school campus.
- Construction. Modeling is based on the construction schedule provided for Increment 1 (site preparation, February 2020 to June 2020), and Increment 2 (new construction and modernization, August 2020 to August 2022) provided by the District. The duration of the construction subphases was normalized based on the CalEEMod defaults. Modeling assumes 50,000 square feet of asphalt removal (741 tons) during Increment 1 and 13,000 square feet of hardscape/asphalt removal (193 tons) during increment 2 for a total of 63,000 square feet of asphalt removal (933 tons). Modeling assuming 2,931 square feet of building demolition (135 tons) during Increment 1 and 4,109 square feet of building demolition (189 tons) during Increment 2 for a total of 7,040 square feet of buildings removed (324 tons) The construction equipment mix is based on the CalEEMod defaults associated with up to 12.33 acres of disturbed area on the campus. However, concrete crushing and processing equipment was added to the demolition phase to account for reuse of the asphalt demolished as aggregate base during grading activities. Construction worker and vendor trips are based on the CalEEMod defaults for the 45,441 square feet of new construction and 56,743 square feet of building modernization and account for watering trucks during ground disturbance to reduce fugitive dust. Construction emissions associated with the proposed project are amortized based on a 30-year building lifetime.[42]

Life-cycle emissions are not included in this analysis because not enough information is available for the proposed project. Therefore, life-cycle GHG emissions would be speculative.[43] Additionally, black carbon

[42] International Energy Agency, 2008. Energy Efficiency Requirements in Building Codes, Energy Efficiency Policies for New Buildings.

[43] Life-cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analyses was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction phases of individual development projects is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted. (Governor's Office of Planning and Research, 2008. CEQA and Climate Change: Addressing Climate Change through CEQA Review. Technical Advisory. http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf.

emissions are not included in the GHG analysis because CARB does not include this pollutant in the State's AB 32 inventory and treats this short-lived climate pollutant separately.[44]

4.7.5 IMPACT DISCUSSION

GHG-1 The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Development under the proposed project would contribute to global climate change through direct and indirect GHG emissions from transportation sources, energy (natural gas and purchased energy), water use and wastewater generation, waste generation, and other, off-road equipment (e.g., landscape equipment, construction activities). The following is a discussion of the project's contribution to GHG emissions during both the construction and operation phases.

Construction

The Air District does not have thresholds of significance for construction-related GHG emissions, which are one-time, short-term emissions and therefore would not significantly contribute to the long-term cumulative GHG emissions impacts of the proposed project. One-time, short-term emissions are converted to average annual emissions by amortizing them over the service life of a building. For buildings in general, it is reasonable to look at a 30-year time frame, since this is a typical interval before a new building requires the first major renovation.[45] The net increase in emissions generated by the proposed project was evaluated using CalEEMod, Version 2016.3.2.

As shown in Table 4.7-5, when evaluated over an average 30-year project lifetime, average annual construction emissions from the proposed project would represent a nominal source of GHG emissions and would not exceed the Air District's *de minimis* bright-line threshold of 1,100 $MTCO_2e$/year. Accordingly, construction GHG emissions from the proposed project would be *less than significant* and no mitigation measures are required.

TABLE 4.7-5 GHG EMISSIONS – CONSTRUCTION PHASE

Category	GHG Emissions ($MTCO_2e$/Year)
2020	785
2021	879
2022	608
Total Construction Emissions (Years 2020 to 2021)	2,273
30-Year Project Life Construction[a]	76

Note: Emissions may not total to 100 percent due to rounding.
a. The construction evaluation is amortized over the 30-year estimated life of the proposed project.
Source: CalEEMod 2016.3.2.

[44] Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The State's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within 10 years. (California Air Resources Board, 2017a. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/shortlived.htm.

[45] International Energy Agency, 2008. Energy Efficiency Requirements in Building Codes, Energy Efficiency Policies for New Buildings.

Operation

The total and net increase of GHG emissions that are associated with the proposed project are shown in Table 4.7-6. As shown in this table, development of the proposed project would result in a net increase of GHG emissions of 436 $MTCO_2e$ per year. The increase in GHG emissions would not exceed the Air District's bright-line screening threshold of 1,100 $MTCO_2e$. Therefore, project-related GHG emissions during the operational phase of the proposed project would be *less than significant* and no mitigation measures are required.

Significance without Mitigation: Less than significant.

TABLE 4.7-6 NET CHANGE IN PROJECT GHG EMISSIONS – OPERATIONAL PHASE

Sector	GHG Emissions (MTCO2e/Year) Net Change
Area	<1
Energy	59
On-Road Mobile Sources	291
Waste	83
Water/Wastewater	3
Total	**436**
Air District Bright-Line Threshold	1,100 $MTCO_2e$/ Year
Exceeds Bright-Line Threshold?	**No**

Notes: Emissions may not total to 100 percent due to rounding. NA = not applicable. Conservatively assumes buildings would be constructed to the 2019 Building Energy Efficiency Standards (effective January 1, 2020).
Source: CalEEMod 2016.3.2.

GHG-2 The proposed project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The following discusses project consistency with applicable plans adopted for the purpose of reducing GHG emissions, which include CARB's Scoping Plan and MTC/ABAG's *Plan Bay Area 2040*.

CARB Scoping Plan

CARB's Climate Change Scoping Plan outlines the State's strategies to reduce GHG emissions in accordance with the targets established under AB 32 and SB 32. The Scoping Plan is applicable to State agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Statewide strategies to reduce GHG emissions in the 2017 Climate Change Scoping Plan include: implementing SB 350, which expands the RPS to 50 percent by 2030 and doubles energy efficiency savings; expanding the Low Carbon Fuel Standards (LCFS) to 18 percent by 2030; implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks; implementing the Sustainable Freight Action Plan; implementing the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons to 40 percent below 2013 levels by 2030 and black carbon emissions to 50 percent below 2013 levels by 2030; continuing to implement SB 375; creating a post-2020 Cap-and-Trade Program; and developing an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

The project's GHG emissions, shown in Tables 4.7-5 and 4.7-6 under Impact GHG-1 discussion, include reductions associated with statewide strategies that have been adopted since AB 32 and SB 32. Statewide strategies to reduce GHG emissions include the low carbon fuel standards, California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the CAFE standards, and other early action measures as necessary to ensure the State is on target to achieve the GHG emissions reduction goals of AB 32 and SB 32. In addition, new buildings are required to comply with the current Building Energy Efficiency Standards and CALGreen. The proposed project would comply with these GHG emissions reduction measures since they are statewide strategies. The project's GHG emissions would be reduced from compliance with statewide measures that have been adopted since AB 32 and SB 32 were adopted. Therefore, impacts would be *less than significant*.

Plan Bay Area

As discussed, as part of the implementing framework for *Plan Bay Area 2040*, local governments have identified PDAs to focus growth. The project is within the Freemont Centerville Transit Neighborhood PDA.[46] The proposed project would increase student density at the Thornton school campus, preventing the need for the District to develop new schools on greenfield sites to accommodate demand for student services. Thus, the project would be consistent with the overall goals of *Plan Bay Area 2040* in concentrating new development in locations where there is existing infrastructure. Therefore, the proposed project would not conflict with the land use concept plan in *Plan Bay Area 2040* and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

4.7.6 CUMULATIVE IMPACTS

GHG-3 The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to greenhouse gas emissions.

Project-related GHG emissions are not confined to a particular air basin, but are dispersed worldwide. Therefore, impacts under Impact GHG-1 are not project-specific impacts to global warming, but the proposed project's contribution to this cumulative impact. As discussed under Impact GHG-1, implementation of the project would not exceed South Coast Air Quality Management District's bright-line threshold. Therefore, project-related GHG emissions and their contribution to global climate change would not be cumulatively considerable, and GHG emissions impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

[46] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017. Plan Bay Area 2040 Plan. Priority Development Areas (Plan Bay Area 2040) ArcGIS. https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=56ee3b41d6a242e5a5871b043ae84dc1.

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4.8 HAZARDS AND HAZARDOUS MATERIAL

This chapter describes the regulatory framework and existing conditions on the project site related to hazards and hazardous materials, and an evaluation of the potential environmental consequences associated with the construction and operation of the proposed project that are related to the release of hazardous materials into the environment. The analysis in this section is based, in part, upon the following documents:

Fremont Unified School District, March 2019, Phase I Environmental Site Assessment, Thornton Junior High School Conversion (attached as Appendix E).

Fremont Unified School District, August 2019, Preliminary Environmental Assessment, Thornton Junior High School Conversion (referenced as necessary).

4.8.1 ENVIRONMENTAL SETTING

4.8.1.1 REGULATORY FRAMEWORK

Federal

Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

Federal hazardous waste laws are generally promulgated under the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments of 1984. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. The Department of Toxic Substances Control (DTSC) is responsible for implementing the Resource Conservation and Recovery Act program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law. Under the Certified Unified Program Agency (CUPA) program, the California Environmental Protection Agency (CalEPA) has in turn delegated enforcement authority to Alameda County for State law regulating hazardous waste producers or generators in Fremont. A CUPA is a local agency that has been certified by CalEPA to implement the local Unified Program. The CUPA can be a county, city, or joint powers authority. A participating agency is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. A designated agency is a local agency that has not been certified by CalEPA to become a CUPA but is the responsible local agency that would implement the six Unified Programs until they are certified. Currently, there are 83 CUPAs in California.

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA), also known as Title III of the Superfund Amendments and Reauthorization Act, was enacted in October 1986. This law requires any infrastructure at the State and local levels to plan for chemical emergencies. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their

community. EPCRA Sections 301 through 312 are administered by U.S. Environmental Protection Agency's (USEPA) Office of Emergency Management. The USEPA's Office of Information Analysis and Access implements the EPCRA Section 313 program. In California, Superfund Amendments and Reauthorization Act Title III is implemented through California Accidental Release Prevention program. The State of California has delegated local oversight authority of the California Accidental Release Prevention program to Alameda County.

Hazardous Materials Transportation Act

The United States Department of Transportation regulates hazardous materials transportation under Title 49 of the Code of Federal Regulations. State agencies that have primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. The California State Fire Marshal's Office has oversight authority for hazardous materials liquid pipelines. The California Public Utilities Commission has oversight authority for natural gas pipelines in California. These agencies also govern permitting for hazardous materials transportation.

Federal Response Plan

The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies and other resource providers, including the American Red Cross, that: 1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of State and local governments overwhelmed by a major disaster or emergency; 2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and 3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a Presidential declaration of a major disaster or emergency. The Federal Response Plan is part of the National Response Framework, which was most recently updated on June 2016.

Robert T. Stafford Disaster Relief and Emergency Assistance Act

The Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 authorizes the federal government to aid in emergencies and disasters when State and local capabilities are exceeded. The Robert T. Stafford Disaster Relief and Emergency Assistance Act constitutes statutory authority for most federal disaster response activities, especially as they pertain to the federal Emergency Management Agency and its programs.

National Response Framework

The 2016 National Response Framework, published by the Department of Homeland Security, is a guide to how the nation responds to all types of disasters and emergencies. The Framework describes specific authorities and best practices for managing incidents that range from serious local to large-scale terrorist attacks or catastrophic natural disasters. In addition, the Framework describes the principles, roles, and responsibilities, and coordinating structures for responding to an incident, and further describes how response efforts integrate with those of the other mission areas.

Occupational Safety and Health Administration

The federal Occupational Safety and Health Act of 1970 authorizes each state (including California) to establish their own safety and health programs with the U.S. Department of Labor, Occupational Safety and Health Administration's (OSHA) approval. The California Department of Industrial Relations regulates implementation of worker health and safety in California. California OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices. California standards for workers dealing with hazardous materials are contained in Title 8 of the California Code of Regulations and include practices for all industries (General Industrial Safety Orders), and specific practices for construction and other industries. Workers at hazardous waste sites (or working with hazardous wastes as might be encountered during excavation of contaminated soil) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response regulations.

OSHA Regulation 29 Code of Federal Regulations Standard 1926.62 regulates the demolition, renovation, or construction of buildings involving lead materials. Federal, State, and local requirements also govern the removal of asbestos or suspected asbestos-containing materials (ACMs), including the demolition of structures where asbestos is present. All friable (crushable by hand) ACMs, or non-friable ACMs subject to damage, must be abated prior to demolition following all applicable regulations.

State

California Building Code

The State of California provided a minimum standard for building design through the California Building Code (CBC), which is in Part 2 of Title 24 of the California Code of Regulations. The CBC is based on the 2015 International Building Code but has been modified for California conditions. The CBC is updated every three years, and the current CBC went into effect in January 2017. The 2019 CBC was published July 1, 2019, with an effective date of January 1, 2020. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local city and county building officials for compliance with the typical fire safety requirements of the CBC, including the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas.

California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. This is the official Fire Code for the State and all political subdivisions. It is in Part 9 of Title 24 of the California Code of Regulations. The CFC is revised and published approximately every three years by the California Building Standards Commission.

California Governor's Office of Emergency Services

The California Governor's Office of Emergency Services (Cal OES) began as the State War Council in 1943. With an increasing emphasis on emergency management, it officially became Cal OES in 1970. The California Emergency Management Agency (CalEMA) was established as part of the Governor's Office on January 1, 2009—created by Assembly Bill 38 (Nava), which merged the duties, powers, purposes, and responsibilities of the former Governor's Office of Emergency Services with those of the Governor's Office of Homeland Security. The CalEMA was responsible for the coordination of overall State agency response to major disasters in support of local government. The agency was also responsible for assuring the State's readiness to respond to and recover from all hazards—natural, manmade, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts. On July 1, 2013, Governor Edmund G. Brown Jr.'s eliminated CalEMA and restored it to the Governor's Office as Cal OES.

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped fire threat potential throughout California.[1] The CAL FIRE ranks fire threat based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The rankings include no fire threat, moderate, high, and very high fire threat. Additionally, the CAL FIRE produced the *2010 Strategic Fire Plan for California*, which contains goals, objectives, and policies to prepare for and mitigate for the effects of fire on California's natural and built environments.[2]

California Environmental Protection Agency

CalEPA was created in 1991, unifying California's environmental authority in a single cabinet-level agency and bringing the California Air Resources Board (Air Resources Board), State Water Resources Control Board, Regional Water Quality Control Boards (RWQCBs), California Department of Resources Recycling and Recovery (formerly the Integrated Waste Management Board), DTSC, Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation under one agency. These agencies were placed within the CalEPA is the "umbrella" for the protection of human health and the environment and to ensure the coordinated deployment of state resources. Its mission is to restore, protect, and enhance the environment, to ensure public health, environmental quality, and economic vitality.

Division of the State Architect

The Division of the State Architect (DSA) is headed by the governor-appointed State Architect. The DSA is in the Department of General Services. The DSA reviews seismic, fire and life safety, and accessibility of school construction and modernization projects. DSA approval is required for all school projects regardless of funding status.

[1] California Department of Forestry and Fire Protection. http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_development.php, accessed August 10, 2018.

[2] California Department of Forestry and Fire Protection, 2010. *2010 Strategic Fire Plan for California,* http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf668.pdf, accessed August 10, 2018.

Department of Toxic Substance Control

The DTSC is a department of CalEPA and is the primary agency in California that regulates hazardous waste, cleans-up existing contamination, and looks for ways to reduce the hazardous waste produced in California. The DTSC regulates hazardous waste in California primarily under the authority of the federal Resource Conservation and Recovery Act and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Government Code Section 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, Department of Health Services (DHS) lists of contaminated drinking water wells, sites listed by the State Water Resources Control Board as having underground storage tank (UST) leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

Regional Water Quality Control Board

The Regional Water Quality Control Board (RWQCB) is a department of CalEPA that oversees investigation and cleanup of sites including underground storage tanks where wastes have been discharged in order to protect the water quality of the state. The RWQCB regulates wastewater discharges to surface waters and to groundwater. They also regulate storm water discharges from construction, industrial, and municipal activities.

California Health and Safety Code and Code of Regulations

California Health and Safety Code Chapter 6.95 and California Code of Regulations, Title 19, Section 2729 set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on-site. A business which uses hazardous materials, or a mixture containing hazardous materials, must establish and implement a business plan if the hazardous material is handled in certain quantities.

Asbestos-Containing Materials Regulations

State-level agencies, in conjunction with the USEPA and OSHA, regulate removal, abatement, and transport procedures for asbestos-containing materials (ACMs). Releases of asbestos from industrial, demolition, or construction activities are prohibited by these regulations and medical evaluation and monitoring is required for employees performing activities that could expose them to asbestos. Additionally, the regulations include warnings that must be heeded and practices that must be followed to reduce the risk for asbestos emissions and exposure. Finally, federal, State, and local agencies must be notified prior to the onset of demolition or construction activities with the potential to release asbestos.

Regional

San Francisco Bay Regional Water Quality Control Board

The Porter-Cologne Water Quality Act[3] established the State Water Resources Control Board and divided the state into nine regional basins, each under the jurisdiction of a RWQCB. The San Francisco Bay Region (Region 2) RWQCB (San Francisco Bay RWQCB) regulates water quality in the project area. The San Francisco Bay RWQCB has the authority to require groundwater investigations when the quality of groundwater or surface waters of the state is threatened, and to require remediation actions, if necessary.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products (which are the responsibility of CalEPA and the California Air Resources Board). The Bay Area Air Quality Management District is responsible for preparation of attainment plans for non-attainment criteria pollutants, control of stationary air pollutant sources, and issuance of permits for activities, including demolition and renovation activities affecting asbestos containing materials (District Regulation 11, Rule 2) and lead (District Regulation 11, Rule 1).

Alameda County Department of Environmental Health

The Alameda County Department of Environmental Health (ACDEH) is the Certified Unified Program Agency (CUPA) that coordinates and enforces numerous local, state, and federal hazardous materials management and environmental protection programs in the county. The CUPA administers the following programs:

- Hazardous Materials Business Plan Program
- Hazardous Waste Generator Program
- Underground Storage Tank Program
- California Accidental Release Prevention Program
- Tiered Permitting Program

Alameda County Emergency Operations Plan

Fremont is within the jurisdiction of the Alameda County Emergency Operations Plan. The objective of the Plan is to coordinate all emergency facilities and personal of County jurisdictions into an efficient organization capable of effective emergency response. The Plan establishes the administration of emergency response programs such as alerts and warnings, continuity of governance and training. It outlines responsibility strictures, mutual aid systems and coordination requirements, as well as various recovery operations.

[3] California Water Code Sections 13000 *et seq*.

Local

City of Fremont Disaster Management Operations Plan

Per the Safety Element of the Fremont General Plan, the Disaster Management Operations Plan (DMOP) "is a comprehensive approach to emergency preparedness, addressing possible hazards which might result from an emergency such as a natural disaster, technological incident, nuclear defense, and civil disorder or terrorism. The Plan provides the basic guidelines for organization, authority, duties, services and staff during a disaster and is intended to be coordinated with State, regional and county emergency plans."[4] The DMOP provides procedures for the evacuation or relocation of people from hazardous areas during natural disasters. Evacuation routes suited for different types of potential disasters are identified.

City of Fremont Hazardous Material Area Plan for Emergency Response

This plan, last updated in 2009, is for emergency preparedness in the event of a disaster related to hazardous material use, storage or movement. The plan includes lists and maps showing where significant quantities of hazardous materials are stored, and in some instances, evacuation routes and the location of sensitive receptors such as schools, hospitals, and nursing homes. The Plan includes the following policies related to development review and emergency response:

City of Fremont General Plan

The Safety Element of the City of Fremont General Plan contains policies and measures to ensure that new development does not impede with emergency preparedness or plans. These include:

- Policy 10-4.3: Access and Clearance. Require adequate access and clearance for fire equipment, fire suppression personnel, and evacuation for new development.
  - Implementation 10-4.3.A: Development Review. Review new projects for necessary fire access, street widths and clearances.
  - Implementation 10-4.3.B: Development Criteria. Require all development to provide adequate access and clearance and other fire safety measures as appropriate and require additional vehicular access or clearance areas as determined by the Fire Department and local amendments to the Fire Code.

City of Fremont Local Hazard Mitigation Plan

The Fremont Local Hazard Mitigation Plan implements activities that reduce the cause or occurrence of hazards; reduce exposure to hazards; or reduce effects of hazards through preparedness, response and recovery measures. The Plan is part of an ongoing process to evaluate the risks that pose hazards to Fremont and engage key stakeholders in identifying the most important steps to reduce these risks. The Plan outlines the potential hazards that may impact Fremont and describes how the City will prepare for and respond to emergencies and disasters.

[4] City of Fremont General Plan Safety Element, 2011, page 10-37.

City of Fremont Fire Department

The mission of the Fremont Fire Department (FFD) Department of Emergency Services is to partner with the community and be collectively responsible for mitigating, preparing for, responding to, and recover from disasters. The FFD administers and enforces all applicable State and local fire codes and standards, and fire investigations. Code enforcement is accomplished through the review and approval of building and facility plans, inspection of completed work, and certification of occupancy.

4.8.1.2 EXISTING CONDITIONS

This section describes existing conditions related to hazardous materials, airport hazards, and wildland fires associated with the proposed project.

Hazardous Materials Sites

The subject property is an occupied junior high school built in 1963 and surrounded primarily by residential land use.

Properties listed on the DTSC's EnviroStor,[5] RWQCB's Geotracker,[6] and USEPA's EnviroMapper[7] databases and located within 0.25 miles from the proposed project site are summarized in Table 4.8.1, below.

TABLE 4.8.1 HAZARDOUS MATERIALS SITES WITHIN 0.25 MILES OF PROJECT SITE

Site name	Location	Classification	Status
Alder Avenue	4325 Alder Avenue	Voluntary cleanup	No further action
Tidewater Service Station	4362 Thornton Avenue	LUST Cleanup Site	Completed-Case Closed
U.S. Postal Service	37010 Dusterberry Way	LUST Cleanup Site	Completed-Case Closed
J.G. Dutra & Son	4568 Thornton Avenue	LUST Cleanup Site	Completed-Case Closed
Mobil 10-GYP (Thornton)	4088 Thornton Avenue	LUST Cleanup Site	Completed-Case Closed
G&M Oil Co #207	36979 Fremont Boulevard	Permitted Underground Storage Tank	Permitted (FFD)
Cabrillo Cleaner	4673 Thornton Avenue	Hazardous Waste	Reporting to USEPA
Payne Trucking	4519 San Juan Avenue	Selected Facility	Reporting to USEPA

Sources: California Department of Toxic Substances Control EnviroStor; Regional Water Quality Control Board GeoTracker; US Environmental Protection Agency EnviroMapper.

[5] California Department of Toxic Substances Control, EnviroStor. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=4357+THORNTON+AVE%2C+Fremont+CA, accessed March 1, 2019.

[6] California State Water Resources Control Board, GeoTracker. https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=4357+Thornton+Avenue%2C+Fremont, accessed March 1, 2019.

[7] Environmental Protection Agency, EnviroMapper. https://geopub.epa.gov/myem/efmap/index.html?ve=17,37.556046,-122.015351&pText=4357%20Thornton%20Ave,%20Fremont,%20California,%2094536, accessed March 1, 2019.

Recognized Environmental Conditions

A recognized environmental condition (REC) refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment. As identified in the Phase I ESA (Appendix E), the school site was an orchard from at least 1939 to 1963. During the early 1960s, prior to the construction, the site was a combination of row crops and an orchard. As a result, soil at the site may contain residual organochlorine pesticides from the use of termiticides. The Phase I ESA concluded that these historic chemicals from past agricultural use represent an REC. In response, the Phase I ESA recommended a Preliminary Environmental Assessment (PEA) based on soil testing that adheres to *DTSC's Interim Guidance for Evaluating School Sites with Potential Soil Contamination.*

FUSD completed a PEA for the site in August 2019. The PEA "determined that no further assessment is required for the site."[8] In a letter dated December 9, 2019 to FUSD, DTSC stated it concurs with the conclusion of no further action.[9] Per California Education Code Section 17213.1, Section 3, no further assessment of the site is necessary.

A controlled recognized environmental condition (CREC) refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. The Phase I ESA revealed no evidence of CRECs in connection with the project site.

A historical recognized environmental condition (HREC) refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. The Phase I ESA did not identify any HRECs in connection to the project site.

Asbestos Containing Materials

A *3-Year Asbestos Re-Inspection Report* was performed at Thornton Junior High School in 2015.[10] The report confirmed the presence of Asbestos Containing Materials (ACM) in the following components of multiple original buildings:

- Roofing shingle/shakes
- Roof mastics
- Exterior wood/plywood siding with moisture paper
- Exterior stucco siding with moisture paper

[8] Fremont Unified School District, August 2019, Preliminary Environmental Assessment, Thornton Junior High School Conversion, page 58.

[9] Hume, Richard, P.E., Chief, Northern California Schools Site Mitigation and Restoration Program, Department of Toxic Substances Control, December 9, 2019, to Chwastyk, John Director, Facilities and Construction, Fremont Unified School District.

[10] EnviroScience, Inc., 2015. *Thornton Middle School, EPA/AHERA 3-Year Asbestos Re-Inspection Report.*

- Vinyl floor tiles and mastic
- Wallboards
- Glued-on acoustical tiles
- Air duct insulation

Existing or Proposed Schools

The project site is the existing occupied Thornton Junior High School. In addition, the following schools or educational facilities are within 0.25 miles of the site:

- Oliveira Elementary School is immediately northeast of the site.
- Bay Area Childcare – Oliveira Center is immediately northeast of the site, on the Oliveira Elementary campus.
- Children's Place Preschool is east of the site.
- Harvest Christian Preschool/Daycare is southwest of the site.

Airport Hazards

The City of Fremont is not located within an airport land use plan area. There are no other public use airports within 2 miles of the project site. Hayward Executive Airport, approximately 8.8 miles northwest, is the closest airport to the project site. Moffett Federal Airfield (9.3 miles west-southwest) and San Jose International Airport (13 miles south-southwest) are further from the project site. Due to the distance of the airports and airfield, no associated airport land use plans are relevant to the project site, and the proposed project or variant would not result in a safety hazard for people residing or working in the project area.

Wildland Fire Hazard

CAL FIRE evaluates fire hazard severity risks according to areas of responsibility (i.e., federal, State, and local). According to the California Board of Forestry and Fire Protection, the project site is not within a State Responsibility Area, which are areas where CAL FIRE is the primary emergency response agency responsible for fire suppression and prevention.[11] There are no very high fire hazard severity zones within the Local Responsibility Area for the City of Fremont, including the project site. There are also no moderate, high, and very high fire hazard severity zones in the State Responsibility Area in the vicinity of the City of Fremont, including the project site.[12]

[11] California Board of Forestry and Fire Protection, State Responsibility Area Viewer, https://bof.fire.ca.gov/projects-and-programs/state-responsibility-area-viewer/, accessed March 1, 2019.

[12] California Department of Forestry and Fire Resources, FHSZ Viewer. http://egis.fire.ca.gov/FHSZ/, accessed March 1, 2019.

4.8.2 STANDARDS OF SIGNIFICANCE

Would the project:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school?
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?
5. Be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport that results in a safety hazard or excessive noise for people residing or working in the project area?
6. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

HAZ-1	**The proposed project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials**

Project Operation

Long-term operation of proposed Thornton Middle School would be similar to operation and conditions at the existing Thornton Junior High School. As is currently the case, the proposed middle school would involve minimal transport, storage, use, or disposal of hazardous materials. The types of hazardous materials associated with operation of the school would be limited to those associated with janitorial, maintenance, and repair activities, such as commercial cleansers, lubricants, and paints. These hazardous materials would be used in limited amounts for school operations; and transport, storage, use, and disposal of these materials would be subject to federal and state safety requirements. The storage, handling, and disposal of hazardous materials are regulated by the USEPA and OSHA. The requirements of these agencies would be incorporated into the design and operation of the school. This would include providing for and maintaining appropriate storage areas for potentially hazardous materials and installing or affixing appropriate warning signs and labels. Therefore, operation of the proposed project would result in a less-than-significant impact in this respect.

Project Construction

Project-related construction activities would involve the use of larger amounts of hazardous materials than would project operation. Construction activities would include the use of materials such as fuels, lubricants, and greases in construction equipment and coatings used in construction. However, the materials would be commonplace to construction, and would not be used in such quantities or stored in such a manner as to pose a significant safety hazard. These activities would also be short term or one time in nature and would cease upon completion of the proposed project's construction phase. Project construction workers would also be trained in safe handling and hazardous materials use.

Demolition and interior reconfiguration required as part of the project has the potential to disturb hazardous materials. The project would include demolition of the of the existing administration building and neighboring modular classrooms. Reconfiguring and upgrading the school locker room would require removal of interior walls, ceiling and flooring. Classroom upgrades would involve removal of existing flooring and ceiling materials.

Overall, all suspect ACMs were observed in good condition and do not pose a health and safety concern to the occupants of the subject property at this time. The handling of demolition debris containing ACM would be subject to the ACM regulations and the FUSD Asbestos Management Plan; however, without further mitigation this impact remains *significant*.

Significance without Mitigation: Significant.

Impact HAZ-1: Demolition and interior reconfiguration of the existing structures on-site may create a significant hazard by exposing construction workers to asbestos containing materials. This is a *significant* impact.

> Mitigation Measure HAZ-1: Prior to issuance of a demolition permit, a licensed asbestos abatement contractor shall conduct a comprehensive building survey to determine the presence or absence of any suspect asbestos-containing materials and/or lead-based paint. If such materials are identified, a licensed abatement contractor shall prepare an abatement plan that describes the demolition process, including material containment, disposal, and worker safety.
>
> Significance with Mitigation: Less than significant.

HAZ-2	**The proposed project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.**

Demolition, structural upgrade and reconfiguration of existing on-site structures could result in the release of hazardous building materials (i.e., ACMs) into the environment. Use of hazardous materials during construction would include fuels, lubricants, greases, and coatings. An accidental release of these materials could pose a health hazard to the public.

Existing laws, regulations, policies, and procedures that would serve to prevent a release of hazardous materials include applicable federal and state laws and regulations described in Section 4.8.1.1, Regulatory Framework, of this chapter, and the Stormwater Pollution Prevention Plan and Best Management Practices required for the proposed project (see Chapter 4.9, Hydrology and Water Quality, for additional detail). Compliance with these existing laws, regulations, policies, and procedures would help to ensure that future development activities would not create a significant hazard to the public. However, as indicated under Impact HAZ-1, without further mitigation, the impact of potential ACMs during demolition may be significant. This represents a *significant* impact.

Significance without Mitigation: Significant.

Impact HAZ-2: Release or upset of asbestos containing materials during proposed demolition, structural upgrading and reconfiguring of existing structure on-site poses a risk to public health and represents a *significant* impact.

Mitigation Measure HAZ -2: Implement Mitigation Measure HAZ-1.

Significance with Mitigation: Less than significant.

HAZ-3	**The proposed project could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school.**

The project site is an existing, occupied junior high school. As identified in Section 4.8.1.2, Existing Conditions, one elementary school and three child care facilities are located within 0.25 miles of the site. As concluded under impacts HAZ-1, HAZ-2a, and HAZ-2b, above, the project could have potentially significant impacts related to the assumed presence and release of ACMs. Therefore, the proposed project could emit or handle these hazardous materials within 0.25 miles of existing schools. This is a *significant* impact.

Significance without Mitigation: Significant.

Impact HAZ-3: The proposed project could result in the disturbance of asbestos containing materials within 0.25 miles of one public elementary school and three child care facilities.

Mitigation Measure HAZ-3: Implement Mitigation Measures HAZ-1.

Significance with Mitigation: Less than significant.

HAZ-4	**The proposed project would not create a significant hazard to the public or the environment by being located on a site which is included on a list of hazardous materials sites compiled pursuance to Government Code Section 65962.5.**

The Phase I ESA included a search of standard federal, State, County, and City environmental records. The database records search found no properties surrounding the site that could represent a significant environmental concern. This includes sites with the potential to create a vapor intrusion[13] concern to the subject property.

As discussed in Section 4.8.1.2, Existing Conditions, the Phase I ESA did not identify any CRECs or HRECs on the project site. However, the potential for hazardous materials associated with past agriculture use of the site and the age of original structures was identified as a REC. This resulted in the completion of a PEA that included detailed soil testing per DTSC guidelines. The PEA determined that soils at the site are safe and that no further action is necessary. Based on these analyses, the site of the proposed project would result in a *less-than-significant* impact with regards to hazardous materials.

Significance without Mitigation: Less than Significant.

HAZ-5	**The proposed project would not be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard or excessive noise for people residing or working in the project area.**

As noted above, The City of Fremont is not located within an airport land use plan area. Hayward Executive Airport, approximately 8.8 miles northwest, is the closest airport to the project site. Moffett Federal Airfield (9.3 miles west-southwest) and San Jose International Airport (13 miles south-southwest) are further from the project site. Due to the distance of the airports and airfield, no associated airport land use plans are relevant to the project site, and the proposed project or variant would not result in a safety hazard for people residing or working in the project area. Therefore, there would be *no impact*.

Significance without Mitigation: No impact.

HAZ-6	**The proposed project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.**

The proposed project would result in a significant impact if it would involve physical improvements that would impede emergency response to the project site or the immediate vicinity, or if it would otherwise interfere with emergency evacuation plans.

The project would be limited to the existing footprint of Thornton Junior High School. It would not alter the project area's land use patterns or land use designations to such an extent that they would conflict with this plan. Efficient circulation is vital for the evacuation of residents and the mobility of fire suppression, emergency response, and law enforcement vehicles during an emergency. The proposed

[13] Vapor intrusion is a process by which chemicals in soil or groundwater - especially Volatile Organic Compounds (VOCs) – migrate to indoor air above a contaminated site.

project would improve access for emergency vehicles and fire suppression equipment through changes to onsite traffic circulation and access points. The project would improve project site conditions, allowing better emergency vehicle access to the school.

The proposed project would be required to comply with the provisions of the 2018 CFC and the 2018 CBC, which would ensure that building and life safety measures are incorporated into the proposed project and would facilitate implementation of emergency response plans. The project would not physically conflict with an adopted emergency response plan. As noted in Section 4.8.1.1, the City of Fremont has adopted a series of emergency preparation and response plans, as well as general plan policies, to ensure that development projects undergo review for adequate evacuation procedures, clearance and emergency access. Future development plans would include fire and emergency access through all phases of construction and operation. The FFD will be required to review the proposed project site plans and approve fire truck access and fire flow design.

During construction, the project would be required to comply with all applicable provisions of the CFC to ensure fire safety during the construction phase. The project plans have been developed to be consistent with requirements for the provision of fire sprinklers, fire department access, fire hydrants, and water supply for fire protection.

Therefore, this impact would be *less than significant*.

Significance without Mitigation: Less than significant.

HAZ-7	**The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.**

The project site is located within an urbanized area of Fremont, surrounded by developed lands. As noted in Section 4.8.1.2, Existing Conditions, the proposed project is not located within a fire hazard severity zone. Although the Fremont Hills are identified as an area of wildland fire risk in the City's General Plan, the project site is removed from hillside areas. It is not located in a General Plan-designated fire hazard severity zone. Therefore, the project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

The proposed project would be required to comply with the 2018 CFC and 2018 CBC, including installation of sprinklers, proper protection systems such as fire extinguishing systems and alarms, fire hydrants, water fire flow requirements, and access points to accommodate fire equipment. Moreover, it would require approval by the DSA, which reviews seismic, fire and life safety, and accessibility. Compliance with existing codes, and the project site location outside of fire hazard areas, would ensure that impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

4.8.3 CUMULATIVE IMPACTS

HAZ-8 The proposed project would not result in cumulative impacts with respect to hazards and hazardous materials.

The area considered for cumulative impacts is Alameda County, which is the service area for the Alameda County Department of Environmental Health, the affected CUPA. Other development projects throughout the county would use, store, transport, and dispose of increased amounts of hazardous materials, and thus could pose substantial risks to the public and the environment. However, the use, storage, transport, and disposal of hazardous materials by other projects would conform with regulations of multiple agencies as described in Section 4.8.1.1, Regulatory Framework, above. Non-school projects would also have to comply with multiple local regulations associated with location.

The proposed project is located within 0.25 miles of four schools but would not handle large quantities of known hazardous or acutely hazardous waste. Potential hazards of assumed ACMs would be mitigated by pre-construction review. Therefore, the proposed project would not contribute to a cumulative impact associated with schools.

Furthermore, the proposed project area is not located within 2 miles of a public airport or a private airstrip. Therefore, the proposed project would not contribute to a cumulative impact associated with a public or private airport.

Cumulative projects have the potential to interfere with an adopted emergency response plan or emergency evacuation plan; however, all development would be required to comply with the provisions of the local, State, and federal regulations for emergency response plans and emergency evacuation plans. Compliance with these regulations would reduce potential cumulative impacts to less than significant. Moreover, as described in Chapter 4.15, Transportation, of this EIR, the proposed project would not result in inadequate emergency access.

Cumulative projects have the potential to increase development in areas of high fire susceptibility; however, all development projects included in the included as part of this analysis would be in the urbanized area of Fremont, which is outside all wildfire hazard zones.

Cumulative impacts would be *less than significant* after compliance with regulations, and project impacts would not be cumulatively considerable.

Significance without Mitigation: Less than significant.

4.9 HYDROLOGY AND WATER QUALITY

This chapter describes the regulatory framework and existing conditions on the project site related to hydrology and water quality, and the potential impacts of the project on hydrology and water quality.

4.9.1 ENVIRONMENTAL SETTING

4.9.1.1 REGULATORY FRAMEWORK

Federal Regulations

Clean Water Act

Under the Clean Water Act (CWA) of 1977, the U.S. Environmental Protection Agency (USEPA) seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The statute employs a variety of regulatory and nonregulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The CWA authorizes the USEPA to implement water-quality regulations. The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402(p) of the CWA controls water pollution by regulating stormwater discharges into the waters of the United States. California has an approved State NPDES program. The USEPA has delegated authority for water permitting to the State Water Resources Control Board (SWRCB), which has nine regional boards. The San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB) regulates water quality in Region 2, which includes the City of Fremont.

Section 303(d) of the CWA requires that each state identify water bodies or segments of water bodies that are "impaired" (i.e., not meeting one or more of the water-quality standards established by the state). These waters are identified in the Section 303(d) list as waters that are polluted and need further attention to support their beneficial uses. Once the water body or segment is listed, the state is required to establish Total Maximum Daily Load (TMDL) for the pollutant causing the conditions of impairment. TMDL is the maximum amount of a pollutant that a water body can receive and still meet water quality standards. Typically, TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non- point sources. The intent of the 303(d) list is to identify water bodies that require future development of a TMDL to maintain water quality. In accordance with Section 303(d), the RWQCB has identified impaired water bodies within its jurisdiction, and the pollutants or stressors responsible for impairing the water quality.

The receiving water for the project site is Lower San Francisco Bay, which is listed on the Section 303(d) List of Water Quality Limited Segments for chlordane, dichloro diphenyl trichloroethane (DDT), dieldrin, dioxin compounds, furan compounds, invasive species, mercury, polychlorinated biphenyls (PCBs), and

trash.[1] Chlordane, DDT, and dieldrin are organochlorine insecticides; PCBs were commonly used as coolants in electrical equipment.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established by the CWA to regulate municipal and industrial discharges to surface waters of the United States, including discharges from municipal separate storm sewer systems (MS4s). Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring and other activities.

Under the NPDES Program, all facilities which discharge pollutants into waters of the United States are required to obtain an NPDES permit. Requirements for storm water discharges are also regulated under this program. In California, the NPDES permit program is administered by the SWRCB through the nine RWQCBs. Fremont and the project site lie within the jurisdiction of San Francisco RWQCB (Region 2) and are subject to the waste discharge requirements of the Municipal Regional National Pollutant Discharge Elimination System Stormwater Permit (MRP), (Order No. R2-2009-0074) issued by the San Francisco RWQCB. The MRP requires 70+ municipalities in the Bay Area, including the City of Fremont, to place conditions on development projects to incorporate site design measures, source controls, treatment measures, and on larger projects, flow duration controls (FDCs).

Under Provision C.3 of the MRP, the co-permittees use their planning authorities to require appropriate low impact development (LID) measures, including infiltration, evapotranspiration, rainwater harvesting and use, and biotreatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. Under Provision C.6, co-permittees require applicants to implement appropriate stormwater best management practices (BMPs) during project construction.

State Regulations

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code Sections 13000 et seq.) is the basic water quality control law for California. The Act established the SWRCB and divided the State into nine regional basins, each under the jurisdiction of a RWQCB. The SWRCB is the primary State agency responsible for the protection of California's water quality and groundwater supplies. The RWQCBs carry out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing

[1] State Water Resources Control Board, 2014. Impaired Water Bodies, https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml, accessed August 8, 2019.

water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems. As described above, Fremont is within the jurisdiction of the San Francisco Bay RWQCB (Region 2).

Pursuant to the Porter-Cologne Act, municipal stormwater discharges in Fremont are regulated under the San Francisco Bay Region Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit, Order No. R2-2015-0074, NPDES Permit No. CAS612008, Municipal Regional Permit (MRP). Provision C.3 of the MRP addresses post-construction stormwater management requirements for new development and redevelopment projects that add and/or replace 10,000 square feet or more of impervious area. Provision C.3 requires the City to require incorporation of site design, source control, and stormwater treatment measures into development projects, to minimize the discharge of pollutants in stormwater runoff and non-stormwater discharges, and to prevent increases in runoff flows. The MRP requires that LID methods are to be the primary mechanism for implementing such controls.

Other State agencies with jurisdiction over water quality regulation in California include the California Department of Health Services (DHS) for drinking water regulations, the California Department of Fish and Wildlife (CDFW) and the Office of Environmental Health and Hazard Assessment (OEHHA).

The project site is within the Crandall Creek Subwatershed of the Alameda Creek Watershed, which is under the jurisdiction of the San Francisco Bay RWQCB. The Water Quality Control Plan for the San Francisco Bay Watershed was last updated in December 2018. This Basin Plan gives direction on the beneficial uses of the State waters within Region 2; describes the water quality that must be maintained to support such uses; and provides programs, projects, and other actions necessary to achieve the standards established in the Basin Plan.

State Water Resources Control Board (SWRCB) General Construction Permit

In California, the SWRCB has broad authority over water quality control issues for the State. The SWRCB is responsible for developing Statewide water quality policy and exercises the powers delegated to the State by the federal government under the CWA.

Construction activities that disturb one or more acres of land that could impact hydrologic resources must comply with the requirements of the SWRCB Construction General Permit (2009-0009-DWQ) as amended by 2010-0014-DWQ. Under the terms of the Permit, applicants must file Permit Registration Documents (PRDs) with the SWRCB prior to the start of construction. The PRDs include a Notice of Intent (NOI), risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are now submitted electronically to the SWRCB via the Storm Water Multiple Application and Report Tracking System (SMARTS) website.

Applicants must also demonstrate conformance with applicable BMPs and prepare a SWPPP, containing a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection, and discharge points, general topography both before and after construction, and drainage patterns across the project site. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program, a chemical

monitoring program for nonvisible pollutants if there is a failure of the BMPs, and a sediment-monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Some sites also require implementation of a Rain Event Action Plan (REAP). The updated Construction General Permit (2012-0006-DWQ), which went into effect on July 17, 2012, also requires applicants to comply with post-construction runoff reduction requirements.[2]

State Updated Model Water Efficient Landscape Ordinance (Assembly Bill 1881)

The updated Model Water Efficient Landscape Ordinance requires cities and counties to adopt landscape water conservation ordinances or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Water Efficient Landscape Ordinance (WELO). Fremont adopted a locally modified WELO in March of 2019.

Executive Order B-29-15 required the State to revise the Model WELO to increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, on-site stormwater capture, and by limiting the portion of landscapes that can be covered in turf. It also requires reporting on the implementation and enforcement of local ordinances, with required reports due by December 31, 2015.[3]

Regional Regulations

San Francisco Bay Regional Water Quality Control Board

Regional authority for planning, permitting, and enforcement is delegated to the nine Regional Water Quality Control Boards (RWQCBs). The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. Fremont is within the jurisdiction of the San Francisco Bay RWQCB (Region 2).

The San Francisco Bay RWQCB addresses region-wide water quality issues through the creation of the Water Quality Control Plan for San Francisco Bay Basin (Basin Plan). The Basin Plan was updated most recently in June 2013. This Basin Plan designates beneficial uses of the State waters within Region 2, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards established in the Basin Plan.[4]

Alameda Countywide Clean Water Program

The Alameda Countywide Clean Water program facilitates local compliance with the Federal Clean Water Act to keep pollutants like litter, pesticides, automotive chemicals and other harmful substances out of

[2] State Water Resources Control Board, 2016. *NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities.* http://www.swrcb.ca.gov/board_decisions/adopted_orders/water_quality/2012/wqo2012_0006_dwq.pdf, accessed February 2, 2019.

[3] California Department of Water Resources, 2015. Updated Model Water Efficient Landscape Ordinance. http://www.water.ca.gov/wateruseefficiency/landscapeordinance/, accessed February 2, 2019.

