



PROPOSED MITIGATED NEGATIVE DECLARATION and INITIAL STUDY

City of Mt. Shasta Golden Eagle Charter School

Prepared for:

City of Mt. Shasta

April 2019
32-46

ENPLAN

3179 Bechelli Lane Suite 100
Redding, CA 96002

PROPOSED MITIGATED NEGATIVE DECLARATION

LEAD AGENCY:	City of Mt. Shasta
PROJECT PROPONENT:	City of Mt. Shasta
PROJECT NAME:	Golden Eagle Charter School Conditional Use Permit and Tentative Parcel Map
PROJECT SUMMARY:	<p>The applicant requests approval of a Conditional Use Permit and Tentative Parcel Map that would allow construction and operation of a new charter school and appurtenant facilities. The school building would have a floor area of approximately 35,500 square feet and include two parking areas (one south of the school and one along Pine Street), a drop-off/pick-up area for students, and landscaping improvements. One full-access driveway would be constructed off of Pine Street at the southern boundary of the Project site; one entrance-only driveway to the student drop-off/pick-up area would be constructed north of the full-service driveway. A future gymnasium and play field would be constructed as funding becomes available (see Figures 1 and 2 of the Initial Study). Proposed construction activities are detailed in Section 3.2 (Project Components/Physical Improvements) of the Initial Study.</p> <p>The proposed Tentative Parcel Map would merge ten existing parcels and excess road right-of-way and establish three parcels. Two of the parcels would accommodate the proposed project, and the northernmost parcel would be established as an open space area. No development is proposed for the open space area.</p>
LOCATION:	The Project site is located within the City of Mt. Shasta City limits on the west side of Pine Street, generally east of Interstate 5 (I-5), south/southeast of Lassen Lane, and north/northeast of W. Field Street as shown in Figures 1 and 2 of the Initial Study. Assessor's Parcel Numbers: 057-071-010- and -040; 057-031-030 and -060; 057-051-010 and -020; 057-044-020 and -040; 057-064-030 and -070; City of Mt. Shasta road right-of-way.

FINDINGS / DETERMINATION

As documented in the Initial Study, project implementation could result in visual impacts; loss of riparian habitat; loss of wetlands; disturbance of nesting migratory birds (if present); impacts to paleontological, cultural, and tribal cultural resources (if present); increased runoff due to the addition of impervious surfaces; the introduction and spread of noxious weeds during construction; temporarily increased risk of wildfires; temporarily increased air emissions; temporarily increased noise and vibration levels; and exposure of sensitive receptors to elevated noise levels.

Design features incorporated into the project would avoid or reduce certain potential environmental impacts, as would compliance with existing regulations and permit conditions. Remaining impacts can be reduced to levels that are less than significant through implementation of the mitigation measures presented in Section 1.9 of the Initial Study. Because the City of Mt. Shasta will adopt mitigation measures as conditions of project approval and will be responsible for ensuring their implementation, it has been determined that the project will not have a significant adverse impact on the environment.

Final Mitigated Negative Declaration approved by the Planning Commission of the City of Mount Shasta on _____, 2019 by Resolution _____.

INITIAL STUDY

GOLDEN EAGLE CHARTER SCHOOL

CITY OF MT. SHASTA

LEAD AGENCY:



City of Mt. Shasta
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April 2019

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Appendix B:	CalEEMod Air Quality/Greenhouse Gas Emissions Output Files
Appendix C:	Biological Resources Documentation <ul style="list-style-type: none"> • ENPLAN Summary Report: <i>Potential for Special-Status Species to Occur on the Project Site.</i> • U.S. Fish and Wildlife Service List of Threatened and Endangered Species • California Natural Diversity Database (CNDDB) Query Summary • List of vascular plants observed: May 6 and June 26, 2018.
Appendix D:	Noise Study
Appendix E:	Traffic Study

SECTION 1.0 INTRODUCTION

1.1 PURPOSE OF STUDY

The City of Mt. Shasta (City), as Lead Agency, has prepared this Initial Study to provide the general public and interested public agencies with information about the potential environmental impacts of the proposed Golden Eagle Charter School Project (Project). The Project consists of a Use Permit for construction of a new school and appurtenant facilities, and approval of a Tentative Parcel Map.

The Parcel Map would merge the ten existing parcels and excess road right-of-way and establish three parcels. Two of the parcels would accommodate the proposed Project, and the northernmost parcel would be established as an open space area. Three parcels are proposed to facilitate financing for the Project. Details about the proposed Project are included in Section 3.0 (Project Description) of this Initial Study.

This Initial Study has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (as amended), codified in California Public Resources Code §21000 et seq., and the State CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3. Pursuant to these regulations, this Initial Study identifies potentially significant impacts and, where applicable, includes mitigation measures that would reduce all identified environmental impacts to less-than-significant levels. This Initial Study supports a Mitigated Negative Declaration (MND) pursuant to CEQA Guidelines §15070.

1.2 EVALUATION TERMINOLOGY

The environmental analysis in Section 4.0 is patterned after the Initial Study Checklist recommended in the State CEQA Guidelines. For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the proposed Project. To each question, there are four possible responses:

- **No Impact.** The proposed Project will not have any measurable environmental impact on the environment.
- **Less-Than-Significant Impact.** The proposed Project has the potential to impact the environment; however, this impact will be below established thresholds of significance.
- **Potentially Significant Impact Unless Mitigation Incorporated.** The proposed Project has the potential to generate impacts which may be considered a significant effect on the environment; however, mitigation measures or changes to the proposed Project's physical or operational characteristics can reduce these impacts to levels that are less than significant.
- **Potentially Significant Impact.** The proposed Project will have significant impacts on the environment, and additional analysis is required to determine if it is feasible to adopt mitigation measures or project alternatives to reduce these impacts to less than significant levels.

1.3 ORGANIZATION OF THE INITIAL STUDY

This document is organized into the following sections:

Section 1.0: **Introduction:** Describes the purpose, contents, and organization of the document and provides a summary of the proposed Project.

Section 2.0: **CEQA Determination:** Identifies the determination of whether impacts associated with development of the proposed Project are significant, and what, if any, additional environmental documentation may be required.

- Section 3.0:** **Project Description:** Includes a detailed description of the proposed Project.
- Section 4.0:** **Environmental Impact Analysis (Checklist):** Contains the Environmental Checklist from CEQA Guidelines Appendix G with a discussion of potential environmental effects associated with the proposed Project. Mitigation measures, if necessary, are noted following each impact discussion.
- Section 5.0:** **List of Preparers**
- Section 6.0:** **Abbreviations and Acronyms**
- Appendices:** Contains information to supplement Section 4.0.

1.4 PROJECT SUMMARY AND LOCATION

Project Title:	Golden Eagle Charter School Use Permit and Tentative Parcel Map
Applicant:	Golden Eagle Charter School Representative: Nick Trover
Lead Agency Name and Address:	City of Mt. Shasta 305 N. Mt. Shasta Blvd. Mt. Shasta, CA 96067
Contact Person and Phone Number:	Juliana Lucchesi, City Planner 530.926.7510
City's Environmental Consultant:	ENPLAN 3179 Bechelli Lane Redding, CA 96002

Project Location:

As shown in **Figure 1**, the Project is located within the City of Mt. Shasta on the west side of Pine Street, generally east of Interstate 5 (I-5), south/southeast of Lassen Lane, and north/northeast of W. Field Street in Section 6, Township 40 North, Range 4 West of the U.S. Geological Survey (USGS) City of Mount Shasta quadrangle. Latitude: 41° 19' 2" N; Longitude: 122° 19' 17" W.

Assessor's Parcel Numbers: 057-031-030, -060; 057-044-020, -040; 057-051-010, -020; 057-071-010, -040; 057-064-030, -070, and City street right-of-way.

Path: N:\companyfiles\01-Jobs Active\032-46 PACE - Mt. Shasta Golden Eagle Charter School\3-Project GIS\3-Map Documents\Initial Study\Fig_1_Project_Vicinity_012819.mxd



0 2,000 Feet

Figure 1
Project Vicinity

All depictions are approximate. Not a survey product.

03.14.19

1.5 ENVIRONMENTAL SETTING

General Plan Designation:	High Density Residential (HDR)
Zoning:	High Density Residential (R-3) and Low Density Residential (R-1)
Surrounding Land Uses:	Parcels northeast of the Project site along Pine Street are developed with a hospital and miscellaneous medical offices. The hospital is ±275 feet northeast of the Project site. A senior housing facility is located on Kingston Road, ±600 feet north of the proposed school building. Single-family residences on W. Field Street are located ±250 feet southeast of the future play field. Multi-family residences on Pine Street are located adjacent to the Project's proposed southern driveway. Interstate 5 (I-5) is to the west.
Topography:	The Project site is located at an elevation of ±3,525 feet above mean sea level. The property slopes gently to the southwest.
Soils:	According to the U.S. Department of Agriculture, Natural Resources Conservation Service, one soil unit has been mapped in the Project site: Deetz gravelly loamy sand, 5 to 15 percent slopes.
Natural Communities/ Wildlife Habitats:	<p>As detailed in Section 4.4 (Biological Resources), natural communities in the open space area north of the proposed development site include stream/riverine, seasonal wet meadow, riparian wetland, and perennial grassland.</p> <p>Natural communities in the area proposed for development include fresh emergent wetland, riparian wetland, seasonal wet meadow, and perennial grassland. The perennial grassland habitat occupies the majority of the site. ±0.197 acres of riparian wetland habitat is located in the southern area of the site adjacent to Cedar Street; ±0.012 acres of fresh emergent wetland is also located in this area. ±0.068 acres of seasonal wet meadow is located in the southwestern area of the site, immediately west of the future play field. Vegetated ditches are also present in the southeastern area of the site along Pine Street, and south of the proposed southern access driveway.</p>
Climate:	Climate in the study area is characterized by a Mediterranean climate with cool, wet winters and hot, dry summers. The average annual rainfall is ±39.96 inches. Temperatures range between an average January low of 29.9 degrees Fahrenheit (°F) and an average July high of 84.7 °F.

1.6 REGULATORY REQUIREMENTS

Permits and approvals that may be necessary for construction and operation of the proposed Project are identified below.

City of Mt. Shasta:

- Adoption of a Mitigated Negative Declaration for the Project pursuant to the California Environmental Quality Act (CEQA).
- Adoption of a Mitigation Monitoring and Reporting Program for the Project that incorporates the mitigation measures identified in this Initial Study.

- Approval of a Conditional Use Permit for the proposed Project.
- Approval of a Tentative Parcel Map and abandonment of City street right-of-way (ROW) within the Project site.

State Water Resources Control Board (SWRCB)/Central Valley Regional Water Quality Control Board (CVRWQCB):

- Coverage under the NPDES permit for *Discharges of Storm Water Runoff Associated with Construction Activity* (currently Order No. 2009-009-DWQ). Permit coverage may be obtained by submitting a Notice of Intent to the SWRCB. The permitting process requires the development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP) that includes Best Management Practices (BMPs) to reduce pollutants and any additional controls necessary to meet water quality standards.
- Section 401 Water Quality Certification (or waiver); Report of Waste Discharge.
- If construction dewatering activities result in the direct discharge of relatively pollutant-free wastewater to waters of the U.S., coverage under CVRWQCB General Order R5-2016-0076-01 (NPDES NO. CAG995002) *Waste Discharge Requirements - Limited Threat Discharges to Surface Water*. This Order includes specific requirements for monitoring, reporting, and implementing BMPs for construction dewatering activities.

U.S. Army Corps of Engineers:

- Section 404 Permit under the Federal Clean Water Act.

California Department Fish and Wildlife:

- Issuance of Section 1600 Lake or Streambed Alteration Agreement.

1.7 TRIBAL CULTURAL RESOURCES CONSULTATION

Public Resources Code §21084.2 (AB 52, 2014) establishes that “*a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.*” In order to determine whether a project may have such an effect, a lead agency is required to consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if:

1. The California Native American tribe requested to the lead agency, in writing, to be informed through formal notification of proposed projects in the geographical area; and
2. The tribe responds, in writing, within 30 days of receipt of the formal notification and requests the consultation.

According to the City, as of March 1, 2019, no California Native American tribes have requested formal notification of proposed projects in the geographical area.

1.8 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the proposed Project, involving at least one impact requiring mitigation to bring it to a less-than-significant level. Impacts to these resources are evaluated using the checklist included in Section 4.0. The Proposed Project was determined to have a less-than-significant impact or no impact without mitigation on unchecked resource areas.

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

1.9 SUMMARY OF MITIGATION MEASURES

The following mitigation measures are proposed to reduce impacts of the proposed Project to less-than-significant levels.

AESTHETICS

MM 4.1.1 Each application for a building permit shall be accompanied by a landscaping, signage, parking, lighting, building design, and snow storage plan in accordance with the City's Design Guidelines and Zoning Code. In addition, a roof plan or other documentation that demonstrates that all roof-mounted mechanical equipment is adequately screened from public view and adjacent properties must be submitted.

Prior to issuance of each building permit, the City Planner or his/her designee shall review the plans to verify consistency with the Design Guidelines and Zoning Code. Prior to issuance of each Certificate of Occupancy by the City's Building Official, the Building Official and City Planner shall verify that landscaping, signage, parking, lighting, building design, and screening of mechanical equipment are consistent with the approved plans.

AIR QUALITY

MM 4.3.1 The following measures shall be implemented throughout construction:

- a. All material excavated, stockpiled, or graded shall be covered or sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of ambient air quality standards. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day.
- b. All material transported offsite shall be either sufficiently watered or securely covered to prevent a public nuisance.

- c. All areas (other than paved roads) with vehicle traffic shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.
- d. All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.
- e. All land clearing, grading, earth moving, and excavation activities on the project site shall be suspended when winds are causing excessive dust generation.
- f. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least two feet of free board in accordance with the requirements of Section 23114 of the California Vehicle Code. This provision is enforced by local law enforcement agencies.
- g. Paved streets in and adjacent to the construction site shall be swept or washed at the end of the day to remove excessive accumulations of silt and/or mud resulting from activities on the development site.

BIOLOGICAL

MM 4.4.1 Prior to commencement of any earth disturbance (e.g., clearing, grading, trenching, etc.), exclusionary fencing shall be installed around wetlands, other waters of the U.S. and State, and montane riparian scrub habitats that are designated for preservation. Fencing locations shall be determined by a qualified biologist in consultation with City staff. No construction activities (e.g., clearing, grading, trenching, etc.), including vehicle parking and materials stockpiling, shall occur within the fenced areas. The exclusionary fencing shall be periodically inspected by a qualified biologist throughout project construction to ensure the fencing is properly maintained. The fencing shall be removed upon project completion.