[4] San Francisco Bay Regional Water Quality Control Board, 2013. *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan).* Latest revision June 29, 2013.

Alameda County's creeks, wetlands and the Bay. The Clean Water Program supports member agencies' compliance and enforcement work with guides, fact sheets and online resources to help communicate BMPs during the construction and site preparation process.

Alameda County Flood Control and Water Conservation District

The City of Fremont and the Alameda County Flood Control and Water Conservation District (ACFC/WCD) share the responsibility for storm drainage in the City. The primary focus of the ACFC/WCD is to plan, design and inspect construction of flood control projects. Additionally, the ACFC/WCD maintains flood control infrastructure and preserves the natural environment through pollution control regulations. The ACFC/WCD has delineated watersheds into management zones, including Zones 5 and 6 in the City of Fremont area. In the Fremont area, Zone 5, and Zone 6 in the south. The project site is in Zone 5, which generally includes the northern part of the City and contains Alameda Creek, Crandall Creek, Dry Creek, and Plummer Creek, as well as 50 miles of engineered flood control channels. Stormwater in this watershed travels through channels, pipelines, and underground culverts to three pump stations which lift and discharge stormwater to San Francisco Bay.[5]

Local Regulations

Fremont General Plan

The City of Fremont 2030 General Plan contains policies and implementation measures that pertain to and regulate hydrology and water quality. These are listed in Table 4.9-1.

Fremont Municipal Code

The Fremont Municipal Code also contains a series of chapters that include regulations and standards pertaining to hydrology and water quality. These are summarized below:

- Chapter 18.200, Flood Damage Prevention, establishes regulations and methods to reduce flood losses, including construction standards for all areas of special flood hazards.
- Chapter 18.205, Grading, Erosion and Sediment Control, establishes regulation to ensure that soil is not stripped or removed such that lands are subject to erosion, subsidence and faulty drainage; as well as to prevent the run-off based pollution of watercourses.
- Chapter 18.210, Stormwater Management and Discharge Control, established discharge regulations, requirements and inspection standards to reduce non-storm water discharges to the city storm drain system; control discharge to the city storm drain system from spills, dumping or disposal; and reduce pollutants in stormwater discharges to the maximum extent practicable.

[5] City of Fremont, 2011. *Fremont 2030 General Plan,* Public Facilities Element, page 9-18.

TABLE 4.9-1 FREMONT GENERAL PLAN POLICIES AND IMPLEMENTATION MEASURES

Policy/Implementation Number	Policy/Implementation Text
Policy 7-1.5	**Promotion of Interagency Coordination**. Promote interagency coordination for the protection and preservation of biological resources.
Implementation 7-1.5.C	**Preservation of Wetlands in Creek and Flood Areas.** Encourage the Alameda County Flood Control and Water Conservation District and the Alameda County Water District to preserve, enhance, and restore wetlands that are under their jurisdiction.
Policy 7-3.1	**Protect and Improve Water Quality.** Protect and improve water quality in all Fremont's creeks, streams, water courses and water bodies.
Implementation 7-3.1.A	**Limit projects that Decrease Water Quality**. Review projects in watershed areas that would negatively impact water quality and require appropriate mitigation.
Policy 7-3.2	**Groundwater Resources**. Protect groundwater from contamination, specifically, the Niles Cone Groundwater Basin.
Policy 7-3.3	**Enforce Water Quality Requirements**. Enforce Federal, State and locally issued mandates regarding water quality such as the National Pollutant Discharge Elimination System (NPDES) permit requirements.
Implementation 7-3.3.A	**Alameda Countywide Clean Water Program**. Support the Alameda Countywide Clean Water Program and continue to implement a municipal stormwater clean water program to reduce stormwater pollutants according to NPDES permit mandates.
Implementation 7-3.3.B	**Stormwater Control in New Developments**. Require development projects to incorporate appropriate stormwater treatment measures, site design techniques and source controls to address stormwater runoff pollutant discharges and to prevent increases in runoff rates and durations in development projects consistent with NPDES.
Implementation 7-3.3.C	**Reduce Impervious Surface Areas.** Minimize stormwater flow and volume impacts on local waterways by reducing impervious surface areas associated with new and redevelopment projects and encouraging the use of permeable surfaces.
Implementation 7-3.3.D	**Water Quality Treatment Measures**. Encourage the preferred order of measures early on in the site plan review process for compliance with the Municipal Regional Permit: 1) Rainwater Capture and Reuse; 2) Evapotranspiration; 3) Infiltration; and, 4) Landscape-Based Treatment, to the extent practicable for all new and redevelopment projects.

Source: City of Fremont, Fremont 2030 General Plan.

4.9.1.2 EXISTING CONDITIONS

Regional and Local Hydrology

Fremont is located in the San Francisco Bay Hydrologic Region, which covers approximately 4,500 square miles and encompasses 10 counties including Alameda County. It corresponds with the boundaries of the San Francisco RWQCB Region 2 and the San Francisco Bay Area Integrated Regional Water Management (IRWM) Plan. The San Francisco Bay Hydrologic Region is a complex network of watersheds, marshes, rivers, creeks, reservoirs, and bays mostly draining into the San Francisco Bay and the Pacific Ocean. The site itself is located in the Santa Clara Valley Groundwater Basin, one of 28 basins of the San Francisco Bay Hydrologic Region. It is in the 57,900-acre Niles Cone subbasin.[6]

[6] California Department of Water Resources, 2009. *California Water Plan, Update 2009, San Francisco Bay, Integrated Water Management. Bulletin 160-09, Volume 3, Regional Reports.*

Surface Waters

As noted under Section 4.9.1.1, above, the project site is within the Crandall Creek Subwatershed of the Alameda Creek Watershed. The Alameda Creek Watershed is the largest watershed in the Bay Area, at 660 square-miles. It extends as from Mount Hamilton in the south Mount Diablo in the north, east to the Altamont Hills in Livermore, and west to San Francisco Bay. The 6.5-mile Crandall Creek Subwatershed flows from urban flatlands of Fremont into the Coyote Hills marsh, where the water is cleaned naturally, then through a pipe under the levee into the Alameda Creek Flood Control Channel. It includes Crandall Creek and Ardenwood Creek (now engineered channels) and a network of underground storm drains.[7] Also noted in under Section 4.9.1.1, the Alameda County Flood Control and Water Conservation District watershed management zone in which the project site is located includes Alameda Creek, Crandall Creek, Dry Creek, and Plummer Creek, as well as 50 miles of engineered flood control channels.

Groundwater

The City of Fremont and project site overlies the Santa Clara Valley Niles Cone groundwater basin. Niles Cone has a series of relatively flat-lying aquifers separated by extensive clay layers. Niles Cone is bounded by the Diablo Range to the east and the San Francisco Bay to the west and has a surface area of 65,800 acres. The Hayward fault cuts approximately north to south across Niles Cone, thereby impeding the flow of groundwater to the west. This has separated the Niles Cone into the Below Hayward Fault and Above Hayward fault subbasins. The project site is located immediately west of the Hayward fault, in the Below Hayward fault subbasin. The aquifers in this subbasin are composed of gravel and sand deposits from the alluvial fans of Alameda Creek and other streams flowing from the Diablo Range. The Newark Aquifer, the shallowest aquifer in Niles Cone, is between 40 and 140 feet below ground surface (bgs). Its thickness ranges from less than 20 feet at the western edge of the basin to more than 140 feet at the Hayward Fault.[8] As noted in the Geotechnical Investigation performed at the site (Appendix D) groundwater at the site was encountered at a maximum of 43 feet bgs.

Groundwater Quality

Niles Cone generally contains high-quality potable water. High and moderate concentrations of total dissolved solids (TDS) have been detected as a result of historic intrusion of water from the San Francisco Bay, in response to pumping of freshwater from Niles Cone aquifers. This pumping in the Niles Cone subbasin has allowed saline waters to migrate from the shallow aquifers through the Bay Mud to deeper aquifers used for public supply.[9]

[7] Alameda County Flood Control and Water Conservation District. https://www.acfloodcontrol.org/resources/explore-watersheds/, accessed February 12, 2019.

[8] Alameda County Water District, 2017, Groundwater Management Plan. https://www.acwd.org/DocumentCenter/View/19/Ch-4-Groundwater-Management?bidId=, accessed February 16, 2019.

[9] United States Geological Survey and the State Water Resources Control Board, 2013, Groundwater Quality in the San Francisco Bay, Groundwater Basins, California, https://pubs.usgs.gov/fs/2012/3111/pdf/fs20123111.pdf, accessed February 19, 2019.

Water Supply Sources

The City's current water supplies are provided by the Alameda County Water District. Local runoff from the Alameda Creek watershed accounts for about 40 percent of Fremont's total water supply and is used to recharge the aquifers of the Niles Cone Groundwater Basin. This runoff, together with water released from the South Bay Aqueduct at a location east of the town of Sunol, flows down Alameda Creek and into the Alameda Creek Flood Control Channel. Here, the water is captured behind three large, inflatable rubber dams. These dams divert water to the Quarry Lakes where water percolates to recharge the underlying groundwater basin.

Sixteen wells are used to extract water from the groundwater basin. Together, these wells can produce up to 47.5 million gallons of water per day (mgd). This water is blended with San Francisco Regional Water System supplies before being delivered to customers.[10]

Site Drainage

The project site is fully developed with a junior high school and associated parking and driving aisles, at an elevation of about 46 feet above sea level. The approximately 784,000-square-foot site is composed of about 400,000 square feet of impervious surface and about 384,000 square feet of pervious surface. Runoff from the existing site is collected on-site within drain box inlets and conveyed underground through a series of 10-inch, 12-inch, 15-inch, and 24-inch storm drains that run beneath the site.

4.9.2 STANDARDS OF SIGNIFICANCE

Would the project:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    a. Result in substantial erosion or siltation on- or off-site?
    b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
    c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? or

[10] Alameda County Water District website, Niles Cone Groundwater Basin web page, https://www.acwd.org/380/Niles-Cone-Groundwater-Basin, accessed February 19, 2019.

d. Impede or redirect flood flows?

4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

4.9.3 IMPACT DISCUSSION

HYDRO-1 The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

As explained above and in Chapter 3, Project Description, the project site is currently developed with a junior high school. The proposed project would result in an increase of about 175,000 square feet in impervious surface on the site and the addition of about 11,700 square feet of strategic impervious components in the form of bioswales and drainage areas. Per RWQCB requirements, all runoff from new impervious surfaces would be treated on-site by LID (low impact development) methods. The proposed project is less likely to create changes to stormwater flows, decreasing potential to introduce pollutants to receiving waters.

Regardless, urban runoff can carry a variety of pollutants, such as oil and grease, metals, sediment and pesticide residues from roadways, parking lots, rooftops, landscaped areas and deposit them into adjacent waterways via the storm drain system. Construction and operational impacts associated with the demolition of existing structures and construction of new structures could result in impacts to water quality and waste discharge attributed to water pollution from soil erosion and increased stormwater runoff. Construction activities also have the potential to impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff, and the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Finally, the refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

Construction Impacts

Since the proposed project would disturb more than one acre of land during construction, it would be subject to compliance with the NPDES Construction General Permit (CGP). As such, it would require preparation of a SWPPP that includes erosion and sediment control BMPs. These BMPs must meet or exceed measures required by the CGP as well as control hydrocarbons, trash, debris, and other potential construction-related pollutants. Examples of construction BMPs include inlet protection, silt fencing, fiber rolls, stabilized construction entrances, stockpile management, solid waste management, and concrete waste management. Implementation of BMPs would prevent or minimize environmental impacts and ensure that discharges during the demolition and construction phase of the project would not cause or contribute to the degradation of water quality in receiving waters.

The CGP also requires the project Applicant to file Permit Registration Documents with the SWRCB prior to the start of construction activities. These include a Notice of Intent (NOI), risk assessment, site map, annual fee, signed certification statement, SWPPP, and post-construction water balance calculations.

Compliance with applicable regulatory requirements and implementation of construction BMPs would minimize discharges during the construction phase of the proposed project and would not result in the degradation of water quality in receiving waters. Therefore, construction-related water quality impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

Project Impacts

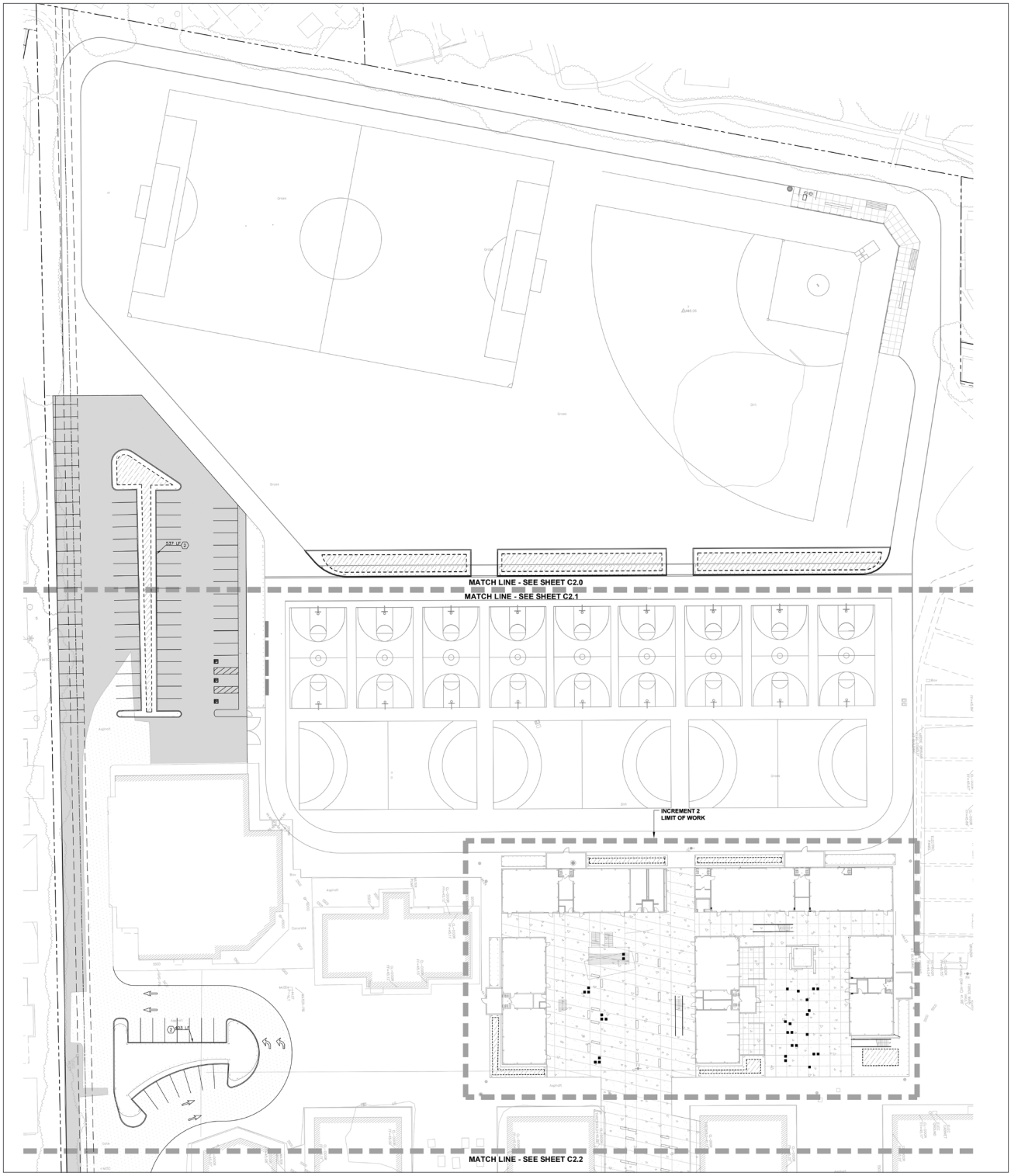
As explained in Section 4.9.1.1 above, discharges to stormwater drains or channels from post-construction activities are regulated by the Municipal Separate Storm Sewer System (MS4) Permit, issued by the San Francisco Bay RWQCB, pursuant to Federal NPDES regulations. Accordingly, a required Water Quality Management Plan (WQMP) would be prepared and implemented at the project site specifying BMPs to be used in project design and in project operations and maintenance to minimize pollution of stormwater. The BMPs specified in the WQMP would follow the guidelines of the Alameda Countywide Clean Water Program and any locally adopted Standard Urban Stormwater Mitigation Plan (SUSMP).

The proposed project involves demolition on and improvements to an existing school site that is well-connected to the City's stormwater system. Stormwater is currently removed by sheet flow action across paved surfaces towards on-site stormwater drains and catchment basins located throughout the property. As noted in Chapter 3, Project Description, the project would introduce about 175,000 square feet in net new pervious surfaces in the form of new parking, circulation and recreation-related asphalt hardscapes. Because the project would disturb in excess of 10,000 square feet of the impervious surface of the project site, it must comply with the C.3 provisions set by the San Francisco Bay RWQCB. A Stormwater Control Plan (SCP) that details the site control, source control, and stormwater measures that would be implemented at the site must be submitted to the City of Fremont.

A preliminary Horizontal Control Plan that includes strategic bioretention area has been prepared. These areas would treat runoff before being discharged into the storm drain system. As shown in Figure 4.9-1, bioretention areas would be located:

- North of hardscaped play courts;
- In the median of the new parking lot at the west side of the campus;
- At various locations surrounding the proposed new classroom cluster.

The proposed biofiltration strategy would decrease site runoff in low flow situations and delay runoff in large storm events and would increase the quality of runoff. The City of Fremont will either find that the Final Stormwater Control Plan complies with C.3 Stormwater Technical Guidelines or will require changes to ensure compliance.



Source: Quattrocchi Kwok Architects, 2019. BKF Engineers/Surveying/Planners, 2019.

Figure 4.9-1
Horizontal Control Plan

Collectively, the required BMPs and LID design features of the project would address the anticipated and expected pollutants of concern from the operational phase of the proposed project. The existing site has no such features. Additionally, the development review process would ensure that the proposed project complies with various statutory requirements necessary to achieve regional water quality objectives and protect groundwater and surface waters from pollution by contaminated stormwater runoff. The original 1963 school campus was constructed prior to implementation of these regulatory structures.

In summary, compliance with State regulations requiring preparation of a SWPPP for the proposed project as well as compliance with the City's landscape plan application requirements, would reduce the potential for water quality impacts during construction. The requirement to prepare a SCP and implement site design, source control, and treatment control measures prior to the issuance of grading permits would address the potential for pollutants in stormwater during the operational phase of the project. Therefore, impacts related to water quality from development of the proposed project would be *less than significant* and no mitigation is required.

Significance Without Mitigation: Less than significant (LTS).

HYDRO-2	**The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.**

Groundwater recharge may be reduced if areas currently capable of infiltration of rainfall runoff are reduced and/or permeable areas are replaced with impervious surfaces. As noted in the previous section, the development of the project would result in a significant increase in impervious surfaces. However, the installation of landscaped areas shown in Figure 3-15 and bioretention areas described under HYDRO-1 would increase overall site permeability as compared to existing conditions. This would allow for further infiltration of stormwater runoff. Therefore, the proposed project would not interfere substantially with groundwater recharge or result in a lowering of the groundwater table.

Construction Impacts

As noted in Chapter 4.6, Geology and Soils, groundwater was encountered at approximately 26.5 bgs to 43 feet bgs at the project site during recent testing, with a historical high of 25 feet bgs. Given that the maximum depth of excavations associated with the project would be in the in the range of 10 feet to 12 feet, dewatering associated with construction of the proposed project is not expected to occur. However, as noted in the geotechnical report, groundwater testing was limited, and "Variations in groundwater levels across the site and over time should be anticipated." There is a possibility that dewatering, which decrease groundwater supply, may be necessary to stabilize excavations, either adjacent to groundwater or that reach high groundwater. This short-term, excavation-specific dewatering would not significantly deplete regional groundwater supplies or reduce public supply. All dewatering activities would require obtaining a Waste Discharge Requirements (WDR) permit from San Francisco Bay RWQCB. The WDR permit would require testing to prevent discharged water from posing a risk to water quality in San Francisco Bay. Should the results of the testing indicate that pollutant levels are too high, treatment of the

collected groundwater would be required prior to discharge to San Francisco Bay or the City's storm drain system. In addition, the proposed project would be subject to SWPPP requirements, which include measures for spill prevention, control, and containment that would prevent potential construction pollutants from leaching into the shallow groundwater. These existing regulatory requirements would ensure that the discharge of construction dewatering would not significantly impact groundwater supply.

Project Impacts

Operation of the proposed project would not significant deplete groundwater resources. While the Niles Cone aquifer beneath the project site is a major source of water for the Alameda County Water District, that supply is augmented by water purchased from the State Water project (via the South Bay Aqueduct) and the San Francisco Public Utilities Commission (via the Hetch Hetchy aqueduct system). Moreover, the sixteen wells used to extract water from Niles Cone can produce up to 47.5 mgd.[11] In addition, as noted in Section 4.9.1.2, the shallowest major aquifer of the Niles Cone is between 40 and 140 feet bgs.

The proposed project would result in a shuffling of existing Fremont students from existing elementary schools to Thornton. It would not significantly increase water demand, nor would it involve the construction of new groundwater wells. The scope and components of the proposed project, combined with the potential supply and characteristics of the relevant groundwater aquifer, reduce the potential for operational impacts to groundwater supply.

The implementation of LID measures and on-site infiltration, as required under the C.3 provisions of the Clean Water Program will also increase the potential for groundwater recharge. The use of site design features as per the C.3 provisions and implementation of water use efficiency measures mandated by the Water Conservation Act of 2009 will ensure that groundwater supplies are not depleted. The impact would be considered *less than significant* and no mitigation is required.

Significance without Mitigation: Less than significant.

HYDRO-3	**The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would 1) result in substantial erosion or siltation on- or off-site; 2) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; 3) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or 4) impede or redirect flood flows.**

The project site does not contain any watercourses, streams, or rivers. The project would not alter any watercourses, streams, or rivers in a manner that could result in substantial erosion or siltation,

[11] Alameda County Water District. https://www.acwd.org/380/Niles-Cone-Groundwater-Basin, accessed March 3, 2019.

significantly increase surface runoff, contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems, or impede or redirect flood flows.

The project would increase impervious surface at a currently developed site by approximately 175,000 square feet. It would alter the existing drainage pattern of the site. Construction activities would involve demolition of existing structures, grading, excavation, and the construction of school buildings, outdoor areas and parking lots.

Project construction would not result in drainage or runoff patterns that would significantly increase erosion or siltation. The site is currently developed and virtually flat. As previously discussed in Section HYDRO-1, standard erosion and sediment control measures are required and would be implemented as part of the SWPPP for the proposed project to minimize erosion/siltation risk during construction. The SWPPP would be required to include an erosion control plan that prescribes measures such as phasing of grading, limiting areas of disturbance, designation of restricted-entry zones, diversion of runoff away from disturbed areas, protective measures for sensitive areas, outlet protection, and provisions for re-vegetation or mulching. The erosion control plan would also include treatment measures to trap sediment once it has been mobilized, including inlet protection, straw bale barriers, straw mulching, straw wattles, silt fencing, check dams, terracing, and siltation or sediment ponds.

Operation of the project, including the addition of impervious surface, would not result in runoff that significantly increases the potential for flooding, capacity exceedance or flood flow impact. As explained under HYDRO-1, the existing school site is well-connected to the City's stormwater system via a series of 10- to 24- inch on-site storm drains, as well as junctions and catch basins.

The project would be required to implement a Stormwater Control Plan (SCP) that details the site control, source control, and stormwater measures, per C.3 flow and discharge criteria set by the RWQCB. All runoff from new impervious surfaces (roof, pavement, hardscape) will need to be treated on-site by LID (low impact development) methods. A significant quantity of storm runoff would be treated by the 11,700 square feet of strategically-located biofiltration areas (Figure 4.9-1) before being discharged to the SD system off-site. The required SCP would also identify and describe overflow drains, subdrains, landscaping, irrigation, and connection to the storm drain system.

The topography of the project site and distance from any watercourses, combined with compliance with the above regulations, ensure that the proposed project would not result in alterations of existing site drainage that are dangerous or could impact local infrastructure. The impact would be *less than significant* and no mitigation is required.

Significance Without Mitigation: Less than significant.

HYDRO-4 The proposed project would not, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

The project site is not located within the 100-year flood hazard area or any special flood hazard area as mapped by the Federal Emergency Management Agency (FEMA).[12] As stated in the geotechnical report completed for the project, the project site is outside tsunami inundation areas and seiche hazards zones, such that the potential of these events is not a design consideration. As such, the release of pollutants as a result of these events is a *less than significant* impact.

Significance without Mitigation: Less than significant.

HYDRO-5 The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

The project site is not within the purview of a sustainable groundwater management plan. The San Francisco Bay RWQCB monitors surface water quality through implementation of the Water Quality Control Plan for the San Francisco Bay Basin, also referred to as the "Basin Plan" and designates beneficial uses for surface water bodies and groundwater within the Santa Clara Valley. The Basin Plan also contains water quality criteria for groundwater.

Best management practices and low impact development measures would be implemented across the project site during both construction and operation of the proposed project. These measures would control and prevent the release of sediment, debris, and other pollutants into the storm drain system. Implementation of best management practices during construction would be in accordance with the provisions of the SWPPP, which would minimize the release of sediment, soil, and other pollutants. Operational best management practices would be required to meet the C.3 provisions of the MRP. These best management practices include the incorporation of site design, source control, and treatment control measures to treat and control runoff before it enters the storm drain system. The proposed treatment measures would include the use of several bioretention areas to treat and detain runoff prior to discharge to the City's storm drain system. Additionally, the project would be connected to municipal water supplies and does not propose any groundwater wells on the property. As noted under HYDRO-2, groundwater was encountered at approximately 26.5 bgs to 43 feet bgs at the project site and the proposed project would not disturb groundwater during construction. With implementation of these best management practices and low impact development measures in accordance with City and MRP requirements, the potential impact on water quality would be *less than significant*, and the proposed project would not conflict with or obstruct the implementation of the Basin Plan.

Significance without Mitigation: Less than significant.

[12] Federal Emergency Management Agency, FEMA Flood Map Service Center: Search By Address web page, https://msc.fema.gov/portal/search#searchresultsanchor, accessed April 3, 2019.

4.9.4 CUMULATIVE IMPACTS

HYDRO-6 The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to hydrology and water quality.

The analysis of cumulative hydrology and water quality impacts considers the larger context of future development within Fremont. Cumulative impacts can occur when impacts that are significant or less than significant from a proposed project combine with similar impacts from other past, present, or reasonably foreseeable future projects in a similar geographic area. Cumulative impacts could result from incremental changes that degrade water quality or contribute to drainage and flooding problems within the watershed.

As discussed previously, development of the proposed project and other cumulative projects in the City would require conformance with state and local policies that would reduce hydrology and water quality impacts to less than significant levels. Any cumulative development project identified in this Draft EIR or in Fremont would be subject to City policies and ordinances, design guidelines, zoning codes and other applicable City requirements that address impacts related to hydrology and water quality. More specifically, potential changes related to stormwater quality, stormwater flows, drainage, impervious surfaces, and flooding would be minimized or avoided by the implementation of stormwater control measures, retention, infiltration, and LID measures, and review by City staff to integrate measures to reduce potential flooding impacts. With the implementation of these measures, the impacts to water quality and hydrology would be less than significant for individual projects within the project area and cumulative projects within Fremont.

The water quality regulations implemented by the San Francisco Bay RWQCB take a basin-wide approach and consider water quality impairment in a regional context. For example, the NPDES Construction Permit ties receiving water limitations and basin plan objectives to terms and conditions of the permit, and the MS4 Permit works with all municipalities to manage storm water systems to be collectively protective of water quality. For these reasons, impacts from future development within the watershed on hydrology and water quality are not cumulatively considerable and would result in a *less-than- significant* cumulative impact with respect to hydrology and water quality.

Significance without Mitigation: Less than significant.

4.10 LAND USE AND PLANNING

This chapter describes the regulatory framework and existing conditions on the project site related to land use and planning, and the potential impacts of the project on the environment resulting from implementation of the proposed project. This chapter contains a summary of the relevant regulatory setting and existing conditions followed by an analysis of the proposed project and cumulative impacts.

4.10.1 ENVIRONMENTAL SETTING

4.10.1.1 REGULATORY FRAMEWORK

This section summarizes existing State, and local agencies, regulations, and plans that pertain to land use. There are no federal or regional regulations applicable to the proposed project.

State Regulations

Government Code Section 53094

California Government Code Section 53904 allocates the power to regulate school districts to the State legislature, rather than local jurisdictions. School districts are not required to comply with the zoning ordinance of the city or county upon a two-thirds vote from the school district board. The governing board of the school district is required to notify the city or county within 10 days of this decision, upon which time the city or county may take action in the superior court applicable to the city. The superior court must determine whether the school district board's action was arbitrary and capricious. If these findings are not made, the school district may proceed to ignore the zoning requirements of the local municipal code.[1]

Regional Regulations

Plan Bay Area 2040

The Association of Bay Area Governments (ABAG) is the regional planning agency and council of governments for the nine-county San Francisco Bay Area, which includes Alameda County and the City of Fremont. The Metropolitan Transportation Commission (MTC) and ABAG's *Plan Bay Area 2040* is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS). *Plan Bay Area 2040* was prepared by MTC in partnership with ABAG, the Bay Area Air Quality Management District, and San Francisco Bay Conservation and Development Commission and adopted on July 26, 2017.[2] The SCS sets a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce greenhouse gas (GHG) emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by California Air Resources Board. An overarching goal of *Plan Bay Area 2040* is to concentrate development in areas

[1] California Government Code Section 53094 *et seq*.
[2] Association of Bay Area Governments, 2017. *Plan Bay Area 2040*. http://2040.planbayarea.org/, accessed March 10, 2019.

where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle miles traveled and associated GHG emissions reductions. The project site is located within both a Transit Priority Area (TPA) and Priority Development Area (PDA) by *Plan Bay Area 2040*.[3] SB 375 defines a TPA as a lot or area within a half mile of a major transit stop or within one-quarter of a mile of high-quality transit corridors, which includes planned rail stations in an adopted Regional Transportation Plan.[4] The project site is within ½-mile of two rails stations, one Altamont Commuter Rail stop and one Amtrak stop. *Plan Bay Area 2040*identifies TPA zones with the goal of locating land uses that would not substantially increase automobile traffic and will instead decrease automobile transit and allow for promotion of public and active transportation. PDAs are areas within existing communities that local city or county governments have identified and approved for future growth.[5] This existing neighborhood is identified as appropriate for additional, compact development.

Local Regulations

While the proposed project must comply with State regulations rather than local ordinances, the proposed project is surrounded by adjacent locally-regulated neighborhoods, so local context is also acknowledged. Although the school campus is not subject to the local jurisdiction under Government Code Section 53094, the local regulations outline relevant information about the project site.

Fremont 2030 General Plan

The City of Fremont's 2030 General Plan, adopted in 2011, serves as an effective guide for the orderly growth and development, provision of public services and facilities, and conservation of natural resources.

General Plan Policies

Key policies and strategies of the General Plan relevant to the proposed project are included in Table 4.10-1.

TABLE 4.10-1 GENERAL PLAN GOALS, POLICIES, AND STRATEGIES PERTAINING TO LAND USE AND PLANNING

Goal/Policy/ Strategy Number	Goal/Policy/Strategy Text
Goal 2-1	*A city transformed from an auto-oriented suburb into a distinctive community known for its walkable neighborhoods, dynamic city center, transit-oriented development at focused locations, attractive shopping and entertainment areas, thriving work places, and harmonious blending of the natural and built environments.*

[3] Metropolitan Transportation Commission and Association of Bay Area Governments. https://www.planbayarea.org/pda-tpa-map, accessed April 23, 2019.

[4] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017. *Plan Bay Area: Final Land Use Modeling Report.*

[5] Metropolitan Transportation Commission and Association of Bay Area Governments. Priority Development Areas. https://mtc.ca.gov/our-work/plans-projects/focused-growth-livable-communities/priority-development-areas, accessed April 23, 2019.

TABLE 4.10-1 GENERAL PLAN GOALS, POLICIES, AND STRATEGIES PERTAINING TO LAND USE AND PLANNING

Policy 2-1.4	Sustain and enhance Fremont's neighborhoods as the basic "building blocks" of the community. Fremont's neighborhoods should accommodate a high quality of life by providing diverse housing choices, safe and walkable streets, and convenient access to services, schools, and parks. While the basic pattern of land uses in most neighborhoods is set, over time the City's residential areas will adapt and evolve to reflect Fremont's vision for a more sustainable future
Goal 2-2	*Growth and development that is orderly and efficient, leverages public investment, ensures the continued availability of infrastructure and public services, reduces adverse impacts on adjacent properties, and protects the natural environment.*
Policy 2-2.4	Ensure that future land use decisions are fully consistent with the General Plan Land Use Map. Each General Plan land use category shall have at least one corresponding zoning district. More than one zoning district per General Plan category may be established for categories which accommodate a wide range of densities or development types. Residential zoning districts should generally be differentiated by the number of units allowed per net acre (or square feet of lot area per dwelling unit).
Policy 2-2.5	Use zoning and subdivision regulations to direct the city's growth, ensure sufficient opportunities for new development, improve Fremont's quality of life, create complete neighborhoods, reduce nuisances, achieve compatibility between adjacent properties and uses, address land use conflicts, and protect the health and safety of residents, visitors, and workers.
Goal 2-3	*Compact, walkable, and diverse neighborhoods, each with an array of housing types and shopping choices, with parks, schools, and amenities that can be conveniently accessed by all residents*
Policy 2-3.2	Encourage continued reinvestment in Fremont neighborhoods by the public and private sectors. While the basic land use pattern in many neighborhoods is already set and will be maintained, their improvement and evolution should be viewed an important part of the City's sustainability initiatives.
Policy 2-3.5	Promote design and land use decisions which improve the walkability of neighborhoods, enhance the ability to travel by bicycle or public transportation, and minimize the distance a resident must travel to reach basic services, shopping, parks, and schools. Except where precluded by steep terrain, each neighborhood should include a mix of compatible uses, including housing, parks, civic facilities, and local shopping and services
Policy 2-3.6	Improve the ability to travel through neighborhoods and between neighborhoods on foot, bicycle, or automobile. Street layouts should facilitate pedestrian travel and connect homes with nearby services to the greatest extent feasible. Cul-de-sacs and dead-ends should be avoided if they require circuitous routes for pedestrians. Incomplete links in the City's street system should be eliminated to improve circulation and reduce trip lengths.
Policy 2-3.10	Allow schools, day care centers, senior centers, group homes, public and semi-public facilities (e.g., churches), and nursing care facilities in residential areas, subject to conditions which limit the impacts of these uses on nearby properties. To the extent permitted by state and federal law, conditions of approval may be placed on such uses to ensure that they are operated in a manner that is sensitive to neighborhood concerns, and that maintains the quality of life. In addition, such uses should be sited in a way that minimizes the exposure of future occupants to noise, localized air pollution sources, and other environmental hazards.
Policy 2-4.7	Encourage the collocation of public services such as education, health care, libraries, child care, senior centers and job training in shared facilities located within neighborhood and community centers. Such facilities and services may be incorporated within new large-scale private development as a way to provide community benefits and meet the service needs generated by that development.
Goal 9-9	*Quality educational opportunities and facilities available to the community.*
Policy 9-9.1	Coordinate with FUSD so that the District Board and staff are aware of development plans.

Source: City of Fremont, 2011, City of Fremont General Plan.

General Plan Land Use Designations

The Fremont 2030 General Plan designates the campus as a Public Facility in the Land Use Element. The seven State-mandated General Plan elements are complemented by five additional elements to comprise the following list:

- Sustainability
- Land Use
- Circulation
- Community Character
- Housing
- Economic Development
- Conservation
- Parks and Recreation
- Public Facilities
- Safety and Noise
- Community Plans
- Implementation

The Land Use Element describes the general distribution of land uses and the density and intensity of development within Fremont. The project site has a General Plan land use designation of Public Facilities, as shown on Figure 3-5 in Chapter 3, Project Description, of this Draft EIR. The Public Facility land use designation applies to non-open space parcels owned by public agencies or utilities facilities, public schools, water and sanitary district facilities, transit agency facilities, utilities, and other federal, state, county, and local government facilities.[6]

Zoning Code

Title 18 of the Municipal Code sets forth the Fremont Zoning Code. The Zoning Code regulates land use and development in the city. It describes zoning districts and contains the Zoning Map and development standards for the zoning districts. The Zoning Ordinance is the mechanism used to implement the goals, policies, and strategies of the existing General Plan and to regulate all land use within the city. The Zoning Ordinance establishes allowable land use intensities, including density and floor area ratio (FAR). The project site and surrounding area are zoned Public Facilities (PF). The purpose of this zoning district is to foster the orderly development of large-scale educational and public service uses in the community and special approved uses on publicly owned land, to ensure the presence of said uses as a vital part of the community balance, and to prevent intrusion of uses which may overburden community facilities and resources.[7]

4.10.1.2 EXISTING CONDITIONS

The project site is the existing 18-acre school campus located along the southwestern edge of the City of Fremont. The site is located on Thornton Avenue, and is bounded by residential land uses to the south, west, and north and a commercial shopping center to the east. The site currently contains nine permanent, wood frame buildings, a concrete gymnasium, and a series of modular buildings to make up a 43-classroom campus. The school campus is currently configured with paved parking and vehicle entry points at the school entrance on Thornton Avenue with a row of permanent wooden buildings set back spanning the width of the campus. Behind the permanent buildings, the campus opens to hardcourt play

[6] City of Fremont, 2011. *The City of Fremont General Plan*, page 2-32.

[7] City of Fremont, 2019. Fremont Municipal Code Section 18.60. https://www.codepublishing.com/CA/Fremont/, accessed April 23, 2019.

areas followed by turf fields, including a baseball diamond and track, that extend to the northwestern border of the campus. The newer modular and portable buildings stretch along the northern border of the campus.

Figure 3-3 in Chapter 3, Project Description, of this Draft EIR shows the immediate vicinity of the project site. The property is in a residential area of Fremont containing a mix of low density and low-medium density residential uses to the north, west, and south. Oliveria Elementary School and two churches are in the surrounding area north of the campus. East of the project site amidst residential uses lies a commercial center, a post office, and four churches.

4.10.2 STANDARDS OF SIGNIFICANCE

Section 15064.7 of the CEQA Guidelines explains that thresholds of significance for determining environmental effects are identifiable quantitative, qualitative, or performance levels, non-compliance with which means the effect would normally be determined to be significant and compliance with which means the effect normally would be less than significant. The City of Fremont uses the questions in Appendix G of the CEQA Guidelines as the thresholds of significance for projects requiring environmental review under CEQA. Based on this consideration, the analysis in Section 4.10.3 uses the following standards of significance. The proposed project would result in a significant land use and planning impact if it would:

1. Physically divide an established community.
2. Cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

4.10.3 IMPACT DISCUSSION

LU-1 The proposed project would not physically divide an established community.

Projects with the potential to divide an established community typically include major highways or roadways, storms channels, utility transmission lines, or the closure of bridges or roadways. The physical division of an established community would impair mobility within an existing community or between a community and outlying areas.

The proposed project would result in construction and operation of additional classroom buildings, modernized facilities and reconfiguration of parking and loading/unloading areas on a school campus that has been developed since 1963. The project would be limited to the footprint of the existing school property. As such, proposed improvements would continue to conform with, not divide the surrounding community. The proposed project would remain integrated into the existing established community and have a *less-than-significant impact* with respect to physical division.

Significance without Mitigation: Less than significant.

LU-2 The proposed project would not cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

The project involves modernization and construction associated with the conversion of an existing junior high school in an urbanized area to a middle school in the same site footprint. The project would result in a continued school use on a site zoned and designated Public Facility. The project would remain consistent with those land use regulations.

The City of Fremont General Plan includes a Sustainability Element. Table 4.10-2 lists the policy areas included in the Sustainability Element and describes how the proposed project is consistent with those policies.

TABLE 4.10-2 SUSTAINABILITY ELEMENT CONSISTENCY ANALYSIS

General Plan Policy Areas	Proposed Project
Reducing GHG Emissions	As concluded in Chapter 4.2, the project would have no significant impacts related to GHG emissions.
Adapting to Climate Change	As stated in Chapter 4.9, the project site is not located within the 100-year flood hazard area or any special flood hazard area as mapped by the Federal Emergency Management Agency.
Promoting Transit-Oriented Development	N/A
Facilitating Multi-Modal Transportation Options	As described in Chapter 3, Project Description, that project would include a new mounted stainless steel bike rack, new concrete pedestrian walkways throughout the site, and a pedestrian crosswalk improvement on Thornton Avenue.
Promoting Green Building	As noted in Chapter 4.5, new buildings would comply with the 2019 Building Energy Efficiency Standards, which are 30 percent more energy efficient for nonresidential buildings than 2016 Standards.
Improve Waste and Recycling	As concluded in Chapter 4.17, the project would no significant impacts related to waste or recycling.
Municipal Energy Efficiency	N/A
Energy Conservation	As noted in Chapter 4.5, new buildings would comply with the 2019 Building Energy Efficiency Standards, which are 30 percent more energy efficient for nonresidential buildings than 2016 Standards.
Stormwater Control	As described in Chapter 4.9, project would include Horizontal Control Plan with bioretention areas that would treat runoff before discharged into the storm drain system.
Water Conservation	As concluded in Chapter 4.9, projected water supplies are sufficient to meet projected demands during normal years and a first dry year through 2040 as well as for multiple dry years through 2020.

Source: City of Fremont 2011, City of Fremont General Plan and PlaceWorks.

As explained in Section 4.10.1.1, the proposed project is located within the Expanded Study Area and Permit Area for Burrowing Owl Conservation of the Santa Clara Valley Habitat Plan. However, the District is not a participating agency in the Habitat Plan, and therefore would not be subject to the Habitat Plan. Thus, the proposed project would not conflict with the provisions of an adopted Habitat Conservation

Plan, Natural Community Conservation Plan, or other approved, local, regional, or State habitat conservation plan.

Due to the urban area of the project site, consistency of the project with existing land use and lack of applicable policies, the impact of the proposed project with respect to environmental-based policy conflict would be *less than significant*.

Significance without Mitigation: Less than significant.

4.10.4 CUMULATIVE IMPACTS

LU-3	**The proposed project would not result in significant cumulative impacts with respect to land use and planning.**

While development of a single project may not be significant in impacting the land use of an area, several concurrent developments in the same area of a city could constitute a significant cumulative effect. This analysis of cumulative impacts to land use and planning is based on the list of fourteen related projects, ranging from residential to mixed-use to schools, presented in Table 4-1 in Section 4, Environmental Analysis, of this Draft EIR. The related projects range from 0.4 to 1.4 miles from the project site.

As discussed above, the proposed project would not conflict with any applicable land use plans, policies, or regulations. In addition, the proposed project would not physically divide an existing community. Approval of the cumulative projects by the City of Fremont and surrounding jurisdictions would be contingent on those projects either conforming to existing zoning and General Plan land use regulations for those sites or obtaining approval of zone changes and/or General Plan amendments. The proposed project is approximately 0.4 miles away from three nearest cumulative projects and would not divide the existing neighborhood, and thus would not cumulatively affect neighborhood cohesion and connectivity. Therefore, cumulative impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

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4.11 NOISE

This chapter describes the regulatory framework and existing conditions of the project site related to noise and vibration, and the potential impacts of the Thornton Middle School Conversion Project. This section examines state and local noise guidelines, policies, and standards; reviews noise levels at existing receptor locations; evaluates potential noise and vibration impacts associated with the project; and provides mitigation to reduce potential vibration impacts at nearby residences. This evaluation uses procedures and methodologies as specified by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The analysis in this section is based in part on the noise modeling data included in Appendix F of this DEIR.

4.11.1 ENVIRONMENTAL SETTING

4.11.1.1 NOISE DESCRIPTORS

The following are brief definitions of terminology used in this chapter. Appendix F includes a summary of noise and vibration fundamentals.

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."
- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.

- Peak Particle Velocity (PPV). The peak signal value of an oscillating vibration velocity waveform, usually expressed in inches per second (in/sec).
- Sensitive Receptor. Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

4.11.1.2 REGULATORY FRAMEWORK

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. There are no federal regulations that apply directly to the proposed project. The following regulations apply to the proposed project.

State Regulations

Standards for School Sites

Under Title 5, the California Department of Education (CDE) regulations require public school districts to consider noise in the site selection process. As recommended by CDE guidance, if a school district is considering a potential school site near a freeway or other source of noise, it should hire an acoustical engineer to determine the level of sound that the site is exposed to and to assist in designing the school should that site be chosen.

CALGreen

The California Green Building Standards Code (CALGreen) has requirements for insulation that affect exterior-interior noise transmission for nonresidential structures. Pursuant to CALGreen Section 5.507.4.1, *Exterior Noise Transmission*, an architectural acoustics study may be required when a project site is within a 65 dBA CNEL or L_{dn} noise contour of an airport, freeway or expressway, railroad, industrial source or fixed-guideway source. Where noise contours are not readily available, if buildings are exposed to a noise level of 65 dBA L_{eq} during any hour of operation, specific wall and ceiling assembly and sound-rated windows may be necessary to reduce interior noise to acceptable levels.

Local Regulations

Fremont General Plan

The City of Fremont has introduced noise standards in its General Plan. The following goals and policies are directly relevant to the proposed project:

Goal 10-8: Minimal impacts to residents and property due to noise and ground vibration sources.

> *Policy 10-8.1: Site Development Acceptable Noise Environment*
> A noise environment which meets acceptable standards as defined by the State of California Building Code and local policies contained herein.

Table 4.11-1 below summarizes the City of Fremont noise and land use compatibility standards.

TABLE 4.11-1 LAND USE COMPATIBILITY FOR COMMUNITY EXTERIOR NOISE ENVIRONMENTS

	Exterior Noise Exposure (L_{dn})		
Land Use Category	Normally Acceptable	Conditionally Acceptable	Unacceptable
Single-Family and Multi-Family Residential	<55 – 60	60 -75	75 - >80
Hotels, Motels and other lodging	<55 – 65	65 -75	75 - >80
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds	<55 – 65	65 – 80	>80
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches	<55 – 60	60 – 75	75 - >80
Office Buildings, Business, Commercial, and Professional	<55 - 70	70 – 80	>80
Auditoriums, Concert Halls, Amphitheaters	NA	<55 -070	70 - >80

Notes: *Normally Acceptable:* Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special insulation requirements.
Conditionally Unacceptable: Specified land use may be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features included in the design.
Unacceptable: New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.
Source: City of Fremont General Plan, Safety – *Noise and Vibration.*

Policy 10-8.3: Noise Environment Protection
Protect existing residential neighborhoods from noise. In general, the City will require the evaluation of mitigation measures for projects under the following circumstances:

1) The project would cause the L_{dn} to increase by 5 dBA or more but would remain below 60 dBA, or;
2) The project would cause the L_{dn} to increase by 3 dBA or more and exceed 60 dBA, or;
3) The project has the potential to generate significant adverse community response due to the unusual character of the noise.

Policy 10-8.5: Construction Noise Levels
Control construction noise at its source to maintain existing noise levels, and in no case to exceed the acceptable noise levels.

Implementation 10-8.5.B: Construction Noise Mitigation
Continue to apply the construction hours ordinance to new development to limit noise exposure created by construction activity. Apply best practices to further limit noise in sensitive areas and long-term projects, such as maintaining construction equipment in good condition and use of mufflers on internal combustion engines, installation of temporary noise barriers, prohibiting extended idling time of internal combustion engines, locating staging areas away from sensitive receptors and other feasible best management practices.

Policy 10-8.6: Sensitive Uses
Protect schools, hospitals, libraries, places of religious worship, convalescent homes, and other noise sensitive uses from noise levels exceeding those allowed in residential areas.

Implementation 10-8.6.A: Location of Sensitive Uses
Locate noise sensitive uses away from noise sources unless mitigation measures are included in development plans.

Fremont Municipal Code

Construction Noise

Section 18.160.010 Construction hours – Limitations

Construction activity for development projects in any zoning district on any property within 500 feet of one or more residences, lodging facilities, nursing homes or inpatient hospitals are limited to the weekday hours of 7:00 a.m. to 7:00 p.m. and Saturday or holiday hours of 9:00 a.m. to 6:00 p.m. Construction on Sundays is not allowed.

Section 18.218.050 (d) – Noise Standard Development Requirements

To reduce the potential for noise impacts during construction, the following requirements shall be implemented:

- Construction Equipment shall be well-maintained and used judiciously to be as quiet as practical;
- Construction, excavating, grading, and filling activities (including the loading and unloading of materials, truck movements, and warming of equipment motors) shall be limited during construction hours as designated in Section 18.60.010, *Construction Hours-Limitations*;
- All internal combustion engine-driven equipment shall be equipped with mufflers, which are in good condition and appropriate for equipment;
- The contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists;
- Loading, staging areas, stationary noise generating equipment, etc., shall be located as far as feasible from sensitive receptors;
- The contractor shall comply with Air Resources Board idling prohibitions of unnecessary idling of internal combustion engines; and
- Signs shall be posted at all construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number for the project sponsor in the event of noise complaints. The applicant shall designate an on-site complaint and enforcement manager to track and respond to noise complaints.

Vibration

The City of Fremont does not have specific limits for vibration from construction activities. The FTA provides criteria for acceptable levels of ground-borne vibration for various types of buildings. The FTA criteria are used for this analysis. Structures amplify groundborne vibration and wood-frame buildings, such as typical residential structures, are more affected by ground vibration than heavier buildings. The level at which groundborne vibration is strong enough to cause architectural damage has not been determined conclusively. The most conservative estimates are reflected in the FTA standards, shown in Table 4.11-2.

TABLE 4.11-2 CONSTRUCTION VIBRATION DAMAGE

Building Structural Category	PPV, in/sec
I. Reinforced concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: Federal Transit Administration, 2018. *Transit Noise and Vibration Impact Assessment Manual*. September.

Existing Conditions

The project site is in a predominately residential area with a noise environment influenced primarily by roadway noise from Thornton Avenue and surrounding residential roadways. Noise from nearby residential uses (e.g., property maintenance) and commercial uses to the west also contribute to the total noise environment intermittently in the project vicinity.

Ambient Noise Monitoring Results

To determine baseline noise levels in the project vicinity, ambient noise monitoring was conducted by PlaceWorks in April 2019. Measurements were made during weekday periods when the project area is expected to be most active. One long-term (48 hour) measurement was conducted within the project vicinity, and short-term (15 minute) measurements were conducted at three locations in the project area. All measurements were conducted from Monday, April 15 through Wednesday, April 17 of 2019.

The primary noise sources around the measurements were traffic and school activities. Aircraft flyovers also contributed to the overall noise environment at various locations within the project area. Meteorological conditions during the measurement periods were favorable for outdoor sound measurements and were noted to be representative of the typical conditions for the season.

All sound level meters used for noise monitoring satisfy the American National Standards Institute (ANSI) standard for Type 1 instrumentation.[1] The sound level meters were set to "slow" response and "A" weighting (dBA). The meters were calibrated prior to and after the monitoring period. All measurements were at least five feet above the ground and away from reflective surfaces. Noise measurement locations are described below and shown in Figure 4.11-1. A summary of the daily trend during long-term noise measurements are provided in Appendix F. The short-term noise measurement results are summarized in Table 4.11-3.

[1] Monitoring of ambient noise was performed using Larson-Davis Model LxT and 820 sound level meters.

Source: Google Earth, 2019; PlaceWorks, 2019.

0 600
Scale (Feet)

Project Site

ST = Short-term Measurement Location

LT = Long-term Measurement Location

Figure 4.11-1
Approximate Noise Monitoring Locations

TABLE 4.11-3 SHORT-TERM NOISE MEASUREMENTS SUMMARY IN A-WEIGHTED SOUND LEVELS

Monitoring Location	Description	15-Minute Noise Level, dBA		
		L_{min}	L_{eq}	L_{max}
ST-1a	Southern school property line – 11:41 a.m., 4/15/2019 Primary noise sources: school lunch activity	56.3	65.1	84.1
ST-1b	Southern school property line – 12:59 p.m., 4/15/2019 Primary noise sources: school PE activity	47.6	58.1	69.7
ST-2a	Southwestern school property line – 12:03 p.m., 4/15/2019 Primary noise sources: school lunch activity	39.2	50.7	67.8
ST-2b	Southwestern school property line – 12:20 p.m., 4/15/2019 Primary noise sources: school PE activity	38.8	48.7	63.3
ST-3	Northwestern school property line – 12:38 p.m., 4/15/2019 Primary noise sources: birds, no school activity	38.7	43.1	55.3

Source: PlaceWorks 2019

The following describes the noise monitoring locations:

- **Long-Term Location 1 (LT-1)** was located approximately 40 feet west of the Thornton Avenue centerline. A 48-hour noise measurement was conducted, beginning at the 12:00 p.m. hour on Monday, April 15, 2019. The noise environment of this site is characterized primarily by local traffic on Thornton Avenue and the measured L_{dn} was 74 dBA.
- **Short-Term Location 1 (ST-1)** was located at the southern school property line adjacent to a residence on Coronado Drive and in line with the existing basketball courts. Two 15-minute noise measurements were conducted, with ST-1a beginning at 11:41 a.m. and ST-1b beginning at 12:59 p.m. on Monday, April 15, 2019. The noise environment of this site is characterized primarily by school activities. Secondary noises such as aircraft flyovers and traffic on Thornton Avenue also contribute to the existing noise environment at this location. ST-1a was conducted during the student lunch hour and ST-1b was conducted during physical education (PE) class.
- **Short-Term Location 2 (ST-2)** was located at the southwestern school property line adjacent to a residence on Bosworth Court. Two 15-minute noise measurements were conducted, with ST-2a beginning at 12:03 p.m. and ST-2b beginning at 12:20 p.m. on Monday, April 15, 2019. The noise environment of this site is characterized primarily by school activities. Secondary noises such as aircraft flyovers and birds also contribute to the existing noise environment at this location. ST-2a was conducted during the student lunch hour and ST-2b was conducted during physical education (PE) class.
- **Short-Term Location 3 (ST-3)** was located at the northwestern school property line adjacent to a residence on Blue Ridge Street. One 15-minute noise measurement was conducted beginning at 12:38 p.m. on Monday, April 15, 2019. The noise environment of this site is characterized primarily by school activities. Secondary noises such as aircraft flyovers, a distant train horn and birds also contribute to the existing noise environment at this location. ST-3 was conducted during a period of no observed student activity (e.g., lunch or PE).

Sensitive Receptors

Certain land uses, such as residences, schools, and hospitals are particularly sensitive to noise and vibration. Sensitive receptors within the City include residences, senior housing, schools, places of worship, and recreational areas. These uses are regarded as sensitive because they are where citizens most frequently engage in activities which are likely to be disturbed by noise, such as reading, studying, sleeping, resting, or otherwise engaging in quiet or passive recreation. Commercial and industrial uses are not particularly sensitive to noise or vibration.

The project site is an existing junior high school in a primarily residential area. The school is accessed via Thornton Avenue. There are residences to north, south, and a mix of residential and commercial uses including Pathway Community Church to the west. Primary noise in the project vicinity is traffic from local roadways and school activities.

4.11.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant noise impact if it would:

1. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards.
2. Generate 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.

4.11.2.1 CONSTRUCTION NOISE THRESHOLDS

The City has not established noise limits for temporary construction activities. The FTA recommends a noise level limit of 90 dBA L_{eq} for residential receptors, which is used in this analysis to assess construction noise impacts.

4.11.2.2 TRANSPORTATION NOISE THRESHOLDS

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions; changes of 1 to 3 dBA are detectable under quiet, controlled conditions; and changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is readily discernible to most people in an exterior environment. Based on this and Policy 10-8.3, *Noise Environment Protection,* from the City of Fremont Noise Element (which recommends using a criterion of 3 dBA L_{dn} increase or more for residential neighborhoods that exceed 60 dBA), traffic noise impacts are considered significant if sensitive receptor locations experience a 3 dBA L_{dn} or more noise increase with implementation of the project.

4.11.2.3 STATIONARY NOISE THRESHOLDS

Similar to transportation sources, stationary noise impacts (HVAC equipment, student recreational activity) are considered significant if sensitive receptor locations experience a 3 dBA L_{dn} or more noise increase with implementation of the project.

4.11.2.4 VIBRATION THRESHOLDS

Per the FTA criteria, the threshold for architectural damage for buildings with non-engineered timber and masonry (i.e., residential buildings), the criterion is 0.2 in/sec PPV.

4.11.3 IMPACT DISCUSSION

NOISE-1	**The proposed project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or deferral standards.**

Traffic Noise

As discussed above, only "audible" changes in noise levels at sensitive receptor locations (i.e., 3 dBA or more) are considered potentially significant. Note that a doubling of traffic flows (i.e., 10,000 vehicles per day to 20,000 per day) would be needed to create a 3 dBA L_{dn} increase in traffic-generated noise levels.

The peak hour traffic volumes along roadways in the project area provided in the Transportation Impact Assessment for the project[2] were used to determine the permanent traffic noise level increase due to implementation of the proposed project. This analysis compares the Existing plus Project AM peak hour traffic volumes to the Existing AM peak hour traffic volumes logarithmically to estimate the project increase. The permanent noise level increase was estimated to be 2.3 dBA L_{dn} or less throughout all study roadway segments. Since the permanent noise level increase due to project-generated traffic would be less than 3 dBA L_{dn}, the proposed project would not cause a substantial permanent noise level increase at surrounding noise-sensitive receptors. This would be a less-than-significant impact. Appendix F includes the traffic noise increase calculations.

Stationary Noise

Heating, ventilation, and air conditioning (HVAC) systems will be installed at the new proposed buildings. The nearest residences to the new proposed buildings are located northeast approximately 140 feet from the property line. Typical HVAC equipment generates noise levels ranging up to 72 dBA at distance of 3 feet. At 140 feet noise levels would attenuate to 39 dBA. New HVAC equipment is anticipated to be similar to or quieter than existing equipment.

[2] Kittelson & Associates, 2019. Thornton Middle School Conversion Transportation Impact Analysis.

While the project would result in a student increase from 1,259 to 2,176 students, there is not expected to be a substantial noise increase due to recreational noise during recess, lunch and PE hours. The project would result in reconfiguration of outdoor space and recreational facilities. Though the play field and playcourts would be reconfigured, student recreational activities would generate similar noise as the existing site, such as student and staff voices. It is noted that based on the logarithmic nature of sound, a doubling of students all present at the same time would be needed to increase the ambient noise environment by 3 dBA or more. In addition, No PA system is proposed for sports and recreational activities. Finally, the project does not propose changes in operation of the school bell schedule, and recess and lunch periods would remain the same. This would result in a less-than-significant impact.

Construction Noise

Construction activities are anticipated to occur for approximately one and a half years. Proposed phases include demolition, site preparation, grading, building construction, paving, and architectural coating/painting. Two types of short-term noise impacts could occur during construction: (1) mobile-source noise from transport of workers, material deliveries, and debris and soil haul and (2) stationary-source noise from use of construction equipment. Existing uses surrounding the project site would be exposed to construction noise.

Construction Vehicles

The transport of workers and materials to and from the construction site would incrementally increase noise levels along Thornton Avenue. Individual construction vehicle pass-bys may create momentary noise levels of up to approximately 85 dBA (L_{max}) at 50 feet from the vehicle, but these occurrences would generally be infrequent and short lived.

Construction generates temporary trips from workers and vendors. Project construction is anticipated to have six phases, of which some will generate more or less construction related trips. Building construction, building modernization, paving, and part of painting phases would potentially overlap for 13 work days. These overlapping phases are anticipated to generate the most daily trips; 298 worker and 110 vendor daily trips. However, worker and vendor trips associated with just building construction would be 259 and 101 daily trips over the 542-day building period.

Haul trips, separate from worker and vendor trips, are averaged over the total period of the construction phase. Demolition will take place in two increments. The first increment will have the most haul trips generated for a total of 89. Haul trips will take place over a 36-day period, averaging to 3 daily haul trips. The project site is located 4357 Thornton Avenue, approximately 0.75 miles north east of I-880. Existing AM peak hour trips at Thornton Avenue – South of Fremont Blvd and Thornton Avenue – North of Contra Costa Avenue are 2,162 and 2,154 trips, respectively. The addition of worker, vendor trips and haul trips would result in a much less than 1 dBA increase. Therefore, noise impacts from construction-related truck traffic would be less than significant at noise-sensitive receptors along the construction routes and no mitigation measures would be required.

Construction Equipment

Noise generated during construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. Each phase of construction involves the use of different kinds of construction equipment and therefore has its own distinct noise characteristics. Noise levels from construction activities are dominated by the loudest piece of construction equipment. The dominant noise source is typically the engine, although work piece noise (such as dropping of materials) can also be noticeable. Noise levels from project-related construction activities were calculated from the simultaneous use of all applicable construction equipment at spatially averaged distances (i.e., from the center of the general construction area) to the property line of the closest sensitive receptors. Although construction may occur across the entire site, the center of the proposed project best represents the potential average construction-related noise levels to the various sensitive receptors during the overall construction portion of the proposed project.

Each phase of construction has a different equipment mix, depending on the work to be accomplished. The noise produced at each phase is determined by combining the L_{eq} contributions from each piece of equipment used at a given time. Construction activities associated with the proposed project would not require blasting or pile driving. In the construction of residential and mixed-use projects, demolition and grading typically generate the highest noise levels because they require the largest equipment. Construction noise quite often exhibits a high degree of variability because factors such as noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase result in different noise levels at a given sensitive receptor. Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels in excess of 80 dBA at 50 feet. Since noise from construction equipment is intermittent and diminishes at a rate of 6 dB per doubling distance, the average noise levels at noise-sensitive receptors would be lower, because mobile construction equipment would move around the site with different loads and power requirements.

To calculate construction noise as it affects sensitive receptors, the Federal Highway Administration RCNM calculation methodology was used. The RCNM includes reference noise levels for numerous equipment pieces. Since the RCNM calculations do not account for shielding due to intervening buildings and structures, ground effects, or air absorption, the results of these calculations are conservative (that is, they represent a reasonable worst-case scenario). Using information provided by the project applicant and methodologies and inputs employed in the air quality assessment, the expected construction equipment mix was estimated and categorized by construction activity.

On-site sensitive receptors are students and staff in the existing classroom buildings. Off-site sensitive receptors are the surrounding residences. The nearest residential receptors from the acoustical center of the site are to the north east and south west. The associated, aggregate sound levels—grouped by construction activity—are summarized in Table 4.11-4

TABLE 4.11-4 PROJECT-RELATED CONSTRUCTION NOISE LEVELS, ENERGY-AVERAGE (L_{EQ}) SOUND LEVELS

	Off-Site Sensitive Receptors	On-Site Sensitive Receptors
Construction Activity	Northwest and Southeast Residential (380 Feet)	Building 9 (100 Feet)
Demolition	70 dBA	82 dBA
Site Preparation	69 dBA	81 dBA
Grading	70 dBA	82 dBA
Building Construction	67 dBA	79 dBA
Paving	69 dBA	81 dBA
Painting	56 dBA	68 dBA

Note: Calculations performed with the FHWA's RCNM software are included in Appendix F. Distance measurements were taken using Google Earth (2019) from the acoustical center of the project site.

On-Site Receptors

The nearest on-site building is approximately 100 feet from the acoustical center of the site. At that distance exterior noise levels could reach up to 82 dBA L_{eq}. Typical exterior-to-interior noise attenuation is 25 dBA, yielding approximate interior levels of 57 dBA L_{eq}. Speech interference is considered to be intolerable when background noise levels exceed 60 dBA. Therefore, because average construction noise levels are not expected to exceed 60 dBA, this would result in a less-than-significant impact to students on-site.

Off-Site Receptors

The nearest residence is approximately 380 feet from the acoustical center of the project site as shown in Table 4.11-4. Average noise levels during construction could reach 70 dBA L_{eq}, at the nearest receptor, which does not exceed the FTA criterion of 90 dBA L_{eq}. Provided construction activities take place between hours of 7:00 a.m. to 7:00 p.m. on weekdays, 9:00 a.m. to 6:00 p.m. Saturdays and holidays and no construction activities on Sundays per Municipal Code Section 18.160.010, and provided that the project comply with the standard construction noise minimization measures per Municipal Code Section 18.218.050(d), construction noise would result in a less than significant impact.

Land Use Compatibility

The City of Fremont General Plan's Safety Element includes future noise contours to assess the noise and land use compatibility of a project site. According to the future noise contour figure, Thornton Avenue is within 70-75 dBA L_{dn} contour (consistent with LT-1 measurement results), the school buildings closest to Thornton avenue are within the 60 dBA L_{dn} contour, and the playfields to rear of the buildings are within the 55 dBA L_{dn} contour. The school site falls under "Normally Acceptable" per City land use compatibility for community exterior noise environments and no mitigation is needed.

Significance without Mitigation: Less than significant.

NOISE-2 The proposed project could generate excessive groundborne vibrations or groundborne noise levels during construction.

Potential vibration impacts associated with development projects are usually related to the use of heavy construction equipment during: (a) demolition and grading phases of construction, and/or (b) the operation of large trucks over uneven surfaces during project operations.

Operational Vibration (Long-Term)

The operation of the proposed project would not include any substantial long-term vibration sources. Thus, no significant vibration effects from operations sources would occur.

Construction Vibration Impacts (Short–Term)

Construction operations can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The effects from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures.

For reference, a PPV of 0.2 in/sec is used as the limit for non-engineered timber and masonry buildings (which would apply to the surrounding structures) (FTA 2018). At a distance of 25 feet or greater, construction-generated vibration levels at the nearest building would be less than the 0.2 in/sec PPV vibration damage criterion. The nearest structures are residential home to the southeast at 20 feet, which could result in vibration levels of up to 0.28 in/sec PPV; therefore, resulting in a potentially significant impact. Table 4.11-5 summarizes vibration levels for typical construction equipment at the nearest sensitive receptors.

TABLE 4.11-5 VIBRATION LEVELS FOR TYPICAL CONSTRUCTION EQUIPMENT

Equipment	PPV (In/Sec) at 25 Feet	PPV (In/Sec) at 20 Feet
Vibratory Roller	0.21	0.28
Large Bulldozer	0.089	0.12
Loaded Trucks	0.076	0.11
Jackhammer	0.035	0.05
Small Bulldozer	<0.01	<0.01

Source: Federal Transit Administration, 2018. *Transit Noise and Vibration Impact Assessment*.

Significance without Mitigation: Potentially significant.

Impact NOISE-2: Vibration associated with construction of the proposed project could impact residential land use 20 feet southeast of the project site.

Mitigation Measure NOISE-2: The use of a static roller in place of a vibratory roller will be used to reduce vibration levels below the performance standard of 0.2 in/sec PPV if paving is required within 25 feet of off-site residential buildings.

Significance with Mitigation: Less than significant.

NOISE-3	The proximity of the project site to an airport or airstrip would not result in exposure of future residents or workers to airport-related noise.

The nearest airport is Hayward Executive Airport, approximately 9 miles northwest of the project site and would not result in exposure of future workers to airport-related noise. Therefore, this impact would be less than significant.

Significance without Mitigation: Less than significant.

4.11.4 CUMULATIVE IMPACTS

4.11.4.1 CUMULATIVE OPERATIONAL IMPACT

A significant cumulative traffic noise increase would be identified if project traffic were calculated to contribute 1 dBA L_{dn} or more under Cumulative plus Project conditions to a significant traffic noise increase over existing conditions. That is, if a cumulative traffic noise increase of greater than the 3 dBA L_{dn} significance threshold of perceptibility is calculated, and the relative contribution from project traffic is calculated to contribute 1 dBA L_{dn} or more to this cumulative impact, it would be considered cumulatively considerable. However, a cumulative traffic noise increase of up to 2.5 dBA L_{dn} is projected when compared to existing conditions, which would not exceed 3 dBA L_{dn}. Therefore, this would be less than significant impact.

4.11.4.2 CONSTRUCTION NOISE AND VIBRATION

Cumulative impacts would only occur if other projects are being constructed in the vicinity of the proposed project at the same time as the proposed project. The general area around the project site is built out. Project construction noise would not combine with other planned and approved construction projects to create cumulatively considerable impacts. Therefore, cumulative construction and vibration impacts would be less than significant.

Significance Without Mitigation: Less than significant.

4.12 POPULATION AND HOUSING

This chapter describes the regulatory framework and existing conditions on the project site related to population and housing, and the potential impacts of the project on population and housing.

4.12.1 ENVIRONMENTAL SETTING

4.12.1.1 REGULATORY FRAMEWORK

This section summarizes key State, regional, and local regulations and policies pertaining to population and housing that are applicable to the proposed project. There are no federal regulations regarding population and housing that are applicable to the proposed project.

State Regulations

California Housing Element Law

California Housing Element Law[1] includes provisions related to the requirements for housing elements of local government General Plans. These requirements include an assessment of housing needs and an inventory of resources and constraints relevant to the meeting of these needs. Additionally, in order to assure that counties and cities recognize their responsibilities in contributing to the attainment of the State housing goals, local jurisdictions must plan for, and allow the construction of, a share of the region's projected housing needs.

Regional Regulations

Association of Bay Area Governments Projections 2013

The Association of Bay Area Governments (ABAG) is the official comprehensive planning agency for the San Francisco Bay region, which is composed of the nine counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma, and contains 101 cities. ABAG produces growth forecasts so that other regional agencies, including the Metropolitan Transportation Commission (MTC) and the Bay Area Air Quality Management District, can use the forecast to make project funding and regulatory decisions.

ABAG projections are the basis for the Regional Transportation Plan (RTP) and the regional Ozone Attainment Plan. In this way, ABAG projections have practical consequences that shape growth and environmental quality. The general plans, zoning regulations, and growth management programs of local jurisdictions inform ABAG projections. The projections are also developed to reflect the impact of "smart growth" policies and incentives that could be used to shift development patterns from historical trends toward a better jobs-housing balance, increased preservation of open space, and greater development and redevelopment in urban core and transit-accessible areas throughout their region.

[1] Government Code Sections 65580 through 65589.8.

Regional Housing Needs Allocation

Housing Element law requires local jurisdictions to plan for, and allow the construction of, a share of the region's projected housing needs. This share is called the Regional Housing Needs Allocation. State law mandates that each jurisdiction provide sufficient land to accommodate a variety of housing opportunities for all economic segments of the community to meet or exceed the RHNA. As the regional planning agency, ABAG is responsible for taking the overall regional housing needs allocation (RHNA) provided by the State and preparing a formula for allocating that housing need by income level across its jurisdiction. ABAG calculates the RHNA for individual jurisdictions within Alameda County, including Fremont.

Plan Bay Area 2040

MTC and ABAG's *Plan Bay Area 2040* is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS). *Plan Bay Area 2040* was prepared by MTC in partnership with ABAG, the Bay Area Air Quality Management District, and San Francisco Bay Conservation and Development Commission and adopted on July 26, 2017.[2] The SCS sets a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce greenhouse gas emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by California Air Resources Board. In 2008, MTC and ABAG initiated a regional effort (FOCUS) to link local planned development with regional land use and transportation planning objectives, and *Plan Bay Area 2040* reinforced the focus growth strategy. Through this initiative, local governments identified Priority Development Areas (PDAs). The PDAs form the implementing framework for *Plan Bay Area 2040.* The PDAs are existing neighborhoods served by public transit and have been identified for additional, compact development. Overall, well over two-thirds of all regional growth by 2040 is allocated within PDAs. The PDAs throughout the San Francisco Bay Area are expected to accommodate 77 percent (or over 629,000 units) of new housing and 55 percent (or 707,000) of new jobs.[3]

There are four PDAs within the City of Fremont: the City Center PDA, the Centerville PDA, the Irvington PDA, and the South Fremont/Warm Springs PDA. The project is in the Centerville PDA. All four PDAs are entirely within the Fremont city limit, and ABAG projects that the City Center PDA will accommodate 2,900 new housing units and 5,900 new jobs by 2040, the Centerville PDA will accommodate 2,510 new housing units and 440 new jobs, the Irvington District will accommodate 2,980 new housing units and 180 new jobs, and South Fremont/Warm Springs will accommodate 2,980 new housing units and 16,090 new jobs.[4]

[2] Association of Bay Area Governments, 2017. *Plan Bay Area 2040*. http://2040.planbayarea.org/, accessed February 2, 2019.

[3] Metropolitan Transportation Commission and Association of Bay Area Governments, 2017. *Final Plan Bay Area, Strategy for a Sustainable Region.*

[4] Alameda County Transportation Commission, 2017. *Alameda County Priority Development Area Investment and Growth Strategy.*

Local Regulations

City of Fremont Housing Element

The most recent Fremont Housing Element was certified in February 2015 with a planning period from 2015 to 2023. The Housing Element includes a housing needs assessment; an analysis of potential housing sites; potential constraints to housing production; housing goals, objectives, and policies; as well as an implementation program meant to accommodate housing development that will be affordable to a range of household types and income levels.

The City of Fremont Housing Element finds that Fremont is expected to add more jobs than housing during the next decade and beyond. Continued job growth will fuel future housing demand in the city and will be an ongoing challenge for the City and the region to maintain a balance between jobs and housing.

City of Fremont Zoning Ordinance

The Fremont Zoning Ordinance implements the policies of the City of Fremont's General Plan by classifying and regulating the uses of land and structures within the City. The establishment of zoning districts—such as residential, commercial, and industrial districts—provides regulations regarding permitted, conditionally permitted, and specifically prohibited land uses and establishes development standards (e.g., setbacks, height limits, and building size limitations) for structures and land. These standards vary depending on the zoning district within the City. The zoning district for a particular site is shown on the City's zoning maps, while the specific regulations are found within Title 18 (Zoning Ordinance) of the Fremont Municipal Code.

4.12.1.2 EXISTING CONDITIONS

This section describes the existing population, housing, and employment conditions in Fremont.

Population

As shown below in Table 4.12-1, according to *ABAG Projections 2017*, Fremont's population is projected to increase from 222,155 in 2015 to 275,440 in 2040, this represents an increase of approximately 24.0 percent.[5] Since *ABAG Projections 2017* are used in regional planning efforts, the ABAG numbers are used for the purpose of evaluating environmental impacts in this EIR (see discussion of Impact POP-1 for a comparison of the proposed Project's buildout with ABAG projections).

[5] Association of Bay Area Governments, 2017. *Plan Bay Area, Projections 2017*, City Table, Alameda County.

TABLE 4.12-1 ABAG POPULATION, HOUSEHOLD, AND JOBS PROJECTIONS FOR FREMONT

			Change from 2015 - 2040	
Fremont	2015	2040	Number	Percent
Population	222,155	275,440	53,285	24%
Households	73,300	90,160	16,860	23%
Jobs	95,205	118,460	23,255	24%

Note: Percent are rounded to the nearest whole number.
Source: Association of Bay Area Governments (ABAG), 2017. *Plan Bay Area, Projections 2017*, City Table, Alameda County.

Housing

In 2017, Fremont contained 76,550 housing units. This represents an increase of approximately 3.3 percent from the 2010 Census data, which reported a total of 73,989 housing units.[6] Of the total number of existing housing units in 2017, 62.4 percent were owner-occupied and 37.6 percent were renter-occupied.

Total Jobs

Industry and commerce provide thousands of jobs, millions of dollars in annual sales, and property tax revenues, and many critical services to Fremont residents. As shown in Table 4.12-1, according to the *ABAG Projections 2017,* jobs are expected to increase from 95,205 in 2015 to 118,460 in 2040; this represents an increase of approximately 24 percent.[7]

Jobs-to-Household Balance

A jobs-to-household ratio demonstrates the balance between the number of jobs and households within a community. It is calculated by dividing the number of jobs in the community by the number of households in the same area. A high number of jobs relative to a low number of households indicates that workers must commute into the community. A low number of jobs and high number of households indicates that workers must commute out of the community for work. In contrast, a healthy jobs-to-housing ratio, which is region specific, increases opportunities for residents to work locally. According to the *ABAG Projections 2017,* Fremont's jobs-to-household ratio was 1.30[8] and is expected to increase to 1.31[9] by the year 2040.

[6] U.S. Census Bureau, 2013-2017 American Community Survey. https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B25003&prodType=table, accessed April 23. 2019.
[7] Association of Bay Area Governments, 2017. *Plan Bay Area, Projections 2013*, City Table, Alameda County.
[8] 95,205 jobs (2015) divided by 73,300 households (2015) = 1.30 jobs per household.
[9] 118,460 jobs (2040) divided by 90,160 households (2040) = 1.31 jobs per household.

According to the *ABAG Projections 2017,* the Bay Area region jobs-to-household ratio was 1.35 jobs per household in 2015,[10] and is expected to increase to 1.37[11] by the year 2040. Therefore, Fremont is slightly under the proportion of jobs per household within the region as a whole. However, the extent to which residents will work locally depends in part on complex relationships between the housing types available in the City, the skills and education levels among the City's labor force, and the jobs that are located within the City. In no Bay Area community do all employed residents work in the city where they live, nor do all people employed in any given city live in that city.

Employment

According to ABAG projections, there are currently between 95,205 and 103,130 jobs in Fremont. As of 2019, Fremont Unified School District (FUSD) was made up of 42 schools serving 35,000 students in grades K-12 in Fremont.[12] According to the Employment Development Department (EDD), there are between 2,180 to 4,789 staff serving across the FUSD either in administration, as teachers, or as support staff on campuses.[13] Thornton Junior High School on the proposed project site employs between 50 to 99 people as of 2019.

4.12.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant population and housing impact if it would:

1. Induce substantial unplanned population growth, or growth for which inadequate planning has occurred, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
2. Displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing elsewhere.

4.12.3 IMPACT DISCUSSION

POP-1	**The proposed project would not induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).**

[10] 3,669,990 (total jobs in Bay Area Region, 2015) divided by 2,720,410 (total households in Bay Area Region, 2015) = 1.349 jobs per household.

[11] 4,698,375 (total jobs in Bay Area Regions, 2040) divided by 3,426,705 (total households in Bay Area Region, 2040) = 1.371 jobs per household.

[12] Fremont Unified School District, About the District. https://fusd-ca.schoolloop.com/pf4/cms2/view_page?d=x&group_id=1524555033922&vdid=4ia17a1jujp9d2c5, accessed April 24, 2019.

[13] State of California Employment Development Department, Employer Search Results. https://www.labormarketinfo.edd.ca.gov/aspdotnet/databrowsing/empResults.aspx?menuChoice=emp&searchType=Industry&naicsect=61&naicscode4=6111&naicscode6=611110&geogArea=0604000001, accessed April 24, 2019.

Development of the proposed project would result in the construction of new buildings, reconfiguration and moderation of existing buildings, development of new parking and circulation areas, and campus site upgrades on the existing Thornton Junior High School campus, in order to expand school to include 6th grade. This project would increase the capacity of the school facilities from 1,259 students to 2,176 students, a 73 percent increase in student capacity. As explained in Chapter 3, Project Description, the objectives of the project are to help accommodate an increasing student population in Fremont Unified School District (FUSD), reduce overcrowding at local elementary schools, and integrate 6th grade into the current 7th and 8th grade program. While the proposed project would result in more students at Thornton, these would be existing FUSD students.

The school would be funded by the District's Measure E bond program, which was passed by voters to modernize neighborhood Fremont schools in part by repairing, constructing and acquiring classrooms, sites, facilities, and equipment as strain is placed on these resources. As such, the proposed project would not induce substantial unexpected population growth. Rather it would respond to ongoing and estimated future growth. The impact related to growth would be *less than significant*.

Significance without Mitigation: Less than significant.

POP-2	**The proposed project would not displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere.**

As highlighted in the discussion of POP-1, development of the proposed project would be limited to the construction of new buildings, reconfiguration and moderation of existing buildings, development of new parking and circulation areas, and campus site upgrades on the existing Thornton Junior High School campus. No housing would be displaced directly or indirectly. There would be *no impact*.

Significance without Mitigation: No impact.

4.12.4 CUMULATIVE IMPACTS

POP-3	**Implementation of the proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to population and housing.**

This section analyzes potential impacts to population and housing that could occur from a combination of the project and other reasonably foreseeable projects in the surrounding area. The geographic scope of this analysis is taken as Fremont. A cumulative impact would be considered significant if the proposed project, taken together with past, present, and reasonably foreseeable projects in Fremont, would result in the displacement of either people or housing units. Impacts resulting from the displacement of both people and housing necessitating the construction of replacement housing elsewhere are site-specific and are assessed on a site-by-site basis. The significance of the impacts would depend largely on what, if any, existing housing and residents occur on or near the sites of the related projects identified in Table 4-1 in

Chapter 4, Environmental Analysis, of this Draft EIR. As shown on Table 4-1, 197 new residential units will be constructed in Fremont by 2030, assuming buildout of approved projects. This is in addition to 390 potential new units associated with pending residential and mixed-use projects. Similar to the proposed project, the determination for the displacement of a substantial number of people and housing would be made on a case-by-case basis and, if necessary, the applicants of the related projects would be required to comply with the City's Development Impact Fees and Affordable Housing Fees. Future applicants may also be required to provide relocation assistance to rental households displaced as a result of conversion projects, pursuant to Chapter 18.190 of the Fremont Municipal Code. Thus, given that the proposed project's impacts regarding the displacement of housing and people are less than significant, the proposed project's impacts in this regard would not be cumulatively considerable. Therefore, cumulative impacts to population and housing would be *less than significant* and no mitigation measures are required.

Significance without Mitigation: Less than significant.

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4.13 PUBLIC SERVICES

This chapter describes public services and recreation facilities in the City of Fremont and evaluates the potential impacts to public services and recreation from future development that could occur by developing the proposed project. In each section, a summary of the relevant regulatory setting and existing conditions are followed by a discussion of project-specific and cumulative impacts.

This chapter covers the following public services:

- Fire Protection
- Police
- Schools
- Libraries
- Parks

4.13.1 FIRE PROTECTION SERVICES

4.13.1.1 ENVIRONMENTAL SETTING

This section describes the current regulations, resources, and response time for fire protection and emergency services in Fremont.

Regulatory Framework

State Regulations

California Code of Regulations

Public Safety

Division 1 of Title 19, Public Safety, of the California Code of Regulations (CCR) pertains to fire and life safety and constitutes the Basic Building Design and Construction Standards of the Office of the State Fire Marshal. Title 19 includes prevention and engineering measures for new construction. Title 19 is regularly reviewed and updated by the Office of the State Fire Marshal.

California Building Code

The State of California provides minimum standards for building design through the California Building Code (CBC), which is located in Part 2 of Title 24 (California Building Standards Code) of the CCR. The CBC is based on the International Building Code but has been amended for California conditions. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Typical fire safety requirements of the CBC include the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code (IFC) of the International Code Council, with California amendments. This is the official Fire Code for the State and all political subdivisions. It is located in Part 9 of Title 24 of the CCR. The CFC is revised and published every three years by the California Building Standards Commission.

California Health and Safety Code

The California Health and Safety Code provides regulations pertaining to the abatement of fire-related hazards. This Code also requires that local jurisdictions enforce the State Building Standards Code, which provides standards for fire-resistant building and roofing materials and other fire-related construction methods, as discussed above.

California Fire Plan

The California Fire Plan is the State's "road map" for reducing the risk of wildfire. The overall goal of the plan is to reduce total costs and losses from wildland fire in California through focused pre-fire management prescriptions and increased initial attack success. The Plan provides guidance to local jurisdictions in meeting State goals.

Local Regulations

City of Fremont General Plan

The City of Fremont General Plan, adopted on December 13, 2011, contains policies in the Public Facilities and Safety Elements related to fire protection and emergency services. Policies and strategies relevant to fire protection services are listed in Table 4.13-1.

City of Fremont Municipal Code

The Fremont Municipal Code, organized by Title, Article, and Chapter, contains all ordinances for the city. Title 15 of the Municipal Code sets forth the standards for building and construction in the city. The City's Fire Code, which is in Title 15 (Buildings and Construction), Chapter 15.35 (Fire Code) of the Municipal Code, regulates permit processes, emergency access, hazardous material handling, and fire protection systems, including automatic sprinkler systems, fire extinguishers, and fire alarms. The City has adopted by reference the most recent California Building Code (CBC), subject to additions and amendments as outlined in Chapter 15.10 (Fremont Building Code) and Chapter 15.30 (Fremont Existing Building Code).

TABLE 4.13-1 CITY OF FREMONT GENERAL PLAN POLICIES PERTAINING TO FIRE SERVICES

Policy/Implementation Number	Policy Text
Policy 9-1.2	Ensure public safety facilities are added or expanded as necessary to keep pace with population growth and meet operational needs. Take into account the availability of both capital and operating funds when determining the timing of new and expanded facilities.
Policy 10-4.2	Maintain development standards that limit potential health and safety risks, and the risks of structure damage and severe economic loss due to fire hazards.
Implementation 10-4.2.A	Require all new development and renovations to comply with the California Building Code, Fire Code, and all local ordinances for construction and adequacy of water flow and pressure, ingress/egress and other measures for fire protection.
Policy 10-4.3	Require adequate access and clearance for fire equipment, fire suppression personnel, and evacuation for new development.
Implementation 10-4.3.B	Require all development to provide adequate access and clearance and other fire safety measures as appropriate, and require additional vehicular access or clearance areas as determined by the Fire Department and local amendments to the Fire Code.
Implementation 10-4.3.C	Enforce regulations related to fire resistant construction, sprinkler systems and early warning fire detection system installation. Maintain accurate information on construction methods of structures and location and number of structures on a site.
Policy 10-5.2	Strive to maintain a 6 minute 40 second response time for areas below the Toe of the Hill.

Source: City of Fremont, 2011, General Plan.

4.13.1.2 EXISTING CONDITIONS

The City of Fremont Fire Department (FFD) provides fire, medical, rescue, and life safety emergency services within Fremont. Emergency services are delivered through 13 in-service fire companies from 11 strategically located fire stations in the city. The FFD, led by the Fire Chief, is home to the Fire Administration Department organized under the following four branches:

- Operations
- Fire Prevention
- Training/EMS

Administration/Personnel Fire Station 6 is located at 4355 Central Avenue, about 0.54 miles from the project site. According to the FFD 2018 Annual Report, their fleet includes 16 fire engines, including three new engines, three aerial trucks, one air/light unit for incident support, two rescue boats, technical rescue equipment, hazardous materials equipment, and six off-road engines.[1] This equipment is operated by approximately 6 battalion chiefs, 39 fire captains, 41 fire engineers, and 44 firefighters. In addition, the FFD employs four hazmat inspectors and four fire inspectors, of which there are two senior members for each inspector type.

[1] Fremont Fire Department, 2018 Annual Report. http://fremont.gov/DocumentCenter/View/40902/2018-Annual-Report-14-Final-Cambria, accessed April 24, 2019.

The Fremont General Plan strives to maintain a 6 minute 40 second response time for areas below the Toe of the Hill in Fremont.[2] As of 2018, the FFD is committed to keeping response times low with a standard of 5 minutes and 30 seconds to arrival at the emergency scene.[3] From incidents recorded in 2018, the highest recorded incident type was medical aid/rescue, comprising over 65 percent of all calls. Good intention calls composed 16 percent of calls, and false alarms and service calls comprised over six percent of all calls each. The other types of calls, classified as fire, explosions, hazardous materials, natural disasters, and other, made up the remaining types of calls for service to the FFD in 2018.[4]

4.13.2 STANDARDS OF SIGNIFICANCE

The proposed project would have a significant impact to fire protection and emergency services if it would result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities or a need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services.

4.13.3 IMPACT DISCUSSION

The following impact discussion analyzes the project's impact using the standards of significance as identified in the Standards of Significance above.

PS-1	**The proposed project would not result in the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.**

A significant environmental impact could result if implementation of the proposed project would increase demand for fire protection services to the extent that the construction of new or physically altered fire protection facilities would be needed.

The proposed project would result in the construction of new buildings, reconfiguration and moderation of existing buildings, development of new parking and circulation areas, and campus site upgrades on the existing Thornton Junior High School campus to expand school capacity from 7th and 8th grades to include 6th grade as well, a 73 percent increase in student capacity. The increase in capacity may increase the potential for on-site fire-related incidents and impacts to fire service provision.

However, the project is proposed on an existing school site and would shift student capacity from surrounding schools, resulting in a minimal net change to the student population. New demand for public services, such as fire protection, are primarily driven by population growth. As described in Chapter 4.12, Population and Housing, the project would not result in substantial direct or indirect population growth.

[2] City of Fremont, 2011. *City of Fremont General Plan.*
[3] Ibid.
[4] Ibid.

This means that the increase in demand for fire protection services would not be substantial and would not create a need for new fire protection facilities. The project sites and surrounding areas are currently developed and served by the FFD. Additionally, the proposed project would comply with all applicable codes for fire safety and emergency access, as required by the DSA. The proposed project would not require new or physically altered fire department facilities. Environmental impacts from new fire facilities would be *less than significant*, and no mitigation is required.

Significance without Mitigation: Less than significant.

4.13.3.12 CUMULATIVE IMPACTS

PS-2	**The proposed project would result in less-than-significant cumulative impacts with respect to fire protection services.**

The methodology used for the cumulative impact analysis is described in Chapter 4.0, Environmental Evaluation, of this Draft EIR. The cumulative setting for fire protection services considers growth resulting from the proposed project, in combination with growth projected by the Association of Bay Area Governments (ABAG) in the service area of the FFD. A significant cumulative environmental impact would result if this cumulative growth would exceed the ability of FFD to adequately serve its service area, thereby requiring construction of new facilities or modification of existing facilities.