MM 4.4.2 The potential for introduction and spread of noxious weeds shall be avoided/minimized by:

- a. Using only certified weed-free erosion control materials, mulch, and seed.
- b. Limiting any import or export of fill material to material that is known to be weed free.
- c. Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the job site.

MM 4.4.3 In order to avoid impacts to nesting migratory birds and/or raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5, including their nests and eggs, one of the following shall be implemented:

- a. Vegetation removal and other ground-disturbance activities associated with construction shall occur between September 1 and January 31 when birds are not nesting; or
- b. If vegetation removal or ground disturbance activities occur during the nesting season, a pre-construction nesting survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area.

Surveys shall begin prior to sunrise and continue until vegetation and nests have been sufficiently observed. The survey shall take into account acoustic impacts and line-of-sight disturbances occurring as a result of the project in order to determine a sufficient survey radius to avoid nesting birds.

At a minimum, the survey report shall include a description of the area surveyed, date and time of the survey, ambient conditions, bird species observed in the area, a description of any active nests observed, any evidence of breeding behaviors

(e.g., courtship, carrying nest materials or food, etc.), and a description of any outstanding conditions that may have impacted the survey results (e.g., weather conditions, excess noise, the presence of predators, etc.).

The results of the survey shall be submitted to the CDFW upon completion. The survey shall be conducted no more than one week prior to the initiation of construction. If construction activities are delayed or suspended for more than one week after the pre-construction survey, the site shall be resurveyed.

If active nests are found, the applicant shall consult with CDFW and the USFWS regarding appropriate action to comply with the Migratory Bird Treaty Act and California Fish and Game Code §3503. Compliance measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

CULTURAL

MM 4.5.1 In the event of any inadvertent discovery of cultural resources (i.e., burnt animal bone, midden soils, projectile points or other humanly-modified lithics, historic artifacts, etc.), all work within 50 feet of the find shall be halted until a professional archaeologist can evaluate the significance of the find in accordance with PRC §21083.2(g) and §21084.1, and CEQA Guidelines §15064.5(a). If any find is determined to be significant by the archaeologist, the City shall meet with the archaeologist to determine the appropriate course of action. If necessary, a Treatment Plan prepared by an archeologist outlining recovery of the resource, analysis, and reporting of the find shall be prepared. The Treatment Plan shall be reviewed and approved by the City prior to resuming construction.

MM 4.5.2 In the event that human remains are encountered during construction activities, the City shall comply with §15064.5 (e) (1) of the CEQA Guidelines and PRC §7050.5. All project-related ground disturbance within 100 feet of the find shall be halted until the County coroner has been notified. If the coroner determines that the remains are Native American, the coroner will notify the NAHC to identify the most likely descendants of the deceased Native Americans. Project-related ground disturbance in the vicinity of the find shall not resume until the process detailed in §15064.5 (e) has been completed.

GEOLOGY AND SOILS

MM 4.7.1 If paleontological resources (fossils) are discovered during construction, all work within 50 feet of the find shall be halted until a professional paleontologist can evaluate the significance of the find. If any find is determined to be significant by the paleontologist, the City shall meet with the paleontologist to determine the appropriate course of action. If necessary, a Treatment Plan prepared by a paleontologist outlining recovery of the resource, analysis, and reporting of the find shall be prepared. The Treatment Plan shall be reviewed and approved by the City prior to resuming construction.

HAZARDS / HAZARDOUS MATERIALS

MM 4.8.1 During construction, all areas in which work will be completed using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a fire break.

HYDROLOGY AND WATER QUALITY

- MM 4.10.1** Prior to issuance of a building permit or any earth disturbance for any phase of development, a final drainage/hydrology study shall be submitted to the City Engineer for review and approval. The drainage/hydrology study shall be prepared by a registered professional engineer and shall include drainage calculations and a storm drain plan that demonstrates that post-construction runoff from the project will not increase the 10-, 25-, or 100-year flows downstream in accordance with the City's adopted Construction Standards. The storm drain plan shall be consistent with the post-construction measures outlined in the State Water Resources Control Board's NPDES permit for *Discharges of Storm Water Runoff associated with Construction Activity*.

NOISE

- MM 4.13.1** Construction activities shall be limited to between the hours of 7:00 a.m. and 5:00 p.m. Exceptions to these limitations may be approved by the City's Public Works Director or his/her designee for activities that require interruption of utility services to allow work during low demand periods, or to alleviate traffic congestion and safety hazards.
- MM 4.13.2** Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- MM 4.13.3** When not in use, motorized construction equipment shall not be left idling for more than five minutes.
- MM 4.13.4** Prior to issuance of a building permit for the gymnasium, the applicant shall provide documentation that the building complies with the City's interior noise level standard for schools of 40 dBA Ldn. The analysis shall be prepared by a registered Engineer qualified in acoustical analysis. Any noise attenuation features that are required to meet the City's noise standards (e.g., additional wall insulation, thicker window glass, exterior noise barriers, etc.) shall be depicted on the construction plans and shall be verified by the Building Official. Implementation of the noise attenuation measures shall be verified by the Building Official during final inspection of the buildings.
- MM 4.13.5** Prior to any earth disturbance associated with the play field, the applicant shall provide documentation that the play field is not located within the 70 dBA Ldn noise contour of Interstate 5. If it is not possible for the play field to be located outside of the 70 dBA Ldn noise contour, the applicant shall submit plans to the City for installation of a noise barrier (earthen berm or wall) along with documentation by a registered Engineer qualified in acoustical analysis that demonstrates that the play field complies with the City's exterior noise level standard of 70 dBA Ldn. The noise barrier shall be depicted on the construction plans and shall be verified by the Building Official. Implementation of the noise attenuation measures shall be verified by the Building Official during final inspection of the noise barrier.

TRIBAL CULTURAL RESOURCES

Implementation of **Mitigation Measures MM 4.5.1 and 4.5.2.**

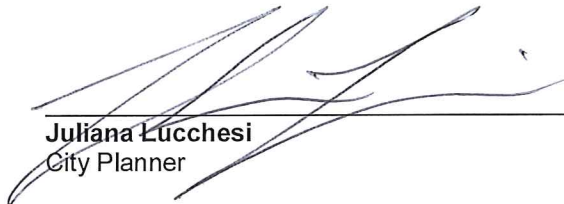
WILDFIRE

Implementation of **Mitigation Measure MM 4.8.1.**

SECTION 2.0 CEQA DETERMINATION

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION has been prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a significant effect(s) on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or Negative Declaration pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or Negative Declaration, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.


Juliana Lucchesi
City Planner

3/29/2019
Date

SECTION 3.0 PROJECT DESCRIPTION

3.1 PROJECT BACKGROUND, COMPONENTS, AND OBJECTIVES

Golden Eagle Charter School (GECS), established in August 2008, is a county-wide benefit charter authorized by the Siskiyou County Board of Education. GECS presently leases four facilities: three locations in the City of Mt. Shasta and one in the City of Yreka. In Mt. Shasta, the School's main office and library are located at 2405 South Mt. Shasta Boulevard; the grade K-5 learning center is located at 2411 South Mt. Shasta Boulevard; and the grade 6-12 learning center is located at 2226 Mt. Shasta Boulevard. The resource center in the City of Yreka is located at 1515 South Oregon Street.

GECS is outgrowing its current facilities in the City of Mt. Shasta and is proposing to construct a new school and appurtenant facilities and consolidate operations at the new location. According to the 2017-2018 School Accountability Report Card published by the School, Golden Eagle Charter school had an enrollment of 495 for the 2017-18 school year; 183 students were in grades K-5; 137 students were in grades 6-8; and 175 students were in grades 9-12. Due to intentional scheduling, it is anticipated that no more than 200 students and 15 staff members would be on-site at the new location at any given time. GECS operates from mid-August through May. Hours of operation are Monday through Friday from 8:00 A.M. to 4:30 P.M. Transportation of students to and from school and school-related functions is the responsibility of the parents/guardians.

As shown in **Figure 2**, the building would have a floor area of approximately 35,500 square feet and include two parking areas (one south of the school and one along Pine Street), a drop-off/pick-up area for students, and landscaping improvements. One full-access driveway would be constructed off of Pine Street at the southern boundary of the Project site; one entrance-only driveway to the student drop-off/pick-up area would be constructed approximately 375 feet north of the full-service driveway. The full-service driveway would also serve as egress for the drop-off/pick-up area. A secondary emergency-only access route from Cedar Street would be provided in the southern Project area. As shown in **Figure 2**, the proposed Project includes a future gymnasium and play field that would be constructed as funding becomes available. Although the design of the gymnasium and play field is not known, it is anticipated that the gymnasium would be approximately 7,500 square feet, and the play field would be approximately 35,000 square feet. GECS also plans to pursue funding for the future installation of rooftop solar panels. Proposed construction activities are detailed in Section 3.2 (Project Components/Physical Improvements) of the Initial Study.

The Project site is ± 12.4 acres and is comprised of ten legal parcels under a single ownership, as well as City street ROW. The Project includes abandoning the existing ROW within the Project site and establishing three parcels for financing purposes. The Tentative Parcel Map is shown in **Figure 3**. As indicated, easements for existing public utilities would be deeded to the City as part of the tentative map approval process.

For purposes of this evaluation, "study area" includes the entire ± 12.4 -acres. "Development site" includes proposed Parcels 1 and 2 as shown in **Figure 3** (± 6.8 acres) and encompasses areas in which improvements would occur. Proposed Parcel 3 (± 5.6 acres) includes the majority of wetlands and other waters of the U.S. and State and would be established as an open space area. No development is proposed on Parcel 3.

Charter schools are regulated pursuant to California Code of Regulations (CCR) Title 5, Division 1, Chapter 11, Subchapter 19 (Charter Schools). The proposed Project is a non-Department of State Architect project and is subject to California Building Standards Code requirements that are enforced by the City's Building Official. It is anticipated that construction of the school would commence in 2019 and be completed in eight months.



Figure 2
Proposed Site Plan

REVISION

GOLDEN EAGLE CHARTER SCHOOL
Proposed Site Plan

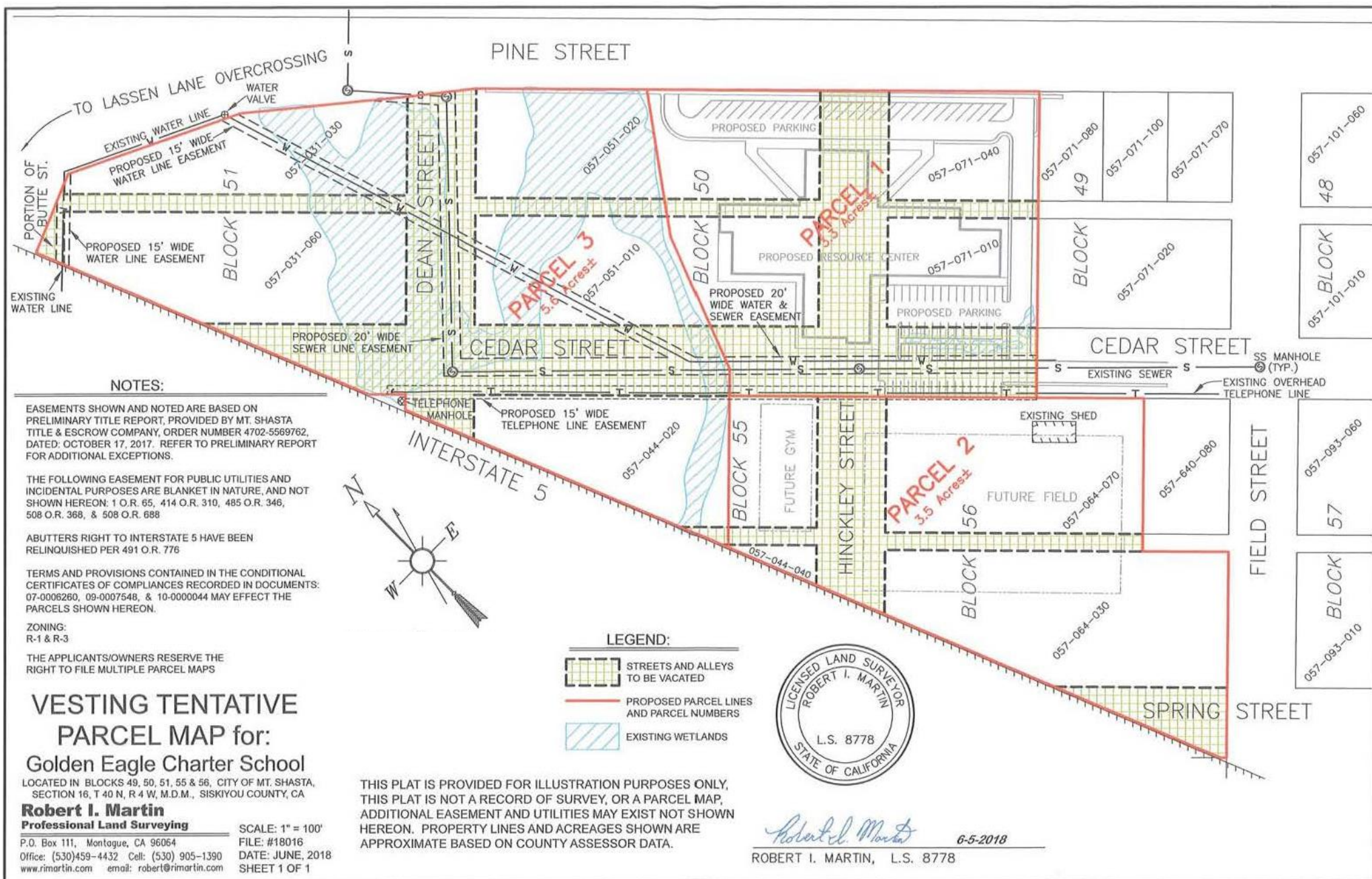


Figure 3
Proposed Tentative Parcel Map

Not to Scale

3.2 PROJECT COMPONENTS/PHYSICAL IMPROVEMENTS

Structures, Parking Areas, and Driveways

Areas in which structures, parking areas, and driveways would be installed would be cleared of all vegetation and graded to accommodate the proposed improvements. It is estimated that no more than 20 trees would be removed to accommodate the parking lot south of the school building. Construction of the school and gymnasium would include excavation for footings, installation of a foundation system, structural framing, electrical, plumbing, and mechanical work, and application of architectural coatings. Driveways and parking areas would be paved.