As described above, the proposed project would not create a need for new or physically altered facilities in order for the FFD to provide fire protection services to its service area. All development in the FFD would be required also to comply with the CBC and CFC. Projects within the vicinity of the proposed project include residential projects, mixed-use projects, and the modernization of a school. The City of Fremont Building Department would not approve any of these proposed projects if noncompliant with the CBC and CFC. As stated under impact discussion PS-1, the increased capacity of the proposed project would absorb existing capacity of other nearby schools. Therefore, the FFD's existing facilities, equipment, and staffing levels would be adequate to accommodate the proposed project, and no additional facilities are proposed at this time. Therefore, the cumulative impact on the provision of fire services would be *less than significant*.

Significance without Mitigation: Less than significant.

4.13.4 POLICE SERVICES

This section describes the current police protection regulations, resources, and response times in Fremont, as well as the proposed project's potential impacts to police protection services.

4.13.4.1 ENVIRONMENTAL SETTING

Regulatory Framework

This section summarizes local policies related to police services in Fremont. There are no federal or State regulations pertaining to law enforcement that apply to the city.

City of Fremont General Plan

The Fremont General Plan discusses the role of Police Department to enhance safety and provide adequate public services. The Police Department regularly reviews new development and redevelopment projects with compliance with the City's Security Ordinance. Policies and strategies in the Public Facilities and Safety Elements of the Fremont General Plan relevant to police protection services are listed in Table 4.13-2.

TABLE 4.13-2 CITY OF FREMONT GENERAL PLAN POLICIES PERTAINING TO POLICE SERVICES

Policy/Implementation Number	Policy Text
Policy 9-1.2	Ensure public safety facilities are added or expanded as necessary to keep pace with population growth and meet operational needs. Take into account the availability of both capital and operating funds when determining the timing of new and expanded facilities.
Policy 10-5.2	Strive to maintain a 6 minute 40 second response time for areas below the Toe of the Hill.
Implementation 10-9.1.A	Include the Police Department in the review of development projects and solicit comments regarding implementation of crime prevention and CPTED concepts.

Source: City of Fremont, 2011, General Plan.

4.13.4.2 EXISTING CONDITIONS

The Fremont Police Department (FPD) is responsible for all public safety and emergency preparedness services in the City of Fremont. Led by the Chief of Police, the Division is comprised of the following specific units:[5]

- Office of Business Services
- Office of Professional Standards and Accountability
- Police Chief's Office
- Media Relations/IPO

All City police functions are housed in the 67,000 square feet police station complex located at 2000 Stevenson Boulevard, located approximately 2.6 miles southeast of the proposed project site.[6] The Police Department includes 317.5 total full-time employees, including 28 full-time employees of the Chief's

[5] City of Fremont Police Department. https://www.fremontpolice.org/index.aspx?nid=104, accessed April 30, 2019.
[6] City of Fremont, 2011. *Fremont General Plan.*

Office Division and 199 sworn officers. In addition, 118.5 professional officers work as civilians to provide essential services including finance, record, executive assistance, and other administrative support.[7]

The Police Department has divided the City into three zones for patrol. The proposed project site is in Fremont Police Department North Zone (Zone 2)[8] . The Patrol Division is the largest division within the FPD and consists of Patrol, K9, Field Training, Traffic, and Communications units. The total 160 sworn officers and professional staff that make up the Department's Patrol Unit equates to a staffing ratio of approximately 0.7 patrolling officer to every 1,000 residents.

4.13.5 STANDARDS OF SIGNIFICANCE

The proposed project would have a significant impact to police protection services if it would result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services.

4.13.6 IMPACT DISCUSSION

This section analyzes potential project-specific and cumulative impacts to police protection services potentially resulting from implementation of the proposed project.

PS-3	**The proposed project would not result in the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.**

A significant environmental impact would result if development of the proposed project would necessitate the need for construction or operation of new or physically altered police facilities. As discussed under the fire protection services impact discussion, the proposed project would result in the construction of new buildings, reconfiguration and moderation of existing buildings, development of new parking and circulation areas, and campus site upgrades on the existing Thornton Junior High School campus to expand school capacity from 1,259 students to 2,176 students. Utilization of the project site is currently developed with a junior high school which is restricted to daytime and afternoon hours. Neither the hours of operation nor the use of the site would not change under the proposed project. Although the relationship is not directly proportional, an hourly-restricted use of land typically results in decreased potential for emergency incidents and a decrease in the number of calls to police departments. While the increase in student capacity associated with the proposed project may cause a slight increase in demand

[7] City of Fremont Police Department, Table of Organization webpage, https://www.fremontpolice.org/DocumentCenter/View/40, accessed August 23, 2019.

[8] City of Fremont Police Department, Zone Map webpage, https://www.fremontpolice.org/DocumentCenter/Home/View/38, accessed August 19, 2019.

for police services, the school site and surrounding areas are currently developed and served by the FPD. Therefore, project impacts to police services would be less than significant and no mitigation measures are warranted.

Significance without Mitigation: Less than significant.

4.13.7 CUMULATIVE IMPACTS

PS-4	**The proposed project would result in less-than-significant cumulative impacts with respect to police services.**

A significant cumulative environmental impact could result if, in combination with other past, present, and reasonably foreseeable projects, construction of the proposed project would exceed the ability of FPD responders to adequately serve the vicinity thereby requiring construction of new facilities or modification of existing facilities. This section analyzes potential impacts to police protection services that could occur from implementation of the project in combination with reasonably foreseeable growth. For the purposes of this analysis, the area of cumulative effect will be considered the service area of the FPD, the area within one of the three zones designated by the FPD in the city limit of Fremont.

As described above, the proposed project is unlikely to increase the level of activity on the project site and as such would not increase the number of calls for police protection services. As noted, the project would not require the construction or expansion of FPD facilities. Moreover, as part of the FPD's involvement with Fremont's public facilities and growth, other significant development in Fremont will be reviewed to assess potential impacts on the Department's ability to provide adequate services. Finally, if and when new or expanded FPD facilities do become necessary, new construction or expansion projects would be subject to separate CEQA review in order to identify and mitigate potential environmental impacts to the extent feasible. Therefore, impacts related to the provision of police protection services resulting from buildout of the project would be less than significant.

Significance without Mitigation: Less than significant.

4.13.8 SCHOOLS

This section describes the existing regulations and conditions concerning schools, as well as the proposed project's potential impacts to existing schools.

4.13.8.1 ENVIRONMENTAL SETTING

Regulatory Framework

This section summarizes key State and local regulations related to schools. There are no federal regulations pertaining to schools that apply to the proposed project.

State Regulations

California Senate Bill 50

California Senate Bill 50 (SB 50) places limitations on the power of local governments to require mitigation of school facilities by developers. Under the provisions of SB 50, school districts can collect fees to offset the cost of expanding school capacity which becomes necessary as development occurs. These statutory mitigation fees are determined based on the square footage of proposed uses. As a part of this Bill, school districts must base their long-term facilities needs and costs on long-term population growth in order to qualify for this source of funding. Payment of statutory mitigation fees is deemed to be adequate mitigation of school impacts under CEQA.

California Government Code (Section 65995(b)) and Education Code (Section 17620)

SB 50 amended California Government Code Section 65995, which contains limitations on Education Code Section 17620, the statute that authorizes school districts to assess statutory mitigation fees within school district boundaries. Government Code Section 65995(b)(3) requires the maximum square footage assessment for development to be increased every two years, according to inflation adjustments. On January 24, 2018 the State Allocation Board (SAB) approved increasing the allowable amount of statutory school facilities fees (Level I School Fees) from $3.48 to $3.79 per square foot of assessable space for residential development of 500 square feet or more, and up to $0.61 per square foot of chargeable covered and enclosed space for commercial/industrial development.[9] According to California Government Code Section 65995(h), the payment of statutory mitigation fees is "deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization...on the provision of adequate school facilities." The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code.

Mitigation Fee Act (California Government Code (Sections 66000 through 66008)

Enacted as Assembly Bill (AB) 1600, the Mitigation Fee Act requires a local agency establishing, increasing, or imposing a statutory mitigation fee as a condition of development to identify the purpose of the fee and the use to which the fee is to be put.[10] The agency must also demonstrate a reasonable relationship between the fee and the purpose for which it is charged, and between the fee and the type of development project on which it is to be levied. This Act became enforceable on January 1, 1989.

[9] State Allocation Board Meeting, January 24, 2018. https://www.dgs.ca.gov/-/media/Divisions/OPSC/Agenda-Items/2018/01-January/01242018_SAB_Transcript.ashx?la=en&hash=8720620D9C2EDAC4CD7081DF2EF8F4093B5CC942, accessed April 30, 2019.

[10] California Government Code, Sections 66000-66008. http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=65001-66000&file=66000-66008, accessed December 8, 2015.

Local Regulations

Fremont Unified School District Measure E

The Fremont Unified School District (FUSD) Measure E Bond Issue is a school facilities bond approved by voters in June of 2014. The Measure was developed to modernize or repair neighborhood schools with local funding to "update technology/aging classrooms, math, science/computer labs for 21st Century learning, upgrade electrical wiring to current safety codes, fix/replace leaky roofs, aging plumbing/ restrooms, remove asbestos, repair, construct, acquire equipment, classrooms, sites, facilities."[11] The Measure included $650 million in funding dedicated to improving Fremont schools, with no bond money allowed to go to administrators, salaries, benefits, or other operating expenses.

City of Fremont General Plan

The City of Fremont's General Plan, adopted in 2011, contains Public Facilities Element with policies and strategies to encourage school districts to maintain and enhance existing educational opportunities. Policies and strategies relevant to school provision are listed in Table 4.13-3.

TABLE 4.13-3 CITY OF FREMONT GENERAL PLAN POLICIES PERTAINING TO SCHOOLS

Policy/Implementation Number	Policy Text
Policy 9-9.1	Coordinate with FUSD so that the District Board and staff are aware of development plans.
Implementation 9-9.1.C	Consult with the School District to ensure school locations are compatible with surrounding uses, and when formulating large-scale community and specific plans
Policy 9-10.1	Work with FUSD, Ohlone College, and other educational institutions to address circulation, traffic, and parking issues in the vicinity of school campuses, to encourage use of alternate modes of transportation, and to ensure the safety of students traveling to and from school.
Implementation 9-10.1.A	Ensure that pedestrian connections between new residential developments and existing streets and sidewalks allow children to access neighborhood schools as quickly and safely as possible. Promote school siting and site improvements that emphasize multiple points of access to a neighborhood.

Source: City of Fremont, 2011. *General Plan.*

City of Fremont Municipal Code

The City of Fremont Municipal Code, organized by title, chapter, article, and section, contains all ordinances for Fremont. Title 17 Subdivisions includes regulations relevant to schools in Fremont. Under Chapter 17.25, Subdivision Procedure, a subdivider may be required to dedicate a school site to a school district as a condition of approval of a tentative subdivision map

[11] Fremont Unified School District, Measure E. https://fusd-ca.schoolloop.com/pf4/cms2/view_page?d=x&group_id=1529997505483&vdid=i17a1we8k2cw, accessed April 30, 2019.

4.13.8.2 EXISTING CONDITIONS

Fremont Unified School District

The FUSD serves the community of Fremont, operating as the second largest of the 18 school districts in Alameda County with 28 elementary schools, one pre-kindergarten campus, five junior high schools, five high schools, and one continuation school. Many of the District's facilities were constructed in the 1950s and 1960s with enrollment growing rapidly to peak in 1972. Since that time, the FUSD has experienced and overall decline in enrollment, though not consistent over time. In recent years, new housing development in the City has increased enrollment in those neighborhoods across the city.[12]

FUSD's Long Range Facilities Plan (LRFP) adopted in 2014 by the Board of Education identifies enhancements to consider when developing proposals for school site plans or improvements. The first enhancement titled "Program Opportunities to Reduce Overcrowding" encourages providing seats for students in neighborhood schools. A design consideration suggests reconfiguring the elementary and junior high school model from a K-6/7-8 to a K-5/6-8 model.13

FUSD standards indicate that each school's capacity should fall within the following guidelines:

- Elementary: 450-900 students
- Junior High: 600-1200 students
- High: 1200-2400 students

By moving sixth grade from the elementary school level to the junior high level, the LRFP indicates that each school should fall within the acceptable range.[13]

4.13.9 STANDARDS OF SIGNIFICANCE

The proposed project would have a significant impact related to schools if, in order to maintain acceptable service ratios or other performance objectives, the proposed project would result in the provision of, or need for, new or physically altered school facilities, the construction or operation of which could cause significant environmental impacts.

4.13.10 IMPACT DISCUSSION

PS-5	**The proposed project would not result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.**

[12] City of Fremont, 2011. *Fremont General Plan.*
[13] Fremont Unified School District, 2014. *Long Range Facilities Plan.*

The proposed project would have a significant impact related to schools if would increase the demand for school services to the degree that new facilities are required. As a proposed expansion of an existing school that would alleviate overcrowding at existing schools, the project would have *no impact*.

Significance without Mitigation: No impact.

4.13.11 CUMULATIVE IMPACTS

PS-6	The proposed project would result in less-than-significant cumulative impacts with respect to school services.

A significant cumulative environmental impact could result if, in combination with other past, present, and reasonably foreseeable projects, buildout of the proposed project in combination with past, present and reasonably foreseeable projects would exceed the ability of FUSD to adequately serve the vicinity, thereby requiring construction of new facilities or modification of existing facilities. This section analyzes potential impacts to school services that could occur from implementation of the project in combination with reasonably foreseeable growth. For the purposes of this analysis the area of cumulative effect will be considered the service area of the FUSD, which as discussed above includes the areas within the city limits of Fremont.

As described above, the proposed project would result in the increased capacity and facility improvements of an existing school. There would be *no impact*.

Significance without Mitigation: No impact.

4.13.12 LIBRARIES

This section describes the regulatory framework and existing conditions related to library services in the City of Fremont.

4.13.12.1 ENVIRONMENTAL SETTING

Regulatory Framework

This section summarizes key State regulations related to libraries in Fremont. There are no federal regulations pertaining to libraries that apply to the proposed project.

State Regulations

The Mello-Roos Communities Facilities Act of 1982

The Mello-Roos Community Facilities Act, Government Code Section 53311 *et seq.*, provides an alternative method of financing certain public capital facilities and services through special taxes. This State law empowers local agencies to establish Community Facilities Districts (CFDs) to levy special taxes for facilities such as libraries. Such districts exist within the City of Campbell.

Local Regulations

City of Fremont General Plan

The City of Fremont's General Plan, adopted in 2011, contains Public Facilities Element with policies and strategies to encourage adequate library facilities to serve the residents within the city. Policies and strategies relevant to school provision are listed in Table 4.13-4.

TABLE 4.13-4 CITY OF FREMONT GENERAL PLAN POLICIES PERTAINING TO LIBRARIES

Policy/Implementation Number	Policy Text
Policy 9-1.3	Continue to provide library facilities and community centers, senior centers, and Family Resource Center to the community. Provide additional facilities and cultural facilities as funding allows.
Implementation 9-1.3.A	Continue to provide facilities for the Fremont Main Library, the Fremont Senior Center, the Fremont Family Resource Center, and community centers.

Source: City of Fremont, 2011. *General Plan.*

4.13.12.2 EXISTING CONDITIONS

The Alameda County Library System operates the Main Library in the City Center at 2400 Stevenson Boulevard and branch libraries across the city in the Centerville, Irvington, and Niles neighborhoods. The four libraries in Fremont are among 10 system-wide that serve Fremont, Newark, Dublin, Albany, Union City, and unincorporated Castro Valley and San Lorenzo. The system is operated by the County, which funds the staffing, materials and equipment, and the City of Fremont provides and maintains its own library facilities. An appointed Fremont Library Commission advises the Fremont Library staff on local issues.

The Fremont Main Library is considered the central library for the County system and has a circulation of up to 300,000 books.[14] The three branch libraries in Fremont have smaller collections and more limited hours, open one to two days a week. At one time the City funded additional operating hours at branch libraries but eliminated this funding during a budget decline over 15 years ago. The Fremont Main Library and existing branch libraries are expected to meet the City's needs through 2035.14

4.13.13 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant impact if, in order to maintain acceptable service ratios or other performance objectives, the proposed project would result in the provision of or need for new or physically altered library facilities, the construction or operation of which could cause significant environmental impacts.

[14] City of Fremont, 2011. *Fremont General Plan.*

4.13.14 IMPACT DISCUSSION

PS-7 The proposed project would not result in the need for new or physically altered libraries, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.

The Alameda County Library System provides library services to the City of Fremont at the Fremont Main Library at 2400 Stevenson Boulevard and three branch libraries. The Centerville Library at 3801 Nicolet Avenue is the closest library, located approximately 0.86 miles northwest of the project site. The libraries do not maintain a service ratio. As described above, the proposed project would not result in substantial direct or indirect population growth as the project is to alleviate overcrowding within the Fremont elementary schools. As such, it is unlikely that the proposed project would induce demand for library services in the same way that the construction of new residential or other commercial facilities would have the potential to result in significant environmental impacts. Moreover, the proposed project would include a new Admin/Library Building which would serve the student body associated with the proposed project. Therefore, *no impact* would result in this respect.

Significance without Mitigation: No impact.

4.13.15 CUMULATIVE IMPACTS

PS-8 The proposed project would result in less-than-significant cumulative impacts with respect to the construction of libraries.

A significant cumulative environmental impact could result if, in combination with other past, present, and reasonably foreseeable projects, buildout of the proposed project in combination with past, present and reasonably foreseeable projects would exceed the ability of the Alameda County Library System to adequately serve the vicinity, thereby requiring construction of new facilities or modification of existing facilities. This section analyzes potential impacts to library facilities that could occur from implementation of the project in combination with reasonably foreseeable growth. For the purposes of this analysis, the area of cumulative effect is considered the service area of the Alameda County Library System which as discussed above includes the eight communities the system serves within Alameda County.

As described above the proposed project would include the construction of a new Administrative/Library building on the school site, increasing the amount of library space available to existing students within the service area. This would result in a favorable impact to the library system and would thus not create a need for additional new or expanded library facilities by accommodating existing students in the District. Therefore, there would be *no impact* related to the provision of library facilities resulting from buildout of the project.

Significance without Mitigation: No impact.

4.13.16 PARKS

This section describes the regulatory framework and existing conditions related to parks and recreation in Fremont, as well as the proposed project's potential impacts to parks and recreation facilities.

4.13.16.1 ENVIRONMENTAL SETTING

Regulatory Framework

This section summarizes key State and local regulations related to park and recreation services. There are no federal regulations pertaining to park and recreation services that apply to the proposed project.

State Regulations

The 1975 Quimby Act (California Government Code Section 66477) authorizes cities and counties to adopt ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. Revenues generated through the Quimby Act cannot be used for operation and maintenance of park facilities.[15] A 1982 amendment (AB 1600) requires agencies to clearly show a reasonable relationship between the public need for the recreation facility or parkland and the type of development project upon which the fee is imposed. Cities with a high ratio of park space to inhabitants can set a standard of up to 5 acres per 1,000 persons for new development. Cities with a lower ratio can only require the provision of up to 3 acres of park space per 1,000 persons. The calculation of a city's park space to population ratio is based on a comparison of the population count of the last federal census to the amount of City-owned parkland.

Local Regulations

East Bay Regional Parks District

The East Bay Regional Park District (EBRPD) is a special district operating in Alameda and Contra Costa Counties and operates four regional recreational facilities in Fremont: Mission Peak Regional Preserve (2,999 acres); Quarry Lakes Regional Recreation Area (539 acres); Coyote Hills Regional Park (978 acres); and Ardenwood Historic Farm (205 acres). In addition, the District operates the 12-mile-long Alameda Creek Trail, which extends from the mouth of Niles Canyon to the Bay. An EBRPD bond measure approved by voters in 2008 includes limited funding to local jurisdictions such as Fremont for rehabilitation and maintenance of City parks.

San Francisco Bay Trail

Another recreational amenity for Fremont is the San Francisco Bay Trail, a planned 500-mile-long trail around the Bay, of which 270 miles were completed as of 2005. There are two completed portions near Fremont, passing through Coyote Hills and along southern Fremont Boulevard. The City attempts to

[15] Westrup, Laura, 2002. Quimby Act 101: An Abbreviated Overview, Sacramento: California Department of Parks and Recreation. https://www.parks.ca.gov/pages/795/files/quimby101.pdf, accessed May 1, 2019.

partner with private developments when the opportunity arises, which reduces the direct costs of completing the trail.

City of Fremont General Plan

The Fremont General Plan includes the Parks and Recreation Element. The purpose of the Element is to address the preservation of parks and open space and promote recreation in the City of Fremont. The Element includes a series of polices that are directly related to parks and school recreational facilities as parks in the City. These are shown in Table 4.13-5.

TABLE 4.13-5 CITY OF FREMONT GENERAL PLAN POLICIES PERTAINING TO PARKS

Policy/Implementation Number	Policy Text
Policy 8-3.2	Cooperate with the Fremont Unified School District to maintain and increase public access to school playing fields and playgrounds when not in use.
Implementation 8-3.2.A	Encourage FUSD to open its facilities to the public, particularly during the summer.

Source: City of Fremont, 2011, General Plan.

Fremont Municipal Code

The Fremont Municipal Code, organized by Title, Article, and Chapter contains all ordinances for the city. Title 18 Article II of Campbell Municipal Code sets regulations and standards for parks and recreation facilities and buildings in the city. Chapter 18.290.090 (Park Land Impact Fees) of the Fremont Municipal Code requires development impact fees or dedication of park land on residential development projects to acquire and maintain parks and recreational facilities to mitigate impacts from new development. The collected fee is for acquisition, improvement, maintenance, rehabilitation, expansion, or implementation of parks and recreational facilities.

4.13.16.2 EXISTING CONDITIONS

The Fremont Community Services and Recreation Services Departments operates parks and recreational facilities and recreational programs in Fremont. The City of Fremont and other public agencies own and operate several facilities throughout the city which include parks, an aquatic park, recreational fields, gymnasiums, play courts, open spaces, and picnic areas, all of which are open and accessible to the public.

Parks

The City of Fremont has 53 parks, providing a wide range of recreation facilities to the community, for a total of 1,148 acres of parks. Park acreage is currently sufficient in attaining the City's target of 5 acres of parkland per 1,000 residents.[12]

The City's park categories include citywide parks, neighborhood parks, mini parks, historic parks, civic parks, and linear parks. In addition, the City has leased land from the FUSD for recreational use. While

these lands are not permanently committed to park use, they function as neighborhood parks without the bounds of standards or guidelines for recreational facilities. Due to their intermittent use, these facilities are not included in the City's parkland inventory. All parks within approximately 1 mile of the proposed project site are displayed in Table 4.13-6.

TABLE 4.13-6 NEARBY PARKS

Park	Distance from Project Site
Westridge Park	0.63 miles northwest
Brookvale Trail Park	0.88 miles northwest
Los Cerritos Community Park	0.76 miles north
Centerville Community Park	0.94 miles southeast
Patterson Park	1.02 miles northwest
Plaza Park	0.87 miles southwest
Bill Ball Plaza	0.50 miles south

Source: City of Fremont, 2011. *General Plan.*

Recreational Trails

Recreational trails are considered off-road Class 1 facilities for biking, walking, or jogging. In some cases, use by equestrians may also be allowed. The City of Fremont operates recreational trails throughout the city limits and partners with other public agencies to augment the trail network through and around Fremont. These trails include regional facilities such as the Alameda Creek Trail, the Bay Trail, and the proposed Union Pacific Corridor Trail. It also includes existing and proposed trails in the Hill Area which are typically managed by the EBRPD. The San Francisco Bay Trail runs through the western edge of Fremont and the Bay Area Ridge Trail runs north to south along the Coyote Hills ridge in east Fremont.[16] The closest trail to the proposed project site is a City-owned recreational trail approximately 0.9 miles northwest of the school campus.

4.13.17 STANDARDS OF SIGNIFICANCE

The proposed project would have a significant impact with regard to parks and recreation if it would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered parks and recreational facilities, or need for new or physically altered parks and recreation facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.
2. Increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur, or be accelerated.
3. Include or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

[16] City of Fremont, 2016. *City of Fremont Pedestrian Master Plan*. https://fremont.gov/DocumentCenter/View/37740/Chpt-3-PED?bidId=, accessed May 1, 2019.

4.13.18 IMPACT DISCUSSION

PS-9 The proposed project would not result in the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.

The proposed project would have a significant impact related to park facilities if it would increase the demand for park facilities in order to maintain acceptable service ratios requiring the construction of new facilities that may cause significant environmental impacts. As discussed above, there are over 1,184 acres of parks in Fremont. As has been stressed throughout this document, the proposed school modernization and expansion would be developed to serve students now attending existing elementary schools at locations across Fremont. The proposed school conversion to include 6th graders in the student body would serve communities around the project site. It would neither promote the movement of students within Fremont, nor increase the population of Fremont. Moreover, as described Chapter 3, Project Description, the project would include redevelopment of the school's playing fields and expansion of the asphalt hardcourt area with six new basketball courts, three new ball walls, eight new tetherball courts and a fitness section. Thus, it would not increase strain on existing park facilities. The proposed project would result in *a less-than-significant* impact.

Significance without Mitigation: Less than significant.

4.13.19 CUMULATIVE IMPACTS

PS-10 The proposed project would result in less-than-significant cumulative impacts with respect to parks.

A significant cumulative environmental impact could result if, in combination with other past, present, and reasonably foreseeable projects, buildout of the proposed project in combination with past, present and reasonably foreseeable projects would exceed the ability of the Fremont Community Services and Recreation Services Departments to adequately serve the vicinity, thereby requiring construction of new facilities or modification of existing parks. This section analyzes potential impacts to parks that could occur from implementation of the project in combination with reasonably foreseeable growth. For the purposes of this analysis the area of cumulative effect will be considered the service area of the Fremont Community Services and Human Services Departments which, as discussed above, operate as part of the City of Fremont.

As described above, the proposed school expansion would be developed to serve students now attending the existing elementary schools at locations across the FUSD. The proposed school would serve communities around the project site with the reconfiguration of the elementary schools to serve K-5 and the junior high schools to serve 6-8, effectively transferring the 6th grade to the junior high school. It would neither promote the movement of students within Fremont, nor increase the population of Fremont. It would not increase strain on existing park facilities. As the proposed project would contain

fields and outdoor play areas for students, related impacts would be site specific, and would not create a need for additional new or expanded park facilities. Therefore, there would be a *less than significant* impact related to the provision of park facilities resulting from buildout of the project.

Significance without Mitigation: Less than significant.

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4.14 RECREATION

This chapter describes the regulatory framework and existing conditions on the project site related to transportation, and the potential impacts of the project on recreation.

4.14.1 ENVIRONMENTAL SETTING

4.14.1.1 REGULATORY FRAMEWORK

This section summarizes key local regulations related to recreation concerning the proposed project. There are no State or federal regulations pertaining to recreation that directly apply to the proposed project.

Local Regulations

City of Fremont General Plan

The Fremont General Plan includes the Parks and Recreation Element. The purpose of the Element is to address the preservation of parks and open space and promote recreation in the City of Fremont. The Element includes a series of polices that are directly related to schools and school recreational facilities in the City, including shared use and program coordination. These are shown in Table 4.14-1.

TABLE 4.14-1 CITY OF FREMONT GENERAL PLAN POLICIES PERTAINING TO RECREATION

Policy/Implementation Number	Policy Text
Policy 8-1.1	Develop parks and recreational facilities consistent with the standards and guidelines included in the Parks and Recreation chapter of the General Plan and in the Parks and Recreation Master Plan
Policy 8-3.1	Encourage other land and resource agencies to maintain and expand their offerings of recreational opportunities in Fremont.
Policy 8-4.1	Continue to offer an array of recreational programs to the public.
Implementation 8-4.1.A	Continue to offer high quality recreational programs that cover their own costs through user fees
Policy 8-4.2	Where financially feasible, provide new recreational opportunities to the community.

Source: City of Fremont, 2011. *General Plan.*

4.14.1.2 EXISTING CONDITIONS

The Fremont Community Services and Recreation Services Departments operates recreational facilities and recreational programs in Fremont. The City of Fremont and other public agencies own and operate several facilities throughout the city which include parks, an aquatic park, recreational fields, gymnasiums, play courts, open spaces, and picnic areas, all of which are open and accessible to the public.

RECREATION

Recreational Facilities

The City of Fremont offers a range of recreational facilities, including recreation/community centers, a water play facility, sports fields, tennis courts, a golf course, and a dog park. In addition, other agencies such as the Fremont Unified School District and the East Bay Regional Parks District operate facilities that can be used by the public.

The recreational facilities offered through the City of Fremont are as follows:

- Five community centers: Centerville, Irvington, Warm Springs, Central Park, and Los Cerritos
- Fremont Senior Center
- Fremont Park Golf Course
- Fremont Bank Aqua Adventure Water Park
- Tennis and basketball courts
- Sports fields
- Skate park
- Dog park
- Olive Hyde Art Gallery

Recreational Programs

The City also offers an array of recreational programs for young children, children, teens, adults, and seniors as shown in Table 4.14-2.

TABLE 4.14-2 CITY OF FREMONT RECREATION SERVICES PROGRAMS

Age Group	Program
Youth, Teens	Summer camps: academic enrichment, aquatics, art & cooking, drama & dance, sports, traditional
Youth	Extended care
Youth, Teens	Central Park Grid
Youth, Teens	Academic enrichment
Youth, Teens, Adults	Aquatics
Youth, Teens, Adults	Art
Youth, Teens, Adults	Dance
Youth, Teens, Adults	Fitness and Health
Youth, Teens, Adults	Music
Youth, Teens, Adults	Sports: Badminton, basketball, golf, soccer, tennis
Young Children	Tiny Tots Preschool Program
Young Children	Tot Sports
Teens	Teen Leadership Academy

Source: City of Fremont, Recreation Services.

4.14.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant recreation impact if it would:

1. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.14.3 IMPACT DISCUSSION

REC-1 The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

The proposed project would have a significant physical impact on existing parks and recreational facilities if it would significantly increase the demand for and use of those facilities. Such an increase in demand is typically generated by development that supports new users, such as new residential development or development that replaces existing parks. As previously discussed under the school services impact discussion, the proposed project would increase classroom space, improve recreational components and modernize facilities at an existing school to accommodate the transfer of existing District students from existing elementary schools. As shown on Figure 3-6 in Chapter 3, Project Description, the proposed project would include a courtyard-style outdoor learning spaces and basketball courts, a kindergarten play area, and new playfields.

The project would not result in new students or residents. It would not generate significant additional demand for parks and recreational facilities in the City of Fremont. The proposed project would improve school recreational spaces. It would not result in the deterioration of existing park facilities. It would have a *less than significant* impact.

Significance without Mitigation: Less than significant.

REC-2 The proposed project would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

As illustrated in Figure 3-4, the project would include the reorganization and redevelopment of the school's hardtop area and playing fields. The running track would be rotated about 45 degrees, the baseball diamond repositioned into the northeast corner of the campus, and unused turf area removed, allowing for the expansion of the asphalt hardcourt area. The new 140,000-square-foot hardcourt area would include six new basketball courts, three new ball walls, eight new tetherball courts and a fitness

section. These elements are some of the physical components of the process to convert Thornton from a junior high school to middle school.

These updated facilities would accommodate existing FUSD students and serve users of the school. These facilities would be located on an already developed school site with no change to the existing land use. These facilities are elements of the physical improvements of the project, which, as assessed throughout this EIR, would have no adverse physical effects on the environment. As such, the proposed project would have a *less than significant* impact in this respect, and no mitigation is required.

Significance without Mitigation: Less than significant.

4.14.4 CUMULATIVE IMPACTS

REC-3	The proposed project would result in less-than-significant cumulative impacts with respect to recreational facilities.

A significant cumulative environmental impact could result if buildout of the proposed project, in combination with past, present and reasonably foreseeable projects, would exceed the ability of the Fremont Community Services and Recreation Services Departments to adequately serve the vicinity, thereby requiring construction of new facilities or modification of existing facilities. This section analyzes potential impacts to recreational facilities that could occur from implementation of the project in combination with reasonably foreseeable growth. For the purposes of this analysis the area of cumulative effect will be considered the service area of the Fremont Community Services and Human Services Departments which, as discussed above, operate as part of the City of Fremont.

As described above, the proposed school expansion would be restricted to the existing school site and developed to serve students now attending the school and those transferred to the school from existing FUSD schools. The proposed school would serve communities around the project site with the reconfiguration of the elementary schools to serve K-5 and the junior high schools to serve 6-8, effectively transferring the 6th grade to the junior high school. It would neither promote the movement of students within Fremont, nor increase the population of Fremont. The site and program specific nature of the project would not add to potential recreational impacts associated with other development projects nor increase cumulative strain on existing recreational facilities. There would be a *less than significant* cumulative impact related to the provision of recreation facilities resulting from buildout of the project.

Significance without Mitigation: Less than significant.

4.15 TRANSPORTATION

This chapter provides an overview of the existing transportation conditions of the proposed project and discusses the associated regulatory framework. It also evaluates the potential for implementation of the proposed project to result in significant environmental impacts, direct and indirect, related to transportation. The analysis focuses on potential impacts to intersections and roadway segments, pedestrian and bicycle facilities, and transit service. Significant impacts are quantified and mitigation measures are identified to address these impacts, as necessary.

The Traffic Impact Analysis (TIA) (see Appendix G) incorporated by reference in this chapter was conducted to identify potential traffic impacts and site and circulation impacts related to the proposed project. The potential impacts of the project were evaluated in accordance with the standards set forth by the City of Fremont and the Alameda County Transportation Commission (ACTC) Congestion Management Program (CMP).

ENVIRONMENTAL SETTING

4.15.1.1 REGULATORY FRAMEWORK

This section describes local environmental laws and policies that are relevant to the California Environmental Quality Act (CEQA) review process for transportation and circulation. These policies provide a context for the impact discussion related to the proposed project's consistency with the applicable regulatory conditions. There are no applicable federal, State, or regional environmental laws or policies applicable to the proposed project.

State Regulations

California Department of Transportation

The California Department of Transportation (Caltrans) is the primary State agency responsible for transportation issues. One of its duties is the construction and maintenance of the State highway system. Caltrans approves the planning, design, and construction of improvements for all State-controlled facilities including State Route (SR) 17, SR 85, and the associated interchanges for these facilities in the study area. Caltrans has established standards for roadway traffic flow and developed procedures to determine if State-controlled facilities require improvements. For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken. For projects that would not physically affect facilities but may influence traffic flow and levels of service at such facilities, Caltrans may recommend measures to mitigate the traffic impacts.

The following Caltrans procedures and directives are relevant to the proposed Plan, particularly to State roadway facilities:

- Level of Service Target. Caltrans maintains a minimum level of service (LOS) at the transition between LOS C and LOS D for all its facilities. Where an existing facility is operating at less than the LOS C/D threshold, the existing measure of effectiveness should be maintained.

- Caltrans Project Development Procedures Manual. This manual outlines pertinent statutory requirements, planning policies, and implementing procedures regarding transportation facilities. It is continually and incrementally updated to reflect changes in policy and procedures.
- Caltrans Deputy Directive 64. This directive requires Caltrans to consider the needs of non-motorized travelers, including pedestrians, bicyclists, and persons with disabilities, in all programming, planning, maintenance, construction, operations, and project development activities and products. This includes incorporation of the best available standards in all of Caltrans' practices.
- Caltrans Deputy Directive 64-RI. This directive requires Caltrans to provide for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State highway system. Caltrans supports bicycle, pedestrian, and transit travel with a focus on "complete streets" that begins early in system planning and continues through project construction and maintenance and operations.
- Caltrans Director's Policy 22. This policy establishes support for balancing transportation needs with community goals. Caltrans seeks to involve and integrate community goals in the planning, design, construction, and maintenance and operations processes, including accommodating the needs of bicyclists and pedestrians.

California Complete Streets Act of 2008 (Assembly Bill 1358)

Originally passed in 2008, California's Complete Streets Act came into force in 2011 and requires local jurisdictions to plan for land use transportation policies that reflect a "complete streets" approach to mobility. "Complete streets" comprises a suite of policies and street design guidelines which provide for the needs of all road users, including pedestrians, bicyclists, transit operators and riders, children, the elderly, and the disabled. From 2011 onward, any local jurisdiction—county or city—that undertakes a substantive update of the circulation element of its general plan must consider "complete streets" and incorporate corresponding policies and programs.

State Transportation Improvement Program

The California Transportation Commission (CTC) administers the public decision-making process that sets priorities and funds projects envisioned in long-range transportation plans. The CTC's programming includes the State Transportation Improvement Program (STIP), a multi-year capital improvement program of transportation projects on and off the State highway system, funded with revenues from the State Highway Account and other funding sources.

Senate Bill 743

Governor Jerry Brown signed California Senate Bill 743 on September 27, 2013, which recommends Vehicle Miles Traveled (VMT) as the sole measure of a project's impact on transportation infrastructure as opposed to the current methods which focus on metrics related to vehicular roadway capacity and LOS. The shift to VMT will decouple the LOS analysis approach from environmental analysis this has the potential to streamline the CEQA review process in cases where LOS-based traffic impacts could not be mitigated to less than significant levels.

Regional Regulations

Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county Bay Area, including Alameda County. It also functions as the federally mandated metropolitan planning organization (MPO) for the region. It is responsible for regularly updating the Regional Transportation Plan (RTP), a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the public agency tasked with regulating air pollution in the nine-county Bay Area, including Alameda County. As a primary source of air pollution in the Bay Area region is from motor vehicles, air district regulations affect transportation planning in the project study area. The BAAQMD's goals include reducing health disparities due to air pollution, achieving and maintaining air quality standards, and implementing exemplary regulatory programs and compliance with federal, State, and regional regulations.

Alameda County Transportation Commission

The Alameda County Transportation Commission (ACTC) is the County's Congestion Management Agency (CMA). It prepared and oversees the 2017 Alameda County Congestion Management Program (CMP). The CMP identifies countywide strategies to respond to future transportation on needs and procedures to reduce congestion. The CMP identifies existing and desired traffic conditions on a variety of roadways throughout the county.

The CMP requires analysis of the Metropolitan Transportation System (MTS) for all development projects that would generate more than 100 PM peak hour trips. The CMP uses LOS standards to measure congestion and has established LOS standards to determine how local governments meet the standards of the CMP. This includes impacts to the roadway, transit system, cyclists on the Countywide Bicycle Network and pedestrians within the Areas of Countywide Significance identified in the Alameda Countywide Pedestrian Plan.

Local Regulation

City of Fremont General Plan

Both the Mobility Element and Public Facilities Element of the 2011 Fremont General Plan include policies specifically related to transportation and access to and around public schools. These regulations are identified in Table 4.15-1, below.

TABLE 4.15-1 GENERAL PLAN POLICIES PERTAINING TO SCHOOL ACCESS AND TRANSPORTATION

Goal/Policy/ Strategy Number	Goal/Policy/Strategy Text
Mobility Element	
Policy 3-1.6	Pedestrian and Bicycle Safety: Improve the safety of pedestrians and bicyclists throughout Fremont through design, signage, capital projects, pavement maintenance, street sweeping and public education.
Implementation 3-1.6.A	Pursue grant funding opportunities to implement a Safe Routes to School program aimed at protecting the safety of students walking to and from school and that addresses physical improvements, including gaps in the sidewalk network
Policy 3-2.3	Pedestrian Networks. Integrate continuous pedestrian walkways in Fremont's City Center, Town Centers, residential neighborhoods, shopping centers, and school campuses. Place a priority on improving areas that are not connected by the City's pedestrian network, with the objective of making walking safer, more enjoyable, and more convenient.
Implementation 3-2.3.C	Use the development review process to require pedestrian connectivity within proposed development and between development and destinations (public facilities, transit, neighborhood commercial uses, parks, etc.)
Policy 3.2.4	Improving Bicycle Circulation. Enhance bicycle circulation, access, and safety throughout Fremont, particularly in the City Center, the Town Centers, around existing and planned BART stations, and near schools and other public facilities. Barriers and impediments to bicycle travel should be reduced.
Policy 3-4.5	Traffic Calming. Incorporate measures to slow down or "calm" traffic on local streets, or in some special circumstances, collector streets, that experience cut-through traffic, hazardous conditions for bicycles or pedestrians, or a high incidence of vehicles traveling at excessive speeds. A variety of approaches, such as road design, increased enforcement, streetscape improvements, crosswalk pavers, chicanes, raised crosswalks near schools, and curb "bulbouts" should be used to address this issue.
Policy 3-5.5	Coordination with Adjacent Cities and Other Public Agencies. Coordinate with Newark, Milpitas, Union City, and other nearby jurisdictions and local public agencies to ensure compatible plans and road development standards and to coordinate major transportation investments. This should include coordination with the Fremont Unified School District on the provision of school bus service and school-related traffic issues
Public Facilities Element	
Policy 9-10.1	Addressing Circulation, Traffic and Parking Issues at Schools. Work with FUSD, Ohlone College, and other educational institutions to address circulation, traffic, and parking issues in the vicinity of school campuses, to encourage use of alternate modes of transportation, and to ensure the safety of students traveling to and from school.
Implementation 9-10.1.A:	Pedestrian Connections. Ensure that pedestrian connections between new residential developments and existing streets and sidewalks allow children to access neighborhood schools as quickly and safely as possible. Promote school siting and site improvements that emphasize multiple points of access to a neighborhood.
Implementation 9-10.1.C:	AC Transit Service Improvements. Work with AC Transit to promote transit service improvements between residential areas and local high and middle schools, and to provide suitable transit facilities such as bus shelters near school campuses.
Implementation 9-10.1.E:	Traffic Management. Work with FUSD to provide traffic management during peak pickup and drop-off hours at school sites to minimize accident risks and traffic impacts.

Source: City of Fremont, 2011, City of Fremont General Plan.

4.15.1.2 EXISTING TRANSPORTATION NETWORK

Roadway Network

A network of arterials, collectors, and local streets and an interstate highway provide indirect or direct access to the site. Through traffic is generally served by arterial streets, while collector streets connect arterials to local streets and land uses. Local streets provide direct access to land uses. These roadways are summarized below

- Thornton Avenue is a four-lane, east-west major arterial with an eastern terminus at Paseo Padre Parkway and a western terminus at Highway 84 just east of the Dumbarton Bridge Toll Plaza.
- Oak Street is a north-south collector providing access between Alder Avenue and Hansen Avenue, and serves as an alternative north-south connection to Fremont Avenue. Oak Street also provides access to both Thornton Junior High School and Oliveira Elementary School. Oak Street is a two-lane roadway with sidewalks on both sides and on-street parking.
- Dusterberry Way is a north-south collector providing access between Central Avenue and Thornton Avenue, across from a Thornton Junior High School access driveway. Dusterberry Way has an at-grade rail crossing and is a four-lane roadway with continuous sidewalks on both sides and no on-street parking.
- Coronado Drive is a north-south collector providing access between Thornton Avenue and Nicolet Avenue, mainly serving residential neighborhoods. Coronado Drive is a two-lane roadway with continuous sidewalks and on-street parking. A sidewalk connects the playing fields behind Thornton Junior High School to Coronado Drive.
- Contra Costa Avenue is a north-south collector providing access between Thornton Avenue and Hansen Avenue, expanding about ¼-mile. It is a two-lane roadway with continuous sidewalks on both sides and on-streets parking.
- Cabrillo Drive is a north-south collector west of Thornton Avenue and a local street east of Thornton Avenue. West of Thornton Avenue, Cabrillo Drive is a two-lane roadway with continuous sidewalks, providing access to Decoto Road, weaving through residential neighborhoods. Cabrillo Drive east of Thornton Avenue extends 500 feet and serves a multi-family residential development.
- Blacow Road is a north-south minor arterial expanding the City of Fremont with a terminus at Thornton Avenue across from the I-880 northbound on-ramp. In the site vicinity, Blacow Road is a four-lane roadway with a center median, intermittent on-street parking, and continuous sidewalks with an at-grade rail crossing.
- Interstate 880 is a north-south interstate highway connecting San Jose and Oakland. I-880 connects with Thornton Avenue, both northbound and southbound, via the Thornton Avenue/Central Newark interchange.
- Alder Avenue is an east-west collector providing access between Paseo Padre Parkway and Coronado Drive, and serves as a main access point for American High School east of Fremont Boulevard and for Oliveira Elementary School west of Fremont Boulevard. Alder Avenue is a two-lane roadway with sidewalks and intermittent on-street parking.

- Peralta Boulevard is an east-west minor arterial east of Fremont Boulevard and a collector west of Fremont Boulevard. Peralta Boulevard (SR-84) east of Fremont Boulevard provides access to Mowry Avenue, and is a two-lane roadway with a center left-turn lane, no on-street parking, and sidewalks on both sides of the roadways. Peralta Boulevard west of Fremont Boulevard terminates at Central Avenue and is a two-lane roadway, no on-street parking, and sidewalks on both sides.
- Fremont Boulevard is a north-south major arterial providing access between I-880 to the south, near the Warm Springs Bart Station, and I-880 to the north near Alameda Creek. Fremont Boulevard is a four-lane roadway with a Class II bike lane and sidewalk on both sides.

Pedestrian and Bicycle Facilities

Pedestrian Facilities

Sidewalks are present on both sides of the following streets that provide direct pedestrian access to the project:

- Thornton Avenue
- Coronado Avenue
- Oak Street
- Blue Ridge Street

Marked crosswalks are located at the following intersections:

- Thornton Avenue/Dusterberry Way
- Thornton Avenue/Coronado Drive-Contra Costa Avenue

Bicycle Facilities

Bicycle facilities are classified by the following categories in Chapter 1000 of the *Highway Design Manual*, California Department of Transportation (Caltrans), 2012:

- Class I – Provides a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.
- Class II – Provides a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.
- Class III – Provides a right-of-way designated by signs or permanent markings and shared with pedestrians and motorists.
- Class IV Separated—Provides an on-street, reserved bicycle right-of-way that is physically separated from travel lanes.

There are several classes of bicycle facilities in the vicinity of the project site.

Class II Bike Lanes

Class II bicycle lanes are present along both sides of Thornton Avenue and Fremont Boulevard north of Thornton Avenue.

Class III Bike Lanes

Coronado Drive, Alder Avenue, and Dusterberry Way are designated Class III bicycle routes.

Class IV Separated Bike Lanes

There is a Class IV bikeway on Post Street between Thornton Avenue and Bonde Way.

Safe Routes to School

The City of Fremont maintains a Safe Routes to School program guided by the City's Bicycle Pedestrian Technical Advisory Committee. As part of the program, last updated in November 2018, safe routes for students to walk or bike to school are identified. For the Thornton campus, these include Coronado Drive, Thornton Avenue, Alder Avenue, Nicolet Avenue, and Fremont Boulevard west of Alder Avenue. In addition, some or all of a series of short-term safety improvements such as crosswalk upgrades, stop-signs, improved signage, off-site parking restrictions, and "Paint and plastic" bulb-outs were installed surrounding Thornton in 2018.[1]

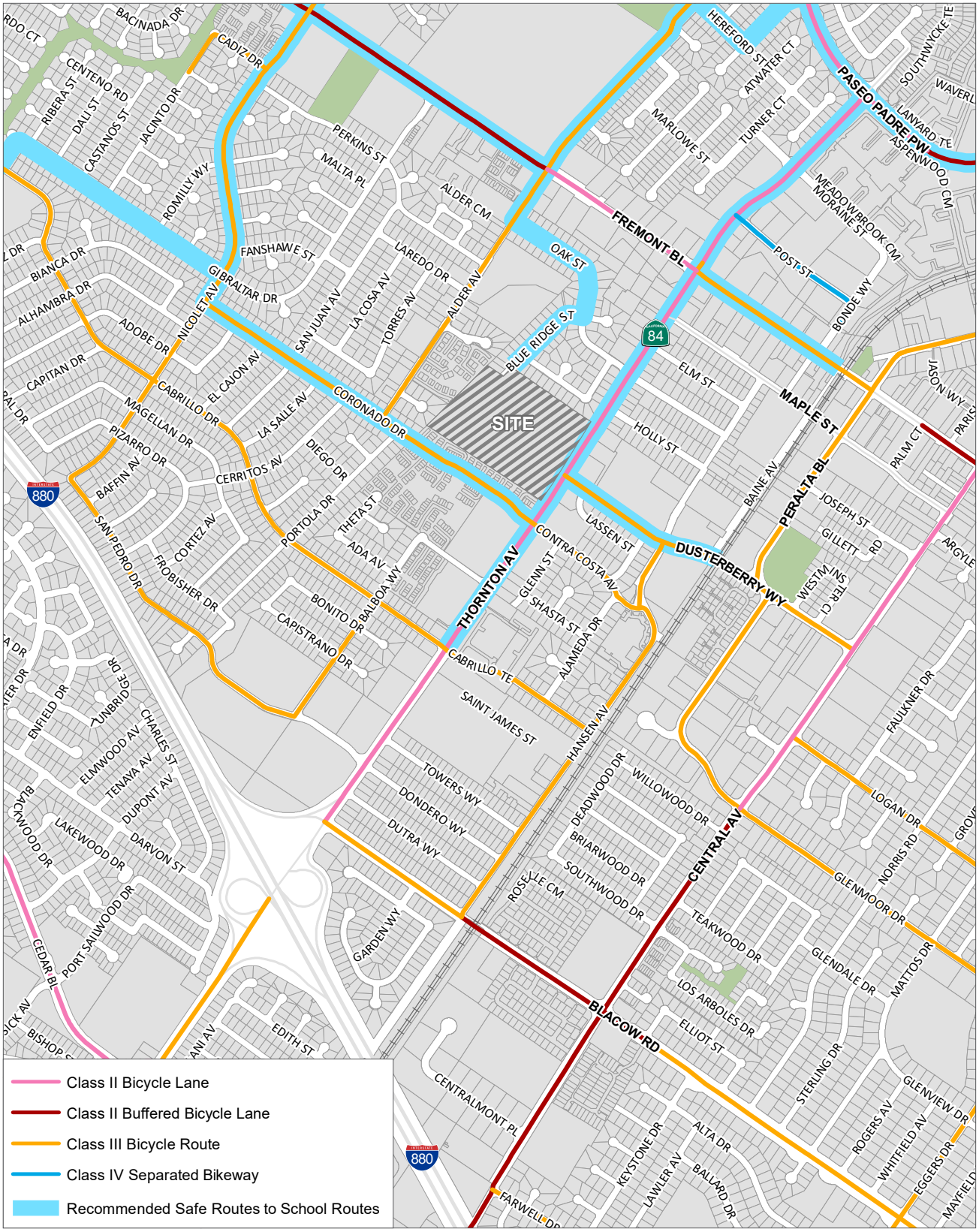
Figure 4.15-1 shows bicycle facilities and recommended Safe Routes to School routes surrounding the project site.

Transit Service

The transit system in the study area includes bus services provided by Alameda-Contra Costa Transit District (AC Transit). The area is served be the following seven bus routes.

- Line U is a Transbay service between Fremont BART and the Stanford Shopping Center in Palo Alto operating in the peak direction, 6:00 a.m. to 8:20 a.m. in the southbound direction and 2:45 p.m. to 5:55 p.m. in the northbound direction. Line U provides service at 30- to 40-minute frequency. Line U runs along Fremont Boulevard in the site vicinity.
- Line 99 is a main trunk route service between Hayward BART and Fremont BART operating between 5:00 a.m. and 12:00 a.m. at 20-minute frequency. Line 99 runs along Fremont Boulevard in the site vicinity.
- Line 210 is a Local service between Union Landing Transit Center and Ohlone College operating between 5:30 a.m. and 10:30 p.m. at 30-minute frequency. Line 210 runs along Fremont Boulevard in the site vicinity.

[1] City of Fremont, 2018, Fremont Safe Routes to School Update, https://fremont.gov/DocumentCenter/View/39646/11-14-18-BPTAC-Meeting-Safe-Routes-to-School-Update-?bidId=, accessed November 12, 2019.



Source: 2017 Fremont Bicycle Master Plan; City of Fremont Rock & Roll to School Recommended Routes; Kittelson & Associates, 2019.

Figure 4.15-1

Existing Bike Facilities and Safe Routes to School Routes

Source: AC Transit 2019.

Figure 4.15-2
Existing Transit Service

- Line 251 is identified by AC Transit as a "school serving" line providing service between Fremont BART and the Ohlone College Newark Campus operating between 6:00 a.m. and 7:00 p.m. at 60-minute frequency. Line 251 runs along Thornton Avenue in the site vicinity.
- Line 621 is identified by AC Transit as a "school serving" line providing service between the Thornton Junior High School and Ardenwood Boulevard/Commerce Drive operating during the school peak. One bus operates southbound in the morning at 7:15 a.m. and two buses operate northbound in the school PM peak at 1:21 p.m. and 2:44 p.m. Line 621 runs along Thornton Avenue in the site vicinity.
- Line 801 is an All-Nighter service between Downtown Oakland and Fremont BART operating between 11:45 p.m. and 4:45 a.m. at one-hour frequency. Line 801 runs along Fremont Boulevard.
- Line 707/710 is part of the Early Bird service to provide an alternative service to BART between 4:00 a.m. and 5:00 a.m. Line 707/710 runs along I-880 in the site vicinity.

The bus stops within a ¼-mile of the project site are located on Thornton Avenue, including Line 251 (Northbound/Southbound) at Dusterberry Way, Line 621 (Northbound) at Dusterberry Way, Line 251 (Southbound) at Allen Court, Line 251 (Northbound) at Contra Costa Avenue, and Line 251 (Northbound/ Southbound) at Cabrillo Drive. Figure 4.15-2 shows the existing transit service in the vicinity of the project site.

4.15.1.3 APPROACH TO ANALYSIS

This analysis assesses the project's potential effects on vehicular traffic, transit operations and bicycle and pedestrian transportation. The project would include new parking and vehicular circulation areas within the existing footprint of the Thornton Junior High School campus, as discussed in Chapter 3, Project Description, of this Draft EIR.

Relevant Standards

City of Fremont Standards

Signalized Intersections

The City of Fremont General Plan provides the following peak hour LOS significance thresholds for signalized intersections outside city and transit centers:

- LOS D for minor arterials and collector streets
- LOS E for arterials within the designated ACTC network

Unsignalized Intersections

The City of Fremont does not have or apply significance thresholds to unsignalized intersections. For the purpose of this analysis, for two-way-stop-controlled intersections, the worst approach shall maintain LOS E or better. This is consistent with the significance thresholds used by Alameda CTC for arterials.

Alameda County Transportation Commission Standards

For CEQA purposes, a roadway segment is considered to operate at an acceptable level if the segment operates at the LOS standard identified by the appropriate CMA. According to the ACTC 2017 CMP, no policy for determining thresholds of significant for LOS have been adopted. Therefore, for purposes of this analysis, the LOS standard for Metropolitan Transportation Commission (MTC) roadways, which include the CMP roadway network, has been utilized. It includes any impact that:

- Results in any roadway segment currently meeting its CMP LOS E standard to degrade to LOS F, or,
- Results in more than a 5 percent increase in the volume to capacity (V/C) ratio for any segment already exceeding its CMP LOS standard, or if already LOS F, under Cumulative No Project conditions.

Intersections and Segments of Study

Local Study Area Intersections

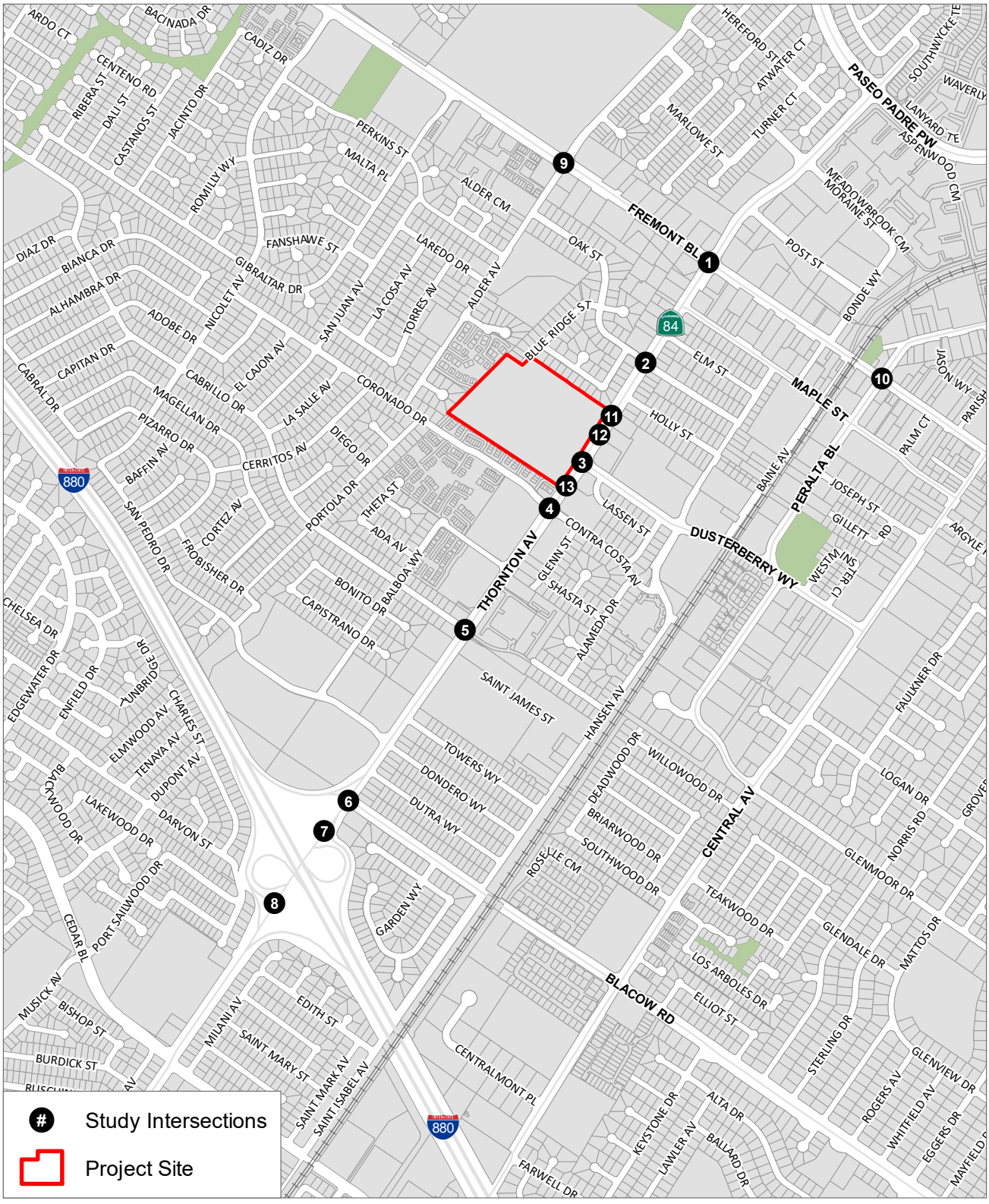
The Traffic Study includes an analysis of traffic conditions for 13 intersections in the vicinity of the project site, as specified by the City of Fremont. These are shown in Figure 4.15-3. They include:

1. Thornton Avenue/Fremont Boulevard
2. Thornton Avenue/Oak Street
3. Thornton Avenue/Dusterberry Way
4. Thornton Avenue/Coronado Drive – Contra Costa Avenue
5. Thornton Avenue/Cabrillo Drive
6. Thornton Avenue/Blacow Road – I-880 NB On-Ramp
7. Thornton Avenue/I-880 NB Off-Ramp
8. Thornton Avenue/I-880 SB Off-Ramp
9. Alder Avenue/Fremont Boulevard
10. Peralta Boulevard/Fremont Boulevard
11. Thornton Avenue/School Bus-Only Driveway
12. Thornton Avenue/School Central Driveway
13. Thornton Avenue/School South Driveway

Thornton Avenue/Fremont Boulevard is a signalized intersection with protected left-turn lanes. There are crosswalks with pedestrian signal phasing are provided across all legs. The intersection is located to the northeast of the project site.

Thornton Avenue/Oak Street is two-way stop-controlled intersection. There are crosswalks provided on Oak Street, parallel to Thornton Avenue. The intersection is located to the northeast of the project site.

Thornton Avenue/Dusterberry Way is a signalized intersection with protected left-turn lanes from Thornton Avenue. There are crosswalks with pedestrian islands, and signal phasing is provided at all legs. The intersection includes the southern driveway of the drop-off and pick-up area on the east side of Thornton Junior High School.



Source: Kittelson & Associates, 2019.

Figure 4.15-3
Transportation Study Intersections

Thornton Avenue/Coronado Drive is a signalized intersection with protected left-turn lanes from Thornton Avenue. There are crosswalks with pedestrian islands, and signal phasing is provided at all legs. The intersection is located to the southeast of the project site.

Thornton Avenue/Cabrillo Drive is a signalized intersection with protected left-turn lanes from Thornton Avenue. There are crosswalks with pedestrian islands, and signal phasing is provided at all legs. The intersection is located to the southeast of the project site.

Thorntown Avenue/Blacow Road is a signalized intersection with protected left-turn lanes from Thornton Avenue and the east side of Blacow Road. There are crosswalks with pedestrian islands along the east side of Thornton Avenue with signal phasing. The west side of Blacow Road is the on-ramp to I-880 northbound. This intersection is southwest of the project site.

Thornton Avenue/I-880 NB Off-Ramp is a signalized intersection with a protected left-turn lane from the I-880 NB Off-Ramp. Vehicles do not have the ability to turn on Thornton Avenue. There is one crosswalk with signalized phasing along the east side of Thornton Avenue. This intersection is southwest of the project site.

Thornton Avenue/I-880 SB Off-Ramp is a signalized intersection with protected left-turn lanes from the I-880 SB Off-Ramp. Vehicles do not have the ability to turn on Thornton Avenue. There are no crosswalks, however, there is a sidewalk on the eastern side of Thornton Avenue in this intersection. This intersection is south of the project site.

Alder Avenue/Fremont Boulevard is a signalized intersection with protected left-turn lanes from Fremont Boulevard. There are crosswalks with signal phasing at all legs. The intersection is located to the southwest of the project site.

Peralta Boulevard/Fremont Boulevard is signalized intersection with protect left-turn lanes from Fremont Boulevard. There are crosswalks with signal phasing at all legs. The intersection is located northeast of the project site.

Thornton Avenue/School Bus-Only Driveway is an unsignalized intersection along Thornton Avenue. Vehicles can turn right into the School Bus-Only Driveway, continue straight on Thornton Avenue, or turn right on Thornton Avenue. The driveway crosses over a sidewalk along the west side of Thornton Avenue. This intersection is located on the northeast boundary of the project site.

Thornton Avenue/School Central Driveway is an unsignalized intersection along Thornton Avenue. Vehicles can turn right into the School Central Driveway or continue straight on Thornton Avenue. The driveway crosses over a sidewalk along the west side of Thornton Avenue. This intersection is located along the eastern boundary of the project site.

Thornton Avenue/School South Driveway is an unsignalized intersection along Thornton Avenue. Vehicles can turn right into the School South Driveway, continue straight on Thornton Avenue, or turn right on Thornton Avenue. The driveway crosses over a sidewalk along the west side of Thornton Avenue. This intersection is located on the southeast boundary of the project site.

Congestion Management Program Network

Per the 2017 CMP, the designated ACTC network within the site vicinity includes the following segments:

- SR-84 (Thornton Avenue) between I-880 and Fremont Boulevard
- SR-84 (Fremont Boulevard) between SR-84 (Thornton Avenue) and SR-84 (Peralta Boulevard)
- SR-84 (Peralta Boulevard) between SR-84 (Fremont Boulevard) and SR-84 (Mowry Avenue)

Analysis Scenarios

The following transportation scenarios were evaluated:

1. Existing Conditions. Existing traffic volumes for intersections were collected in order to establish a basis for analysis in this study. Intersection turning movement volumes were collected on March 7, 2019 at all study intersections, during the following periods: 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. Turning movement volumes for the afterschool peak period, 2:00 p.m. to 4:00 p.m. were collected for the four school driveways along Thornton Avenue
2. Existing plus Project Conditions. Existing traffic volumes with the project were estimated by adding to existing traffic volumes the additional traffic generated by the project. Existing plus Project conditions were evaluated relative to existing conditions in order to determine the effects the project would have on the existing roadway network.
3. Near Term (2022) Conditions: One (1) percent per year growth and trips generated from approved developments was applied to existing traffic volumes to account for regional growth.
4. Near Term (2022) with Project Conditions: Near Term conditions were added to traffic growth and distribution of new trips associated with proposed increased enrollment.
5. Cumulative (2040) Conditions: Future traffic volumes, based on a City-approved list of development projects, were developed using City of Fremont traffic model to account for regional growth in the site vicinity.
6. Cumulative (2040) with Project Conditions: New trips associated with proposed increased enrollment were added to Cumulative (2040) Conditions.

Analysis Time Periods

Intersection peak hours were identified from the data collected at the study intersections. While some variation exists between peak hours at the 13 study intersections, the peak hours at the study intersections generally are as follows:

- AM peak hour: 7:40 to 8:40 a.m.
- PM peak hour: 5:00 to 6:00 p.m.

Existing Level of Service

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

Study intersections were evaluated using the operational methodology outlined in the Highway Capacity Manual (HCM) (Transportation Research Board, Washington, D.C., 2000) at all intersections, as operationalized by Synchro version 9 software tool. The HCM 2000 procedure calculates a weighted average stop delay in seconds per vehicle at an intersection and assigns a level of service designation based on the delay. Table 4.15-2 presents the relationship of average delay to level of service.

TABLE 4.15-2 INTERSECTION LEVEL OF SERVICE DEFINITIONS

Signalized Intersection			Unsignalized Intersection
Average Delay Per Vehicle (Seconds)	LOS	Description of Traffic Conditions	Average Delay Per Vehicle (Seconds)
≤10.0	A	Free flowing. Most vehicles do not have to stop.	≤10.0
>10.0 and ≤20.0	B	Minimal delays. Some vehicles have to stop, although waits are not bothersome.	>10.0 and ≤15.0
>20.0 and ≤35.0	C	Acceptable delays. Significant numbers of vehicles have to stop because of steady, high traffic volumes. Still, many pass without stopping.	>15.0 and ≤25.0
>35.0 and ≤55.0	D	Tolerable delays. Many vehicles have to stop. Drivers are aware of heavier traffic. Cars may have to wait through more than one red light. Queues begin to form, often on more than one approach.	>25.0 and ≤35.0
>55.0 and ≤80.0	E	Significant delays. Cars may have to wait through more than one red light. Long queues form, sometimes on several approaches.	>35.0 and ≤50.0

Source: Transportation Research Board, Highway Capacity Manual, Washington, D.C., 2000.

The Existing Conditions scenario provides an evaluation of current operations based on recently collected peak-hour traffic volumes. The existing operations at the study intersections are shown in Table 4.15-3 and illustrated in Figure 4.15-4. The results indicate that all existing study intersections are operating at LOS D or better for all peak hours.

4.15.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant impact regarding transportation if it would:

1. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian facilities.
2. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1).
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Result in inadequate emergency access.

TABLE 4.15-3 EXISTING CONDITIONS INTERSECTION OPERATIONS

No.	Location	Control	Peak Hour	LOS Standard	Existing		
					V/C	Delay	LOS
1	Thornton Ave & Fremont Blvd	Signal	AM	E	0.74	41.2	D
			PM		0.77	37.2	D
2	Thornton Ave & Oak St	TWSC	AM	E	0.62	27.9	D
			PM		0.50	26.5	D
3	Thornton Ave & Loop Dwy/ Dusterberry Wy	Signal	AM	E	0.63	45.1	D
			PM		0.67	19.3	B
4	Thornton Ave & Coronado Dr/ Contra Costa Ave	Signal	AM	E	0.88	38.3	D
			PM		0.56	14.1	B
5	Thornton Ave & Coronado Dr/ Contra Costa Ave	Signal	AM	E	0.76	23.8	C
			PM		0.57	13.8	B
6	Thornton Ave & I-880 NB On-Ramp/ Blacow Rd	Signal	AM	E	0.89	42.9	D
			PM		0.73	18.1	B
7	Thornton Ave & I-880 NB Off-Ramp	Signal	AM	E	0.56	13.7	B
			PM		0.67	26.7	C
8	Thornton Ave & I-880 SB Off-Ramp	Signal	AM	E	0.56	7.2	A
			PM		0.56	7.9	A
9	Alder Ave & Fremont Blvd	Signal	AM	D	0.83	38.3	D
			PM		0.43	24.5	C
10	Peralta Blvd & Fremont Blvd	Signal	AM	E	0.61	29.0	C
			PM		0.65	27.1	C
11	Peralta Blvd & Fremont Blvd	TWSC	AM	E	0.56	16.3	C
			PM		0.39	11.0	B
13	Thornton Ave & North Dwy	TWSC	AM	E	0.50	9.5	A
			PM		0.39	9.8	A

Notes: TWSC = Two-Way Stop Control (or Side-Street Stop Control).
V/C: Volume to capacity ratio.
Delay: Average delay in seconds is presented for signalized and all-way stop control intersections. Worst approach average delay shown for side-street stop control intersections.
Source: Kittelson & Associates, 2019.

Source: Kittelson & Associates, 2019.

Figure 4.15-4
Existing Traffic Volumes

4.15.3 IMPACT DISCUSSION

TRANS-1 The proposed project would conflict with a program, plan, or ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian facilities.

Project Trip Generation

New trips generated by the proposed project were calculated by applying trip generation estimates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual, 10th Edition, 2017* and using traffic data collected on March 7, 2019 at school driveways along Thornton Avenue.

Drop-off/pick-up activity occurs along Thornton Avenue and surrounding streets as well as the designated school drop-off area, particularly Oak Avenue and Coronado Drive. Given this off-site activity, the school driveways counts underrepresent the total number of drop-off/pick-up trips under current conditions. ITE Trip Generation rates were used to provide a more accurate representation of this activity. The weekday AM peak hour applies the ITE Trip Generation rates and the weekday PM peak hour applies observed trip generation based on the school peak during the PM peak period.

As summarized in Table 4.15-4, the existing school generates 730 AM peak hour trips, 149 PM peak hour trips, and 2,682 daily trips. The project would generate an additional 532 AM peak hour trips, 109 PM peak hour trips, and 1,953 daily trips.

TABLE 4.15-4 PROPOSED PROJECT TRIP GENERATION

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak[a]			Weekday PM Peak[b]		
				In	Out	Total	In	Out	Total
Existing Site									
Middle School/Junior High School	522	1,259	2,682	394	336	730	48	101	149
			2.13	54%	46%	0.58	32%	68%	0.12
Proposed Project									
Middle School/Junior High School	522	2,176	4,635	682	581	1,262	83	175	258
Net New Project Trips			**1,953**	**287**	**245**	**532**	**35**	**74**	**109**

a. Based on ITE Trip Generation Rates of adjacent street traffic.
b. Based on observed/collected trip generation for generator peak during the 4:00-6:00PM peak. Observed generator peak is 4:00 to 5:00 p.m.
Source: Kittelson & Associates, 2019.

Project Trip Distribution

The distribution of project trips was developed based on a select zone analysis using the Alameda County Transportation Commission (ACTC) Countywide travel demand model, and by applying the FUSD attendance boundaries. The distribution from the model was adjusted to match travel patterns from/to project driveway locations and the existing FUSD attendance boundaries. The trip distribution assumptions were confirmed with City of Fremont staff. Overall project trip volumes and trip distribution are presented in Figure 4.15-5 and Figure 4.15-6.

Intersection Operation

Existing plus Project Conditions

Traffic volumes for Existing plus Project conditions include estimated vehicle trips generated by the project and existing volumes on the roadway network.

As shown in Table 4.15-5, nearly all study intersections operate at acceptable LOS under Existing plus Project conditions, at both peak hours. The exception is the Thornton Avenue/Oak Street intersection during the AM peak hour (**boldfaced**), which operates at LOS level F. This conflicts with standards and represents a *significant* transportation impact.

Existing plus Project turning movement volumes are shown in Figure 4.15-7.

Signalized Intersection Queues

Queue lengths resulting from the proposed project were evaluated using Synchro software, version 9.0 at all nine signalized intersections, during both the AM and PM peak hour. Turn movement queues were found to exceed available storage, or through movement queues found to extend past upstream intersections, at the following intersection:

- Thornton Avenue/Dusterberry Way (Intersection #3): Northbound left queue exceeds available storage during the AM peak hour.

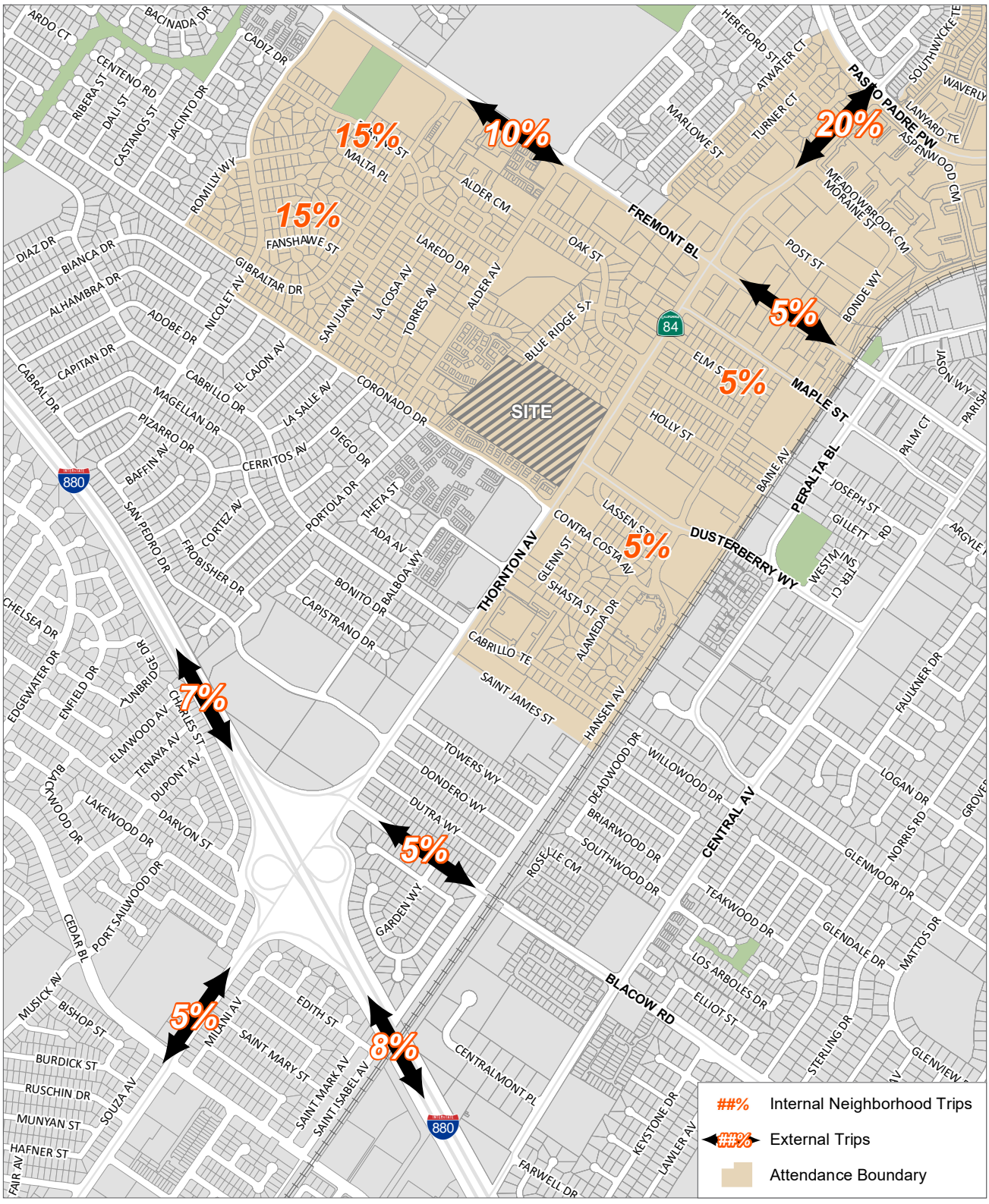
Near-Term Conditions

Near-Term conditions are used to capture any impacts to the traffic network that would occur prior to project startup (defined as before 2022). Near-term conditions and the potential effects of the project on Near-Term intersection operations are discussed in this section.

Near-Term traffic growth was developed based on discussions with the City of Fremont. A one (1) percent annual growth rate was applied to existing traffic volumes consistent with opening year of the project. Traffic growth associated with a City-approved list of six approved development projects (see Table 4.15-6) was then added to the annual growth rate.

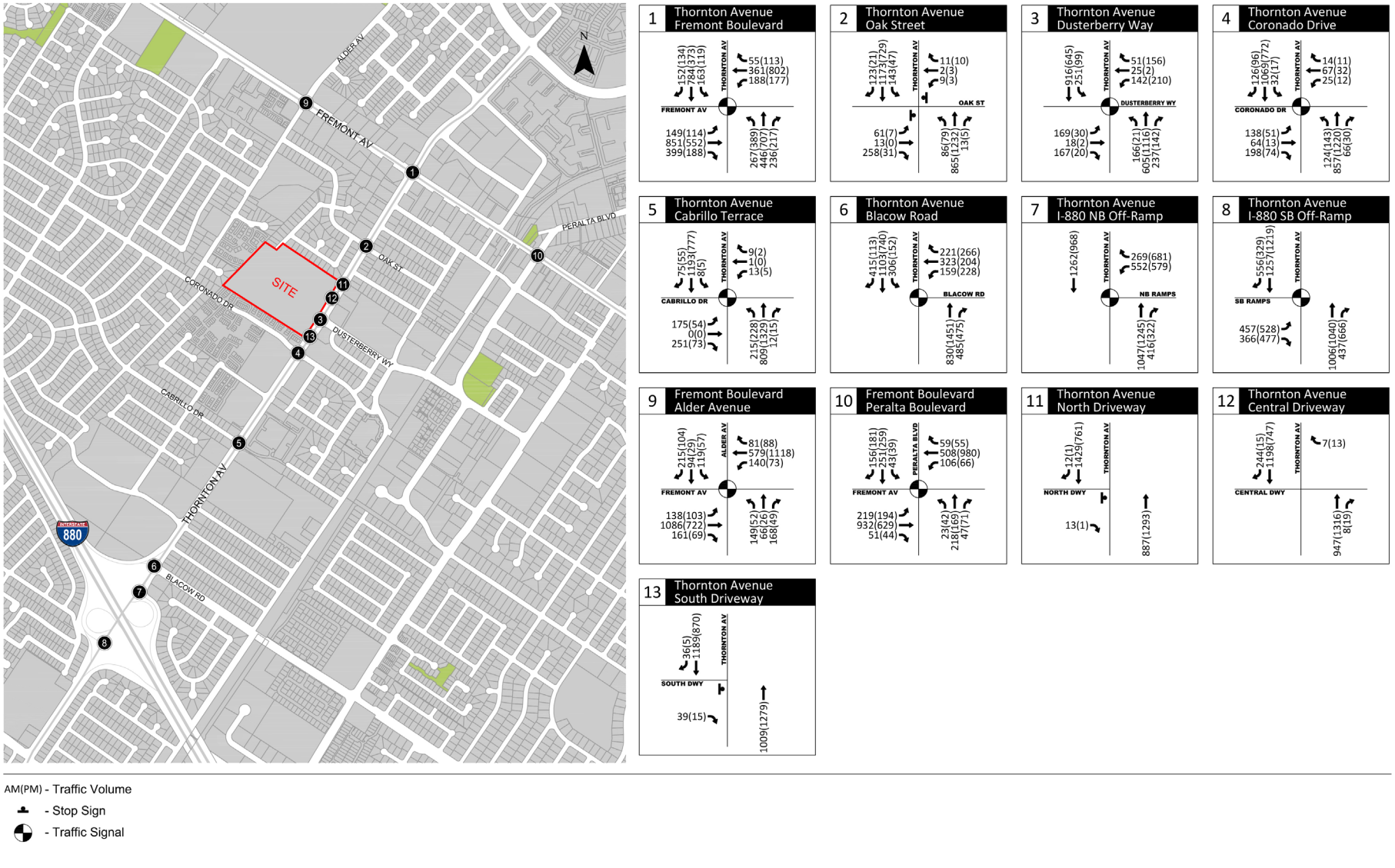
Source: Kittelson & Associates, 2019.

Figure 4.15-5
Project Trip Traffic Volumes



Source: Kittelson & Associates, 2019.

Figure 4.15-6
Project Trip Distribution



Source: Kittelson & Associates, 2019.

Figure 4.15-7
Existing Plus Project Traffic Volumes

TABLE 4.15-5 EXISTING PLUS PROJECT INTERSECTION OPERATIONS

No.	Location	Control	Peak Hour	LOS Standard	Existing + Project		
					V/C	Delay	LOS
1	Thornton Ave & Fremont Blvd	Signal	AM	E	0.77	42.2	D
			PM		0.78	37.5	D
2	Thornton Ave & Oak St	TWSC	AM	E	**0.87**	**99.4**	**F**
			PM		0.50	28.7	D
3	Thornton Ave & Loop Dwy/Dusterberry Wy	Signal	AM	E	0.69	53.2	D
			PM		0.68	23.9	C
4	Thornton Ave & Coronado Dr/Contra Costa Ave	Signal	AM	E	0.96	53.2	D
			PM		0.57	14.3	B
5	Thornton Ave & Cabrillo Dr/Cabrillo Terrace	Signal	AM	E	0.81	25.5	C
			PM		0.58	13.9	B
6	Thornton Ave & I-880 NB On-Ramp/Blacow Rd	Signal	AM	E	0.92	46.4	D
			PM		0.74	18.2	B
7	Thornton Ave & I-880 NB Off-Ramp	Signal	AM	E	0.57	14.0	B
			PM		0.67	26.9	C
8	Thornton Ave & I-880 SB Off-Ramp	Signal	AM	E	0.58	7.5	A
			PM		0.56	7.9	A
9	Alder Ave & Fremont Blvd	Signal	AM	D	0.86	40.1	D
			PM		0.43	24.6	C
10	Peralta Blvd & Fremont Blvd	Signal	AM	E	0.62	28.6	C
			PM		0.65	27.1	C
11	Thornton Ave & North Dwy	TWSC	AM	E	0.61	17.5	C
			PM		0.40	11.0	B
13	Thornton Ave & South Dwy	TWSC	AM	E	0.52	9.9	A
			PM		0.39	9.6	A

Notes: **Bold/shading** = Unacceptable operation.
TWSC = Two-Way Stop Control (or Side-Street Stop Control).
Source: Kittelson & Associates, 2019.

As shown in Table 4.15-7, below, all study intersections would continue to operate at acceptable LOS with the addition of background traffic growth and traffic increases associated with approved development projects in the site vicinity.

TABLE 4.15-6 NEAR-TERM CONDITIONS PROJECT LIST

Development Name	Number of Residential Units: Single Family (SF) Multi-Family (MF)	Commercial Square Feet (SF)
3900 Thornton Avenue	54 MF	7,124 SF
Centerville Junction	11 SF; 52 MF	0 SF
Central Commons	30 MF	0 SF
Montecito Townhomes and Apartments	130 MF	0 SF
Peralta Crossing	43 MF	0 SF
Silicon Sage Mixed Use	136 MF	15,000 SF
TOTAL	**445 MF, 11 SF**	**22,124 SF**

Source: City of Fremont, 2019.

Near-Term plus Project Conditions

Near-Term plus Project volumes were developed by adding proposed project trips to the Near-Term volumes. As shown in Table 4.15-8, as was the case with Existing plus Project conditions, nearly all study intersections apart from the Thornton Avenue/Oak Street intersection during the AM peak (**boldface**) would operate at acceptable LOS under Near-Term plus Project conditions. Future operation of Thornton Avenue/Oak Street conflicts with standards and represent a *significant* transportation impact.

Near-Term plus Project traffic volumes are illustrated in Figure 4.15-8.

Signalized Intersection Queues

Queue lengths at signalized intersections were also evaluated for the nine signalized study intersections under Near-Term plus Project conditions during both the AM and PM peak hour. Turn movement queues were found to either exceed available storage, or through movement queues found to extend past upstream intersections, at the following intersection and time:

- Thornton Avenue/Dusterberry Way (#3): Northbound left queue exceeds available storage during the AM peak hour.

Access and Circulation

Existing school access and site circulation were observed during school PM peak period, on March 26, 2019 and April 5, 2019. During the PM peak period, vehicles were observed waiting in the shoulder lane along Thornton Avenue between Oak Street and Coronado Drive, along Blue Ridge Street between the school access nearest the playing fields and Oak Street, and along Coronado Drive between Thornton

TABLE 4.15-7 NEAR-TERM NO PROJECT INTERSECTION OPERATIONS

No.	Location	Control	Peak Hour	LOS Standard	Near-Term V/C	Near-Term Delay	Near-Term LOS
1	Thornton Ave & Fremont Blvd	Signal	AM	E	0.77	39.5	D
			PM		0.80	38.5	D
2	Thornton Ave & Oak St	TWSC	AM	E	0.70	31.9	D
			PM		0.51	28.5	D
3	Thornton Ave & Loop Dwy/Dusterberry Wy	Signal	AM	E	0.65	54.0	D
			PM		0.70	20.2	C
4	Thornton Ave & Coronado Dr/Contra Costa Ave	Signal	AM	E	0.91	38.9	D
			PM		0.58	14.4	B
5	Thornton Ave & Cabrillo Dr/Cabrillo Terrace	Signal	AM	E	0.78	24.7	C
			PM		0.58	14.6	B
6	Thornton Ave & I-880 NB On-Ramp/Blacow Rd	Signal	AM	E	0.83	20.5	C
			PM		0.75	20.0	B
7	Thornton Ave & I-880 NB Off-Ramp	Signal	AM	E	0.58	14.3	B
			PM		0.72	28.4	C
8	Thornton Ave & I-880 SB Off-Ramp	Signal	AM	E	0.58	7.0	A
			PM		0.57	8.4	A
9	Alder Ave & Fremont Blvd	Signal	AM	D	0.87	40.4	D
			PM		0.44	24.3	C
10	Peralta Blvd & Fremont Blvd	Signal	AM	E	0.65	28.1	C
			PM		0.67	28.1	C
11	Thornton Ave & North Dwy	TWSC	AM	E	0.58	16.8	C
			PM		0.40	11.1	B
13	Thornton Ave & South Dwy	TWSC	AM	E	0.52	9.6	A
			PM		0.40	9.8	A

Note: TWSC = Two-Way Stop Control (or Side-Street Stop Control).
Source: Kittelson & Associates, 2019.

Avenue and Portola Drive. A limited number of vehicles entered the designated school pick-up/drop-off fronting Thornton Avenue due to the limited circulation space. Vehicles were observed blocking the Dusterberry Way intersection after the red light as they waited to enter the school parking lot. As observed, vehicles waited on-street for up to 30 minutes in advance of the school release bell.

As shown in Figure 3-6, in Chapter 3, Project Description, the proposed project would include two locations for drop-off/pick-up activities:

1. The central drop-off loop parallel to Thornton Avenue that spans Building 1 to Building 8. It would provide approximately 600 feet of curb.