Utilities

Public utilities, including water, sewer, electric, and other dry utilities, are present adjacent to the Project site on Pine Street and/or Cedar Street as shown in **Figure 3**. The proposed Project would connect to existing utility infrastructure, and no significant extension or upsizing of utility infrastructure would be required. Underground utilities would be installed using open-cut trenching.

Landscaping

Landscaping would be installed in accordance with Mt. Shasta Municipal Code (MSMC) §18.70.080. Requirements include a mixture of trees, shrubs, and groundcover. A landscape buffer would be maintained along the property's frontage on Pine Street and would include street trees in accordance with MSMC §18.70.080(l). Landscaped areas would be irrigated in accordance with State requirements for water efficient landscaping; alternatively, native plants that can be maintained and survive without artificial irrigation would be planted.

Fencing

Security fencing would be installed around the perimeter of the school site in accordance with the City's Design Guidelines.

Signage

Identifying signage would be placed in front of the building along Pine Street in accordance with MSMC §8.32 (Requirements for Graphic Zone 2) and MSMC Chapter 9.40 (General Requirements-All Graphic Zones).

Stormwater Drainage and Performance Measures

As discussed in Section 4.10 (Hydrology and Water Quality), as required by the SWRCB's NPDES permit for *Discharges of Storm Water Runoff Associated with Construction Activity*, the applicant will implement post-construction measures to replicate the pre-project runoff water balance. Measures may include rooftop and impervious area disconnection (rerouting rooftop drainage pipes to drain rainwater to rain barrels, cisterns, or permeable areas instead of to the storm sewer); using porous pavement that allows runoff to pass through it; and/or installing vegetated swales to treat and attenuate stormwater runoff.

Staging Areas

Temporary staging of materials and construction equipment for construction of the school would occur on proposed Parcel 2. Minor clearing of vegetation may be required to establish the staging area; however, no grading or tree removal would occur.

3.3 CUMULATIVE IMPACTS ANALYSIS

As defined in §15355 of the CEQA Guidelines, a cumulative impact consists of an impact that is created as a result of the combination of a proposed project together with other closely related

past, present, and reasonably foreseeable future projects that cause related impacts. As noted in §15064(h)(4) of the CEQA Guidelines, the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

Further, §15130(b) of the CEQA Guidelines states, *"The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."*

In addition to growth associated with the build-out projections in the City's and County's General Plans, the projects described below were considered in determining whether the proposed Project's impacts would be cumulatively considerable in accordance with §15064(h) of the CEQA Guidelines. No other related projects were identified as being reasonably foreseeable in accordance with §15144 of the CEQA Guidelines.

Crystal Geyser Bottling Plant

On September 20, 2017, Siskiyou County certified the Final Environmental Impact Report (FEIR) for the Crystal Geyser Bottling Plant (CG)¹. An appeal challenging the certification was filed, and the Board of Supervisors denied the appeal on December 12, 2017. Legal action was subsequently taken against the project, and it is not known when the legal action will conclude. The proposed bottling plant is located ±0.5 miles northeast of the GECS site. Because CG does not include any infrastructure or construction-related improvements in proximity to the proposed Project, it would not contribute to cumulative impacts associated with the Project during construction. During operations, the CG project could potentially contribute to cumulative noise, air emissions, greenhouse gas (GHG) emissions, and increased traffic.

Mt. Shasta Downtown Collection System Improvements

On November 14, 2017, a CEQA Categorical Exemption was filed with the State Clearinghouse for the Mt. Shasta Downtown Collection System Improvements project. The project includes replacement of sewer mains, laterals, and cleanouts in the public ROW of Cedar Street, W. Alma Street, and McCloud Avenue. The Downtown Collection System Improvements project includes replacement of a sewer main on W. Alma Street and Cedar Street, approximately 1,000 feet southeast of the proposed GECS site.

Construction contractors for the Downtown Collection System Improvements project may travel on the same streets as contractors for the GECS improvements. According to the City's engineer, the Downtown Collection System Improvements are scheduled to be completed by the end of 2019. If the Downtown Collection System Improvements project is constructed simultaneously with the GECS improvements, cumulative traffic and traffic noise as well as cumulative noise impacts and temporarily increased air emissions during construction would occur.

Mt. Shasta Water Distribution System Improvements

The City is in the process of completing environmental review for the Water Distribution System Improvements project. The project includes replacement of existing water mains on W. Jessie Street, Spring Street, Cedar Street, Pine Street, W. Ivy Street, W. Field Street, W. Alma Street, N. Mt. Shasta Boulevard, and S. Mt. Shasta Boulevard.

¹ Crystal Geyser Environmental Impact Report and related documents: <https://www.co.siskiyou.ca.us/community-development/page/crystal-geyser-project>

Water main improvements on Pine Street would occur adjacent to the GECS project site. Construction contractors for the water distribution system improvements would travel on the same streets as contractors for the GECS improvements. The Water Distribution System Improvements project would contribute to cumulative traffic and traffic noise impacts if the project is constructed simultaneously with the GECS improvements. There is also a potential for cumulative noise impacts and temporarily increased air emissions during construction.

Mt. Shasta Sewer Interceptor Improvements

The City is in the process of completing environmental review for the proposed Sewer Interceptor project. The IS/MND for the project was distributed for public review, and it is anticipated that City Council will consider adopting the MND in May of 2019². The proposed Project includes improvements to the City's wastewater collection system on both the east and west sides of I-5. Improvements on the east side of I-5 include replacement of an existing sewer interceptor in W. Jessie Street between W. Ivy Street and I-5. Improvements would occur approximately 1,000 feet southeast of the GECS site. Construction contractors for the Sewer Interceptor Improvements project may travel on the same streets as contractors for the GECS improvements. If the Sewer Interceptor improvements are constructed simultaneously with the GECS improvements, cumulative traffic, traffic noise, construction noise, and temporarily increased air emissions during construction would occur.

Proposed PacifiCorp Lassen Substation

PacifiCorp presently owns and operates the Mount Shasta Substation on S. Old Stage Road. In 2016, PacifiCorp submitted an application to the California Public Utilities Commission to replace and upgrade the substation, complete improvements to existing distribution lines, and install new overhead and underground distribution lines. The distribution system improvements include replacing 36 transmission poles along a 1.5-mile segment of the existing transmission system; installing three additional poles to connect to the proposed substation; reconductoring two existing distribution lines; removing an existing overhead distribution line; and undergrounding approximately 1,200 feet of the existing overhead line.

The CPUC released a Notice of Intent to Adopt a Mitigated Negative Declaration for the project, and the IS/MND was made available for a 30-day public review period. Based on comments submitted during the public review period, the CPUC prepared revisions to the IS/MND, and a final IS/MND was published on June 19, 2017. The CPUC responded to comments on the final IS/MND and prepared an errata to the final IS/MND in response to those comments. According to the CPUC, as of February 2019, the MND has not been adopted by the CPUC, and it is not known when adoption of the MND will occur. The CPUC originally anticipated that construction of the new substation project would commence in the summer of 2019 and be completed within 12 months; however, the actual date of construction will depend on when the MND is adopted.

The Lassen Substation improvements include installing a new underground distribution line in the northernmost area of proposed Parcel 3 for the GECS Parcel Map. Although the proposed Project does not include any development in this area, construction contractors for the Lassen Substation project would travel on the same streets as contractors for the GECS improvements. The Lassen Substation project would contribute to cumulative traffic, traffic noise, construction noise, and temporarily increased air emissions during construction.

Potential cumulative impacts are further discussed in the applicable resource sections in Section 4.0 below.

² Mt. Shasta Sewer Interceptor Initial Study and Proposed Mitigated Negative Declaration: <https://mtshastaca.gov/wp/wp-content/uploads/2019/03/PRINT-VERSION-FINAL-with-Appendices-Draft-INITIAL-STUDY-MND-for-Circulation-Mt-Shasta-Sewer-Interceptor.pdf>

SECTION 4.0 ENVIRONMENTAL ANALYSIS (CHECKLIST)

4.1 AESTHETICS

Except as provided in Public Resources Code §21099, would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to aesthetics that apply to the proposed project.

STATE

California Scenic Highway Program

The California Scenic Highway Program, administered by the California Department of Transportation (Caltrans), was established in 1963 to preserve and protect the natural beauty of scenic highway corridors in the State. The Scenic Highway System includes a list of highways that have been designated as scenic highways as well as a list of highways that are eligible for designation as scenic highways. Local jurisdictions can nominate scenic highways for official designation by identifying and defining the scenic corridor of the highway and adopting a Corridor Protection Program that includes measures that strictly limit development and control outdoor advertising along the scenic corridor.

California Building Standards Code

Title 24 of the CCR, also known as the California Building Standards Code (CBSC), is based on the International Building Code (IBC) used widely throughout the country. The CBSC has been modified for California conditions to include more detailed and/or more stringent regulations. Part 11 of the CBSC is the Green Building Standards Code, also known as CALGreen. Section 5.106.8 (Light Pollution Reduction) of the CALGreen Code includes standards and restrictions for outdoor lighting systems. The intent of this requirement is to minimize light pollution in an effort to maintain dark skies and to ensure that newly constructed projects reduce the amount of backlight, uplight, light, and glare from exterior light sources.

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Open Space and Conservation Element		
Goal	OC-7	Protect the scenic resources of the Mt. Shasta area.
Policy	OC-7.1	Promote the protection of the scenic beauty of the Mt. Shasta area through appropriate zoning, development standards, and the development review process involving lands in both the City and outside the city limits. The County is encouraged to support and help implement this policy.
IM	OC-7.1(b)	Establish and enforce standards for new development to protect visible hillsides and ridges. These standards will address screening, design, and setbacks from the tops of ridges.

DISCUSSION OF IMPACTS

Questions A and C

Scenic vistas are defined as expansive views of highly valued landscapes from publicly accessible viewpoints. Scenic vistas include views of natural features such as mountains, hills, valleys, water courses, outcrops, and natural vegetation, as well as man-made scenic structures. Scenic resources in the Project area include Mount Shasta, Black Butte, trees and other vegetation, creeks, streams, open space, and forested hills that surround the community. The Project site is visible to individuals living and working in the area and to travelers on adjacent roadways, including I-5, Pine Street, W. Field Street, Cedar Street, and Kingston Road. The Project site is presently undeveloped (see **Photo A-1**), with the exception of an old barn located near the southern boundary of the site. The barn would be demolished to accommodate the proposed development.



Photo A-1. View of Project site from Pine Street, facing northwest.

In addition, the trees along Cedar Street would be removed (see **Photo A-2**), and the site would be cleared and graded to accommodate the proposed improvements.



Photo A-2. Southern end of Project site, facing north on Cedar Street.

Surrounding properties east and northeast of the Project site are developed with a hospital and miscellaneous medical offices. The Project site is visible from these areas (See **Photo A-3**).



Photo A-3. Project site from hospital parking lot, facing west

I-5 borders the Project site to the west. As shown in **Photo A-4**, trees and other vegetation along the Project site's western boundary provide screening of the property. No clearing or earth disturbance would occur in the vegetated areas along I-5.



Photo A-4. View of Project site from northbound I-5, facing northeast.



Photo A-5. View of Project site from southbound I-5, facing southeast.

There would be temporary visual impacts due to the use of construction equipment and grading/earthwork; however, this would cease when the Project is complete.

In terms of long-term operational impacts, pursuant to Mt. Shasta Municipal Code (MSMC) Chapter 18.60 (Architectural Review), the City of Mt. Shasta Design Guidelines apply to all new projects that require a building permit. As stated in the Guidelines, “[i]t is a goal of the City of Mount Shasta to ensure that development is harmoniously integrated with its surroundings, and to encourage excellence in urban design and improvement in overall City appearance.”

The City’s design review procedures require that the following findings be made:

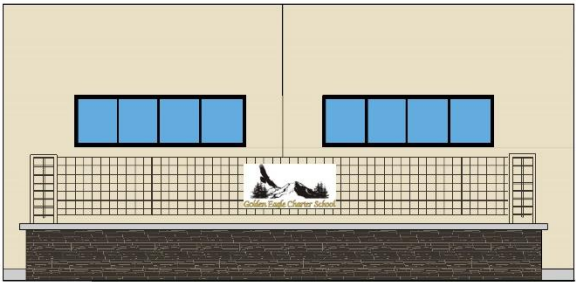
- a. The proposed building and site plan are consistent with the photographic examples shown in the guidelines of acceptable styles, elements, themes, materials, massing, detailing, landscaping, and relationships to street frontages and abutting properties.
- b. The design of the proposed building or structure includes universally acceptable wall materials, or alternative treatments for panelized or prefabricated structures, identified in the guidelines under Color/Materials.
- c. Roof design includes appropriate detail to match the surrounding structures, does not create glare, and is complementary in color to the building.
- d. Design of the structure is sufficient to prevent vibrations or noise from sources internal to the structure from being detected at the property lines.
- e. The proposed color scheme is consistent with the preferences identified in the guidelines under Color/Materials. The base color is a neutral color and the trim color accents or contrasts the base color.
- f. The site plan demonstrates both motorized and non-motorized connectivity from the public right-of-way to the buildings and other site amenities.
- g. The proposed development is in conformity with the standards of the City’s land development code and other applicable ordinances insofar as the location and appearance of the building and structures are involved.

Compliance with the City’s Design Guidelines is confirmed during plan review of the final building and site plans submitted with the Building Permit application. Implementation of the approved design features are verified by the City’s Building Official and City Planner prior to issuance of a Certificate of Occupancy for the building.

Figure 4.1-1 includes building elevations for the proposed Project. As shown, the Project’s design elements include cedar composite siding with stone accents and earth-tone colors. The proposed building is similar in character and design to other non-residential uses in the area, including the hospital and medical offices along Pine Street.

All rooftop mechanical equipment, loading areas, and trash receptacles would be screened from public view. Roofing would be non-reflective. Landscaping consisting of native trees and shrubs would be installed around the building and in the parking areas to further enhance the aesthetic character of the building. Security fencing in areas visible from the Pine Street road ROW would be of similar or complimentary materials to the primary structure. Covered pedestrian walkways would be provided around the building to provide shelter and visual appeal.