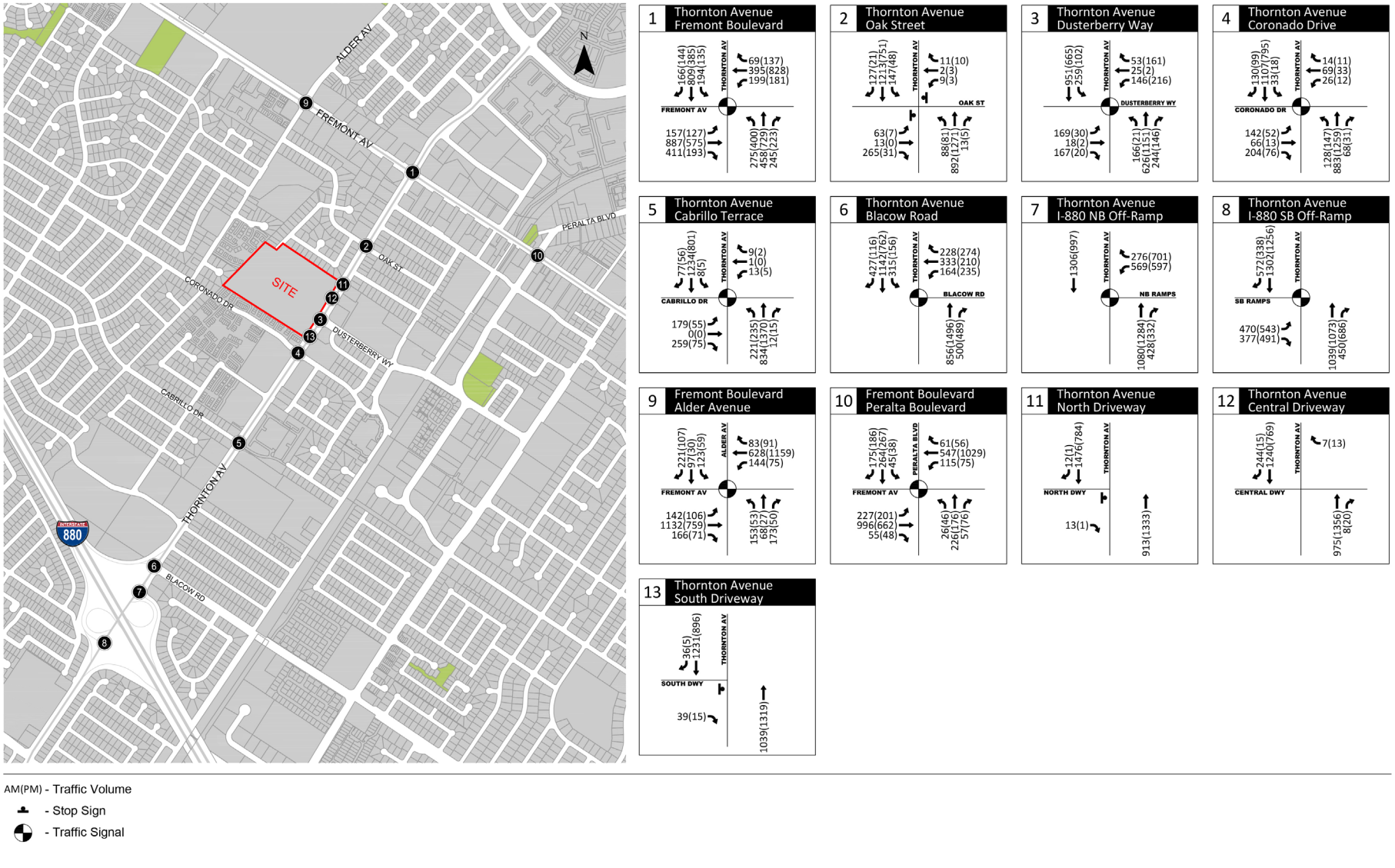
TABLE 4.15-8 NEAR-TERM PLUS PROJECT INTERSECTION OPERATIONS

No.	Location	Control	Peak Hour	LOS Standard	Near-Term + Project V/C	Near-Term + Project Delay	Near-Term + Project LOS
1	Thornton Ave & Fremont Blvd	Signal	AM	E	0.80	40.4	D
			PM		0.80	38.7	D
2	Thornton Ave & Oak St	TWSC	AM	E	**1.01**	**297.0**	**F**
			PM		0.52	30.8	D
3	Thornton Ave & Loop Dwy/Dusterberry Wy	Signal	AM	E	0.74	58.6	E
			PM		0.70	25.7	C
4	Thornton Ave & Coronado Dr/Contra Costa Ave	Signal	AM	E	0.98	51.2	D
			PM		0.59	14.6	B
5	Thornton Ave & Cabrillo Dr/Cabrillo Terrace	Signal	AM	E	0.83	26.8	C
			PM		0.58	14.7	B
6	Thornton Ave & I-880 NB On-Ramp/Blacow Rd	Signal	AM	E	0.84	22.3	C
			PM		0.76	20.2	C
7	Thornton Ave & I-880 NB Off-Ramp	Signal	AM	E	0.59	14.7	B
			PM		0.72	28.5	C
8	Thornton Ave & I-880 SB Off-Ramp	Signal	AM	E	0.60	7.2	A
			PM		0.58	8.5	A
9	Alder Ave & Fremont Blvd	Signal	AM	D	0.89	42.2	D
			PM		0.44	24.4	C
10	Peralta Blvd & Fremont Blvd	Signal	AM	E	0.66	27.9	C
			PM		0.67	28.1	C
11	Thornton Ave & North Dwy	TWSC	AM	E	0.63	18.0	C
			PM		0.41	11.1	B
13	Thornton Ave & South Dwy	TWSC	AM	E	0.54	10.0	B
			PM		0.40	9.6	A

Notes: **Bold/shading** = Unacceptable operation.
TWSC = Two-Way Stop Control (or Side-Street Stop Control)
Average delay in seconds is presented for signalized and all-way stop control intersections. Worst approach average delay shown for side-street stop control intersections.
Alameda County C Synchro Version 9, HCM 2000 methodology.
Source: Kittelson & Associates, 2019.

2. The drop-off loop between Building 8 and Building 10. It would provide approximately 300 feet of curb.

The total directional distance of the above pick-up/drop-off space, including outside and inside lane curbs, is approximately 1,800 feet. The total directional distance of the internal roads is approximately 2,900 feet, not including circulation for the rear parking area beyond the additional pick-up/drop-off area.



Source: Kittelson & Associates, 2019.

Figure 4.15-8
Near -Term Plus Project Traffic Volumes

Based on a vehicle stacking length assumption of 1.5 feet per student and the proposed maximum enrollment of 2,176 students, the estimated maximum queue during pick-up/drop-off activity is 3,264 feet. This corresponds to 131 vehicles, assuming 25 feet per vehicle. The proposed 1,800 feet of designated pick-up/drop-off space would accommodate 72 queued vehicles, and the 2,900 feet of internal circulation space would accommodate 116 queued vehicles, for a total of 188 vehicles on the site. This would fully accommodate the estimated maximum queue of 131 vehicles. Vehicle queuing during drop-off and pick-up hours is not expected to impact safety conditions on Thornton Avenue.

Congestion Management Program Roadway Analysis

A separate analysis of regional roadways is required to comply with requirements of the Alameda County Transportation Commission (ACTC). As stated in Section 4.15.1.1, the Alameda County CMP requires analysis of impacts to the Metropolitan Transportation System (MTS) of all projects that would generate more than 100 PM peak hour trips. As shown in Table 4.15-2, the project would generate 109 PM peak hour trips. Existing freeway and roadway segment peak hour volumes were obtained from the Alameda Countywide Travel Demand Model for the MTS roadway system at locations identified by ACTC in a letter dated March 13, 2019, which they wrote in response to the EIR Notice of Preparation (see Appendix A).

Operations of the MTS freeway and local roadway segments were analyzed based on volume-to-capacity (V/C) ratios. For freeway segments, a per-lane capacity of 2,000 vehicles per hour was used. For local roadways, a per-lane capacity of 900 vehicles-per-hour was used. The capacity for local roadways does not reflect additional capacity provided at intersections through turn pockets. The significance criteria used to analyze roadway facilities are described above in Section 4.15.1.3:

- A project that results in any roadway segment currently meeting its CMP LOS E standard to degrade to LOS F; or
- A project that results in more than a five (5) percent increase in the volume to capacity (V/C) ratio for any segment already exceeding its CMP LOS standard, or if already LOS F, under Cumulative No Project conditions.

Year 2020 and year 2040 volumes also were obtained from the Countywide Travel Demand Model. Level of service was determined by calculating the V/C ratio of each freeway and roadway segment.

Year 2020 Analysis

The results of the LOS analysis for the 2020 “No Project” and “plus Project” scenarios are summarized in Table 4.15-9, below.

As shown in the table, the following five segments (**boldfaced**) operate below LOS D during the PM peak hour under 2020 baseline conditions:

- I-880 southbound, from Thornton Avenue to Decoto Road operates at LOS E.
- Peralta Boulevard northbound, from Paseo Padre to Fremont Boulevard operates at LOS F.
- Fremont Boulevard eastbound, from Peralta Boulevard to Thornton Avenue operates at LOS F.

TABLE 4.15-9 MTS FREEWAY AND ARTERIAL LOS FOR 2020 PM PEAK HOUR

Segment	Direction	# Lanes	No Project Volume	Project Volume	Plus Project Volume	V/C Ratio No Project	V/C Ratio Plus Project	No Project LOS	Plus Project LOS	Change from LOS E or Better to LOS F	Change in V/C > 0.05
I-880											
Mowry Avenue to Thornton Avenue	Northbound	4	6,068	22	6,090	0.759	0.761	D	D	No	No
	Southbound	3	4,677	6	4,683	0.780	0.781	D	D	No	No
Thornton Avenue to Decoto Road	Northbound	4	5,850	6	5,856	0.731	0.732	D	D	No	No
	Southbound	3	4,739	22	4,761	0.790	0.794	**E**	**E**	No	No
Thornton Avenue											
Paseo Padre to Fremont Boulevard	Northbound	2	594	15	609	0.330	0.338	C	C	No	No
	Southbound	2	378	7	385	0.210	0.214	B	B	No	No
Fremont Boulevard to Blacow Road	Northbound	2	1,140	24	1,164	0.633	0.647	D	D	No	No
	Southbound	2	690	15	705	0.383	0.392	C	C	No	No
Peralta Boulevard											
Paseo Padre to Fremont Boulevard	Northbound	1	904	2	906	1.004	1.007	**F**	**F**	No	No
	Southbound	1	598	1	599	0.664	0.666	C	C	No	No
Mowry Avenue											
Paseo Padre to Fremont Boulevard	Northbound	3	1,085	4	1,089	0.402	0.403	C	C	No	No
	Southbound	3	1,105	2	1,107	0.409	0.410	C	C	No	No
Fremont Boulevard to Blacow Road	Northbound	3	1,381	0	1,381	0.511	0.511	D	D	No	No
	Southbound	3	1,010	0	1,010	0.374	0.374	C	C	No	No

TABLE 4.15-9 MTS FREEWAY AND ARTERIAL LOS FOR 2020 PM PEAK HOUR

Segment	Direction	# Lanes	No Project Volume	Project Volume	Plus Project Volume	V/C Ratio No Project	V/C Ratio Plus Project	No Project LOS	Plus Project LOS	Change from LOS E or Better to LOS F	Change in V/C > 0.05
Fremont Boulevard											
Peralta Boulevard to Thornton Avenue	Eastbound	2	1,882	4	1,886	1.046	1.048	**F**	**F**	No	No
	Westbound	2	1,693	2	1,695	0.941	0.942	**E**	**E**	No	No
Thornton Avenue to Adler Avenue	Eastbound	2	1,644	2	1,646	0.913	0.914	**E**	**E**	No	No
	Westbound	2	1,440	4	1,444	0.800	0.802	D	D	No	No
Paseo Padre Parkway											
Isherwood Way to Thornton Avenue	Eastbound	3	476	7	483	0.176	0.179	A	A	No	No
	Westbound	3	468	2	470	0.173	0.174	A	A	No	No
Thornton Avenue to Peralta Boulevard	Eastbound	2	290	2	292	0.161	0.162	A	A	No	No
	Westbound	2	358	2	360	0.199	0.200	B	B	No	No
Central Avenue											
Fremont Boulevard to Blacow Road	Northbound	2	232	1	233	0.129	0.129	A	A	No	No
	Southbound	2	189	1	190	0.105	0.106	A	A	No	No

Note: **Bold** = Intersections exceeding LOS D.
Source: Kittelson & Associates, 2019.

- Fremont Boulevard westbound, from Peralta Boulevard to Thornton Avenue operates at LOS E.
- Fremont Boulevard eastbound, from Thornton Avenue to Adler Avenue operates at LOS E.

However, none of the roadway segments would degrade from LOS E to LOS F with the addition of proposed project trips, nor would any V/C ratios increase by more than 5 percent as a result of the proposed project. As such, this would not contribute to a transportation impact.

Year 2040 Analysis

The results of the LOS analysis for the 2040 "No Project" and "plus Project" scenarios are summarized in Table 4.15-10, below.

As shown in the table, the following seven segments (**boldface**) operate at below LOS D during the PM peak hour under 2040 baseline conditions:

- I-880 northbound, from Mowry Avenue to Thornton Avenue operates at LOS E
- I-880 southbound, from Mowry Avenue to Thornton Avenue operates at LOS F
- I-880 northbound, from Thornton Avenue to Decoto Road operates at LOS E
- I-880 southbound, from Thornton Avenue to Decoto Road operates at LOS F
- Thornton Avenue northbound, from Fremont Boulevard to Blacow Road operates at LOS F
- Fremont Boulevard eastbound, from Peralta Boulevard to Thornton Avenue operates at LOS F.
- Fremont Boulevard westbound, from Peralta Boulevard to Thornton Avenue operates at LOS F.

All freeway segments currently operate at LOS F in the northbound direction in the AM peak hour and operate at LOS F in the southbound direction in the PM peak hour.

However, none of the roadway segments would degrade from LOS E to LOS F with the addition pf proposed project trips, nor would any V/C ratios increase by more than 5 percent as a result of the proposed project. As such, this would not contribute to a transportation impact.

Bicycle and Pedestrian Facilities

The City of Fremont General Plan has policies to balance the needs of automobiles with the needs of pedestrians and bicyclists, incorporate provisions for pedestrians and bicycles on city streets, and provide enhanced pedestrian crossing times at locations with high pedestrian volumes. In addition, the City of Fremont *Bicycle Master Plan*, adopted in July of 2018, proposes a separated bikeway along Thornton Avenue and a bike lane along Dusterberry Way.[2]

[2] City of Fremont, 2018, City of Fremont Bicycle Master Plan, Figure 4-2b.

TABLE 4.15-10 MTS FREEWAY AND ARTERIAL LEVEL OF SERVICE FOR 2040 PM PEAK HOUR

Segment	Direction	# Lanes	No Project Volume	Project Volume	Plus Project Volume	V/C Ratio No Project	V/C Ratio Plus Project	No Project LOS	Plus Project LOS	Change from LOS E or better to LOS F	Change in V/C > 0.05
I-880											
Mowry Avenue to Thornton Avenue	Northbound	4	7,104	22	7,126	0.888	0.891	**E**	**E**	No	No
	Southbound	3	5,979	6	5,985	0.997	0.998	**F**	**F**	No	No
Thornton Avenue to Decoto Road	Northbound	4	6,784	6	6,790	0.848	0.849	**E**	**E**	No	No
	Southbound	3	5,961	22	5,983	0.994	0.997	**F**	**F**	No	No
Thornton Avenue											
Paseo Padre to Fremont Boulevard	Northbound	2	1,543	15	1,558	0.857	0.866	D	D	No	No
	Southbound	2	941	7	948	0.523	0.527	C	C	No	No
Fremont Boulevard to Blacow Road	Northbound	2	1,800	24	1,824	1.000	1.013	**F**	**F**	No	No
	Southbound	2	908	15	923	0.504	0.513	C	C	No	No
Peralta Boulevard											
Paseo Padre to Fremont Boulevard	Northbound	1	787	2	789	0.874	0.877	D	D	No	No
	Southbound	1	579	1	580	0.643	0.644	C	C	No	No
Mowry Avenue											
Paseo Padre to Fremont Boulevard	Northbound	3	1,353	4	1,357	0.501	0.503	C	C	No	No
	Southbound	3	1,480	2	1,482	0.548	0.549	C	C	No	No
Fremont Boulevard to Blacow Road	Northbound	3	1,659	0	1,659	0.614	0.614	C	C	No	No
	Southbound	3	1,259	0	1,259	0.466	0.466	C	C	No	No

TABLE 4.15-10 MTS FREEWAY AND ARTERIAL LEVEL OF SERVICE FOR 2040 PM PEAK HOUR

Segment	Direction	# Lanes	No Project Volume	Project Volume	Plus Project Volume	V/C Ratio No Project	V/C Ratio Plus Project	No Project LOS	Plus Project LOS	Change from LOS E or better to LOS F	Change in V/C > 0.05
Fremont Boulevard											
Peralta Boulevard to Thornton Avenue	Eastbound	2	2,011	4	2,015	1.117	1.119	**F**	**F**	No	No
	Westbound	2	1,997	2	1,999	1.109	1.111	**F**	**F**	No	No
Thornton Avenue to Adler Avenue	Eastbound	2	1,619	2	1,621	0.899	0.901	D	D	No	No
	Westbound	2	1,580	4	1,584	0.878	0.880	D	D	No	No
Paseo Padre Parkway											
Isherwood Way to Thornton Avenue	Eastbound	3	1,707	7	1,714	0.632	0.635	C	C	No	No
	Westbound	3	1,841	2	1,843	0.682	0.683	C	C	No	No
Thornton Avenue to Peralta Boulevard	Eastbound	2	1,080	2	1,082	0.600	0.601	C	C	No	No
	Westbound	2	1,013	2	1,015	0.563	0.564	C	C	No	No
Central Avenue											
Fremont Boulevard to Blacow Road	Northbound	2	580	1	581	0.322	0.323	C	C	No	No
	Southbound	2	244	1	245	0.136	0.136	A	A	No	No

Note: **Bold** = Intersections exceeding LOS D.
Source: Kittelson & Associates, 2019.

As shown in Figure 3-6 in Chapter 3, Project Description, the existing sidewalks along the project site frontage of Thornton Avenue would be maintained. On-site sidewalks and pedestrian facilities will be rehabilitated. As shown in Figure 3-4 in Chapter 3, there is currently an on-site pedestrian crosswalk that traverses the central parking area that is a direct extension to the crosswalk that traverses Thornton Avenue. The proposed project would shift this internal crosswalk approximately 70 feet north to align with the new internal school entrance, resulting in a 70-foot offset from the existing Thornton Avenue crosswalk. However, the sidewalk at this location along Thornton Avenue is approximately 14 feet wide. It accommodates heavy pedestrian movements, as would be expected during peak school times. Given the current sidewalk conditions and the fact that the shifted crosswalk would be coordinated with proposed circulation and school access improvements, there would be no hazardous impacts due to the relocation of the crosswalk.

As identified in Table 4.15-1, Implementation Measure 9-10.1.A of the City of Fremont General Plan calls for ensuring that pedestrian connections allow children to access neighborhood schools as quickly and safely as possible, as well as promote school siting and site improvements that emphasize multiple points of access to a neighborhood.

Field observations completed as part of the Transportation Impact Analysis (Appendix G) identified the segment of Oak Street between Alder Avenue and Thornton as highly traveled by students on foot. This segment of Oak Street includes a horizontal "S" curve that impacts sight distance for vehicles traveling along Oak Street. Currently, there is a no marked crosswalk across Oak Street on both the eastbound and westbound approach at Blue Ridge Street, which is between the two curves of Oak Street. The additional pedestrian activity anticipated from the proposed increased student enrollment will increase the potential for pedestrian accidents on this route. This conflicts with the Public Facilities Element of the City's General Plan, specifically Implementation Measure 9-10.1.A calling for safe access by student pedestrians. This is a *significant* impact.

Congestion Management Plan: Bicycle and Pedestrian Impact Analysis

The ACTC CMP also requires analysis of impacts to cyclists on the Countywide Bicycle Network.

According to the *2015 Alameda County CMP Transportation Impact Analysis Technical Guidelines*, a project would create an impact on pedestrian and bike circulation if:

1. Project vehicle trips would present a barrier to bikes/pedestrians safely crossing roadways. Pedestrian circulation will continue to be provided on site via walkways throughout the site between all on-site facilities and between the site and the adjacent streets. Current crossing safety measures employed by the school during peak hours are sufficient to safely accommodate the additional pedestrian demand generated by the project, and the project would not conflict with Fremont General Plan Policies 3-1.6.A, 9-10.1 regarding the provision of safe routes to schools, pedestrian connections to schools, promotion of alternate modes of travel to schools, and provision of traffic management at school sites. The existing school layout restricts bike and pedestrian circulation in the immediate area.

   As described in Chapter 3, Project Description, the proposed project would combine the central parking and vehicular entrance area with the adjacent parking lot, develop two additional parking lots

along the southwest boundary of the campus, resulting in a net increase of 68 parking stalls. By increasing the onsite school drop-off and pick-up area and adding parking spaces the parking and loading activity on Thornton Avenue and in the surrounding neighborhood, would likely decrease, thereby improving pedestrian and bicycle movement in the area.

2. The project would reduce or sever existing or planned bike/pedestrian circulation in the area. As shown in Figure 3-6, in Chapter 3, Project Description, the project footprint (area of potential impact) would be the same as the existing footprint of Thornton Junior High School. Therefore, the project would not reduce or sever any existing or planned bike/pedestrian facilities in the project vicinity. The project would install new concrete pedestrian walkways throughout the site and updated walkways in select areas. As shown on Figure 3-6, the project would shift the existing crosswalk through the central parking area to the east to align with a new school entrance. The project would also install a new, in-ground mounted stainless steel bike rack on the campus. The project would not further deteriorate pedestrian and bicyclist facilities and would not have an adverse impact to pedestrian and bicyclist circulation in the area.

Transit Facilities

As identified under Environmental Setting, above, and shown on Figure 4.15-2, AC Transit Lines 251 and 621 serve Thornton Avenue in the immediate vicinity of the project site. These are "school serving" AC Transit lines with the capacity to accommodate the project. Very few students were observed using these busses during field observations performed as part of the TIA (Appendix G), and the 1,953 new daily vehicle trips to be generated by the project suggest that driver pick-up/drop-off would continue to be the primary mode of school travel. The project would not require additional transit service to the area nor induce enough demand to incentivize new AC Transit service improvements. The project would not modify or otherwise affect proposed transit projects or policies identified by AC Transit. Due to school attendance boundaries, the project would not significantly impact BART, the nearest regional transit system. As such, the project would not conflict with Fremont General Plan Policy 9-10.1 regarding the promotion of the use of transit services and facilities to serve schools.

Congestion Management Program: Transit Operation Analysis

According to the 2015 Alameda County CMP Transportation Impact Analysis Technical Guidelines, a project would create an impact on transit service if it:

1. Causes vehicular congestion that would significantly degrade transit operations. The proposed project would result in 532 new AM peak trips and 109 new PM peak trips. The proposed redesign of vehicle pick-up and drop-off areas and the increase in parking stalls would result in fewer cars waiting on Thornton Avenue and surrounding roadways during peak drop-off and pick-up periods. As a result of this reduction in congestion on Thornton Avenue, and the fact that school pick-up and drop-off activity occurs outside of typical AM and PM peak traffic periods, the project would not significantly degrade operations of AC Transit Lines 251 and 621 on Thornton Avenue.

2. Causes a ridership increase that would exceed existing transit capacity. As noted above, the project would not result in significantly increased ridership on AC Transit Lines 251 and 621. Additional

students generated from the proposed project would not exceed the capacities of these facilities. The nearest regional transit facility, the Fremont BART station, is located 2 miles from the project site. No impact to BART use would occur as a result of the proposed increased enrollment given the distance from the station.

3. Conflicts with existing transit service plans or preclude future transit service to the project area. For reasons established above, the proposed project would not require additional transit service to the area, nor would it induce enough demand for AC Transit to increase service in the area. The project would not preclude, modify or affect proposed transit projects or policies identified by transit service providers.

Safety

Three years of crash data (July 2015 – June 2018) for surrounding intersections were accessed from the Statewide Integrated Traffic Records System (SWITRS). Table 4.15-11 lists total vehicle crashes by severity and Table 4.15-12 includes collisions involving pedestrian and cyclists.

TABLE 4.15-11 AUTO CRASHES BY SEVERITY, JULY 2015 TO JUNE 2018

		Severity				
ID	Intersection	Fatal	PDO-Only	Minor Injury	Severe Injury	Total
1	Thornton Avenue & Fremont Boulevard	1	4	12	-	17
3	Thornton Avenue & Loop Dwy/Dusterberry Way	-	2	3	-	5
4	Thornton Avenue & Coronado Drive/Contra Costa Avenue	-	2	5	-	7
5	Thornton Avenue & Cabrillo Drive/Cabrillo Terrace	-	3	6	-	9
6	Thornton Avenue & I-880 NB On-Ramp/Blacow Road	-	2	8	-	10
9	Alder Avenue & Fremont Boulevard	-	1	4	-	5
10	Peralta Boulevard & Fremont Boulevard	-	2	8	-	10

Source: SWITRS, 2019.

TABLE 4.15-12 PEDESTRIAN AND BICYCLE INVOLVED COLLISIONS, JULY 2015 TO JUNE 2018

ID	Intersection	Bicycle Involved	Pedestrian Involved
1	Thornton Avenue & Fremont Boulevard	3	2
3	Thornton Avenue & Loop Dwy/Dusterberry Way	-	1
4	Thornton Avenue & Coronado Drive/Contra Costa Avenue	1	-
5	Thornton Avenue & Cabrillo Drive/Cabrillo Terrace	1	3
6	Thornton Avenue & I-880 NB On-Ramp/Blacow Road	1	-
9	Alder Avenue & Fremont Boulevard	-	-
10	Peralta Boulevard & Fremont Boulevard	-	3

Source: SWITRS, 2019.

Per SWITRS data, one fatal crash involving a pedestrian in the vehicular right-of-way occurred outside of normal school hours at the Thornton Avenue/Fremont Boulevard intersection in May 2016 at approximately 11:30 p.m. This incident occurred under specific circumstances at Thornton Avenue/Fremont Boulevard, which is not affected by the proposed project (see Table 4.15-4). Severe injury automobile crashes are absent, while no more than five pedestrian-involved or bicyclist-involved crashes occurred at any intersection over a 3-year period. Given this history, the footprint of the project within an existing school site, the fact that the majority of existing students are driven to school and the proposed circulatory and pedestrian improvements, the Thornton Conversion is unlikely to present a significant collisions hazard within the surrounding transportation network.

Overall, the project would result in two conflicts with a transportation-related program, plan, or ordinance. The project's impacts to the vehicle operation of the Thornton Avenue and Oak Street intersection would be *significant.*

Impact TRANS-1a: New vehicle trips resulting from the Thornton Middle School Conversion Project would result in the degradation of service at the two-way, stop sign-controlled intersection at Thornton Avenue/Oak Street (study intersection #2) from LOS E to LOS F during the AM peak hour under Existing and Near-Term conditions.

Significance without Mitigation: Significant.

Mitigation Measure TRANS -1a: The Fremont Unified School District, in cooperation with the City of Fremont, shall install a traffic signal at the intersection of Thornton Avenue and Oak Street.

As shown in the Table 4.15-13, below, signalization of this intersection would improve Existing and Near-Term plus Project AM peak hour operation to LOS C.

Significance with Mitigation: Less than significant.

TABLE 4.15-13 PLUS PROJECT INTERSECTION OPERATION WITH MITIGATION

				Existing			Near-Term		
No.	Location	Peak Hour	LOS Standard	V/C	Delay	LOS	V/C	Delay	LOS
2	Thornton Ave. and Oak St.	AM	E	0.64	24.0	C	0.68	22.0	C
		PM		0.52	13.3	B	0.53	13.5	B

Notes: Synchro Version 9, HCM 2000 methodology
V/C: Volume to Capacity Ratio
Delay: Average delay in seconds for signalized and all-way stop controlled intersection
Source: Kittelson & Associates, 2019.

Impact TRANS-1b: New student pedestrians from the proposed project would be susceptible to vehicle-pedestrian accidents from unsafe crossing conditions on Oak Street, conflicting with City of Fremont General Plan policy related to student pedestrian access and safety.

Mitigation Measure TRANS-1b: The Fremont Unified School District, in cooperation with the City of Fremont, shall install marked crosswalks across Oak Street on both the eastbound and westbound approach at Blue Ridge Street.

Significance with Mitigation: Less than significant.

TRANS-2 The proposed project would not conflict with CEQA Guidelines Section 15064.3, subdivision (b)(1).

Section 15064.3 of the CEQA Guidelines establishes criteria for determining the significance of transportation impacts. The guidelines state that "generally, vehicles miles traveled is the most appropriate measure of transportation impacts … vehicles miles traveled refers to the amount and distance of automobile travel attributed to the project." Per subdivision (b)(1), "vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact." By July 1, 2020, all CEQA lead agencies must analyze a project's transportation impacts using vehicle miles traveled (VMT).

Per Section 15064.3 (c), "A lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide." The Fremont Unified School District applied current City of Fremont traffic analysis guidelines to this environmental review document, as well as current Congestion Management Program standards. As of June 2019, the time of this analysis, the City of Fremont had not yet developed VMT guidelines. Given CEQA Guidelines Section 15064.3 (c), the proposed project and analysis herein would not conflict with CEQA Guidelines Section 15064.3, subdivision (b)(1). There would be *no impact* and no mitigation is required.

Significance without Mitigation: No impact.

TRANS-3 The proposed project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

The proposed project would be limited to the existing Thornton Junior High School campus footprint. No changes to the current geometry of the site beyond internal vehicle and pedestrian circulation are proposed. The improvement and modernization of an existing school to accommodate the addition of 6th grade students would not introduce incompatible uses to the project site. As noted under TRANS-1 above, improved circulation, driveways and internal roadways were designed to accommodate new students and increase movement into and through the site. These proposed design improvements would not result in or substantially increase hazards. No roadway improvements are proposed under the project. Therefore, the impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

TRANS-4 The proposed project would not result in inadequate emergency access.

A planned emergency access route does not currently exist at the Thornton campus. The proposed project would improve emergency vehicle access to and within the school. As shown in Figure 3-6, the proposed project would include a 20-foot-wide emergency access route. This would provide access to the front and internal areas of the campus that does not currently exist. The access route would follow the new parking and circulation areas to be located along the southern boundary of the campus, and then provide access to both the classroom and rear recreational areas of the campus. Internal loops and a rear egress point at Blue Ridge Street would facilitate further vehicle flow and improved flow into and out of the campus. The emergency access route would provide egress out of the central parking and pick-up/drop-off area.

The project would not alter the capacity or physical characteristics of the roadways serving Thornton Junior High School and the surrounding area. Although there would be an increase in project-generated trips into the intersection network near the school, those vehicles would be present for short periods of time during drop-off and pick-up periods. Emergency vehicle response times are not expected to have any measurable change with the addition of project-generated trips and thus would not be significantly impacted by the project. Proposed on-site circulation improvements are intended to reduce off-site congestion, thereby reducing conflicts with emergency response vehicles. Therefore, the project would not have a substantial effect on emergency access to the areas in the vicinity of the project site, and this impact would be *less than significant*.

Significance without Mitigation: Less than significant.

4.15.4 CUMULATIVE IMPACTS

TRANS-5 The proposed project, in combination with past, present and reasonably foreseeable projects, would result in significant cumulative impacts with respect to transportation and traffic.

Cumulative (2040) conditions and the potential effects of the project on cumulative intersection operations are discussed in this section.

Cumulative No Project Conditions

Cumulative traffic growth was developed using the City of Fremont 2035 General Plan traffic volumes. The model assumes future development throughout the city consistent with regional totals projected by the Association of Bay Area Governments (ABAG). Year 2035 in the model was used to develop a growth increment. That growth increment was extrapolated to 2040.

The Cumulative No Project Condition assume construction of the proposed Centerville Middle School Conversion Project, located at Fremont Boulevard and Central Avenue. This is a similar project in which 6th grade would be added to an existing junior high school. The Centerville project is expected to increase

enrollment by 1,491 students with a similar construction and operational timeline as the proposed project.

Cumulative No Project traffic volumes are shown in Table 4.15-14. Nearly all study intersections would operate acceptably under Cumulative No Project conditions. The exception is:

- Thornton Avenue/Oak Street (#2) during the AM and PM peaks (**boldfaced**)

TABLE 4.15-14 CUMULATIVE INTERSECTION OPERATIONS

No.	Location	Control	Peak Hour	LOS Standard	Cumulative V/C	Cumulative Delay	Cumulative LOS
1	Thornton Ave & Fremont Blvd	Signal	AM	E	0.92	46.2	D
			PM		0.98	51.6	D
2	Thornton Ave & Oak St	TWSC	AM	E	**1.53**	**166.4**	**F**
			PM		**0.64**	**82.2**	**F**
3	Thornton Ave & Loop Dwy/Dusterberry Wy	Signal	AM	E	0.74	77.2	E
			PM		0.86	51.4	D
4	Thornton Ave & Coronado Dr/Contra Costa Ave	Signal	AM	E	1.00	53.5	D
			PM		0.73	16.9	B
5	Thornton Ave & Cabrillo Dr/Cabrillo Terrace	Signal	AM	E	0.84	29.5	C
			PM		0.68	17.8	B
6	Thornton Ave & I-880 NB On-Ramp/Blacow Rd	Signal	AM	E	0.92	30.3	C
			PM		0.95	29.0	C
7	Thornton Ave & I-880 NB Off-Ramp	Signal	AM	E	0.66	16.0	B
			PM		0.92	33.2	C
8	Thornton Ave & I-880 SB Off-Ramp	Signal	AM	E	0.69	7.8	A
			PM		0.72	9.3	A
9	Alder Ave & Fremont Blvd	Signal	AM	D	0.96	48.2	D
			PM		0.56	27.4	C
10	Peralta Blvd & Fremont Blvd	Signal	AM	E	0.76	30.3	C
			PM		0.81	32.2	C
11	Thornton Ave & North Dwy	TWSC	AM	E	0.68	19.8	C
			PM		0.51	12.1	B
13	Thornton Ave & South Dwy	TWSC	AM	E	0.59	10.0	B
			PM		0.51	10.3	B

Notes: Bold/shading = Unacceptable operation.
TWSC = Two-Way Stop Control (or Side-Street Stop Control).
Source: Kittelson & Associates, 2019.

The fact that the Thornton Avenue/Oak Street intersection would degrade to LOS F would conflict with performance standards for unsignalized intersections. This represents a represent a potential cumulative transportation impact.

Cumulative plus Project Conditions

Cumulative plus Project conditions were developed by adding project trips to the cumulative volumes. Cumulative plus Project volumes are listed in Table 4.15-15 and illustrated in Figure 4.15-9. As shown in the table, nearly all study intersections would operate acceptably under Cumulative plus Project conditions. The exceptions are:

- Thornton Avenue/Oak Street (#2): During the AM and PM peak hours **(boldface)**
- Thornton Avenue/Dusterberry Way (#3): During the AM peak hour **(boldface)**

The fact that the Thornton Avenue/Oak Street and Thornton Avenue/Dusterberry Way intersections would degrade to LOS F would conflict with performance standards for unsignalized and signalized intersections, respectively. This represents a represent a potential cumulative transportation impact.

TABLE 4.15-15 CUMULATIVE PLUS PROJECT INTERSECTION OPERATIONS

					Cumulative + Project		
No.	Location	Control	Peak Hour	LOS Standard	V/C	Delay	LOS
1	Thornton Ave & Fremont Blvd	Signal	AM	E	0.95	48.5	D
			PM		0.99	52.2	D
2	Thornton Ave & Oak St	TWSC	AM	E	**1.00**	**>100**	**F**
			PM		**0.65**	**91.3**	**F**
3	Thornton Ave & Loop Dwy/Dusterberry Wy	Signal	AM	E	**0.83**	**90.7**	**F**
			PM		0.86	72.3	E
4	Thornton Ave & Coronado Dr/Contra Costa Ave	Signal	AM	E	1.06	66.2	E
			PM		0.74	17.3	B
5	Thornton Ave & Cabrillo Dr/Cabrillo Terrace	Signal	AM	E	0.89	35.8	D
			PM		0.69	18.0	B
6	Thornton Ave & I-880 NB On-Ramp/Blacow Rd	Signal	AM	E	0.93	31.2	C
			PM		0.95	29.4	C
7	Thornton Ave & I-880 NB Off-Ramp	Signal	AM	E	0.68	16.6	B
			PM		0.92	33.3	C
8	Thornton Ave & I-880 SB Off-Ramp	Signal	AM	E	0.70	8.0	A
			PM		0.73	9.3	A
9	Alder Ave & Fremont Blvd	Signal	AM	D	0.98	50.3	D
			PM		0.56	27.4	C
10	Peralta Blvd & Fremont Blvd	Signal	AM	E	0.76	30.2	C
			PM		0.81	32.2	C
11	Thornton Ave & North Dwy	TWSC	AM	E	0.73	21.3	C
			PM		0.51	12.2	B
13	Thornton Ave & South Dwy	TWSC	AM	E	0.61	10.1	B
			PM		0.51	10.0	A

Notes: **Bold/shading** = Unacceptable operation.
Source: Kittelson & Associates, 2019

Source: Kittelson & Associates, 2019.

Figure 4.15-9
Cumulative Plus Project Traffic Volumes

Impact TRANS-5a. The proposed Thornton Middle School Conversion project would contribute to the degradation of the operation of the two-way stop control intersection at Thornton Avenue/Oak Street (#3) to an unacceptable LOS F during the AM and PM peak hours under Cumulative plus Project conditions.

Significance without Mitigation: Significant.

Mitigation Measure TRANS-5a. Install the traffic signal described in Mitigation Measure TRANS-1a. This would bring intersection operation to LOS C in the AM peak hour and LOS B in the PM peak hour under Cumulative Conditions, as shown in Table 4.15-16, below.

Significance with Mitigation: Less than significant.

TABLE 4.15-16 CUMULATIVE INTERSECTION OPERATION WITH MITIGATION

				Existing			Cumulative plus Project		
No.	Location	Peak Hour	LOS Standard	V/C	Delay	LOS	V/C	Delay	LOS
2	Thornton Ave. and Oak St.	AM	E	0.64	24.0	C	0.75	27.2	C
		PM		0.52	13.3	B	0.63	15.7	B

Notes: Synchro Version 9, HCM 2000 methodology
Source: Kittelson & Associates, 2019

Impact TRANS-5 b. The proposed Thornton Middle School Conversion would contribute to the degradation of the operation of the signalized intersection at Thornton Avenue/Dusterberry Way (#5) to an unacceptable LOS F during the AM peak hour under Cumulative plus Project conditions.

Significance without Mitigation: Significant.

Mitigation Measure TRANS-5b. Fremont Unified School District and the City of Fremont shall coordinate to optimize signal cycle length and phasing splits at the Thornton Avenue/Dusterberry Way intersection. As shown in Table 4.15-17, below, signal optimization and phasing splits at this intersection would improve AM peak hour operation to LOS E under Cumulative Conditions.

Significance with Mitigation: Less than significant.

TABLE 4.15-17 PLUS PROJECT INTERSECTION OPERATION WITH MITIGATION

				Existing			Cumulative plus Project		
No.	Location	Peak Hour	LOS Standard	V/C	Delay	LOS	V/C	Delay	LOS
3	Thornton Ave. and Dusterberry Way	AM	E	n/a	n/a	n/a	0.77	55.0	E
		PM		n/a	n/a	n/a	0.86	72.3	E

Notes: Synchro Version 9, HCM 2000 methodology
Source: Kittelson & Associates, 2019

Pedestrian, Bicycle and Transit

This cumulative analysis includes construction off the Centerville Middle School Conversion project, a similar project in which 6th grade would be added to an existing junior high school. The Centerville project is expected to increase enrollment by 1,491 students, with a construction and operational timeline similar to the proposed project. Like the Thornton Conversion, the Centerville Conversion would include a revised campus circulation plan, included improved drop-off/pick-up areas, increased parking and bicycle and pedestrian improvements. Centerville Junior High School is located about 1 mile southeast of the proposed project site.

The two projects would result in a combined total of 2,336 new students. At both future middle schools, the primary trip type would be driver drop-off and pick-up, to be accommodated by proposed circulation and parking plans that reduce impacts to surrounding pedestrian and bicycle networks. The distance between the two projects, would further inhibit cumulative conflicts with policies in the City of Fremont General Plan or Bicycle Master Plan, including the proposed bikeways along Thornton Avenue Dusterberry Way. Moreover, the Centerville Conversion Project would be held to independent CEQA review and transportation analysis.

As explained previously, the Thornton campus is served by AC Transit school serving routes on Thornton Avenue. These facilities would accommodate new students resulting from the proposed project. Similarly, Centerville Junior High School is currently accessible via school serving AC Transit line 625, with a stop in front of the school. Like the proposed project, school attendance boundaries and distance to regional transit facilities would prevent significant impacts to regional transit facilities including BART. Together, these facilities would absorb cumulative impacts and would not require additional transit service to the area nor induce enough demand to incentivize new AC Transit service improvements. Together, the projects would not modify or otherwise affect proposed transit projects or policies identified by AC Transit. They would not conflict with Fremont General Plan Policy 9-10.1 regarding the promotion of the use of transit services and facilities to serve schools.

The proposed project would not result in cumulative impacts related to pedestrian/bicycle/transit policy and, therefore, the impact would be *less than significant*.

Significance without Mitigation: Less than significant.

4.16 TRIBAL CULTURAL RESOURCES

This chapter describes existing tribal cultural resources on the project site and evaluates the potential environmental consequences on tribal cultural resources from development of the proposed project. A summary of the relevant regulatory setting and existing conditions is followed by a discussion of the proposed project and cumulative impacts.

4.16.1 ENVIRONMENTAL SETTING

4.16.1.1 REGULATORY FRAMEWORK

Federal Regulations

American Indian Religious Freedom and Native American Graves and Repatriation Acts

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

State Regulations

California Environmental Quality Act

California State law provides for the protection of cultural resources by requiring evaluations of the significance of prehistoric and historic resources identified in documents prepared consistent with the California Environmental Quality Act (CEQA). The CEQA Statute is contained in Public Resources Code (PRC) 21000 to 21177 and the CEQA Guidelines are contained in CCR, Title 14, Division 6, Chapter 3, Sections 15000 to 15387.

Under CEQA, a cultural resource is considered a “historical resource” if it meets any of the criteria found in Section 15064.5(a) of the CEQA Guidelines. Under CEQA, the lead agency determines whether projects may have a significant effect on archaeological and historical resources. CEQA Guidelines Section 15064.5 defines what constitutes a historical resource, including: (1) a resource determined by the State Historical Resources Commission to be eligible for the California Register of Historical Resources (including all properties on the National Register); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k); (3) a resource identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (4) any object, building, structure, site, area, place, record, or manuscript that the City determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the City's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered to be historically significant if it meets the criteria for listing on the California Register enumerated below:

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

(B) Is associated with the lives of persons important in our past;

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

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

If the lead agency determines that a project may have a significant effect on a historical resource, the project is determined to have a significant effect on the environment, and these effects must be addressed. However, no further environmental review needs to be completed if, under the qualifying criteria, a cultural resource is not found to be a historical resource or unique archaeological resource.

In addition, PRC Section 21083.2 and Section 15126.4 of the CEQA Guidelines specify lead agency responsibilities to determine whether a project may have a significant effect on archaeological resources. If it can be demonstrated that a project would damage a unique archaeological resource, the lead agency may require reasonable efforts for the resources to be preserved in place or left in an undisturbed state. Preservation in place is the preferred approach to mitigation. The PRC also details required mitigation if unique archaeological resources are not preserved in place.

Section 15064.5 of the CEQA Guidelines specifies procedures to be used in the event of an unexpected discovery of Native American human remains on non-federal land. These codes protect such remains from disturbance, vandalism, and inadvertent destruction, establish procedures to be implemented if Native American skeletal remains are discovered during construction of a project, and establish the Native American Heritage Commission (NAHC) as the authority to identify the most likely descendant and mediate any disputes regarding disposition of such remains.

California Health and Safety Code

California Health and Safety Code Section 7052 states that it is a felony to disturb Native American cemeteries. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the County Coroner can determine whether the remains are those of a Native American. Section 7050.5(b) outlines the procedures to follow should human remains be inadvertently discovered in any location other than a dedicated cemetery. The section also states that the County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC has various powers and duties to provide for the ultimate disposition of any Native American remains, as does the assigned Most Likely Descendant.

Public Resources Code

PRC Section 5097.5 prohibits “knowing and willful” excavation or removal of any “vertebrate paleontological site… or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands.” Public

lands are defined to include lands owned by or under the jurisdiction of the State or any city, county, district, authority, or public corporation, or any agency thereof.

State Laws Pertaining to Human Remains

Any human remains encountered during ground-disturbing activities are required to be treated in accordance with California Code of Regulations Section 15064.5(e) (CEQA), PRC Section 5097.98, and the California Health and Safety Code Section 7050.5. California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Specifically, Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are determined to be of Native American origin, the county coroner must contact the California NAHC within 24 hours of this identification. An NAHC representative will then identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. In addition, CEQA Guidelines Section 15064.5 specifies the procedures to be followed in case of the discovery of human remains on non-federal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

Assembly Bill 52

Assembly Bill (AB) 52, the Native American Historic Resource Protection Act, sets forth a proactive approach intended to reduce the potential for delay and conflicts between Native American and development interests. Projects subject to AB 52 are those that file a notice of preparation for an EIR or notice of intent to adopt a negative or mitigated negative declaration on or after July 1, 2016. AB 52 adds tribal cultural resources (TCR) to the specific cultural resources protected under CEQA. Under AB 52, a TCR is defined as a site, feature, place, cultural landscape (must be geographically defined in terms of size and scope), sacred place, or object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register, or included in a local register of historical resources. A Native American Tribe or the lead agency, supported by substantial evidence, may choose at its discretion to treat a resource as a TCR. AB 52 also mandates lead agencies to consult with tribes, if requested by the tribe, and sets the principles for conducting and concluding consultation.

4.16.1.2 EXISTING CONDITIONS

This section provides an overview of the history of Fremont and resources of cultural significance that may be affected by the proposed project. Archeological evidence indicates that humans began to settle in the Fremont area at least 12,000 years ago. Prehistoric occupation of California is broken into three broad periods: the Paleoindian period (10,000 – 6,000 B.C.), the Archaic period (6,000 B.C. – A.D. 500), and the Emergent period (A.D. 500 – 1800). Early occupants depended mainly on big game and minimally processed plant foods for survival. Later, as trade networks became increasingly complex, and an economy based on clam disk bead money became more prevalent, inhabitants' social status became recognizably linked to wealth.

Linguistic evidence shows that descendants of the native groups who inhabited the area between the Carquinez Straight and the Monterey area were known as the Ohlone, and were often referred to by the name of their linguistic group, Costanoan. The Ohlone occupied a large territory in the South Bay, which includes the project site. This ethnographic group settled in large permanent groupings of households, forming large villages and tribal territories known as "tribelets." The Ohlone lived in domed structures built of woven tule, ferns, and grass, and were often constructed near bayshores and valleys providing access to waterways, increasing their ability to distribute trade goods, as well as access plant and animal life. The Ohlone people's customary way of living disappeared by about 1810 due to introduced diseases, a declining birth rate, and the impact of the California mission system established by the Spanish in the area in 1777.[1]

Outreach to Native American Tribes

The District has not received any request from any Tribes in the geographic area with which it is traditionally and culturally affiliated with or otherwise to be notified and consulted about the proposed project. Nonetheless, the evaluation of potential impacts to TCRs is addressed below in Section 4.16.3, Impact Discussion, of this chapter.