Mitigation Measure MM 4.1.1 requires landscaping, signage, parking, lighting, fencing, and building design plans to be submitted with the building permit application in accordance with the City’s Design Guidelines and Zoning Code. In addition, a roof plan or other documentation must be submitted with the building permit application to demonstrate that all roof-mounted equipment is adequately screened from public view and adjacent properties. Prior to issuance of a building permit, the City Planner must review the plans to verify consistency with the Design Guidelines and Zoning Code.



Building Sign Elevation View

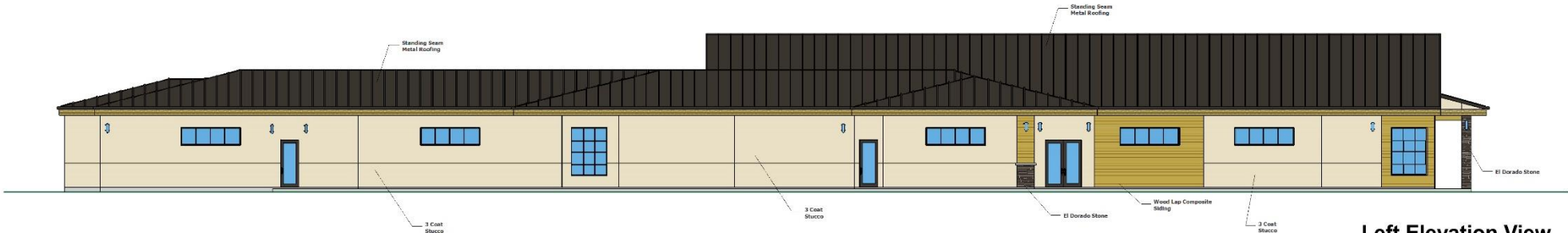


Street Sign Elevation View

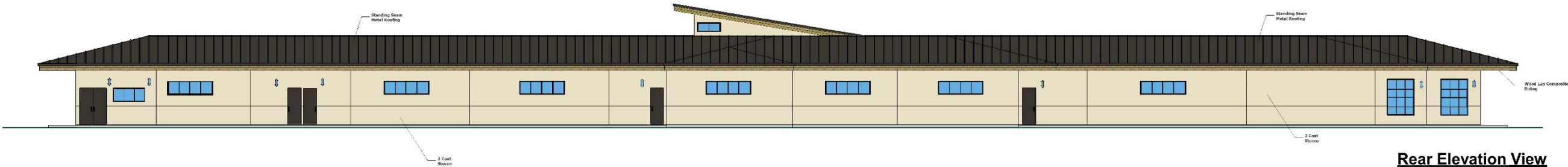
Exterior Finish Material and Color Samples	
	3 Coat Stucco "Sandstone"
	"Cedar" Composite Siding
	Eldorado Stone "Coos Bay"
	"Champagne Metallic" Standing Seem Metal Roofing Similar for All Doors, Windows, and Gutters



Front Main Elevation View



Left Elevation View



Rear Elevation View



Right Elevation View

Figure 4.1-1
Proposed Building Elevations

Prior to issuance of a Certificate of Occupancy by the City's Building Official, the Building Official shall verify that the Project is constructed in accordance with the approved plans. Therefore, because impacts during construction are temporary and would cease at completion of the improvements, and **Mitigation Measure 4.4.1** ensures that the Project complies with the City's Design Guidelines and Zoning Code provisions for design review, impacts would be less than significant.

Question B

There are currently no officially designated State Scenic Highways in Siskiyou County. Therefore, there would be no impact.

Question D

As discussed under Regulatory Context above, the CALGreen Code includes requirements and restrictions intended to minimize light pollution in an effort to maintain dark skies. The City's Design Guidelines also require that lighting be adequately shielded from adjacent properties and designed to minimize the potential for unnecessary lighting of the night sky.

The proposed Project includes the installation of new permanent exterior lighting designed to illuminate the Project's buildings and parking lots (See **Appendix A**, Preliminary Lighting Plan). As shown in the Lighting Plan, external lighting does not encroach into neighboring properties. It is the responsibility of the City's Building Official to review construction documents, including electrical plans and specifications for exterior lighting, prior to issuance of a building permit to ensure that CALGreen and City requirements for outside lighting conform to adopted standards. Therefore, impacts would be less than significant.

CUMULATIVE IMPACTS

Potential cumulative projects in the area include growth according to the build-out projections in the City's General Plan. All new development Projects are subject to the City's Design Guidelines that ensure new development is compatible with its surroundings and consistent with the City's aesthetic vision for the community. Implementation of **Mitigation Measure 4.1.1** ensures that the Project's cumulative contribution to visual impacts is less than significant.

MITIGATION

MM 4.1.1 Each application for a building permit shall be accompanied by a landscaping, signage, parking, lighting, building design, and snow storage plan in accordance with the City's Design Guidelines and Zoning Code. In addition, a roof plan or other documentation that demonstrates that all roof-mounted mechanical equipment is adequately screened from public view and adjacent properties must be submitted.

Prior to issuance of each building permit, the City Planner or his/her designee shall review the plans to verify consistency with the Design Guidelines and Zoning Code. Prior to issuance of each Certificate of Occupancy by the City's Building Official, the Building Official and City Planner shall verify that landscaping, signage, parking, lighting, building design, and screening of mechanical equipment are consistent with the approved plans.

DOCUMENTATION

California Building Standards Code. 2017. Guide to the 2016 California Green Building Standards Code (Nonresidential). <https://www.documents.dgs.ca.gov/bsc/CALGreen/CALGreen-Guide-2016-FINAL.pdf>. Accessed December 2018.

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http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed December 2018.

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<http://mtshastaca.gov/wp/wp-content/uploads/2016/01/5OpenSpaceandConservationElement.pdf>. Accessed December 2018.

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_____. 2018. Mt. Shasta Municipal Code, Title 18 (Zoning).
<https://www.codepublishing.com/CA/MtShasta/#!/MtShasta18/MtShasta18.html>. Accessed December 2018.

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http://www.co.siskiyou.ca.us/sites/default/files/docs/GP_ScenicHighwaysElement.pdf. Accessed December 2018.

4.2 AGRICULTURE AND FOREST RESOURCES

Would the project:

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

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to agriculture or forest resources that apply to the proposed project.

STATE

California Farmland Mapping and Monitoring Program (FMMP)

The FMMP was established in 1982 to provide data to decision makers to assist them in making informed decisions for the best utilization of California's farmland. Under the FMMP, the Department of Conservation (DOC) is responsible for mapping, monitoring, and reporting on the conversion of the State's farmland to and from agricultural use. Important Farmland Maps are updated and released every two years. The following mapping categories, which are determined based on soil qualities and current land use information, are included in the FMMP: prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, grazing land, urban and built-up land, other land, and water.

Williamson Act

The Williamson Act (California Land Conservation Act of 1965) was enacted as a means to protect agricultural uses in the State. Under the Williamson Act, local governments can enter into contracts with private landowners to ensure that specific parcels are restricted to agricultural and related open space uses. In return, landowners receive reduced property tax assessments. The minimum term for a Williamson Act contract is ten years, and the contract is automatically renewed for one-year terms unless the landowner files a notice of nonrenewal or a petition for cancellation. When a notice of non-renewal is filed, the annual tax assessment gradually increases over a ten-year period until it reaches the market value tax rate, at which time the contract is terminated. The landowner may also petition the local government to immediately cancel the contract. If the cancellation is approved, the landowner must pay a cancellation fee, and the property is thereafter taxed at its current market value.

Forest Land and Timberland

Public Resources Code §12220(g) defines Forest Land as *"land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."* Public Resources Code §4526 defines timberland as *"land, other than land owned by the federal government, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees."* Government Code §51104(g) defines Timberland Production Zone as *"an area which has been zoned pursuant to [Government Code] §51112 or §51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h)."*

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Open Space and Conservation Element		
Goals	OC-4	Encourage and conserve lands for agricultural purposes.
	OC-5	Encourage and conserve lands for timber purposes.
Policies	OC 4.1	Allow agricultural production lands to remain available for agriculture and rural uses.
	OC 5.1	Allow timber production lands to remain available for the harvest and replanting of timber resources, as well as rural and recreation uses.

DISCUSSION OF IMPACTS

Questions A, B, and D

According to the *Important Farmland in California* map published by the FMMP, neither the Project site nor surrounding properties are designated as prime farmland, unique farmland, or farmland of statewide importance; however, the Project site is designated as farmland of local importance.

In Siskiyou County, farmland of local importance includes dryland, or sub-irrigated hay and grain, and improved pasture forage species; farmlands presently irrigated but which do not meet the soil characteristics of prime farmland or farmland of statewide importance; and areas currently shown as prime agricultural land in the Siskiyou County General Plan.

Although the Project site is designated as farmland of local importance, aerial photographs from 1951 through 2018 were reviewed and indicate that the property has not historically been used for agricultural purposes, although portions of the property are used for grazing by horses. There are presently no lands within the City limits that are zoned for agricultural production, and the Siskiyou County General Plan does not identify the property as prime agricultural land.

In addition, the property is not irrigated, and the soil type (Deetz gravelly loamy sand, 5 to 15 percent slopes), is not considered prime farmland. Further, according to the NRCS, the land capability classification for the soil indicates that the soil has very severe limitations that reduce the choice of plants or require very careful management, or both. In addition, the Project site is not under a Williamson Act contract.

Because the proposed Project would not convert prime farmland, unique farmland, or farmland of statewide importance, would not conflict with zoning or a Williamson Act contract, and does not include any components that would have an indirect effect on farmland, impacts would be less than significant.

Question C

According to the City's and County's General Plans, the Project site and surrounding area are not designated as timberland and are not zoned for timberland production. Therefore, the proposed Project would have no impact on timberland or cause rezoning of timberland.

As stated under Regulatory Context above, "forest land" is defined in PRC §12220(g) as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

However, the development site does not support ten percent cover by native trees. In addition, the Project site and surrounding area are not designated as forest land. Therefore, there would be no impact.

CUMULATIVE IMPACTS

Potential cumulative projects in the area include growth according to the build-out projections in the City's and County's General Plans. As documented above, although the Project would be located in an area designated as farmland of local importance, the land has not historically been used for agricultural purposes. In addition, there are presently no lands within the City limits that are zoned for agricultural production, and the Siskiyou County General Plan does not identify the property as prime agricultural land; therefore, the Project's impact to farmland would not be cumulatively considerable.

The Project site and surrounding area are not designated as timberland or zoned for timberland production. In addition, the Project is not “forest land” as defined in PRC §12220(g); therefore, the proposed Project would not cumulatively contribute to adverse impacts associated with the loss of timberland or forest land.

MITIGATION

None necessary

DOCUMENTATION

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4.3 AIR QUALITY

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

Federal Ambient Air Quality Standards

The U.S. Environmental Protection Agency (USEPA), under the federal Clean Air Act (CAA), establishes maximum ambient concentrations for criteria air pollutants (CAP), known as the National Ambient Air Quality Standards (NAAQSs). The NAAQSs are designed to protect the health and welfare of the populace with a reasonable margin of safety. **Table 4.3-1** identifies the seven CAPs as well as characteristics, health effects and typical sources for each CAP:

TABLE 4.3-1
Federal Criteria Air Pollutants

Pollutant	Characteristics	Primary Effects	Major Sources
Ozone (O₃)	Ozone is a colorless or bluish gas formed through chemical reactions between two major classes of air pollutants: reactive organic gases (ROG) and oxides of nitrogen (NO _x). These reactions are stimulated by sunlight and temperature; thus, ozone occurs in higher concentrations during warmer times of the year.	<ul style="list-style-type: none">• Respiratory symptoms.• Worsening of lung disease leading to premature death.• Damage to lung tissue.• Crop, forest, and ecosystem damage.• Damage to a variety of materials, including rubber, plastics, fabrics, paints, and metals.	Motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.
Carbon Monoxide (CO)	Carbon monoxide is an odorless, colorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline and wood. Because CO is emitted directly from internal combustion engines, motor vehicles operating at slow speeds are the primary source of carbon monoxide.	<ul style="list-style-type: none">• Chest pain in patients with heart disease.• Headache.• Light-headedness.• Reduced mental alertness.	Motor vehicle exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide (NO₂)	Nitrogen dioxide is a reddish-brown gas formed when nitrogen (N ₂) combines with oxygen (O ₂). Nitrogen oxides are typically created during combustion processes and are major contributors to smog formation and acid deposition. Of the seven types of nitrogen oxide compounds, NO ₂ is the most abundant in the atmosphere and is related to traffic density.	<ul style="list-style-type: none">• Respiratory symptoms.• Damage to lung tissue.• Worsening of cardiovascular disease.• Precursor to ozone and acid rain.• Contributes to global warming and nutrient overloading which deteriorates water quality.• Causes brown discoloration of the atmosphere.	Automobile and diesel truck exhaust, petroleum-refining operations, industrial sources, aircraft, ships, railroads, and fossil-fueled power plants.

Sulfur Dioxide (SO₂)	Sulfur dioxide is a colorless, nonflammable gas that results mainly from burning high-sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries.	<ul style="list-style-type: none"> • Respiratory symptoms. • Worsening of cardiovascular disease. • Damage to a variety of materials, including marble, iron, and steel. • Damages crops and natural vegetation. • Impairs visibility. • Precursor to acid rain. 	Petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and large ships, and fuel combustion in diesel engines.
Particulate Matter (PM_{2.5} and PM₁₀)	<p>Particulate matter is a major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols that are small enough to remain suspended in the air for a long period of time.</p> <p>Particulate matter with a diameter of 10 microns or less (PM₁₀) are inhalable into the lungs and can induce adverse health effects.</p> <p>Fine particulate matter is defined as particles that are 2.5 microns or less in diameter (PM_{2.5}). Therefore, PM_{2.5} comprises a portion of PM₁₀.</p>	<ul style="list-style-type: none"> • Premature death. • Hospitalization for worsening of cardiovascular disease. • Hospitalization for respiratory disease • Asthma-related emergency room visits. • Increased symptoms, increased inhaler usage 	Dust- and fume-producing construction activities, power plants, steel mills, chemical plants, unpaved roads and parking lots, woodburning stoves and fireplaces, wildfires, motor vehicles, and other combustion sources. Also a result of photochemical processes.
Lead	A heavy metal that occurs both naturally in the environment and in manufactured products.	<ul style="list-style-type: none"> • Impaired mental functioning in children • Learning disabilities in children • Brain and kidney damage. • Reproductive disorders. • Osteoporosis. 	Lead-based industrial production (e.g., battery production and smelters), recycling facilities, combustion of leaded aviation gasoline by piston-driven aircraft, and crustal weathering of soils followed by fugitive dust emissions.