4.16.2 STANDARDS OF SIGNIFICANCE

Would the project:

1. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

   i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

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

4.16.3 IMPACT DISCUSSION

TRI-1	**The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource, as defined in Public Resources Code Section 21074.**

[1] City of San Jose, 2011, *Envision San Jose 2040 General Plan Draft Program EIR,* page 673.

The proposed project would result in a substantial adverse change in the significance of a tribal cultural resources if it altered resources listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources or a resource determined to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. The project site is currently developed as a school site initially constructed in 1963 and modernized in 2004. The Native American Heritage Commission (NAHC) completed a record search of Sacred Lands File (SLF) and the results were negative (see Appendix H). The federal, State, and City historic registers do not indicate any site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe designated on the project site. Additionally, the project site is not located within a historic preservation district, nor is it identified as a historic landmark. Consultation requests (see Appendix H) were sent to Native American tribes traditionally and culturally associated with the area. No tribes contacted requested consultation. Therefore, there would be *no impact* as a result of project implementation.

Significance without Mitigation: No impact.

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4.17 UTILITIES AND SERVICE SYSTEMS

This chapter describes the existing utilities and service systems for the project site and evaluates the potential impacts from development of the proposed project on those services and facilities. Wastewater, water supply, and solid waste are each addressed in a separate section of this chapter. In each section, a summary of the relevant regulatory setting and existing conditions is followed by a discussion of proposed project-specific and cumulative impacts. Storm drainage systems and groundwater are addressed in Chapter 4.9, Hydrology and Water Quality, of this Draft EIR. Energy supplies are addressed in Chapter 4.5, Energy, of this Draft EIR.

4.17.1 ENVIRONMENTAL SETTING

4.17.1.1 WATER SUPPLY

Regulatory Framework

Federal Regulations

The Safe Drinking Water Act, the principal federal law intended to ensure safe drinking water to the public, was enacted in 1974 and has been amended several times since it came into law. The Act authorizes the United States Environmental Protection Agency (USEPA) to set national standards for drinking water, called the National Primary Drinking Water Regulations, to protect against both naturally occurring and man-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require all water providers in the United States to treat water to remove contaminants, except for private wells serving fewer than 25 people. In California, the State Department of Health Services conducts most enforcement activities. If a water system does not meet standards, it is the water supplier's responsibility to notify its customers.

State Regulations

California Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, which was passed in California in 1969 and amended in 2013, the State Water Resources Control Board (SWRCB) has authority over State water rights and water quality policy. This Act divided the State into nine regional basins, each under the jurisdiction of a Regional Water Quality Control Board (RWQCB) to oversee water quality on a day-to-day basis at the local and regional level. RWQCBs engage in several water quality functions in their respective regions. RWQCBs regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. Fremont is overseen by the San Francisco Bay RWQCB.

California Urban Water Management Planning Act

Through the Urban Water Management Planning Act of 1983, the California Water Code requires all urban water suppliers within California to prepare and adopt an Urban Water Management Plan (UWMP) and update it every five years. This requirement applies to all suppliers providing water to more than

3,000 customers or supplying more than 3,000 acre-feet[1] of water annually. The Act is intended to support conservation and efficient use of urban water supplies. The Act requires that total project water use be compared to water supply sources over the next 20 years in five-year increments, that planning occur for single and multiple dry water years, and that plans include a water recycling analysis that incorporates a description of the wastewater collection and treatment system within the agency's service area along with current and potential recycled water uses.

CALGreen Building Code (Part 11, Title 24, CCR)

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations [CCR]) to apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure, unless otherwise indicated in the code, throughout the State of California. CALGreen established planning and design standards for sustainable site development, including water conservation measures and requirements that new buildings reduce water consumption by 20 percent. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011. The building efficiency standards are enforced through the local building permit process.

The purpose of CALGreen is to improve public health, safety, and general welfare by enhancing the design and construction of buildings using building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories:

- Planning and design
- Energy efficiency
- Water efficiency and conservation
- Material conservation and resource efficiency
- Environmental quality

The California Plumbing Code (Part 5, Title 24, CCR)

The 2016 California Plumbing Code (Part 5, Title 24, CCR) was adopted as part of the California Building Standards Code. The general purpose of the universal code is to prevent disorder in the industry as a result of widely divergent plumbing practices and the use of many different, often conflicting, plumbing codes by local jurisdictions. Among many topics covered in the code are water fixtures, potable and non-potable water systems, and recycled water systems. Water supply and distribution shall comply will all applicable provisions of the current edition of the California Plumbing Code.

State Updated Model Water Efficient Landscape Ordinance (Assembly Bill 1881)

The updated Model Water Efficient Landscape Ordinance requires cities and counties to adopt landscape water conservation ordinances by January 31, 2010 or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Water Efficient Landscape Ordinance (WELO). As

[1] Once acre-foot is the amount of water required to cover 1 acre of ground (43,560 square feet) to a depth of 1 foot.

noted in Chapter 4.9, Hydrology and Water Quality, the City of Fremont adopted a locally modified WELO on December 1, 2015 in accordance with Assembly Bill (AB) 1881.

Local Regulations

City of Fremont General Plan

The Conservation Element of the City of Fremont's General Plan addresses existing water availability, desired conditions, and water conservation techniques. It explains that water service in the City is provided by the Alameda County Water District (ACWD), a district created by the County Water District Act of 1913 and granted with governing powers for the new community.

The Conservation Element identifies water sources, water quality characteristics, and outlines efforts to reduce water waste. As shown in Table 4.17-1, the Element outlines a series of goals, policies, and programs to conserve water resources and maintain water-quality, including water efficient landscaping, water retention on-site, adhering to the Green Building Code, reclaimed water programs, "purple-pipes" in development, and conservation measures for City Operations.

TABLE 4.17-1 FREMONT GENERAL PLAN SANITARY WASTEWATER POLICIES

Goal/Policy No.	Goal/Policy/Program Text
Land Use Element	
Policy 2-2.9	**Adequacy of Infrastructure.** Allow new development to occur only when the public facilities needed to serve that development are available or will be provided by the development through the payment of impact fees.
Public Facilities Element	
Policy 9-3.1	**Long Range Planning.** Work with the Alameda County Water District, Union Sanitary District, and Alameda County Flood Control District to encourage their long range plans are consistent with the Fremont General Plan.
Conservation Element	
Goal 7-2	**Water Resources.** A protected water resource system that offers natural habitat and enhances the biological value of the City
Goal 7-4	**Water Conservation.** A water conservation program with measurable results consistent with Alameda County Water District's Urban Water Management Plan and with the City's greenhouse gas reduction goals
Goal 7-4.1	**Water Conservation.** Maximize community water conservation.
Goal 7-4.2	**Reclaimed Water**. Encourage the use of reclaimed water for irrigation, industrial purposes and in City operations.

Source: Fremont General Plan.

ACWD Urban Water Management Plan 2015-2020

In compliance with Senate Bill (SB) X7-7 and the California Urban Water Management Planning Act (California UWMP), ACWD coordinated with the Bay Area Water Supply and Conservation Agency (BAWSCA) and commissioned a water management plan that describes how current and future supplies in the ACWD service area will be managed to provide reliable water supply over a planning horizon ending in 2040. Analyses of regional water supply reliability were performed for years with normal water conditions,

single dry year conditions, and multiple dry year conditions. Climate change impacts to ACWD water supplies were also assessed.

Existing Conditions

Water Supply

The ACWD, which serves all of Fremont, Newark, and portions of Hayward and Union City, serves approximately 84,000 mostly residential customers.[2] Potable water supply is derived from the following sources: 40 percent from the State Water Project (SWP); 40 percent from local supplies, and 20 percent from the San Francisco Public Utilities Commission Regional Water System (SFPUC RWS), 85 percent of which originates in the Hetch Hetchy watershed. The SWP and SFPUC RWS supplies are imported through the South Bay Aqueduct and Hetch-Hetchy Aqueduct, respectively.[3] Local supplies include groundwater from the Niles Cone Groundwater Basin, desalinated brackish water from the groundwater basin, and surface water from the Del Valle Reservoir. ACWD has a contractual agreement to purchase up to 42,000 acre-feet of water annually from the SWP, in addition to a contractual agreement with SFPUC RWS for 15,400 acre-feet of water annually. The ACWD's current supply is approximately 65.6 million gallons per day (mgal/day), or 23,725 million gallons (mg) per year.[4] As of 2015 ACWD demand was 48.0 mgal/day.

Water from the SWP enters Fremont through the South Bay Aqueduct to a connection point at the Mission San Jose Water Treatment Plant. Water from the SFPUC RWS enters Fremont through the Hetch Hetchy Aqueduct, which ACWD blends with local groundwater for distribution to customers. Local supplies derive from Alameda Creek Watershed runoff and local rainfall, which is stored in Quarry Lakes and the Niles Cone Groundwater Basin, in addition to Lake Del Valle. The ACWD owns and operates six storage tanks and six storage reservoirs with a storage capacity of 84.7 mg of water.[5] Additional water demand is derived from the Quarry Lakes Groundwater Recharge System, Aquifer Reclamation Program Wells, and Alameda Creek Watershed.

Table 4.17-2 shows historical potable water supply delivered to the ACWD through 2015. Due to recent conservation efforts, in 2015 the District used 37 percent less water supply than it did in 2011.

The residential sector accounted for 67 percent of average potable water demand in the ACWD service area between 2006 and 2015. The remaining 33 percent was used by commercial, industrial, dedicated landscape, and institutional customers.[6]

[2] Alameda County Water District. ACWD Fact Sheet. https://www.acwd.org/93/Fact-Sheet, accessed June 26, 2019.

[3] Alameda County Water District. ACWD's Water Sources and Supplies. https://www.acwd.org/100/ACWDs-Water-Sources-Supplies, accessed June 26, 2019.

[4] Alameda County Water District, 2015. Urban Water Management Plan 2015-2020. https://www.acwd.org/DocumentCenter/View/1264/ACWDs-2015---2020-UWMP?bidId=, accessed June 26, 2019.

[5] Bay Area Water Supply and Conservation Agency, 2011. Alameda County Water District. http://bawsca.org/members/profiles/alameda, accessed June 27, 2019.

[6] Alameda County Water District, 2015. Urban Water Management Plan 2015-2020. https://www.acwd.org/DocumentCenter/View/1264/ACWDs-2015---2020-UWMP?bidId=, accessed June 26, 2019.

TABLE 4.17-2 POTABLE WATER SUPPLY UTILIZATION FOR ACWD

	Annual Production (Acre-Feet/Year)				
Potable Water Source	2011	2012	2013	2014	2015
SWP	14,300	18,300	14,800	16,800	9,000
SFPUC	8,800	9,320	10,000	13,100	8,600
Del Valle Lake	5,900	2,600	5,800	1,400	1,200
Newark desalination plant	6,600	8,900	8,100	8,100	8,200
Local groundwater recharge	33,600	17,000	12,200	12,900	23,300
Semitropic groundwater bank	0	0	2,000	3,000	13,200
Total	**69,200**	**56,140**	**52,900**	**55,300**	**63,500**

Source: Alameda County Water District, 2015. Urban Water Management Plan 2015-2020.

4.17.1.2 SANITARY WASTEWATER (SEWER)

Regulatory Framework

Federal Regulations

The federal government regulates wastewater treatment and planning through the Federal Water Pollution Control Act of 1972, more commonly known as the Clean Water Act, as well as through the National Pollutant Discharge Elimination System (NPDES) permit program, both of which are discussed in further detail below.

Clean Water Act

The Federal Water Pollution Act of 1972, more commonly known as the Clean Water Act (CWA), regulates the discharge of pollutants into watersheds throughout the nation. It is the primary federal law governing water pollution. Under the CWA, the USEPA implements pollution control programs and sets wastewater standards. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, aiding publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.

National Pollutant Discharge Elimination System

The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharge, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable connections and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges

not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a sewage treatment plant.

State Regulations

State Water Resources Control Board

On May 2, 2006 the SWRCB adopted a General Waste Discharge Requirement (Order No. 2006-0003) for all publicly owned sanitary sewer collection systems in California within more than 1 mile of sewer pipe. The order provides a consistent Statewide approach to reducing sanitary sewer overflows (SSOs) by requiring public sewer system operators to take all feasible steps to control the volume of waste discharged into the system, to prevent sanitary sewer waste from entering the storm sewer system, and to develop a Sanitary Sewer Master Plan. The General Waste Discharge Requirement also requires that storm sewer overflows be reported to the SWRCB using an online reporting system.

The SWRCB has delegated authority to nine Regional Water Quality Control Boards (RWQCB) to enforce these requirements within their region. The San Francisco Bay RWQCB issues and enforces NPDES permits in the City of Fremont. NPDES permits allow the RWQCB to regulate where and how the waste is disposed including the discharge volume and effluent limits of the waste and the monitoring and reporting responsibilities of the discharger. The RWQCB is also charged with conducting inspections of permitted discharges and monitoring permit compliance

Sanitary District Act of 1923

The Sanitary District Act of 1923 (Health and Safety Code Section 6400 et seq.) authorizes the formation of sanitation districts and enforces the districts to construct, operate, and maintain facilities for the collection, treatment, and disposal of wastewater. The Act was amended in 1949 to allow the districts to also provide solid waste management and disposal services including refuse transfer and resource recovery.

The California Plumbing Code (Part 5, Title 24, CCR)

The 2016 California Plumbing Code (Part 5, Title 24, and CCR) was adopted as part of the California Building Standards Code. The general purpose of this universal Code is to prevent disorder in the industry as a result of widely divergent plumbing practices and the use of many different, often conflicting, plumbing codes by local jurisdictions. Among many topics covered in the Code are water fixtures, potable and non-potable water systems, and recycled water systems. Water supply and distribution in California must comply with all applicable provisions of the current California Plumbing Code.

Local Regulations

Fremont General Plan

Both Land Use and Circulation Element and Public Services Element of the Fremont General Plan stress the benefits of adequate and well-planned infrastructure, including sanitary sewer. Both contain goals, policies and programs devoted to planning and maintaining this infrastructure. These are listed in Table 4.17-3.

TABLE 4.17-3 FREMONT GENERAL PLAN SANITARY WASTEWATER POLICIES

Goal/Policy No.	Goal/Policy/Program Text
Land Use and Circulation Element	
Policy 2-2.9	**Adequacy of Infrastructure**. Allow new development to occur only when the public facilities needed to serve that development are available or will be provided by the development through the payment of impact fees.
Public Facilities Element	
Policy 9-3.1	**Long Range Planning.** Work with the Alameda County Water District, Union Sanitary District, and Alameda County Flood Control District to encourage their long range plans are consistent with the Fremont General Plan.

Source: Fremont General Plan.

Existing Conditions

This section describes the environmental setting of the project regarding wastewater collection and treatment facilities.

Union Sanitary District

The Union Sanitary District (USD) is a fee-supported district that provides wastewater collection, treatment, and disposal for residents and businesses of the cities of Fremont, Newark, and Union City. USD serves approximately 36.4 square miles in Fremont,[7] and wastewater generated within the USD service area is collected and conveyed to the Alvarado Wastewater Treatment Plant (WWTP). The WWTP is owned and operated by the USD.

USD's wastewater collection system consists of more than 834 miles of underground pipelines.[8] The Irvington Pump Station serves the southern portion of the service area; the Newark Pump Station serves the central portion and the Alvarado Pump Station serves the northern portion. Wastewater collected in the southern and central areas is transported to the Alvarado Wastewater Treatment Plant (WWTP) in Union City via dual 33-inch and 39-inch force mains prior to outfall in the San Francisco Bay after treatment. The northern area wastewater is pumped directly to the WWTP from the Alvarado Pump Station.[9]

[7] City of Fremont, 2011. City of Fremont General Plan, Chapter 9, Public Facilities.

[8] Union Sanitary District, 2019. Mission, Organization, Facts, and History. https://www.unionsanitary.com/about-us/about-us/mission-facts-history, accessed June 27, 2019.

[9] City of Fremont, 2011. City of Fremont General Plan, Chapter 9, Public Facilities.

The Treatment Plant has an average daily dry weather flow capacity of 24.49 mgal/day.[10] The WWTP serves more than 355,000 people and businesses that contribute an average flow of 22.99 mgal/day, or 1.5 mgal/day less than the total flow capacity.[11] The capacity of WWTP is 33 mgal/day and USD's contractual discharge capacity is 43 mgal/day.[12]

4.17.1.3 SOLID WASTE

Regulatory Framework

State Regulations

California Integrated Waste Management Act

California's Integrated Waste Management Act of 1989, AB 939, sets a requirement for cities and counties throughout the State to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. To help achieve this, the Act required that each city and county prepare and submit a Source Reduction and Recycling Element. AB 939 also established the goal for all California counties to provide at least 15 years of on-going landfill capacity.

In 2007, SB 1016 amended AB 939 to establish a per capita disposal measurement system. The per capita disposal measurement system is based on two factors: a jurisdiction's reported total disposal of solid waste divided by a jurisdiction's population. The California Integrated Waste Management Board was replaced by the California Department of Resources Recycling and Recovery (CalRecycle) in 2010. CalRecycle sets a target per capita disposal rate for each jurisdiction. Each jurisdiction must submit an annual report to CalRecycle with an update of its progress in implementing diversion programs and its current per capita disposal rate. In 2018, the Fremont residential per capita disposal rate was 4.7 pounds per resident per day, and the Fremont employee per capita disposal rate was 9.2 pound per employee per day.[13]

In 2011, AB 341 was passed that sets a State policy goal of not less than 75 percent of solid waste that is generated to be source reduced, recycled, or composted by the year 2020. CalRecycle was required to submit a report to the Legislature by January 1, 2014 outlining the strategy that will be used to achieve this policy goal. That report has not been certified.

California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act require areas in development projects to be set aside for collecting and loading recyclable materials. The Act required CalRecycle (formerly CIWMB) to

[10] Alameda County Water District, 2015. Urban Water Management Plan 2015-2020. https://www.acwd.org/DocumentCenter/View/1264/ACWDs-2015---2020-UWMP?bidId=, accessed June 26, 2019.

[11] Union Sanitary District. 2019, Mission, Organization, Facts, and History. https://www.unionsanitary.com/about-us/about-us/mission-facts-history, accessed June 27, 2019.

[12] Alameda County Water District, 2015. Urban Water Management Plan 2015-2020. https://www.acwd.org/DocumentCenter/View/1264/ACWDs-2015---2020-UWMP?bidId=, accessed June 26, 2019.

[13] CalRecycle, California's Statewide Per Resident, Per Employee, and Total Disposal Since 1989. http://www.calrecycle.ca.gov/lgcentral/GoalMeasure/DisposalRate/Graphs/Disposal.htm, accessed March 14, 2016.

develop a model ordinance for adoption by any local agency relating to adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model, or an ordinance of their own, providing for adequate areas in development projects for the collection and loading of recyclable materials.

Mandatory Commercial Organics Recycling

In October of 2014 Governor Brown signed AB 1826[14] requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. Greenhouse gas (GHG) emissions result from the decomposition of organic wastes in landfills. Mandatory recycling of organic waste is aimed at helping achieve California's aggressive recycling and GHG emission goals. The implementation schedule is as follows:

- January 1, 2016: Local jurisdictions shall have an organic waste recycling program in place. Jurisdictions shall conduct outreach and education to inform businesses how to recycle organic waste in the jurisdiction, as well as monitoring to identify those not recycling and to notify them of the law and how to comply.
- April 1, 2016: Businesses that generate eight cubic yards of organic waste per week shall arrange for organic waste recycling services.
- January 1, 2017: Businesses that generate four cubic yards of organic waste per week shall arrange for organic waste recycling services.
- August 1, 2017 and ongoing: Jurisdictions shall provide information about their organic waste recycling program implementation in the annual report submitted to CalRecycle. (See above for description of information to be provided.)
- Fall 2018: After receipt of the 2016 annual reports submitted on August 1, 2017, CalRecycle shall conduct its formal review of those jurisdictions that are on a two-year review cycle.
- January 1, 2019: Businesses that generate four cubic yards or more of commercial solid waste per week shall arrange for organic waste recycling services.
- Fall 2020: After receipt of the 2019 annual reports submitted on August 1, 2020, CalRecycle shall conduct its formal review of all jurisdictions.
- Summer/Fall 2021: If CalRecycle determines that the statewide disposal of organic waste in 2020 has not been reduced by 50 percent of the level of disposal during 2014, the organic recycling requirements on businesses will expand to cover businesses that generate two cubic yards or more of commercial solid waste per week. Additionally, certain exemptions, previously discussed, may no longer be available if this target is not met.

[14] CalRecycle, 2016. Mandatory Commercial Organics Recycling, http://www.calrecycle.ca.gov/recycle/commercial/organics/, accessed February 4, 2016.

Global Warming Solutions Act of 2006, Scoping Plan[15]

The California Global Warming Solutions Act of 2006 (also known as AB 32) Scoping Plan, which was adopted by the Air Resources Board (ARB), included a Mandatory Commercial Recycling Measure. The Mandatory Commercial Recycling Measure focuses on diverting commercial waste to reduce greenhouse gas (GHG) emissions, with the goal of reducing GHG emissions by 5 million metric tons of carbon dioxide equivalents (MTCO2e), consistent with the 2020 targets set by AB 32. To achieve the Measure's objective, the commercial sector will need to recycle an additional 2 to 3 million tons of materials annually by the year 2020.

CalRecycle adopted this Measure at its January 17, 2012 Monthly Public Meeting. The regulation was approved by the Office of Administrative Law on May 7, 2012 and became effective immediately. On June 27, 2012, the Governor signed SB 1018, which included an amendment requiring both businesses that generate 4 cubic yards or more of commercial solid waste per week and multi-family residences with five or more units to arrange for recycling services. This requirement became effective on July 1, 2012.

CALGreen Building Code

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations [CCR]) to apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout the State of California, unless otherwise indicated in this code. Section 4.408, Construction Waste Reduction Disposal and Recycling, mandates that, in the absence of a more stringent local ordinance, a minimum of 50 percent of non-hazardous construction and demolition debris must be recycled or salvaged. The Code requires the Applicant to have a waste management plan, for on-site sorting or construction debris, which is submitted to the City of Fremont for approval. The Plan does the following:

- Identifies the materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale.
- Specifies if materials will be sorted on-site or mixed for transportation to a diversion facility.
- Identifies the diversion facility where the material collected can be taken.
- Identifies construction methods employed to reduce the amount of waste generated.
- Specifies that the amount of materials diverted shall be calculated by weight or volume, but not by both.

[15] CalRecycle. http://www.calrecycle.ca.gov/Recycle/Commercial/, accessed March 14, 2016.

Local Regulations

Alameda Countywide Integrated Waste Management Plan

The Countywide Integrated Waste Management Plan (CoIWMP)[16] is a state-mandated plan under AB 939, prepared by the Alameda County Waste Management Authority. The Plan was first adopted in 1997 and last updated in 2017. The Plan identifies solid waste facilities and waste sheds within Alameda County. It describes the countywide plan for reaching the state-mandated 50 percent recycling goal and the county-mandated 75 percent recycling goal.[17] The Countywide Siting Element, also in the CoIWMP document, demonstrates that there are at least 15 years of remaining disposal capacity to serve all the jurisdictions in the county. Disposal capacity projections are updated annually as part of the state annual reporting process to ensure there is always at least 15 years of remaining disposal capacity.

Fremont General Plan

Both Land Use and Public Services Element of the Fremont General Plan stress the benefits of adequate and well-planned infrastructure, including sanitary sewer. Both contain goals, policies and programs devoted to planning and maintaining this infrastructure. In addition, Goal 9-6 and related policies and implementation measures require maximized waste diversion with the long-term objective of eliminating landfill waste. General Plan goals and policies relevant to this project are listed in Table 4.17-4.

Fremont Municipal Code

Per Section 15.48.020, adopts California Green Building Standards Code (CGBSC or CALGreen) as the green building code of the City of Fremont, thus including CalGreen requirements minimizing solid waste generation and conserve resources in City of Fremont. In addition, Chapter 8.40 provides regulations for solid waste, recyclables and organics management. Section 8.40.780 provides requirements for construction and demolition debris diversion and recycling requirements. 8.40.800 requires approval of a Waste Handling Plan prior to issuance of permits for demolition, building, encroachment, grading, or other similar activity. The Plan is required to show that the diversion requirements will be achieved and indicate that the contractor will use either the franchised hauler debris box service or self-haul the construction and demolition debris to approved recycling facilities.

Existing Conditions

Solid Waste Collection

Republic Services of Alameda County provides solid waste disposal and recycling services for Fremont, Union City, Newark and Piedmont. The Fremont Recycling and Transfer Station, operated by BLT Enterprises of Fremont, is a large volume transfer/processing facility that receives construction/

[16] Alameda County Integrated Waste Management Plan, 2017. http://www.stopwaste.org/resource/reports/countywide-integrated-waste-management-plan-coiwmp, accessed July 19, 2019

[17] StopWaste. http://www.stopwaste.org/resource/reports/countywide-integrated-waste-management-plan-coiwmp, accessed July 19, 2019.

TABLE 4.17-4 FREMONT GENERAL SOLID WASTE POLICIES

Goal/Policy No.	Goal/Policy/Program Text
Land Use and Circulation Element	
Policy 2-2.9	**Adequacy of Infrastructure.** Allow new development to occur only when the public facilities needed to serve that development are available or will be provided by the development through the payment of impact fees.
Public Facilities Element	
Policy 9-3.1	**Long Range Planning.** Work with the Alameda County Water District, Union Sanitary District, and Alameda County Flood Control District to encourage their long range plans are consistent with the Fremont General Plan.
Goal 9-6	**Solid Waste Diversion.** Waste diversion maximized with the long-term objective of eliminating landfill waste.
Policy 9-6.1	**Increase Waste Diversion.** Divert more of the City's solid waste stream to beneficial reuse, with a long term objective of eliminating landfill waste.
Policy 9-6.2	**Protect Public Health and Safety.** Implement waste diversion programs that protect public health and safety and the environment.
Policy 9-6.3	**Prioritize Waste Diversion Strategies.** Implement waste diversion strategies in the following order, to promote the highest and best use of all materials: source reduction including redesign, reuse, recycling, organics processing, energy recovery and disposal in the landfill as the last option.
Policy 9-6.4	**Consider Environmental Benefits and Impacts.** Support external, regional, global and other public and private initiatives that are aligned with the City's waste diversion goals.
Goal 9-7	**Waste-Handling Infrastructure.** Infrastructure that manages the City's waste in a cost effective manner
Policy 9-7.2	**Require Development Projects to Provide for Waste Handling.** Ensure all development projects provide adequate space, design and labeling for indoor and outdoor waste management supplies and equipment, such as trash enclosures.
Policy 9-7.3	**Utilize Innovative Technologies.** Explore new, alternative technologies for environmental and economic feasibility, such as processing or collection methods, wet/dry systems, conversion technologies and energy recovery systems that align with the City's waste diversion goals.

Source: Fremont General Plan.

demolition, food wastes, green materials, inert, mixed municipal, hazardous, and tires waste. The maximum permitted throughput is 2,400 tons per day. [18,19,20]

According to 2018 data from the California Department of Resources Recycling and Recovery (CalRecycle), 91 percent of solid waste collected from Fremont was transported to the Altamont Landfill & Resource Recovery near Livermore, owned and operated by Waste Management of Alameda County.[21] According to the 2017 Countywide Integrated Waste Management Plan (ColWMP), this facility has 40 million tons of remaining maximum solid waste (MSW) capacity out of the total 87 million under a 2005 permit. This

[18] City of Fremont General Plan, 2011. https://fremont.gov/DocumentCenter/View/4673/09-Public-Facilities?bidId=, accessed July 12, 2019.

[19] CalRecycle, 2018. https://www2.calrecycle.ca.gov/swfacilities/Directory/01-AA-0297/, accessed July 19, 2019.

[20] Fremont Recycling and Transfer Station. https://www.fremont-recycling.com/, accessed July 19, 2019.

[21] CalRecycle, 2018. https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Destination/DisposalByFacility, accessed July 19, 2019.

represents approximately 34 years of remaining capacity with an expected closure date of 2049.[22] Maximum permitted throughput of this facility is 11,150 tons per day as of December 31, 2014.[23]

Per Waste management of Alameda County, a new section of the Altamont Landfill & Resource Recovery opened on March 23, 2019, and a new permit granted. The landfill currently accepts unlimited tons for disposal from Alameda and San Francisco counties.[24]

Smaller amounts of solid waste from Fremont are taken to Monterey Peninsula Landfill, Potrero Hills Landfill, and Vasco Road Landfill. These are described in Table 4.17-5.

TABLE 4.17-5 LANDFILLS SERVING FREMONT

Landfill	Current Remaining Capacity (MCY)	Total Disposal Capacity (MCY)	Maximum Permitted Throughput (TPD)	Estimated Closing Date	Disposal for Fremont in 2018 (Tons)	Average Daily Disposal for Fremont in 2018 (Tons)
Monterey Peninsula Landfill 14201 Del Monte Blvd. Marina , CA 93933	48.6 million (as of 12/31/2004)	49.7	3,500	2/28/2071	11,480	38
Potrero Hills Landfill 16411 State Hwy 79 Beaumont, CA 92223	13.9 million (as of 1/1/2006)	83.1	4,300	2/14/2048	2,292	8
Vasco Road Sanitary Landfill 16411 State Hwy 79 Beaumont, CA 92223	7.3 million (as of 10/31/2016)	32.9	2,518	2/31/2022	1,439	5
Total	**69.8**	**165.7**	**10,318**		**15,211**	**51**

Note; MCY = million cubic yards; TPD = tons per day.
Sources: CalRecycle 2019.[25]

Waste from Alameda County is also hauled to out of county facilities, including Newby Island in San Jose, Keller Canyon in Contra Costa County, and Forward Inc in San Joaquin County. Newby Island, owned by Republic Services, also includes a Resource Recovery Park (NIRRP), a recycling facility capable of sorting thousands of tons of mixed wet and dry materials, an on-site clean natural gas fueling station and many other sustainable features.[26] In addition, ACWMA has acquired property and adopted a Conceptual Plan and Environmental Impact Report for an Integrated Waste Management Facility which includes, as one of its components, reserve landfill capacity.[27]

[22] Alameda County Integrated Waste Management Plan, 2017. http://www.stopwaste.org/resource/reports/countywide-integrated-waste-management-plan-coiwmp, accessed August 4, 2019.

[23] CalRecycle, 2018. https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Destination/DisposalByFacility, accessed August 4, 2019.

[24] Waste Management of Alameda County, Altamont Landfill webpage, http://altamontlandfill.wm.com/index.jsp, accessed August 4, 2019.

[25] CalRecycle, 2018. Jurisdiction Disposal by Facility. Disposal during 2018 for Fremont.

[26] Alameda County Integrated Waste Management Plan. , 2017. http://www.stopwaste.org/resource/reports/countywide-integrated-waste-management-plan-coiwmp, accessed August 4, 2019.

[27] Alameda County Integrated Waste Management Plan, 2017. http://www.stopwaste.org/resource/reports/countywide-integrated-waste-management-plan-coiwmp, accessed August 4, 2019.

Collectively, Altamont, Monterey Peninsula, Portero Hills and Vasco landfills have a remaining disposal capacity of about 110 million cubic yards for in-county waste. Monterey Peninsula and Portero Hills have a remaining disposal capacity of 62.5 million cubic yards for in-county waste and disposal capacities beyond the 15-year horizon, as required by AB 939.

Compliance with AB 939 is measured in part by actual disposal rates compared to target rates for residents and employees, respectively; actual disposal rates at or below target rates are consistent with AB 939. According to CalRecycle, target disposal rates are 6.6 ppd per residents and 16.1 ppd per employee. Fremont actual disposal rates in 2017 were 4.4 ppd per resident and 9.0 ppd per employee.[28] Thus, solid waste diversion in Fremont is consistent with AB 939.

Additionally, as required by the Solid Waste Facility Capacity Component element of the California Integrated Waste Management Plan (CWIMP) per AB 939, two landfills serving City of Fremont provide more than 15 years of waste disposal capacity, in compliance with State requirements to have 15 years of designated landfill capacity.

4.17.1.4 OTHER UTILITIES

Regulatory Framework

State

Renewables Portfolio Standard

The California Renewables Portfolio Standard (RPS) was established in 2002 under SB 1078 and was amended in 2006 and 2011. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. The California Public Utilities Commission is required to provide quarterly progress reports on progress toward RPS goals. This has accelerated the development of renewable energy projects throughout the state. Based on the third quarter 2014 report, the three largest retail energy utilities provided an average of 20.9 percent of its supplies from renewable energy sources. Since 2003, 8,248 megawatts (MW) of renewable energy projects have started operations. SB 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100 (Chapter 312, Statutes of 2018)

On September 10, 2018, Governor Brown signed SB 100, which raises California's RPS requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state

[28] CalRecycle, 2017. Jurisdiction Diversion/Disposal Rate Summary (2007 - Current). https://www2.calrecycle.ca.gov/LGCentral/DiversionProgram/JurisdictionDiversionPost2006, accessed August 4, 2019.

agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Title 24, Part 6, Building Energy Conservation Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission) in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On June 10, 2015, the California Energy Commission adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017.

The 2016 Standards continue to improve upon the previous 2013 Standards for new construction of and additions and alterations to residential and nonresidential buildings. Under the 2016 Standards, residential and nonresidential buildings are 28 and 5 percent more energy efficient than the 2013 Standards, respectively. Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the prior 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features. While the 2016 standards do not achieve zero net energy, they do get very close to the state's goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve zero net energy for newly constructed residential buildings throughout California.

Title 20, California Code of Regulations, Sections 1601 et seq.: Appliance Efficiency Regulations

The 2012 Appliance Efficiency Regulations took effect on February 13, 2013. The regulations include standards for federally and non-federally regulated appliances.

Title 24, Part 11, Green Building Standards

CALGreen (24 CCR Part 11) is a code with mandatory requirements for new residential and nonresidential buildings throughout California. CALGreen is intended to (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction. CALGreen contains requirements for construction site selection; storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

Local

City of Fremont General Plan Policies

The specific policies outlined in the City's General Plan that are related to Electricity, Natural Gas, and Telecommunications and that apply to the proposed project are listed in Table 4.17-6.

TABLE 4.17-6 FREMONT GENERAL PLAN SANITARY WASTEWATER POLICIES

Goal/Policy No.	Goal/Policy/Program Text
Public Facilities Element	
Goal 9-4	**Gas and Electricity**. Natural gas and electric infrastructure that meet the needs of new development.
Policy 9-4.1	**Planning Consistency**. Work with PG&E to ensure that their long range plans are consistent with the Fremont General Plan and that infrastructure is sufficient to support new development.
Policy 9-4.2	**Encourage PG&E to Upgrade Infrastructure.** Encourage PG&E to evaluate and upgrade aging infrastructure throughout Fremont.
Conservation Element	
Goal 7-9	**Energy Conservation**. Highly efficient building and site design standards that provide cost-effective methods to conserve energy, reduce the City's carbon footprint, and promote the use of renewable energy sources.
Policy 7-9.1	**Implement Green Building Standards**. Continue to implement and strengthen green building standards.
Policy 7-9.2	**Energy Efficiency in Building/Site Design.** Encourage/require maximum feasible energy efficiency in site design, building orientation, landscaping, and utilities/infrastructure for all development and redevelopment projects.
Policy 7-9.3	**Renewable Energy Sources.** Encourage renewable energy sources for new and existing buildings and infrastructure.

Source: City of Fremont, 2011, Fremont General Plan.

Existing Conditions

Electricity

The project site is in the service area of East Bay Community Energy (EBCE), with electric energy conveyed to customers through Pacific Gas and Electric Company (PG&E) infrastructure. In 2017 PG&E's preliminary projected average annual electricity demand growth (mid-demand forecast) between 2018 and 2028 was estimated at 0.99 percent. Total mid-electricity consumption in PG&E's service area was 281,666 gigawatt-hours per year in 2015 and is forecast to increase to 319,484 gigawatt-hours per year in 2027.[29]

Natural Gas

PG&E provides natural gas to the City of Fremont and the project site. PG&E owns and operates an integrated natural gas transmission, storage, and distribution system that includes most of northern and central California. As of December 31, 2017, PG&E's natural gas system consisted of approximately 42,800 miles of distribution pipelines, over 6,400 miles of backbone and local transmission pipelines, and various storage facilities. PG&E provides natural gas procurement, transportation, and storage services to

[29] California Energy Commission, 2017, California Energy Demand 2018-2028 Preliminary Forecast, https://efiling.energy.ca.gov/getdocument.aspx?tn=220615, accessed July 21, 2019.

approximately 4.2 million residential customers and over 200,000 commercial and industrial customers. Northern California annual gas requirements for year 2018 were projected to be 2,115 million cubic feet per day (MMcf/day) and decreasing to 1,957 MMcf/day in year 2022.[30]

4.17.2 STANDARDS OF SIGNIFICANCE

The proposed project would have a significant impact on water service if:

1. It would require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects.
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.
3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
5. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

4.17.3 IMPACT DISCUSSION

UTIL-1	**The proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects.**

Water Facilities

ACWD would continue to provide the project site with water services. ACWD has enough available and planned water supplies to support the proposed project, as discussed in detail under Impact UTIL-2 below. As such there would be no need to construct or expand water treatment facilities. The proposed project would connect to the existing water main beneath Thornton Avenue. Existing local infrastructure would be preserved in place. No major water infrastructure would be installed in the public ROW, and thus no associated public or environmental impacts created.

[30] California Gas and Electric Utilities (CGEU), 2018. 2018 California Gas Report. https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf, accessed July 21, 2019.

Wastewater Facilities

Wastewater generated on the project site would continue to be treated by the Union Sanitary District at the Alvarado Treatment Plant. WWTP has enough capacity to support the proposed project, as described in detail under Impact UTIL-3, below and there would be no need to construct or expand wastewater treatment facilities as a result of the project. The proposed project would connect to the existing sewer system line beneath Thornton Avenue. Existing local infrastructure would be preserved in place. No major off-site water infrastructure would be installed, and thus no associated public or environmental impacts created.

Solid Waste Facilities

Republic Services of Alameda County will continue to provide solid waste disposal and recycling services for the site. The Fremont Recycling and Transfer Station will continue to receive solid waste from the project site. The existing landfills have enough capacity and will remain open for at least 15 years, as discussed in detail under Impact UTIL-4, below. Therefore, the project would not require or result in the relocation or construction of new or expanded solid waste treatment facilities, and thus no associated public or environmental impacts created.

Storm Water Drainage Facilities

As analyzed in detail in Chapter 4.9, Hydrology and Water Quality, while the proposed project would result in an increase of about 175,000 square feet in impervious surface on the site,[31] it would include the addition of about 11,700 square feet of strategic impervious components in the form of bioswales and drainage areas.[32] Per RWQCB requirements, all runoff from new impervious surfaces would be treated on-site by LID (low impact development) methods. As a result of these proposed runoff best practices, the proposed project would not require or result in the relocation or construction of new or expanded storm water drainage facilities off-site.

Electric Power and Natural Gas Facilities

East Bay Community Energy (EBCE) will continue to provide electrical power to the proposed project, with electric energy conveyed to customers through Pacific Gas & Electric's (PG&E) existing infrastructure.

The proposed project is designed to include energy saving features. The electrical systems will include energy efficient LED lighting fixtures in the interior and exterior of the buildings with low voltage controls to include dimming, daylight sensors and automatic occupancy sensing devices. The site parking lot and pathway lighting will have energy-efficient LED lamps and drivers with low voltage controls. Natural gas uses will include water heaters, gas turrets in the proposed laboratories and school heating units. The project would connect to existing utility lines and local telecommunication providers and is not anticipated to require the construction or relocation of electric power, natural gas, or telecommunication facilities. The proposed project would be limited to an existing school campus and would not require upgrades to connect to existing utility lines and providers.

[31] David Hansen, Quattrocchi Kwok Architects. Personal communication with Greg Goodfellow, March 30, 2019.
[32] Rebecca Joseph, BKF Engineers. Personal communication with Greg Goodfellow, April 8, 2019.

PG&E will continue to provide gas service to the project site. As calculated by CalEEMod (see Appendix B) operation of the proposed project would use approximately 510,758 kBTU of natural gas per year.[33] Northern California annual gas requirements for the 2022 are estimated at 1,957 MMcf/day, or 2 billion kBTU in the year 2022.[34]

Additionally, as analyzed in more detail in Chapter 4.5, Energy, the project would modernize a nearly 60-year-old facility. It would adhere to the energy efficiency requirements outlined in Section 4.5.1 and comply with 2019 Building Energy Efficiency Standards. The resulting facility would be a more sustainable campus. Moreover, the proposed additional student body would be transferred from other District schools, resulting in decreased energy use at those schools.

Given these conditions, the proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects. The result would be a *less-than-significant* impact.

Significance without Mitigation: Less than significant.

UTIL-2	**The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.**

Development of the proposed project would result in the demolition of 7,040 square feet of existing school structures and construction of approximately 43,360 square feet of new buildings and building additions, for a net increase of 36,320 square feet of interior school space. As noted in Chapter 3, Project Description, two of the objectives of the proposed school is to reduce capacity and overcrowding at local elementary schools and to help accommodate an increasing student population across the District.

The 2015-2020 ACWD UWMP identifies projections for water demand through the horizon year of 2040. Projected supply vs. demand for both normal and dry years is shown in Table 4.17-7. The table indicates that projected water supplies are enough to meet projected demands during normal years and a first dry year through 2040 as well as for multiple dry years through 2020.

Water demand generated by the proposed project would not significantly impact the supply indicated in Table 4.17-7. The ACWD demand projections in Table 4.17-7 are based on estimates of future growth. Similarly, the proposed project is a response to future growth, rather than a driver of growth. Assuming the average school demand rate of 8,658 gallons/student/year,[35] school demand generated by the 917 additional students as a result of this project would be 7.94 mgal/year, or approximately 0.02 mgal/day. This would represent a 0.39 percent increase in ACWD demand during Normal Year 2020, a rate that

[33] CalEEMod, 2019.

[34] California Gas and Electric Utilities (CGEU), 2018. 2018 California Gas Report. https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf, accessed July 23, 2019.

[35] California Air Pollution Control Officers Association, California Emissions Estimator Model, Appendix D, Water Rates, 2016. http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/05_appendix-d2016-3-1.pdf, accessed July 24, 2019.

would remain largely unchanged in future years given the projected demand figures in Table 4.17-7. In addition, water demand at City of Fremont elementary schools from which students would be relocated would decrease.

TABLE 4.17-7 ACWD PROJECTED WATER SUPPLY AND DEMAND (ACRE-FEET/YEAR)

		2015	2020	2030	2040
Normal Year	Supply	77,900	77,200	76,600	76,000
	Demand	52,600	62,900	69,300	69,800
Single Dry Year	Supply	54,300	55,300	56,100	56,800
	Demand	50,000	59,500	65,800	67,000
Multiple Dry Year	Supply		57,600		
	Demand		57,600		

Source for data: Alameda County Water District, 2015. Urban Water Management Plan 2015-2020.[36]

These results, combined with the water-efficient characteristics of the proposed project due to existing conservation regulations, mean that new entitlements would not be required, and the impact would be *less than significant.*

Significance without Mitigation: Less than significant.

UTIL-3 The proposed project would result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

As described in the existing conditions, the proposed site is served by Unified Sanitary District (USD) with Wastewater processed at the Alvarado Wastewater Treatment Plant (WWTP). The USD serves more than 355,000 people and businesses that contribute an average daily flow of 22.99 mgal/day.[37] The capacity of WWTP is 33 mgal/day.[38] Accordingly, the WWTP has a remaining capacity to receive and process 10.1 mgal/day.

Assuming the average school indoor demand rate of 2,424 gallons/student/year,[39] school demand generated by the 917 additional students as a result of this project would be 2.22 Mgal/year, or 0.0061 mgal/day. Assuming 95 percent of the net increase in water demand for the proposed project becomes

[36] California Gas and Electric Utilities (CGEU) ,2018. 2018 California Gas Report. https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf, accessed July 24, 2019.

[37] Union Sanitary District, 2019. Mission, Organization, Facts, and History. https://www.unionsanitary.com/about-us/about-us/mission-facts-history, accessed June 27, 2019.

[38] Alameda County Water District, 2015. Urban Water Management Plan 2015-2020. https://www.acwd.org/DocumentCenter/View/1264/ACWDs-2015---2020-UWMP?bidId=, accessed July 24, 2019.

[39] California Emissions Estimator Model, Appendix D, Water Rates, September 2016. http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/05_appendix-d2016-3-1.pdf, accessed July 24, 2019.

wastewater, the proposed project would generate 0.0058 mgal/day of wastewater. This represents less than 1 fifth of 1 percent (0.018) of the remaining WWTP capacity. While the increase in wastewater flows from implementation of the proposed project would add to the capacity demands on the WWTP and its conveyance system, the amount of wastewater generated would not exceed the remaining capacity. Therefore, the proposed project would result in a *less-than-significant* impact with respect to the need for new or expanded wastewater collection facilities.