STATE

State Ambient Air Quality Standards

The California CAA establishes maximum concentrations for the seven federal CAPs, as well as the four additional air pollutants identified below. The four additional standards are intended to address regional air quality conditions, not project-specific emissions. These maximum concentrations are known as the California Ambient Air Quality Standards (CAAQSSs). The California Air Resources Board (CARB) has jurisdiction over local air districts and has established its own standards and violation criteria for each CAP under the CAAQS. For areas within the State that have not attained air quality standards, the CARB works with local air districts to develop and implement attainment plans to obtain compliance with both federal and State air quality standards.

Visibility-Reducing Particles. Visibility-reducing particles vary greatly in shape, size, and chemical composition, and come from a variety of natural and manmade sources. Major sources include wildfires, residential fireplaces and woodstoves, windblown dust, ocean sprays, biogenic

emissions, dust and fume-producing construction, industrial and agricultural operations, and fuel combustion. Primary effects include visibility impairment, respiratory symptoms, and worsening of cardiovascular disease.

Sulfate (SO₄). Sulfate is oxidized to sulfur dioxide (SO₂) during the combustion process and is subsequently converted to sulfate compounds in the atmosphere. Major sources include industrial processes and the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. Primary effects include respiratory symptoms, worsening of cardiovascular disease, damage to a variety of materials, including marble, iron, and steel, damage to crops and natural vegetation, and visibility impairment.

Hydrogen Sulfide (H₂S). Hydrogen sulfide is a colorless gas with the odor of rotten eggs. Major sources include geothermal power plants, petroleum refineries, and wastewater treatment plants. Primary effects include eye irritation, headache, nausea, and nuisance odors.

Vinyl Chloride (chloroethene). Vinyl chloride, a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. It is also listed as a toxic air contaminant because of its carcinogenicity. Most vinyl chloride is used to make 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. Primary effects include dizziness, drowsiness, headaches, and liver damage.

Table 4.3-2 provides the federal and State ambient air quality standards:

**TABLE 4.3-2
Federal and State Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O ₃)	8 Hour	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)
	1 Hour	0.09 ppm (180 µg/m ³)	–
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)
	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)
Nitrogen Dioxide (NO ₂)	1 Hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)
Sulfur Dioxide (SO ₂)	24 Hour	0.04 ppm (105 µg/m ³)	0.14
	3 Hour	–	–
	1 Hour	0.25 ppm (665 µg/m ³)	75 ppb (196 µg/m ³)
	Annual Arithmetic Mean	–	0.030 ppm
Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	–
	24 Hour	50 µg/m ³	150 µg/m ³
Particulate Matter – Fine (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	12 µg/m ³
	24 Hour	–	35 µg/m ³
Sulfates	24 Hour	25 µg/m ³	–
Lead	Calendar Quarter	–	1.5 µg/m ³
	30 Day Average	1.5 µg/m ³	–
	Rolling 3-Month Average	None	0.15 µg/m ³
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	–

Pollutant	Averaging Time	California Standards	National Standards
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm (26 µg/m ³)	–
Visibility-Reducing Particles	8 Hour	–	–

Source: CARB 2016. Notes: mg/m³=milligrams per cubic meter; ppm=parts per million; ppb=parts per billion; µg/m³=micrograms per cubic meter

Toxic Air Contaminants

In addition to the California CAPs, Toxic Air Contaminants (TACs) are another group of pollutants regulated under the California CAA. There are presently over 200 chemicals listed by the State as TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), grading and demolition of structures (asbestos), and diesel-motor vehicle exhaust. TACs are less pervasive in the urban atmosphere than the CAPs, but are linked to short-term (acute) and long-term (chronic or carcinogenic) adverse human health effects. Health effects of TACs include cancer, birth defects, neurological damage, and death. Ambient air quality standards have not been set for TACs. Instead, these pollutants are typically regulated through a technology-based approach for reducing TACs. This approach requires facilities to install Maximum Achievable Control Technology on emission sources.

Assembly Bill 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987, was adopted in response to public concern regarding potential adverse health effects associated with emissions of TACs. Facilities found to release high volumes of toxic air pollution are required to conduct a detailed health risk assessment that estimates emission impacts to the neighboring community.

LOCAL

Siskiyou County Air Pollution Control District

The SCAPCD has the responsibility of enforcing federal and state air quality regulations in Siskiyou County. It also issues rules and regulations setting specific standards of operation, defining permit requirements, and setting emission limits. For new or modified stationary sources, the SCAPCD has defined 250 pounds (lbs)/day as the threshold of significance for NO_x, PM_{2.5}, PM₁₀, and SO₂ emissions, and 2,500 lbs/day as the threshold of significance for CO emissions (Rule 6.1). Siskiyou County is currently designated in attainment or unclassified status for all federal and state criteria pollutants; therefore, the County is not required to have a local air quality attainment plan.

City of Mt. Shasta

The City's General Plan includes the following Goal and Policy that apply to the proposed Project:

Open Space and Conservation Element		
Goal	OC-11	Strive to maintain clean air in the planning area.
Policy	OC-11.1	Work with the County to maintain attainment status in the planning area.

DISCUSSION OF IMPACTS

Questions A and B

As discussed under Regulatory Context, for areas within the State that have not attained air quality standards, the CARB works with local air districts to develop and implement attainment plans to obtain compliance with both federal and State air quality standards. Because Siskiyou County is

currently designated in attainment or unclassified status for all federal and state criteria pollutants, the County is not required to have a local air quality attainment plan; therefore, the proposed Project would have no impact.

Question C

See discussion under Regulatory Context above and Section 4.7 (Greenhouse Gas Emissions). Project emissions were estimated using Version 2016.3.2 of the California Emissions Estimator Model (CalEEMod). CalEEMod provides default values when site-specific inputs are not available. CalEEMod does not directly calculate ozone emissions. Instead, the emissions associated with ozone precursors (ROG and NO_x) are calculated. For the proposed Project, site-specific inputs and assumptions include, but are not limited to, the following:

- Although the Project is proposed to be constructed in phases, with the play field and gymnasium constructed in the future when funding becomes available, in order to represent a worst-case scenario, reported emissions from the CalEEMod analysis are based on all phases of the Project being constructed concurrently.
- Emissions from construction are based on all construction-related activities associated with proposed and future uses, including but not limited to grading, use of construction equipment, material hauling, trenching, and site preparation.
- Emissions from operation of the proposed Project are based on all proposed and future operational activities, including vehicle traffic, electricity usage in the buildings and for lighting in parking lots, water use, wastewater treatment, solid waste disposal, use of architectural coatings, etc.
- Construction would commence in 2019 and be completed in eight months.

Output files, including all site-specific inputs and assumptions, are provided in **Appendix B**.

Construction Emissions

The proposed Project would result in the temporary generation of ROG, NO_x, PM₁₀, and other regulated pollutants during construction. ROG and NO_x emissions are associated with employee vehicle trips, delivery of materials, and construction equipment exhaust. PM₁₀ is generated during site preparation, excavation, paving, and from exhaust associated with construction equipment.

Although neither the City nor the SCAPCD have adopted specific thresholds for construction-related emissions, the City typically references current SCAPCD rules, including Rule 6.1-New Source Siting, which includes thresholds for new stationary sources. As stated under Regulatory Context above, the SCAPCD has defined 250 pounds (lbs)/day as the threshold of significance for NO_x, PM_{2.5}, PM₁₀, and SO₂ emissions, and 2,500 lbs/day as the threshold of significance for CO emissions. As shown in **Table 4.3-3**, construction of the proposed Project would not exceed Siskiyou County's thresholds for any of the pollutants.

TABLE 4.3-3
Projected Construction Emissions

Pollutants of Concern (Pounds per Day)					
ROG	NO _x	PM ₁₀	PM _{2.5}	CO	SO ₂
105.17	22.82	3.76	2.34	20.06	0.04

Nonetheless, sensitive receptors adjacent to the construction area would be exposed to elevated dust levels and other pollutants. Sensitive receptors are individuals or groups of people that are more affected by air pollution than others, including young children, elderly people, and people weakened by disease or illness. Locations that may contain high concentrations of sensitive receptors include residential areas, schools, playgrounds, childcare centers, hospitals, convalescent homes, and retirement homes.

Construction activities would occur adjacent to single-family residences on Pine Street, approximately 25 feet south of the Project's proposed southern driveway; single-family residences on W. Field Street, approximately 200 feet southeast of the future play field; and the hospital on Pine Street, approximately 150 feet east of the Project site. Compliance with federal, state, and local regulations, and implementation of **Mitigation Measure MM 4.3.1** would reduce temporary impacts during construction to a less-than-significant level.

Operational Emissions

Operation of the Project would generate criteria pollutants from area sources (e.g., cleaning supplies, maintenance activities such as painting, landscape equipment etc.) and mobile sources (e.g., vehicle trips for employees, visitors, vendors, deliveries, etc.), as well as indirect emissions associated with energy use, solid waste disposal, water treatment and distribution, and wastewater treatment. Sensitive receptors that could be affected by operational emissions include the single-family residences on Pine Street and W. Field Street; the hospital on Pine Street; and students attending the GECS.

As indicated in **Table 4.3-4**, operational emissions would not exceed the SCAPCD's thresholds for any of the pollutants.

**TABLE 4.3-4
Projected Operational Emissions**

Pollutants of Concern (Pounds per Day)						
Source	ROG	NOx	PM₁₀	PM_{2.5}	CO	SO₂
Area	1.17	Trace	Trace	Trace	0.01	0
Energy	0.02	0.17	0.02	0.02	0.14	Trace
Mobile	1.74	14.36	3.27	0.93	17.87	0.06
Total	2.93	14.52	3.28	0.94	18.02	0.06

Potential Impacts to Off-Site Sensitive Receptors

Although operational emissions would not exceed the SCAPCD's thresholds, because idling vehicles will queue in the student drop-off/pick-up aisle, the potential to create a CO hotspot was evaluated. Because the school does not provide transportation, and no school buses would be coming to the site, the analysis focused on privately owned vehicles transporting students to and from the site.

A CO hotspot is a localized concentration of CO that is above the State or federal ambient air quality standards. High-volume streets, highways, and intersections have been found to be pollution hotspots, mainly due to frequent deceleration and acceleration, and the increased frequency and duration of idling at intersections (CARB, 2017). Intersections that tend to exhibit a significant CO concentration typically operate at LOS D or worse.

As discussed in Section 4.17 (Transportation), a Traffic Impact Study (TIS) for the proposed Project was prepared by Traffic Works in May 2018 and evaluated potential operational traffic impacts associated with the proposed Project. The TIS concluded that study intersections in the

Project area, including Pine Street and the proposed Project's northern and southern driveways, would operate at LOS A or B during the A.M. and P.M. peak hours under existing plus project conditions; therefore, it is not anticipated that the Project would result in a CO hotspot and would not result in localized concentrations of CO that would exceed adopted air quality standards. The proposed Project does not include any other components (e.g., stationary sources) that could expose off-site sensitive receptors to substantial pollutant concentrations during operation. Therefore, impacts to off-site receptors would be less than significant.

Potential Impacts to On-Site Sensitive Receptors

As shown in **Figure 2**, the proposed play field would be located west of the school building, approximately 150 feet east of I-5. CEQA §21151.8 includes specific requirements for the acquisition of school sites and the construction of schools by a school district. The siting of new schools is generally prohibited in or adjacent to hazardous waste sites, on a site that includes pipelines that carry hazardous substances or hazardous waste, or a site that is within 500 feet of the edge of the closest traffic lane of a freeway or other busy traffic corridor. CEQA §21151.8(b)(9) defines "freeway or other busy traffic corridor" as roadways that, on an average day, have traffic in excess of 50,000 vehicles in a rural area, and 100,000 vehicles in an urban area. Although CEQA §21151.8 does not apply to charter schools, an analysis of potential health risks associated with existing pollution sources in proximity to the Project site is warranted.

In April 2005, CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* that addresses siting sensitive receptors in proximity to the specific sources of air pollution identified in **Table 4.3-5**. The table identifies the applicability of each pollution source to the proposed Project. As indicated the only potential existing pollution source in proximity to the Project site is I-5.

**Table 4.3-5
Existing Pollution Sources in Proximity to the Project Site**

Source	Advisory Recommendation	Applicability to Project Site
High traffic volume freeways and roads	Avoid siting new sensitive land uses within 500 feet of a freeway/urban road with 100,000 vehicles/day; or a rural road with 50,000 vehicles/day.	I-5 parallels the western project boundary. The proposed school building would be located ±400 feet from I-5; the future play field would be located ±150 feet from I-5. As documented below, traffic volumes in the Project area are well below 50,000 vehicles per day.
Distribution centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center that has more than 100 truck trips per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week; avoid locating residences and other new sensitive land uses near entry and exit points.	There are no applicable distribution centers or entry/exit points to/from such a distribution center within 1,000 feet of the Project site.
Rail yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.	Although the Union Pacific Railroad is located ±650 feet east of the Project site, there are no major service/maintenance rail yards within 1,000 feet of the Project site.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.	There are no ports in proximity to the Project site.

Petroleum Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.	There are no petroleum refineries in proximity to the Project site.
Chrome plating facilities	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.	There are no chrome plating facilities within 1,000 feet of the Project site.
Dry cleaners	Avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district.	There are no dry cleaners within a one-mile radius of the Project site.
Large gas dispensing facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.	There are no large gas stations or gas dispensing facilities within 300 feet of the Project site.

According to California Department of Transportation (Caltrans) 2017 traffic counts, average annual daily trips (AADT) on I-5 in the City of Mt. Shasta are as shown in **Table 4.3-6**. The table indicates trips for all vehicles; it is estimated that between 24 to 33 percent of the total AADTs represents truck traffic. “Back AADT” represents traffic south of the count location. “Ahead AADT” represents traffic north of the count location.

Table 4.3-6
Interstate 5 Traffic Counts (All Vehicles), City of Mt. Shasta

Milepost (Siskiyou County)	Location	Back AADT	Ahead AADT
8.475	Junction Route 89	23,100	21,700
10.485	Lake Street	21,700	23,000
12.062	North Mt. Shasta	23,000	24,800
13.184	Abrams Lake Road, right alignment	12,900	12,900
13.189	Abrams Lake Road	10,550	10,550

Source: Caltrans Traffic Volumes (All Vehicles), 2017.

As described in **Table 4.3-5**, the potential for health risks increases when traffic volumes exceed 50,000 vehicles per day in a rural setting. As shown in **Table 4.3-6**, traffic volumes on I-5 in the Project area are substantially less than the threshold for potential health impacts of 50,000 AADTs. Therefore, health risks associated with traffic on I-5 would be less than significant.

For both construction and operational emissions, the proposed Project would not result in significant impacts associated with ozone (O₃), lead (Pb), hydrogen sulfide (H₂S), vinyl chloride, or visibility reducing particles as discussed below.

Ozone. CalEEMod does not directly calculate ozone emissions. Instead, the emissions associated with ozone precursors (ROG and NO_x) are calculated. Because project construction would generate relatively low amounts of both ROG and NO_x, the potential for ozone production/emissions is less than significant.

Lead. Elevated levels of airborne lead at the local level are usually found near industrial operations that process materials containing lead, such as smelters and battery manufacturing/recycling facilities. As these conditions are not applicable to the proposed Project, the potential for lead emissions is less than significant.

Hydrogen sulfide. Hydrogen sulfide is formed by geothermal power plants, petroleum refineries, and during the decomposition of organic material in anaerobic environments, including sewage treatment processes. Although the proposed Project would generate wastewater, the amount of wastewater treated has a less than significant potential to significantly increase hydrogen sulfide emissions.

Vinyl chloride. Vinyl chloride is used to manufacture polyvinyl chloride (PVC) plastic and other vinyl products. Approximately 98 percent of vinyl chloride produced in the United States is used during the manufacture of PVC. Additionally, vinyl chloride is produced during the microbial breakdown of chlorinated solvents (e.g., engine cleaner, degreasing agent, adhesive solvents, paint removers, etc.). The potential for vinyl chloride exposure is primarily limited to areas in close proximity to PVC production facilities. Because PVC manufacturing facilities are absent from the Project area, and project implementation would not result in an increase of chlorinated solvents, potential vinyl chloride emissions associated with the proposed Project would be less than significant.

Visibility-reducing pollutants. Visibility-reducing pollutants generally consist of sulfates, nitrates, organics, soot, fine soil dust, and coarse particulates. These pollutants contribute to the regional haze that impairs visibility, in addition to affecting public health. According to the California Regional Haze Management Plan, natural wildfires and biogenic emissions are the primary contributors to visibility-reducing pollutants. Because relatively small amounts of particulates would be generated during construction and operations, potential impacts with respect to visibility-reducing pollutants are less than significant.

Therefore, impacts would be less than significant because **Mitigation Measure MM 4.3.1** would reduce temporary impacts during construction, and the Project does not include any operational components that would expose sensitive receptors to substantial pollutant concentrations.

Question D

Construction activities that have the potential to emit odors and similar emissions include diesel equipment, paints, solvents, fugitive dust, and adhesives. Odors and similar emissions from construction are intermittent and temporary, and generally would not extend beyond the construction area. Due to the temporary and intermittent nature of construction odors, impacts during construction would be less than significant.

Odors and similar emissions associated with operation of the proposed Project include emissions from vehicles, maintenance activities (painting, pavement maintenance, re-roofing, etc.), use of gas-powered landscape equipment, and similar activities. Operational odors and similar emissions would be intermittent and are not expected to be significantly greater than existing conditions. Therefore, operational impacts would be less than significant.

CUMULATIVE IMPACTS

Past, present, and future development projects contribute to a region's air quality conditions on a cumulative basis; therefore, by its very nature, air pollution is largely a cumulative impact. If a project's individual emissions contribute toward exceedance of the NAAQS or the CAAQS, then the project's cumulative impact on air quality would be considered significant. In developing attainment designations for criteria pollutants, the USEPA considers the region's past, present, and future emission levels. As stated above, Siskiyou County is in attainment or unclassified status for all federal and state criteria pollutants.

Implementation of the proposed Project combined with future development within the Project area could lead to cumulative impacts to air quality. Although the cumulative projects identified in Section 3.3 would also generate emissions during construction, and there is a possibility that some of these projects could be constructed simultaneously, all projects in Siskiyou County are subject to applicable CARB and SCAPCD rules and regulations, including mitigation measures that address impacts during construction.

Further, all development is subject to SCAPCD regulations for new or modified stationary sources and thresholds of significance for CO, NO_x, PM_{2.5}, PM₁₀, and SO₂ emissions (Rule 6.1). These thresholds were adopted to minimize cumulative impacts to air quality. Implementation of **Mitigation Measure MM 4.3.1** and compliance with CARB and SCAPCD regulations ensures that the proposed Project would have a less-than-significant cumulative impact on local and regional air quality.

MITIGATION

MM 4.3.1 The following measures shall be implemented throughout construction:

- a. All material excavated, stockpiled, or graded shall be covered or sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of ambient air quality standards. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day.
- b. All material transported offsite shall be either sufficiently watered or securely covered to prevent a public nuisance.
- c. All areas (other than paved roads) with vehicle traffic shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.
- d. All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.
- e. All land clearing, grading, earth moving, and excavation activities on the project site shall be suspended when winds are causing excessive dust generation.
- f. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least two feet of free board in accordance with the requirements of Section 23114 of the California Vehicle Code. This provision is enforced by local law enforcement agencies.
- g. Paved streets in and adjacent to the construction site shall be swept or washed at the end of the day to remove excessive accumulations of silt and/or mud resulting from activities on the development site.

DOCUMENTATION

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4.4 BIOLOGICAL RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on state or federally protected wetlands, (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

Federal Clean Water Act

Section 404

Under Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material into wetlands and waters of the U.S. The USACE requires that a permit be obtained prior to the placement of structures within, over, or under navigable waters and/or prior to discharging dredged or fill material into waters below the ordinary high-water mark (OHWM). There are several types of permits issued by the USACE that are based on the project's location and/or level of impact. Regional general permits are issued for recurring activities at a regional level. Nationwide permits (NWP) authorize a wide variety of minor activities that have minimal effects. Projects that are not covered under a regional general permit and do not qualify for a NWP are required to obtain a standard permit (e.g., individual permit or letter of permission).

Section 401

Under Section 401 of the CWA, a project requiring a USACE Section 404 permit is also required to obtain a State Water Quality Certification (or waiver) to ensure that the project will not violate established State water quality standards. The RWQCB regulates waters of the State and has a policy of no-net-loss of wetlands. The RWQCB typically requires mitigation for impacts to wetlands before it will issue a water quality certification.

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 requires that all federal agencies ensure that any action they authorize, fund, or carry out will not likely jeopardize the continued existence of federally listed species or result in the destruction or adverse modification of critical habitat. Projects that would result in "take" of any federally listed species are required to obtain authorization from National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS) through either Section 7 (interagency consultation) or Section 10(a) (incidental take permit) of FESA, depending on whether the federal government is involved in permitting or funding the project.

Federal Migratory Bird Treaty Act

Under the Migratory Bird Treaty Act (MBTA) of 1918, as amended, migratory bird species listed in CFR Title 50, §10.13, including their nests and eggs, are protected from injury or death, and any project-related disturbances. The MTBA applies to over 1,000 bird species, including geese, ducks, shorebirds, raptors, and songbirds, some of which were near extinction before MBTA protections were put in place in 1918. The MTBA provides protections for nearly all native bird species in the U.S., including non-migratory birds.

Fish and Wildlife Conservation Act

Under the Fish and Wildlife Conservation Act of 1980, as amended, the USFWS maintains lists of migratory and non-migratory birds that, without additional conservation action, are likely to become

candidates for listing under the FESA. These species are known as Birds of Conservation Concern and represent the highest conservation priorities.

Bald and Golden Eagle Protection Act

This Act provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds and their occupied and unoccupied nests.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), also known as the Sustainable Fisheries Act, requires the identification of Essential Fish Habitat (EFH) for federally managed fishery species and implementation of appropriate measures to conserve and enhance EFH that could be affected by project implementation. All federal agencies must consult with NMFS on projects authorized, funded, or undertaken by that agency that may adversely affect EFH for species managed under the MSFCMA.

STATE

California Endangered Species Act

Under the California Endangered Species Act (CESA), the Fish and Game Commission is responsible for listing and delisting threatened and endangered species, including candidate species for threatened or endangered status. CDFW provides technical support to the Commission, and may submit listing petitions and assist with the evaluation process. CDFW maintains documentation on listed species, including occurrence records. In addition, CDFW maintains a list of fully protected species, most of which are also listed as threatened or endangered. CDFW also maintains a list of species of special concern (SSC). SSC are vulnerable to extinction but are not legally protected under CESA; however, impacts to SSC are generally considered significant under CEQA.

CESA prohibits the take of State-listed threatened and endangered species, but CDFW has the authority to issue incidental take permits under special conditions when it is demonstrated that impacts are minimized and mitigated. Fully protected species may not be taken or possessed at any time, and no licenses or permits may be issued for their take. One exception allows the collection of fully protected species for scientific research.

California Fish and Game Code §1600-1616 (Streambed Alteration)

California Fish and Game Code §1600 *et seq.*, requires that a project proponent enter into a Streambed Alteration Agreement (SAA) with CDFW prior to any work that would divert or obstruct the natural flow of any river, stream, or lake; change the bed, channel, or bank of any river, stream, or lake; use material from any river, stream, or lake; and/or deposit or dispose of material into any river, stream, or lake. The SAA will include conditions that minimize/avoid potentially significant adverse impacts to riparian habitat and waters of the state.

California Fish and Game Code §3503 and 3503.5 (Nesting Bird Protections)

These sections of the Code provide regulatory protection to resident and migratory birds and all birds of prey within the State and make it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Code.

California Fish and Game Code §1900-1913 (Native Plant Protection Act)

The Native Plant Protection Act (NPPA) includes measures to preserve, protect, and enhance native plants that are listed as rare and endangered under the CESA. The NPPA states that no person shall take, possess, sell, or import into the state, any rare or endangered native plant, except in compliance with provisions of the Act.

Oak Woodlands Conservation Act

The State of California provides for oak protection through the Oak Woodlands Conservation Act (Act), last amended in 2005. The Act applies only when the lead agency is a county and the project is located in an unincorporated county area. The Act requires a determination of whether the project may result in the conversion of oak woodlands that will have a significant effect on the environment as well as implementation of oak woodland mitigation measures, if necessary.

LOCAL

City of Mt. Shasta

The City of Mt. Shasta's General Plan includes the following Goals, Policies, and Implementation Measures (IM) that apply to the proposed Project:

Open Space and Conservation Element		
Goals	OC-1	Conserve lands that support important fisheries, wildlife and botanical habitat, and wetlands.
	OC-2	Protect riparian habitat along streams in the Planning Area.
	OC-3	Conserve wetland areas
Policies	OC-1.1	Limit development on lands that provide important fisheries, wildlife and botanical habitat, and wetlands to agriculture and rural density residential.
	OC-2.1	Require erosion control protection as a part of grading and development plans.
	OC-3.1	Work to satisfy state and national wetlands policy.
IM	OC-1.3(b)	Consider the Theiss 1990 wetland report and the documented identification of the California Department of Fish and Game's deer wintering and fawning grounds as initial steps in identifying important fishery, wildlife and botanical, and wetland habitats in the planning area. Recognize and reference new, credible information as it becomes available.

DISCUSSION OF IMPACTS

Question A

The evaluation of potential impacts on candidate, sensitive, and/or special-status species entailed records searches and field evaluations completed by ENPLAN. The records searches included a review of California Natural Diversity Data Base (CNDDDB) records for special-status plants and animals; USFWS records for federally listed, proposed, and candidate plant and animal species under jurisdiction of the USFWS; and essential fish habitat (EFH) data maintained by the NMFS. Neither the USFWS nor CNDDDB identified any critical habitats within the Project site. NMFS does not maintain a species list for the project quadrangle because Shasta and Keswick Dams block upstream passage to spawning areas in the upper Sacramento River.

To determine the presence/absence of special-status plant and animal species, an ENPLAN biologist conducted botanical and wildlife surveys on May 6 and June 26, 2018. The special-status plant species potentially occurring in the study area would have been evident at the time the fieldwork was conducted. Most of the special-status wildlife species would not have been evident at the time the fieldwork was conducted; however, determination of their potential presence could readily be made based on observed habitat characteristics.

Appendix C includes the following:

- California Natural Diversity Database (CNDDDB) Query Summary
- U.S. Fish and Wildlife Service List of Threatened and Endangered Species
- ENPLAN Summary Report: *Potential for Special-Status Species to Occur on the Project Site*.
- List of vascular plants observed: May 6 and June 26, 2018.

Special-Status Plant Species

Review of the USFWS species lists for the Project area identified four federally listed plant species as potentially being affected by the proposed Project: Gentner's fritillary, Hoover's spurge, slender Orcutt grass, and whitebark pine. The Project area does not contain designated critical habitat for federally listed plant species.

Review of CNDDDB records found that the following five special-status plant species have been broadly mapped in the Project area: broad-nerved hump moss, marsh skullcap, northern adder's tongue, Siskiyou clover, and woodnymph. Ten other special-status plant species have been reported within a five-mile radius of the Project site: Aleppo avens, Gasquet rose, Jepson's dodder, Oregon fireweed, pallid bird's-beak, rattlesnake fern, Shasta chaenactis, subalpine aster, three-leaved beardtongue, and woolly balsamroot. Three non-status species, Baker's globe mallow, Pacific fuzzwort, and three-ranked hump moss, have also been reported within the search radius.

Botanical surveys of the project site were conducted on May 6 and June 26, 2018. A list of plant species observed during the field surveys is included in **Appendix C**. Also included in **Appendix C** is a summary report indicating the potential for state and federal special-status species to occur in the Project area. As indicated, no special-status plant species were observed or are expected to occur. Therefore, the proposed Project would have no impact on special-status plant species.

Special-Status Wildlife Species

Review of the USFWS species list for the Project area identified 11 federally listed wildlife species as potentially being affected by the proposed Project: gray wolf, northern spotted owl, yellow-billed cuckoo, California red-legged frog, Oregon spotted frog, delta smelt, longfin smelt, valley elderberry longhorn beetle, conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The USFWS does not identify designated critical habitat in the study area for any federally listed wildlife species, and review of the USFWS critical habitat map confirmed this finding.