Significance without Mitigation: Less than significant.

UTIL-4 The proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Construction Phase

The proposed project includes demolition of 7,040 sf of existing school buildings and some site improvements. The debris resulting from the demolition will need to be moved off-site to appropriate landfills. The project applicant anticipates approximately 1,258 tons of demolition debris, as detailed in Table 4.17-8. Assuming that that 65 percent of the nonhazardous demolition waste by weight is recycled, reused, or otherwise diverted from landfill disposal as required by CalGreen, 818 tons would be reused on-site, and 440 tons of material would be disposed of off-site.

TABLE 4.17-8 ESTIMATED DEMOLITION DEBRIS

Description	Quantity (Tons)	Reused On-Site (Tons)	Disposed Off-Site (Tons)
Increment 1 – Asphalt Demolition	741	481.65	259.35
Increment 1 – Building Demolition	135	87.75	47.25
Total Increment 1	**876**	**569.4**	**306.6**
Increment 2 – Asphalt Demolition	193	125.45	67.55
Increment 2 – Building Demolition	189	122.85	66.15
Total Increment 2	**382**	**248.3**	**133.7**
TOTAL	**1.258**	**817.7**	**440.3**

Source: Fremont Unified School District, 2019.

The demolition of the existing buildings may cause a strain on existing landfill capacities if waste exceeds the daily permitted capacity for any landfills serving the City of Fremont. Altamont Landfill, taking majority of the solid waste from the City, has remaining capacity of 40 million tons as of 2014.[40] Solid waste

[40] Alameda County Integrated Waste Management Plan, 2017. http://www.stopwaste.org/resource/reports/countywide-integrated-waste-management-plan-coiwmp, accessed June 24, 2019.

disposal generated during construction phase of the project would constitute 0.0031 percent of the Altamont Landfill.

Hazardous materials are not accepted at the above mentioned landfills. Hazardous waste materials include paint, batteries, oil, asbestos, and solvents. In compliance with federal, state, and local regulations and ordinances, any hazardous waste generated in association with the project is required to be disposed of at a permitted hazardous waste disposal facility. The Fremont Recycling and Transfer Station, operated by BLT Enterprises of Fremont, is a large volume transfer/processing facility that also receives hazardous, waste.[41]

The project will also be subject to approval of a Waste Handling Plan prior to approval of demolition, grading or building plans, in accordance with Municipal Code 8.40.800. The Plan is required to show that the diversion requirements will be achieved and indicate that the contractor will use either the franchised hauler debris box service or self-haul the construction and demolition debris to approved recycling facilities.

Operational Phase

Republic Services of Alameda County provides solid waste disposal and recycling services for Fremont, Union City, Newark and Piedmont. The Fremont Recycling and Transfer Station, operated by BLT Enterprises of Fremont, is a large volume transfer/processing facility that receives construction/demolition, food wastes, green materials, inert, mixed municipal, hazardous, and tires waste. As noted under Existing Conditions, above, the maximum permitted throughput is 2,400 tons per day.

According to 2018 data from the California Department of Resources Recycling and Recovery (CalRecycle), 91 percent of solid waste collected from Fremont was transported to the Altamont Landfill & Resource Recovery near Livermore, owned and operated by Waste Management of Alameda County.[42,43] Maximum permitted throughput of this facility is 11,150 tons per day and remaining capacity is 65.4 million cubic yards as of 12/31/2014. Altamont Landfill is expected to close in 2025.[44] Smaller amounts of solid waste from Fremont are taken to Monterey Peninsula Landfill, Potrero Hills Landfill, Vasco Road Landfill, and other facilities. All four landfills are described in Table 4.17-5. As detailed in Table 4.17-3, the four landfills serving Fremont have maximum permitted throughput of 21,468 tpd. Monterey Peninsula and Potrero Hills landfills have maximum permitted throughput of 7,800 tpd with an average daily City of Fremont disposal of 46 tons, as reported in 2018 (see Table 5.15-5) and disposal capacities beyond the 15-year horizon, as required by AB 939.

[41] CalRecycle, 2018. https://www2.calrecycle.ca.gov/swfacilities/Directory/01-AA-0297/, accessed July 24, 2019.
[42] CalRecycle, 2018. https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Destination/DisposalByFacility, accessed July 24, 2019.
[43] City of Fremont General Plan, 2011. https://fremont.gov/DocumentCenter/View/4673/09-Public-Facilities?bidId=, accessed July 24, 2019.
[44] CalRecycle, 2018. https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Destination/DisposalByFacility, accessed July 24, 2019.

Using a standard of 1 lb/day/student,[45] the buildout of the proposed project is estimated to generate approximately 917 ppd or 0.459 tons per day of solid waste. The proposed project would add 0.459 tons per day, which represents 0.0059 percent of the maximum daily throughput for Monterey Peninsula and Portero Hills landfills and less than 1 percent of the daily City of Fremont solid waste.

Additionally, the proposed project will comply with all existing federal, state and local regulations reducing the amount of solid waste. Fremont General Plan Goal 9-6 and related policies and implementation measures require maximized waste diversion with the long-term objective of eliminating landfill waste. The project will also be subject to approval of a Waste Handling Plan prior in accordance with Municipal Code 8.40.800 requires approval of a Waste Handling Plan showing that the diversion requirements will be achieved.

Overall, sufficient landfill capacity is available in the region for the estimated solid waste generated by the proposed project during operations, and project development would not require an expansion of landfill capacity. Impacts would be *less than significant* for the operational phase.

Significance without Mitigation: Less than significant.

UTIL-5	**The proposed project would comply with federal, State, and local management and reduction statutes and regulations related to solid waste.**

As described above under Section 4.17.1.3, Regulatory Framework, California's Integrated Waste Management Act of 1989, AB 939, subsequently amended by SB 1016, set a requirement for cities and counties throughout the State to divert 50 percent of all solid waste from landfills by January 1, 2000 through source reduction, recycling, and composting. The Public Facilities Element of the City's General Plan Goal 9-6 requires maximized waste diversion with the long-term objective of eliminating landfill waste and outlines municipal efforts to facilitate recycling and education. Fremont Municipal Code Section 15.48.020, adopts California Green Building Standards Code (CGBSC or CALGreen) as the green building code of the City of Fremont, including CalGreen requirements minimizing solid waste generation and conserving resources. Section 8.40.780 provides requirements for construction and demolition debris diversion and recycling requirements and Section 8.40.800 requires approval of a Waste Handling Plan prior to issuance of permits for demolition, building, encroachment, grading, or other similar activity.

The proposed project would be required to comply with existing federal, state and local regulations, including the General Plan policies and Municipal Code requirements. Therefore, impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

[45] CalRecycle, Estimated Solid Waste Generation Rates. https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates, accessed July 24, 2019.

4.17.3.15 CUMULATIVE IMPACTS

UTIL-6 The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to water service.

This section analyzes potential impacts to water supply that could occur from the project in combination with other reasonably foreseeable projects in the surrounding area. The geographic scope of this cumulative analysis is the ACWD service area. As explained under Impact UTIL-2 above, the project would not significantly increase the demand for water supply, and therefore would not exceed the long-term supply under normal circumstances. Additionally, ACWD's UWMP determined that the water supply will be enough to accommodate future demand in the service areas through 2040, under normal circumstances, single dry year and multiple dry years. With SB X7-7 and the state, county and local water conservation ordinances in place, all jurisdictions would be required to conserve water use through establishing water efficiency measures. The General Plan includes policies and strategies that would ensure adequate water supplies are available for the residents of Fremont. As outlined under Regulatory Framework, above, various policies promote the efficient use of existing water supplies through a variety of water conservation measures. In addition, pursuant to SB 610 and SB 221, Water supply assessments would be prepared for large development projects prior to approval of each project to ensure adequate water supply for new development. Together, these regulations, policies, and other considerations would ensure that cumulative impacts with respect to water supply would be *less than significant*.

Significance Without Mitigation: Less than significant.

5. Alternatives to the Proposed Project

5.1 INTRODUCTION

The following evaluation was prepared to evaluate whether there may be feasible alternatives to the project that could avoid or substantially lessen any of the significant effects of the project. Section 15126.6, Consideration and Discussion of Alternatives to the Project, of the California Environmental Quality Act (CEQA) Guidelines states that:

> *An EIR shall describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.*

A "No Project" Alternative is required as part of a "reasonable range of alternatives."

5.1.1 PURPOSE

The alternatives evaluated in this Draft EIR were developed consistent with Section 15126.6(b) of the CEQA Guidelines, which states that:

> *Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.*

5.1.2 PROJECT OBJECTIVES

As considered in Chapter 3, the primary goal of the proposed project is to reduce capacity and overcrowding at FUSD elementary schools. The District has developed the following project objectives to aid decision-makers in their review of the project, consideration of project alternatives and associated environmental impacts.

- Integrate 6th grade into the current 7th and 8th grade program.
- Help accommodate an increasing student population across the District.

- Maximize outdoor learning spaces in a secure environment.
- Improve circulation while maximizing safety at school entry and parking areas.

5.1.3 SELECTION OF A REASONABLE RANGE OF ALTERNATIVES

Section 15126.6(c) of the State CEQA Guidelines states:

> *The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.*

5.1.4 ALTERNATIVES CONSIDERED AND REJECTED

As described above, Section 15126.6(c) of the State CEQA Guidelines requires EIRs to identify any alternatives that were considered by the lead agency but rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Section 15126.6(c) provides that among the factors that may be used to eliminate alternatives from detailed consideration in and EIR are (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

- Incremental Expansions at Existing Elementary Schools. FUSD assessed the potential of upgrading existing elementary schools to accommodate increased capacity. This alternative may have reduced some of the transportation-related potential impacts of the proposed project. However, this alternative would have been in direct conflict with the goals of the FUSD Long Range Facilities Plan (LRFP) and would conflict with the project objectives of integrating 6th grade programs into junior high schools and maximizing new outdoor learning spaces. In addition, accommodating additional enrollment at existing schools would require new facilities that could themselves result in traffic, noise, vibration and land use impacts, as well impacts in other physical and regulatory areas.
- New Elementary School. The proposed project would ease overcrowding at existing elementary schools by transferring 6th grade students to a junior high school. Alternatively, FUSD could build a new elementary school to accommodate current overcapacity at existing elementary schools. This alternative was rejected because the proposed project is a part of a larger LRFP strategy that includes a similar middle school conversion of Centerville Junior High School, a project with the same objectives. In addition, FUSD is currently planning a new elementary school on a separate site.

5.1.1 ALTERNATIVES CONSIDERED

In accordance with the CEQA Guidelines, two project alternatives and the comparative merits of each are discussed below. All the potential environmental impacts associated with adoption and implementation of the proposed project were found to be either *less than significant* without mitigation or *less than significant with mitigation*. The following alternatives were selected because of their potential to further reduce and avoid these impacts. The alternatives to be analyzed in comparison to the proposed project include:

- No Project Alternative. Consistent with Section 15126.6(e)(2) of the CEQA Guidelines, under the No Project Alternative, the proposed project would not be adopted or implemented. Thornton Junior High School would remain a 7th and 8th grade facility. No students would be reassigned to Thornton Junior High School and no physical improvements to the campus would be made. Overcapacity at existing elementary schools in Fremont would not be addressed.
- Reduced Enrollment ("Lower Growth") Alternative. The current proposed project assumes an enrollment increase of 917 students and a new classroom cluster totaling 34,860 square feet. Under the Reduced Enrollment Alternative, Thornton Junior High School would still be converted to a 6th to 8th grade middle school. However, the total number of new students would be reduced. New students under this alternative would be 63 percent of the proposed increase, or about 578 students. In addition, the total amount learning space would be reduced to accommodate the reduced number of new students. Under the Reduced Enrollment Alternative, the New Classroom Cluster described in Chapter 3, Project Description, would be reduced from five, 2-story buildings to two, 2-story buildings. Total square footage of the cluster would be reduced from 34,860 square feet to 22,300 square feet.

5.2 ALTERNATIVES COMPARISON

Table 5-1 presents a comparative summary of the alternatives considered in this analysis. Each alternative is analyzed against the impact factors considered for the project, according to whether it would have a mitigating or adverse effect. The basis for the determination in Table 5-1 is further discussed in the next section of this chapter.

5.3 IMPACT ASSESSMENT

5.3.1 NO PROJECT ALTERNATIVE

5.3.1.1 AESTHETICS

Under the No Project Alternative, the existing site would remain in its current condition. None of the project components or improvements would be constructed. The school would remain a middle school composed of various permanent and portable structures constructed about 50 years ago. As described in

TABLE 5-1 COMPARISON OF PROJECT ALTERNATIVES

Environmental Topic	No Project Alternative	Reduced Enrollment Alternative
Aesthetics	+	0
Air Quality	-	-
Biological Resources	-	0
Cultural Resources	-	0
Energy	-	-
Geology and Soils	-	0
Greenhouse Gas Emissions	-	-
Hazards and Hazardous Materials	0	0
Hydrology and Water Quality	+	0
Land Use and Planning	0	0
Noise	-	-
Population and Housing	0	0
Public Services	0	0
Recreation	0	0
Tribal Cultural Resources	0	0
Transportation	--	-
Utilities and Service Systems	0	0

Note: ++ Indicates that the alternative's impacts are substantially greater when compared to the project
+ Indicates that the alternative's impacts are slightly greater when compared to the project
0 Indicates that the alternative's impacts are similar to the project
– Indicates that the alternative's impacts are slightly lessened when compared to the project.
– – indicates that the alternative's impacts are substantially lessened compared to the project and would avoid a significant and unavoidable impact of the project.

Chapter 4.1, Aesthetics, of this Draft EIR, potential impacts related to the visual character or quality of the site and its surroundings would not be significant due to lack of surrounding scenic vistas and the introduction of a contemporary, architecturally designed structure and modernized components onto a site of relatively low-visual quality. The No Project Alternative would not benefit from the internal and external visual, architectural and site plan improvements of the proposed conversion. Therefore, this alternative would result in *slightly greater* impacts than the project with regards to aesthetics.

5.3.1.2 AIR QUALITY

Under this alternative, the existing uses of the project site would remain the same and no construction would occur. As described in Chapter 4.2, Air Quality, the proposed project would result in significant construction-related emissions. However, Mitigation Measure AIR-2 would reduce those impacts to a less-than-significant level. Project construction was also found to temporarily elevate concentrations of Toxic Air Contaminants (TACs) and $PM_{2.5}$ in the vicinity of the site, an impact that would be mitigated to a less-

than-significant level. The No Project Alternative would not involve construction and therefore would not result in any construction- or operation- related emissions. Therefore, although the impacts of the proposed project would be mitigated, this alternative would result in a *slightly lessened* air quality impact.

5.3.1.3 BIOLOGICAL RESOURCES

As described in Chapter 4.3, Biological Resources, potential impacts to the nests and eggs of protected birds were identified, and mitigation measures in the form of nesting bird surveys were established. Although with mitigation the proposed project would not result in a significant impact with regards to biological resources, the No Project alternative would not involve removal of existing trees or disturbance to any structures currently on site, some of which were identified as potentially suitable bird habitats. Therefore, the No Project Alternative would result in *slightly lessened* impacts to biological resources.

5.3.1.4 CULTURAL RESOURCES

The No Project Alternative would not involve any ground disturbance; therefore, it would have no potential for disturbing cultural resources and human remains. As described in Chapter 4.4, Cultural Resources, while the existing site has been previously disturbed, the potential to uncover not yet discovered cultural resources remains. Ground-disturbance attributed to construction activities could result in a significant impact related to historical or archaeological resources. However, implementation of the mitigation measures would effectively reduce those impacts to a less-than-significant level. Given that the No Project Alternative would not involve any ground-disturbance, the No Project Alternative would result in *slightly lessened* impacts compared to the project.

5.3.1.5 ENERGY

Under the No Project Alternative, no new school construction or operations would occur. Net energy use would remain the same. As described in Chapter 4.5, the proposed project would result in increased net fuel use during construction, as well as new net fuel, natural gas and electricity use associated with project operation. While this energy use does not represent a significant impact, the No Project Alternative would result in a *slightly lessened* impact compared to the project.

5.3.1.6 GEOLOGY AND SOILS

Under the No Project Alternative, no construction of new buildings would occur on site. As discussed in Chapter 4.6, Geology and Soils, of this Draft EIR, the project would result in the placement of new buildings in areas susceptible to soils settlement and expansion, potentially resulting in significant loss, injury, or death. However, Mitigation Measures GEO-1, GEO-3 and GEO-4 would require construction techniques such as compaction grouting and imported fill that would reduce these significant impacts to less-than-significant. Still, given that the No Project Alternative would not be associated with any new soil disturbance or construction, it would have a *slightly lessened* impact as compared to the project.

5.3.1.7 GREENHOUSE GAS EMISSIONS

Under the No Project alternative, the existing site would remain unchanged and continue to operate under its current condition. Construction and operation of a school conversion would not occur. Therefore, greenhouse gas emissions related to construction activities and operation of the site would not increase. Although Chapter 4.7, Greenhouse Gas Emissions, concludes that a less-than-significant GHG impact would occur, such emissions would nominally increase due to construction activities and new VMT associated with student travel. Consequently, this alternative would result in *slightly lessened* GHG impacts than the project.

5.3.1.8 HAZARDS AND HAZARDOUS MATERIALS

Under the No Project Alternative, no demolition of existing structures would occur. As described in Chapter 4.8, Hazards and Hazardous Materials, of this Draft EIR, the presence of asbestos-containing materials (ACM) was verified in buildings that would be demolished as part of the proposed project. The release of these materials was identified as having a potentially significant impact. Although Mitigation Measure HAZ-1, requiring a comprehensive building survey to determine the presence of asbestos-containing materials, would reduce the impact to less than significant, the No Project Alternative would not release any of these materials, and a *slightly lessened* impact would occur.

5.3.1.9 HYDROLOGY AND WATER QUALITY

Under the No Project Alternative, the project site would continue to operate as a junior high school and no improvements would be constructed. As discussed in Chapter 4.9, Hydrology and Water Quality, the proposed project would result in less-than-significant hydrology and water quality impacts with regards to groundwater supplies and recharge. This is the result of compliance with Best Management Practices (BMPs) and Low Impact Design (LID), which includes filtration features that will contribute to groundwater recharge and minimize stormwater runoff. Although the No Project Alternative would not increase the amount of impervious surface on the site, there would be no implementation of current BMPs and LID. In addition, the proposed Horizontal Control Plan (see Figure 4.9-1) that establishes bioretention areas to treat runoff and improve infiltration and groundwater recharge would not be implemented under the No Project Alternative. Therefore, this alternative would result in *slightly greater* hydrology and water quality impacts as compared to the proposed project.

5.3.1.10 LAND USE AND PLANNING

Under the No Project Alternative, the type and intensity of land use on the project site would not change. Thus, it would not divide the existing community or create conflicts with regulation adopted for the purpose of avoiding or mitigating adverse environmental effects. As described in Chapter 4.5, the proposed project would also not divide an existing community. Moreover, new components of the proposed project would be consistent with environmental and sustainability-oriented regulations established in the City of Fremont General Plan such as green building, energy conservation, and stormwater control. As such, the No Project Alternative would result in *similar* land use impacts as compared to the proposed project.

5.3.1.11 NOISE

Thornton Junior High would remain a junior high school with no new students or facilities under the No Project Alternative. No construction would occur. This EIR determined that the proposed project could generate excessive groundborne vibration levels during project construction, and that the use of static rollers in place of vibratory rollers would be required to successfully mitigate this impact to a less-than-significant level. Regardless of mitigation, the No Project Alternative has no potential to impact the existing noise environment. It would have a *slightly less* impact regarding noise.

5.3.1.12 POPULATION AND HOUSING

The No Project Alternative would neither support nor promote new population or housing in the City of Fremont. Similarly, as discussed in Chapter 4.12, Population and Housing, the proposed project would not induce population growth. It would be a response to strain placed on FUSD elementary schools from ongoing and estimated future growth. The proposed project would not displace any housing units, as it would be limited to physical improvements in support of a capacity increase at an existing school campus. Therefore, the No Project Alternative's impacts are *similar* to the project.

5.3.1.13 PUBLIC SERVICES

Under this alternative, the project site would continue to operate in its current condition and would not result in a school conversion, additional students or associated physical upgrades. The proposed project would result in 917 new students and an additional 36,320 square feet of permanent building space on top of the existing 83,462 square feet of permanent and portable building space currently on site. While this growth would increase the probability of strains on public services, it was determined in Chapter 4.13, Public Services that the project would have no significant impact on fire, police, school, library, or park services. Moreover, the project would alleviate overcrowding at FUSD schools and add new library resources. Given these determinations, the No Project Alternative would result in *similar* impacts to public services as compared to the proposed project.

5.3.1.14 RECREATION

Under the No Project Alternative, no improvements to recreational spaces at Thornton Junior High School would occur. While the proposed project would result in 917 new students to Thornton, these students would come from neighborhood elementary schools. The project would not result in new students or residents. As such, it would not generate significant additional demand for parks and recreational facilities in the City of Fremont. Moreover, as described in Chapter 3, Project Description, the project would result in new recreational facilities at Thornton, including courtyard-style outdoor learning spaces and basketball courts, a kindergarten play area, and new playfields. It would not result in the deterioration of existing park facilities. The No Project Alternative would have *similar* impacts to recreational facilities as the proposed project.

5.3.1.15 TRANSPORTATION

Under the No Project Alternative, the student capacity and physical layout of Thornton Junior High School would remain the same. The number of vehicle trips to and from the school would remain constant; parking and circulation areas of the campus would not change; and bicycle, pedestrian and transit patterns would stay the same.

As assessed in Chapter 4.15, Transportation, the proposed project would alter transportation patterns in and around the campus. New VMT associated with the project would significantly impact the operation of a nearby intersection. Moreover, the proposed project, in combination with planned, present, and reasonably foreseeable projects would also significantly impact intersection operations. These impacts would require mitigation in the form of new signals and signalization. These mitigation measures would reduce impacts to less-than-significant levels, and project design features would accommodate new transportation patterns associated with the school conversion. Regardless, the No Project Alternative would avoid transportation impacts altogether. As such, it would have *substantially lessened* transportation-related impacts as compared to the proposed project.

5.3.1.16 TRIBAL CULTURAL RESOURCES

Given that the No Project Alternative would not disturb the project site in any way, it could not cause a substantial adverse change in the significance of a tribal cultural resource, as defined in Public Resources Code Section 21074. As explained in Chapter 4.16 of this EIR, the Native American Heritage Commission completed a record search of the project site in the Sacred Lands File, with negative results. Moreover, no tribes responded to requests to consult on the EIR process. Thus, the proposed project was deemed to have no impact on Tribal Cultural Resources. The No Project Alternative would have a *similar* effect.

5.3.1.17 UTILITIES AND SERVICE SYSTEMS

As analyzed in Chapter 4.17, the proposed project would result in no significant impacts associated with utilities and service systems, including the need to expand facilities or lack of compliance with related regulation. However, proposed new facilities and students would result in increases in water demand, associated wastewater output, and solid waste. Under the No Project Alternative, the project site would operate under existing junior high school conditions. Demand on utilities and services would not change. Therefore, while the impacts of the proposed project would not be significant, these impacts would be slight greater than those of this alternative. Consequently, the No Project Alternative would result in *slightly lessened* impacts compared to the project.

5.3.2 REDUCED ENROLLMENT ALTERNATIVE

Under the Reduced Enrollment Alternative, the scope of the conversion of Thornton Junior High to a 6th - 8th grade middle school would be reduced from 917 new students to 578 new students, a 63 percent reduction in new capacity. Consistent with the reduced new enrollment, the 34,860 square-foot classroom cluster, which as proposed would include five, 2-story buildings, would be reduced to a 22,300 square-foot classroom cluster consisting of two, 2-story buildings. The remaining site improvements and modernization components of the proposed project would remain the same.

5.3.2.1 AESTHETICS

Under this alternative, the total square footage of the proposed project would be reduced, and the number of new classroom buildings halved. As discussed in Chapter 4.1, Aesthetics, the proposed project would have no aesthetic impacts on scenic vistas or related to resources that improve the overall visual quality of the site. Therefore, this alternative, which would be in the same location and consisting of identical design and modernization components with a slightly smaller physical footprint, would result in *similar* aesthetic impacts as compared to the proposed project.

5.3.2.2 AIR QUALITY

Under this alternative, the number of new students would be reduced by 63 percent and the total square footage of the proposed project would be reduced by about 12,000 square feet. As a result, construction activities and phasing would be reduced, the overall intensity of school operations would be reduced, and VMT-related air quality impacts would decrease. Given that each of these activities contribute to decreased air quality, the Reduced Enrollment Alternative would result in *slightly lessened air* quality impacts as compared to the proposed project.

5.3.2.3 BIOLOGICAL RESOURCES

Under this alternative, nearly all characteristics and components of the proposed project would remain the same, other than the total building square footage and future school capacity. As explained in Chapter 4.3, Biological Resources, development of the site could result in impacts to protected bird species, an impact that would be mitigated with nesting survey measures. Because this alternative would result in similar site and tree disturbance and would require the same mitigation, it would result in *similar* biological impacts as compared to the proposed project.

5.3.2.4 CULTURAL RESOURCES

Large portions of the site would be subject to construction excavation and disturbance under this alternative, as would be the case with the proposed project. As explained in Chapter 4.4, although the site is currently developed as a school, these actions could disturb existing cultural resources, an impact that would be mitigated by required work stoppage in the event of resource discovery. Therefore, this alternative would result in *similar* cultural resource impacts as compared to the proposed project.

5.3.2.5 ENERGY

Under the Reduced Enrollment Alternative, building construction and associated energy use would be slightly reduced due to the exclusion of two classroom buildings. Similarly, the reduction in future student capacity would result in reduced operational and VMT-related energy demands. Although it was concluded in Chapter 4.5 that the proposed project would not have significant impacts on energy use, this alternative would have *slightly lessened* energy impacts as compared to the proposed project.

5.3.2.6 GEOLOGY AND SOILS

Under this alternative, Thornton Junior High School would be modernized and expanded as part of a middle school conversion, as would be the case with the propose project. Like the proposed project, the Reduced Enrollment Alternative would result in the placement of new buildings in areas susceptible to soil settlement and expansion, resulting in significant impacts that were deemed mitigatable by soil strengthening techniques outlined in Mitigation Measures GEO-1, GEO-3, and GEO-4 in Chapter 4.6 of this EIR. As a result, this alternative would have *similar* geological and soils impacts as compared to the proposed project.

5.3.2.7 GREENHOUSE GAS EMISSIONS

The Reduced Enrollment Alternative would result in less new net classroom space and a 63 percent reduction in student capacity, as compared to the proposed project. As a result, construction activities and phasing would be reduced, the overall intensity of school operations would be reduced, and VMT-related emissions would decrease. While GHG emissions were deemed a less-than-significant impact in Chapter 4.7 of this EIR, the Reduced Enrollment Alternative would result in *slightly lessened* GHG emissions impacts as compared to the proposed project.

5.3.2.8 HAZARDS AND HAZARDOUS MATERIALS

Although this alternative would result in less new classroom space and fewer new students, it would include the demolition of the same selected areas and features as the proposed project, including the school's existing administration building and three adjacent modular buildings, totaling about 4,100 square feet. As detailed in Chapter 4.8, this demolition process could result in the release of asbestos-containing materials, a significant impact that would be mitigated by required pre-demolition permit building surveys. Given the shared demolition components between this alternative and proposed project, this alternative would have *similar* impacts related to hazards and hazardous materials.

5.3.2.9 HYDROLOGY AND WATER QUALITY

The Reduced Enrollment Alternative would differ from the proposed project in terms of total new classroom space and total new enrollment. However, like the project, this alternative would include reconfigured parking lots, circulation areas, recreational space, and buildings. It would disturb more than one acre of land during construction, and thus be subject to compliance with the NPDES Construction General Permit and associated erosion and sediment control practices (see Chapter 4.9). Like the project, this alternative would require a Municipal Separate Storm Sewer System (MS4) Permit and be held to a Water Quality Management Plan consistent with the guidelines of the Alameda Countywide Clean Water Program. Similarly, the Reduced Enrollment Alternative would disturb in excess of 10,000 square feet of impervious surface, and thus be held to a Stormwater Control Plan consistent with C.3 provisions set by the San Francisco Bay Regional Water Quality Control Board. The Horizontal Control Plan (Figure 4.9-1) proposed as part of the project would still apply to this alternative. As concluded in Chapter 4.9, these measures would ensure that there would be no significant hydrology or water quality impacts from the proposed project. Therefore, this alternative would have *similar* impacts.

5.3.2.10 LAND USE AND PLANNING

Like the proposed project, this alternative would occur within the footprint of an existing school campus. It would not divide an existing community. While this alternative would include less building space and accommodate fewer new students, it would include the same physical modernization components, upgrades, and new building techniques that, as described in Chapter 4.10, either directly support or do not conflict with land use policies targeting environmental stewardship. Thus, the Reduced Enrollment Alternative would have *similar* land use impacts as the proposed project.

5.3.2.11 NOISE

As described in Chapter 4.11, the proposed project could generate groundborne vibration levels during project construction that significantly impact nearby residences. The use of static rollers in place of vibratory rollers would be required to successfully mitigate this impact to a less-than-significant level. No other noise-related impacts were identified. Given that the Reduced Enrollment Alternative would occur in the same location as the project, and would include similar construction, demolition, and site clearance techniques, it would have *similar* noise impacts as the proposed project.

5.3.2.12 POPULATION AND HOUSING

Like the proposed project, this alternative would neither include nor replace housing, and represents a response to population growth rather than a driver of population growth. As such, it would have *similar* impacts regarding population and housing as compared to the proposed project.

5.3.2.13 PUBLIC SERVICES

As noted in Chapter 4.13, the proposed project would have no impact on parks, schools, libraries, or safety services in Fremont. The Reduced Enrollment Alternative would result in a middle school conversion of the same type in the same place, with nearly identical modernization components, upgrades, and site improvements. Student enrollment under this alternative would be reduced from 917 to 578, and new classroom space reduced from the 34,860-square-foot classroom cluster consisting of five, 2-story buildings to a 22,300-square-foot classroom cluster consisting of two, 2-story buildings. These operational reductions would ensure that this alternative also does not strain existing services, resulting in *similar* public services-related impacts as the proposed project.

5.3.2.14 RECREATION

The proposed project would result in 917 new students to Thornton, each of whom would come from existing neighborhood elementary schools. The project would not result in new students or residents. As such, it would not generate significant additional demand for parks and recreational facilities in the City of Fremont. Moreover, as described in Chapter 3, Project Description, the project would result in new recreational facilities at Thornton, including courtyard-style outdoor learning spaces and basketball courts, a kindergarten play area, and new playfields. It would not result in the deterioration of existing park facilities. Given that the Reduced Enrollment Alternative would result in a middle school with identical recreational components and accommodating 63 percent fewer new students, it too would not adversely

affect recreational facilities. This alternative would have *similar* impacts to recreational facilities as the proposed project.

5.3.2.15 TRANSPORTATION

Under the Reduced Enrollment Alternative, the number of new students enrolled at Thornton Middle School would decrease by 63 percent. The proposed project assumes 917 new students, while this alternative would accommodate 578 new students. As analyzed in Chapter 4.15, the number of new vehicle trips to and from the school is a direct corollary of the number of new students.

Existing plus Reduced Enrollment Alternative Conditions

Chapter 4.15 concluded that new vehicle trips resulting from the proposed project would degrade service at the two-way, stop sign-controlled intersection at Thornton Avenue and Oak Street from LOS E to LOS F during the AM peak hour. This is a potentially significantly near-term impact would require mitigation in the form of a new traffic signal at the intersection to reduce the impact to a less-than-significant level.

Traffic volumes from the Reduced Enrollment Alternative would decrease. As part of the Transportation Impact Assessment (Appendix C) completed for this EIR, traffic volumes for Existing plus Reduced Enrollment Alternative conditions were developed using an additive approach to enrollment. Estimated vehicle trips generated by this alternative were added to existing volumes on the roadway network, to develop the volumes for the Existing plus Reduced Enrollment Alternative conditions.

Operation of the Thornton Avenue/Oak Street intersection was evaluated during morning peak hour under the Reduced Enrollment Alternative. As shown in Table 5-2, below, the intersection would operate at LOS E and remain within the standard under Reduced Enrollment Alternative conditions. The resulting impact would be less than significant, and no mitigation would be required.

TABLE 5-2 EXISTING PLUS REDUCED ENROLLMENT ALTERNATIVE INTERSECTION OPERATION, THORNTON AVENUE AND OAK STREET, AM PEAK HOUR

					Existing + Project			Existing + Reduced Enrollment Alternative		
No.	Location	Control	Peak Hour	LOS Standard	V/C	Delay	LOS	V/C	Delay	LOS
2	Thornton Ave.& Oak St.	TWSC	AM	E	0.87	99.4	F	0.19	47.2	E

Source: Kittelson & Associates, 2019. Synchro Version 9, HCM 2000 methodology; TWSC: Two-Way Stop Control (or Side-Street Stop Control); Worst approach average delay is shown for side-street stop control intersections.

Cumulative plus Reduced Enrollment Alternative Conditions

The Chapter 4.15 analysis concluded that under Cumulative No Project Conditions, which account for regional growth projections and the conversion of nearby Centerville Junior High School to a middle school, the Thornton Avenue/Oak Street intersection would degrade to an unacceptable LOS F during the morning and afternoon peak hours. This would occur regardless of the implementation of the proposed project or project alternative. As concluded in Chapter 4.15, the proposed project would contribute to this

degradation, causing a significant impact that would require mitigation in the form of the new traffic signal described above. The Reduced Enrollment Alternative would also create new, albeit less, traffic that would contribute to the significant impact to the intersection, requiring the same mitigation.

The proposed project was found to significantly degrade operation of the signalized intersection at Thornton Avenue/Dusterberry Way to an unacceptable LOS F during the AM peak hour under Cumulative plus Project conditions. This intersection would not be impacted under Cumulative No Project conditions. Mitigating the proposed project's impact to this signalized intersection would require optimizing signal cycle length and phasing splits.

The impact of Reduced Enrollment Alternative plus Cumulative conditions on the Thornton Avenue/ Dusterberry Way intersection was analyzed in the TIA, for comparison. As shown in Table 5-3, below, the alternative would still result in the intersection operating at LOS F during the AM peak hour. This would require the same mitigation identified for the proposed project.

TABLE 5-3 CUMULATIVE PLUS REDUCED ENROLLMENT ALTERNATIVE INTERSECTION OPERATION, THORNTON AVENUE AND DUSTERBERRY WAY, AM PEAK HOUR

					Cumulative + Project			Cumulative + Reduced Enrollment Alternative		
No.	Location	Control	Peak Hour	LOS Standard	V/C	Delay	LOS	V/C	Delay	LOS
2	Thornton Ave. & Dusterberry Way	Signal	AM	E	0.83	90.7	F	0.81	88.8	F

Source: Kittelson & Associates, 2019. Synchro Version 9, HCM 2000 methodology; TWSC: Two-Way Stop Control (or Side-Street Stop Control); Worst approach average delay is shown for side-street stop control intersections

Transportation Conclusions

The Reduced Enrollment Alternative would reduce the significant, near-term impact of the proposed project to the Thornton Avenue/Oak Street intersection to less-than-significant. However, this intersection will operate at an unacceptable level under Cumulative No Project conditions, regardless of the proposed project. Even a nominal amount of new traffic from a project in the area would contribute to the Cumulative impact. Therefore, the Reduced Enrollment Alternative would require an enrollment increase well below 63 percent of the proposed project amount, essentially no increase in enrollment, to reduce the cumulative impact to a less-than-significant level.

Considering the reduction to near-term impacts and similar cumulative impacts, this alternative would result in a *slightly lessened* transportation impact as the proposed project.

5.3.2.16 TRIBAL CULTURAL RESOURCES

This alternative would result in the conversion of the same junior high school as the proposed project. As described in Chapter 4.16, the Native American Heritage Commission completed a record search of the campus site in the Sacred Lands File, with negative results. Moreover, no tribes responded to requests to

consult on the EIR process. As such, this alternative would have *similar* tribal cultural resources impacts as the proposed project.

5.3.2.17 UTILITIES AND SERVICE SYSTEMS

Under this alternative, all characteristics and features of the proposed project would remain the same, other than the total square footage and future capacity of the school buildings. As a result, construction activities and phasing would be reduced, the overall intensity of school operations would be reduced, and utilization of energy sources would decrease. While the analysis in Subchapter 4.17, Utilities and Service Systems, revealed that the proposed project would not have significant utilities and services impacts, this alternative would result in *slightly lessened* impacts.

5.4 OBJECTIVES ASSESSMENT

This section describes how each alternative would meet the Project objectives, described in Chapter 3 of and repeated above in Section 5.1.2.

5.4.1 NO PROJECT ALTERNATIVE

The No Project Alternative would not meet any of the project objectives.

5.4.2 REDUCED ENROLLMENT ALTERNATIVE

The Reduced Enrollment Alternative would convert a junior high school into a middle school via the integration of 6th grade students from existing elementary schools into a 7th and 8th grade program. These are key objectives of the project. Similarly, the campus design and circulation components of this alternative would support the objectives of outdoor learning, improved circulation, and entryway safety.

However, the 63 percent reduction in new students associated with the Reduced Enrollment Alternative would significantly decrease the potential of the alternative to meet the critical primary goal of the project. This alternative would fail to reduce capacity and overcrowding at FUSD elementary schools to the highest degree possible. The scale of the proposed project was developed as part of a larger middle school conversion program in the LRFP to bring existing and future capacities of FUSD elementary schools to within elementary school size standards of 450-900 students[1] and account for future growth in the City of Fremont. Under the Reduced Enrollment Alternative, about 450 6th grade students would remain in overcrowded FUSD elementary schools, as compared to the proposed project. As such, this alternative is significantly less consistent with the primary project objective.

[1] Fremont Unified School District, 2014. *Long Range Facilities Plan,* page 18.

5.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The environmentally superior alternative is the alternative that would be expected to generate the least amount of significant impacts. In addition to the discussion and comparison of impacts of the project and the alternatives, Section 15126.6 of the CEQA Guidelines requires that an "environmentally superior" alternative be selected and the reasons for such a selection be disclosed. Identification of the environmentally superior alternative is an informational procedure and the alternative selected may not be the alternative that best meets the goals or needs of the project applicant or Alameda County.

As shown in Table 5-3, the No Project Alternative would, in comparison to the project, result in fewer impacts when compared to those of the proposed project for all the environmental impacts. However, the No Project Alternative would not address any of the project objectives of the proposed project. Regardless, the No Project Alterative is considered the environmentally superior alternative. However, in accordance with State CEQA Guidelines Section 15126.6(e)(2), if the environmentally superior alternative is the "No Project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. In this case, the environmentally superior alternative is the Reduced Enrollment Alternative. As noted in Section 5.4.2, this alternative would fail to achieve maximum relief of overcrowding at FUSD elementary school, the primary goal of the project and FUSD LRFP.

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6. CEQA-Mandated Sections

This chapter provides an overview of the impacts of the proposed project based on the analyses presented in Chapters 4 through 5 of this Draft Environmental Impact Report (Draft EIR). The topics covered in this chapter include growth inducement, unavoidable significant impacts, and significant, irreversible changes. A more detailed analysis of the effects the proposed project would have on the environment and proposed mitigation measures to minimize significant impacts are provided in Subchapters 4.1 through 4.17, of this Draft EIR.

6.1 IMPACTS FOUND NOT TO BE SIGNIFICANT

The California Environmental Quality Act (CEQA) Guidelines Section 15128 allows environmental issues, for which there is no likelihood of significant impact, to be "scoped out" and not analyzed further in the EIR. As explained in Chapter 4, Environmental Analysis, of this Draft EIR, the urban nature of the project site, combined with past and current uses preclude environmental impacts associated with agricultural and forestry resources, mineral resources and wildfire. No associated impacts would occur as a result of the proposed project.

6.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. As detailed in Chapter 4of this Draft EIR, none of the environmental impacts associated with the proposed project were found to be significant and unavoidable.

6.3 SIGNIFICANT IRREVERSIBLE CHANGES

Section 15126.2(c) of the CEQA Guidelines requires an EIR to discuss the extent to which a proposed project or plan would commit nonrenewable resources to uses that future generation would probably be unable to reverse. The three CEQA-required categories of irreversible changes are discussed below.

6.3.1 LAND USE CHANGES THAT COMMIT FUTURE GENERATIONS

The project involves redevelopment of an existing 18-acre junior high school site serving students in 7th and 8th grade into a middle school site serving students in 6th, 7th and 8th grade. The project site currently contains 83,462 square feet of interior space, play areas, fields, turf areas, parking and circulation. The project would demolish 4,100 square feet of existing interior space and provide 36,320 square feet of new

interior space including classrooms and an Administration/Library/Entrance Building. The project would also modernize existing buildings and provide site improvements to recreational amenities, utilities, circulation and parking. Because the project site is already developed and is located in an urban area with existing commercial, office, and residential uses, the project is not expected to result in any land use changes that would commit future generations to uses that are not already prevalent in the vicinity of the project site.

6.3.2 IRREVERSIBLE DAMAGE FROM ENVIRONMENTAL ACCIDENTS

Potential environmental accidents of concern include those that would have adverse effects on the environment or public health due to the nature or quantity of material released during an accident and the receptors exposed to that release. As detailed in Chapter 4.7, Hazards and Hazardous Materials demolition and construction activities associated with development of the project would involve some risk of environmental accidents associated with releasing asbestos or contaminated soil. However, these activities would be monitored by State and federal agencies, would follow professional industry standards for safety and construction, and would have to adhere to the protocols of Mitigation Measure HAZ-1 through HAZ-3 established in this Draft EIR. Additionally, the land use proposed by the project would not include any uses or activities that are likely to contribute to or be the cause of a significant environmental accident. As a result, the project would not pose a substantial risk of environmental accidents.

6.3.3 LARGE COMMITMENT OF NON-RENEWABLE RESOURCES

Consumption of nonrenewable resources includes issues related to increased energy consumption, conservation of agricultural lands, and lost access to mining reserves. The project would require water, electric, and gas service, and resources for construction. The ongoing operation of the project would involve the use of nonrenewable resources. Construction and ongoing maintenance of the project would irreversibly commit some materials and nonrenewable energy resources. Materials and resources used would include, but are not limited to, nonrenewable and limited resources such as oil, gasoline, sand and gravel, asphalt, and steel. These materials and energy resources would be used for infrastructure development, transportation of people and goods, and utilities. During the operational phase of the project (post-construction), energy sources including oil and gasoline would be used for lighting, heating, and cooling for the school, and transportation of people to and from the project site.

However, as established in Chapter 4.17, Utilities and Service Systems, of this Draft EIR, the proposed project would not commit a significantly larger quantity of nonrenewable resources than the existing land use. The project would include several features that would offset or reduce the need for nonrenewable resources, such as the sustainable features described in Chapter 3, Project Description, of this Draft EIR. In addition, the project would be required to comply with all current building and design requirements, including those set forth by Title 24 relating to energy conservation. In compliance with CALGreen, the State's Green Building Standards Code, the project would be required to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials. Additionally, the project would include design features which include bike facilities and pedestrian improvements.

The project site does not contain any agricultural land or a mining reserve, so it would not affect those natural resources.

6.4 GROWTH-INDUCING IMPACTS OF THE PROPOSED PROJECT

Section 15126.2(d) of the CEQA Guidelines requires that an EIR discuss the ways in which a project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Typical growth inducing factors might be the extension of urban services or transportation infrastructure to a previously unserved or under-served area, or the removal of major barriers to development. This section evaluates the project's potential to create such growth inducements. Not all aspects of growth inducement are negative; rather, negative impacts associated with growth inducement occur only where the project growth would cause adverse environmental impacts.

As discussed in the Population and Housing section of the Initial Study, the project is not expected to directly induce growth because it does not include construction of housing. Teachers at the proposed school would be transferred from existing elementary schools in the District, rather than new teachers being hired into SMFCSD. Therefore, the project would not provide additional employment over existing conditions. Furthermore, there are no required infrastructure improvements that would increase capacity to the degree that additional development could occur elsewhere in the city.

Development of the project would involve demolition and construction activities that would generate temporary construction jobs; however, it is unlikely that construction workers would permanently relocate to the City of Fremont as a result of the project.

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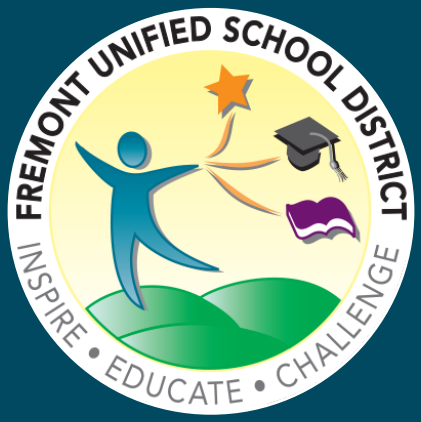

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