Review of CNDDDB records showed that two special-status animals have been broadly mapped in the Project area: Cascades frog and western yellow-billed cuckoo. The following 11 special-status species have been reported within a five-mile radius of the Project site: peregrine falcon, bank swallow, bald eagle, spotted bat, fisher-west coast Distinct Population Segment, northern goshawk, foothill yellow-legged frog, Sierra Nevada red fox, yellow rail, western mastiff bat, and osprey. The following nine non-status species have also been reported in the search radius: Suckley's cuckoo bumble bee, obscure bumble bee, western bumble bee, Franklin's bumble bee, great blue heron, long-eared myotis, North American porcupine, Pacific marten, and silver-haired bat.

Wildlife species observed during the field surveys included Brewer's blackbirds, Canada geese, American crows, scrub jays, and seagulls; a wide variety of other species is expected to utilize the site at certain times of the year. **Appendix C** contains an evaluation of the potential for state and federal special-status species to occur in the Project area. As indicated, no special-status animal species were observed or are expected to occur on the site, although bald eagles, bats, or other special-status species may occasionally fly over or forage in the project area. The proposed Project would have a less-than-significant impact on special-status wildlife species.

Questions B and C

According to CDFW, since the inception of the Natural Heritage Program in 1979, natural communities have been considered for their conservation significance (CDFW, 2017). Unique natural communities were recorded in the CNDDDB until the mid-1990s; at that time, funding for the natural community portion of the program was eliminated. Although natural communities are no longer being added to the CNDDDB, many of the natural community occurrences maintained in the CNDDDB still have significance for conservation, and their existence should be considered in the environmental review process.

Review of CNDDDB natural community records shows that a fen has been mapped approximately 500 feet southwest of the Project site on the west side of I-5, north of Hatchery Lane. Because I-5 separates the Project site from the fen, the proposed Project would not affect the fen. CNDDDB records do not identify any other sensitive natural communities within a five-mile radius of the project site. Other records reviewed for sensitive natural communities included those maintained by the USFWS and NMFS. The USFWS does not identify any designated critical habitats for federally listed species within the study area. NMFS does not identify Essential Fish Habitat in the study area.

A Delineation of Waters of the U.S. was prepared for the Project site by North State Resources, Inc. (NSR), in August 2012 to identify potential USACE jurisdictional wetlands and other waters of the U.S. and State. The study area for the delineation encompassed approximately 13 acres. NSR followed the methods prescribed in the USACE 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*, May 2010.

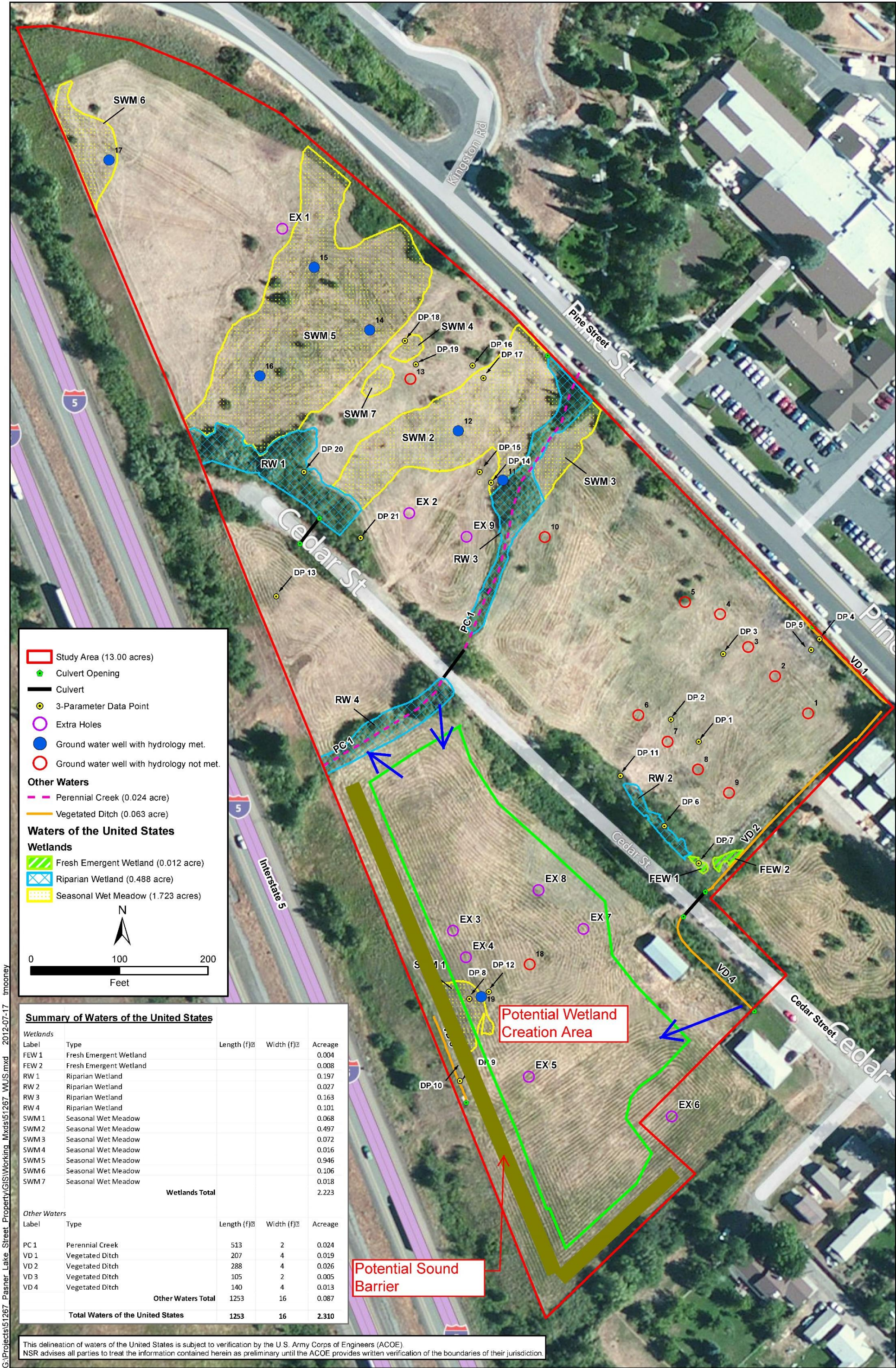
The hydrology of suspect wetland areas was measured by installing and monitoring 19 shallow groundwater wells in accordance with the USACE 2005 *Technical Standard for Water-Table Monitoring of Potential Wetland Sites*. In addition to the monitoring wells, nine test pits were dug and monitored to observe any evidence of saturation. Monitoring occurred in the spring of 2011 and the spring of 2012. As a result of the delineation effort, approximately 2.310 acres of wetlands and waters subject to USACE and State jurisdiction were delineated in the 13-acre study area as shown in **Figure 4.4-1**. The delineation was reverified by the USACE in 2018. **Figure 4.4-1** shows a potential sound barrier and potential wetland creation area that were identified for a previous development project; these features are not related to the proposed Project.

The principal natural communities in the study area are stream/riverine, fresh emergent wetland, riparian wetland, seasonal wet meadow, and perennial grassland. Four of these communities, stream/riverine, fresh emergent wetland, riparian wetland, and wet meadow, are considered sensitive natural communities. Because no development is proposed on Parcel 3, the following discussion focuses on communities within the development site.

Principal Natural Communities

Stream/Riverine

An unnamed perennial creek bisects the property north of the development site. The creek originates at a diversion of Spring Creek near the Mt. Shasta City Park, approximately 0.75 miles north of the study area. The perennial creek enters the property from a 24-inch culvert located under Pine Street, and drains southwest across the project site toward I-5. A vegetated ditch on the Project site is also subject to perennial flow. The ditch segments traverse the southern boundary of the site before draining to a channelized stream south of the study area boundary. The source of flow for the ditch is unknown, but it emerges from a 16-inch culvert under Pine Street.



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Figure 4.4-1
Wetlands and Other Waters of the U.S. and State

Seasonal Wet Meadow

The majority of the wet meadow occurs north of the development site in an area not proposed for development. Approximately 0.068 acres of wet meadow is located in the southwestern area of the site, immediately west of the future play field. Vegetation in the wet meadow includes Santa Barbara sedge, Baltic rush, Kentucky bluegrass, meadow foxtail, creeping bentgrass, velvetgrass, teasel, Nebraska sedge, reed canary grass, cinquefoil, dense-flowered willowherb, and western buttercup.

Fresh Emergent Wetland

Fresh emergent wetland occurs in a depression on the upslope side of Cedar Street. This feature appears to receive water from the vegetated ditch when it overflows the shallow bed and bank near the culvert under Cedar Street.

Montane Riparian Habitat

The montane riparian habitat includes the montane riparian wetland shown in **Figure 4.4-1** as well as surrounding upland dominated by woody riparian vegetation. Montane riparian habitat occurs in areas adjacent to the perennial creek and also immediately northwest of the fresh emergent wetland on the upslope side of Cedar Street. Trees and shrubs dominate this habitat, including hawthorn, Drummond's willow, black cottonwood, wild rose, and apple trees. Understory plant composition is similar to that found in the wet meadow. The community has been fragmented by the construction of Cedar Street through the Project site.

Perennial Grassland

The perennial grassland community occupies the majority of the Project site. This upland habitat is dominated by grasses and forbs, including Kentucky bluegrass, slender wheatgrass, meadow foxtail, soft chess, creeping bentgrass, Idaho fescue, velvetgrass, meadow fescue, peavine, willowherb, and sow thistle.

Potential Impacts

Permanent Impacts to Wetlands and other Waters of the U.S. and State

The development site contains 0.107 acres of wetlands and 0.063 acres of streams and ditches, for a total of 0.170 acres of "Waters of the United States." The Project as currently proposed would result in the fill of 0.039 acres of wetland and 0.045 acres of other waters (for a total of 0.084 acres). Depending on final site design, it is possible that additional waters on the development site may be affected.

Because the Project would result in a discharge to Waters of the United States (U.S.), work is subject to conditions of a Clean Water Act (CWA) Section 404 permit as required by the U.S. Army Corps of Engineers (USACE). It is anticipated that the proposed project qualifies for USACE Nationwide Permit (NWP) 39. NWP 39 applies to commercial and institutional developments and attendant features, provided that the activity does not result in the loss of greater than ½-acre of Waters of the U.S. or more than 300 lineal feet of streambed (unless a waiver is issued by the district engineer). Pre-construction notification is required. For permanent wetland losses of 0.1 acres or less that require pre-construction notification, the USACE will determine on a case-by-case basis whether compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. If compensatory mitigation is required, it would likely be achieved through on-site or off-site wetland creation or enhancement. A project requiring a USACE Section 404 permit is also required to obtain a State Water Quality Certification (or waiver) to ensure that the project will not violate established State water quality standards.

No development is proposed within ±50 feet of the perennial creek that bisects the property, and no direct impacts to the creek would occur. However, work would affect the vegetated ditch along Pine Street; if CDFW determines that this feature qualifies as a stream, a Streambed Alteration

Agreement from CDFW would be required. CDFW could determine that additional montane riparian habitat qualifies as “Waters of the State” and require mitigation for direct loss of this habitat.

Indirect effects of construction, such as erosion/sedimentation and pollutant-loaded stormwater runoff in the watershed that enter surface waters, can be harmful to water quality and fish habitat. If the eroded soils are washed into downstream waters, they could directly and indirectly affect aquatic species and habitats. As discussed in Section 1.6 (Regulatory Requirements), the applicant is required to develop a SWPPP that includes BMPs to control erosion and sedimentation and prevent damage to streams, watercourses, and aquatic habitat. BMPs may include, but are not limited to, limiting construction to the dry season; use of straw wattles, silt fences, and/or gravel berms to prevent sediment from discharging to surface waters and sensitive habitats; and revegetating temporarily disturbed sites upon completion of construction. Given the existing requirement for erosion control BMPs during project construction, no further mitigation is needed to protect downstream aquatic habitats.

Compliance with conditions of permits that may be required for the project will ensure that direct impacts on waters of the State and United States are less than significant. To minimize the potential for inadvertent damage to waters planned for retention, **Mitigation Measure 4.4.1** requires that exclusionary fencing be installed at the outer edge of the construction area where it abuts or approaches wetlands and other waters of the U.S. and State. The fencing shall be installed under the direction of a qualified biologist and shall be maintained throughout the construction period.

Because the applicant would comply with conditions of resource agency permits and implement **Mitigation Measure MM 4.4.1**, impacts to wetlands and other waters would be less than significant.

Loss of Perennial Grassland

The proposed Project would result in the permanent removal of grassland habitat to accommodate the proposed improvements. This community is not considered sensitive, and no mitigation for the loss of perennial grassland is required.

Loss of Wildlife Habitat

Plant communities in the Project site provide potential shelter, breeding habitat, and foraging habitat for various animals including birds, squirrels, skunks, rodents, snakes, and lizards. Project construction would result in the conversion of the 6.8-acre development site to urban habitat. In addition to direct impacts, Project implementation would result in temporary impacts to wildlife throughout the construction period due to increased human activity, increased noise levels, and temporary loss of vegetation that may provide food and shelter for wildlife.

Habitats on the project site are already severely fragmented and subject to on-going human activity. Given the location and scale of the proposed project as well as the mitigation measures noted above, impacts on wildlife habitat would be less than significant.

Potential Impacts from Invasive Weeds

The introduction and spread of noxious weeds during construction activities has the potential to adversely affect critical habitat and natural communities. Each noxious weed identified by the California Department of Agriculture receives a rating which reflects the importance of the pest, the likelihood that eradication or control efforts would be successful and the present distribution of the pest within the state. Below is a description of ratings categories that apply to the project area:

Category A. A pest of known economic or environmental detriment that is either not known to be established in California or is present in a limited distribution that allows for the possibility of eradication or successful containment. A-rated pests are prohibited from entering the state because they have been determined to be detrimental to agriculture.

Category B. A pest of known economic or environmental detriment and, if present in California, it is of limited distribution. B-rated pests are eligible to enter the state if the receiving county has agreed to accept them.

Category C. A pest of known economic or environmental detriment and, if present in California, it is usually widespread. C-rated organisms are eligible to enter the state as long as the commodities with which they are associated conform to pest cleanliness standards when found in nursery stock shipments.

Six noxious weed species were observed in the Project area during the botanical field surveys:

B-Rated Weeds:	Canadian thistle, Dyer's-woad, quack grass
C-Rated Weeds:	Yellow star-thistle, Scotch broom, Klamath weed

Noxious weeds observed in the Project area are of widespread distribution in the County, and further spread of these weeds is not anticipated. However, other noxious weeds could be introduced into the Project area during construction if unwashed construction vehicles are not properly washed before entering the Project site.

Soil import/export and use of certain erosion-control materials such as straw can also result in the spread of noxious weeds. As required by **Mitigation Measure MM 4.4.2**, the potential for introduction and spread of noxious weeds can be avoided/minimized by using only certified weed-free erosion control materials, mulch, and seed; limiting any import or export of fill material to material that is known to be weed free; and requiring the construction contractor to thoroughly wash all construction vehicles and equipment at a commercial wash facility before entering the job site. Implementation of **Mitigation Measure MM 4.4.2** reduces potential impacts related to the introduction and spread of noxious weeds to a less-than-significant level.

Compliance with the conditions of resource-agency permits, use of BMPs for spill prevention and erosion control, and implementation of **Mitigation Measures MM 4.4.1 and MM 4.4.2** would reduce the Project's potential impacts on natural communities to a less-than-significant level.

Question D

Wildlife nursery sites in the project vicinity may include deer fawning grounds, fish spawning habitats, bird nesting habitats. According to the City's Open Space/Conservation Element of the General Plan, the southernmost extent of the Planning Area near the Sacramento River is recognized as a critical winter range for black-tail deer. This area is on the west side of I-5, approximately one mile south of the Project site. The closest fawning grounds to the Project site are approximately one mile east of the Project site and would not be impacted. The Open Space and Conservation Element also states that streams and other surface water resources in the planning area that support resident fisheries include the Sacramento River, Lake Siskiyou, Wagon Creek, Big Springs Creek, and their tributaries.

Due to existing barriers in the Project area (i.e., I-5 immediately west of the Project site, and urban development south and east of the Project site), the project site has a low potential to serve as an important nursery site or wildlife corridor. Fish are not known or expected to use the perennial stream in proposed Parcel 3, north of the development site; in any case, project development would not affect access to the stream by fish or other aquatic species. Although security fencing would be

installed around the proposed school, wildlife passage would remain along the perennial stream and elsewhere on proposed Parcel 3.

The Project area is located within the Pacific Flyway, and it is possible that migratory birds could nest in or adjacent to the Project area. As required by **Mitigation Measure MM 4.4.3**, the potential for adversely affecting nesting birds can be greatly minimized by removing vegetation and conducting construction activities either before February 1 or after August 31. If construction occurs during the bird nesting season, a nesting survey would be conducted within one week prior to removal of vegetation and/or the start of construction.

If active nests are found in the Project area, the City would consult with the CDFW and USFWS to determine what actions are required to comply with the Migratory Bird Treaty Act and California Fish and Game Code §3503. Compliance measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

Therefore, because construction activities that may impede wildlife movement would cease upon completion of Project; Parcel 3 would be retained as open space and continue to provide wildlife passage post-construction; and **Mitigation Measure MM 4.4.3** would reduce the potential for adversely affecting nesting birds, the proposed Project would have a less-than-significant impact on the movement of any migratory fish or wildlife species and would not significantly impact migratory wildlife corridors or native wildlife nursery sites.

Question E

Chapter 5 (Open Space and Conservation Element) of the City's General Plan includes objectives and programs related to the conservation of natural resources. **Mitigation Measures MM 4.4.1, MM 4.4.2 and MM 4.4.3** are included to ensure consistency with the General Plan. Chapter 12.10 (City Tree Ordinance) of the City's Municipal Code includes provisions for the control, management, conservation, planting, and enhancement of trees. The Tree Ordinance applies only within commercial and industrial General Plan designations. The City's Director of Public Works has the responsibility to approve plans for public utilities that have the potential to damage street trees. Because the proposed Project would not require the removal of any street trees, there would be no conflict with existing City policies or ordinances.

Question F

A Habitat Conservation Plan (HCP) is a federal planning document that is prepared pursuant to Section 10 of the Federal Endangered Species Act (FESA) when a project results in the "take" of threatened or endangered wildlife. Regional HCPs address the "take" of listed species at a broader scale to avoid the need for project-by-project permitting. A Natural Community Conservation Plan (NCCP) is a state planning document administered by CDFW. There are no HCPs, NCCPs or other habitat conservation plans that apply to the proposed Project. Therefore, there would be no impact.

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the Project area, including growth resulting from build-out of the City's and County's General Plans, are anticipated to permanently remove plant and wildlife resources. Continued conversion of existing open space to urban development may result in the loss of sensitive plant and wildlife species native to the region, habitats for such species, wetlands, wildlife migration corridors, and nursery sites. The conversion of plant and wildlife habitat on a regional level as a result of cumulative development would potentially result in a regionally significant cumulative impact on special-status species and their habitats.

Implementation of BMPs for erosion and sediment control, and implementation of **Mitigation Measures MM 4.4.1, MM 4.4.2, and MM 4.4.3** would avoid, reduce, or mitigate potential impacts to special-status species and sensitive habitats. With these measures, the proposed Project's contribution to cumulative regional impacts to biological resources would be less than significant.

MITIGATION

MM 4.4.1 Prior to commencement of any earth disturbance (e.g., clearing, grading, trenching, etc.), exclusionary fencing shall be installed around wetlands, other waters of the U.S. and State, and montane riparian scrub habitats that are designated for preservation. Fencing locations shall be determined by a qualified biologist in consultation with City staff. No construction activities (e.g., clearing, grading, trenching, etc.), including vehicle parking and materials stockpiling, shall occur within the fenced areas. The exclusionary fencing shall be periodically inspected by a qualified biologist throughout project construction to ensure the fencing is properly maintained. The fencing shall be removed upon project completion.

MM 4.4.2 The potential for introduction and spread of noxious weeds shall be avoided/minimized by:

- a. Using only certified weed-free erosion control materials, mulch, and seed.
- b. Limiting any import or export of fill material to material that is known to be weed free.
- c. Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the job site.

MM 4.4.3 In order to avoid impacts to nesting migratory birds and/or raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5, including their nests and eggs, one of the following shall be implemented:

- a. Vegetation removal and other ground-disturbance activities associated with construction shall occur between September 1 and January 31 when birds are not nesting; or
- b. If vegetation removal or ground disturbance activities occur during the nesting season, a pre-construction nesting survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area.

Surveys shall begin prior to sunrise and continue until vegetation and nests have been sufficiently observed. The survey shall take into account acoustic impacts and line-of-sight disturbances occurring as a result of the project in order to determine a sufficient survey radius to avoid nesting birds. At a minimum, the survey report shall include a description of the area surveyed, date and time of the survey, ambient conditions, bird species observed in the area, a description of any active nests observed, any evidence of breeding behaviors (e.g., courtship, carrying nest materials or food, etc.), and a description of any outstanding conditions that may have impacted the survey results (e.g., weather conditions, excess noise, the presence of predators, etc.).

The results of the survey shall be submitted to the CDFW upon completion. The survey shall be conducted no more than one week prior to the initiation of construction. If construction activities are delayed or suspended for more than one week after the pre-construction survey, the site shall be resurveyed.

If active nests are found, the applicant shall consult with CDFW and the USFWS regarding appropriate action to comply with the Migratory Bird Treaty Act and California Fish and Game Code §3503. Compliance measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

DOCUMENTATION

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<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=68626&inline>. Accessed December 2018.

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<http://www.codepublishing.com/CA/MtShasta/>. Accessed December 2018.

4.5 CULTURAL RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

Section 106 of the National Historic Preservation Act (NHPA)

Section 106 of the NHPA and its implementing regulations require federal agencies to take into account the effects of their activities and programs on historic properties. A historic property is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places, including artifacts, records, and material remains related to such a property (NHPA Sec. 301[5]). A resource is considered eligible for listing in the NRHP if it meets criteria defined in CFR Title 36, §60.4. Section 106 applies to projects undertaken by federal agencies or funded by a federal agency.

STATE

California Environmental Quality Act (CEQA)

CEQA requires that projects financed by or requiring the discretionary approval of public agencies in California be evaluated to determine potential adverse effects on historical and archaeological resources

(California Code of Regulations [CCR], §15064.5). Historical resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance. Pursuant to §15064.5 of the CCR a property may qualify as a historical resource if it meets any of the following criteria:

- a. The resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR).
- b. The resource is included in a local register of historic resources, as defined in §5020.1(k) of the Public Resources Code (PRC), or is identified as significant in a historical resources survey that meets the requirements of §5024.1(g) of the PRC (unless the preponderance of evidence demonstrates that the resource is not historically or culturally significant).
- c. The lead agency determines that the resource may be a historical resource as defined in PRC §5020.1(j), or §5024.1, or may be significant as supported by substantial evidence in light of the whole record. Pursuant to PRC §5024.1, a resource may be eligible for inclusion in the CRHR if it:
 - Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
 - Is associated with the lives of persons important in our past;
 - Embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of an important creative individual, or possesses high artistic values; or
 - Has yielded, or may be likely to yield, information important in prehistory or history.

Resources must retain integrity to be eligible for listing on the CRHR. Resources that are listed in or formally determined eligible for listing in the NRHP are included in the CRHR, and thus are significant historical resources for the purposes of CEQA (PRC §5024.1(d)(1)). A unique archaeological resource means an artifact, object, or site that meets any of the following criteria:

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

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Open Space and Conservation Element		
Goals	OC-8	Preserve areas of significant cultural resources.
Policies	OC-8.1	Ensure that appropriate measures are taken concerning protection or study of significant cultural resources.
IMs	OC-8.1(a)	When projects are proposed on lands identified as having High Cultural Resource Sensitivity, the application shall be accompanied by a Cultural Resources Reconnaissance and Archival Report conducted and compiled by a qualified archaeologist. If there is the likelihood that cultural resources are present on the site, the City may require field study to determine the location, potential for disturbance, and scope of mitigation.

OC-8.1(c)	The scope of mitigation shall conform to the requirements of the California Environmental Quality Act with an emphasis on avoiding, if feasible, disturbance of the cultural resource. Avoidance may be accomplished by capping the site, if appropriate.
OC-8.1(d)	<p>When approving construction projects, the City shall incorporate the following mitigation measure, or a similar measure that would fulfill the intent: Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, or architectural remains be encountered during development activities, work shall be suspended and the City Planning Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with an appropriate specialist (e.g., archaeologist or architectural historian). The project proponent shall be required to implement mitigation necessary for the protection of cultural resources.</p> <p>The City and the project applicant shall consider mitigation recommendations presented by a qualified archeologist for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.</p>
OC-8.1(e)	When approving construction projects, the City shall incorporate the following mitigation measure, or a similar measure that would fulfill the intent: If human remains are discovered, all work must stop in the immediate vicinity of the find, and the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed.

DISCUSSION OF IMPACTS

Questions A and B

An Archaeological/Historical Survey Report for the proposed Project was prepared by John Furry, Cultural Resource Specialties, in November 2018. The study included a records search, Native American consultation, and field evaluation. The records search included review of records at the Northeast Information Center of the California Historical Resources Information System (NEIC); the National Register of Historic Places (NRHP), California Register of Historical Resources, California Historical Landmarks, California Inventory of Historic Resources, California Points of Historic Interest, and Directory of Properties in the Historic Property Data Files for Siskiyou County.

Area of Potential Effects (APE)

The APE includes all areas in which improvements would occur, and areas for staging and temporary construction access, as well as sufficient area for construction. The horizontal APE includes the entirety of the Project site. The vertical APE (i.e., associated with the potential for buried cultural resources) is based upon the existing topography, geological history, site development history, and the engineering design of the project. The vertical APE of a project is related to the proposed excavations associated with the project. It is anticipated that the maximum depth of excavation will not exceed six feet.

Records Search

Research at the NEIC was conducted on June 19, 2018, and covered an approximate half-mile radius around the APE for previously recorded archaeological sites and for previously conducted surveys. The size and scope of the search area was determined to be sufficient based on the results. The records search revealed that 15 recorded cultural sites are located within a half-mile radius of the Project site; however, there are no recorded sites within the APE. Review of the NRHP, the CRHR, the California Inventory of Historic Resources, and the California Historical Landmarks identified no other historic properties within a half-mile radius of the project area.

Field Survey

Archaeological fieldwork took place on July 8, 2018, during which the entire APE was surveyed to identify cultural or historical resources that would be potentially affected by the proposed Project. One historical-age structure, an old barn, was identified in the southern area of the site; however, the Cultural Resource Specialties report states that the barn does not meet the criteria for inclusion on the NRHP. No other archaeological or historical resources were identified during the field survey.

Native American Consultation

In January 2019, the Native American Heritage Commission (NAHC) conducted a search of the Sacred Lands File; the search did not reveal any known Native American sacred sites or cultural resources in the Project area. The NAHC also provided contact information for several Native American representatives and organizations, who were contacted by City staff with a request to provide comments on the proposed Project. No comments or concerns were reported by any Native American representative or organization.

Conclusions

The Cultural Resource Specialties report concludes that the proposed project would not adversely affect historical or archaeological resources. In addition, based on the geomorphological and topographic characteristics of the project site, the results of the records and literature search, the age of soils mapped in the area, and the level of contemporary disturbance, the Project area is considered to have a low potential for both buried historic and prehistoric resources. However, there is always some potential for previously unknown cultural resources to be encountered during site excavation.

Mitigation Measure MM 4.5.1 addresses the inadvertent discovery of cultural resources. With implementation of this measure, impacts would be less than significant.

Question C

The Project area does not include any known cemeteries, burial sites, or human remains. However, it is possible human remains may be unearthed during construction activities. **Mitigation Measure 4.5.2** ensures if human remains are discovered, there shall be no further excavation or disturbance of the site until the County coroner has been contacted and has made the necessary findings as to origin and disposition in accordance with Section 15064.5(e) of the CEQA Guidelines. Therefore, impacts are less than significant.

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the Project area have the potential to impact cultural resources. Archaeological and historic resources are afforded special legal protections designed to reduce the cumulative effects of development. Cumulative projects and the proposed Project are subject to the protection of cultural resources afforded by the CEQA Guidelines Section 15064.5 and related provisions of the PRC. In addition, projects with federal involvement would be subject to Section 106 of the NHPA. Given the non-renewable nature of cultural resources, any impact to protected sites could be considered cumulatively considerable. As discussed above, no archaeological or historic resources would be impacted by the proposed Project with implementation of **Mitigation Measures MM 4.5.1 and MM 4.5.2**, and the proposed Project's cumulative impact to cultural resources is less than significant.

MITIGATION

- MM 4.5.1** In the event of any inadvertent discovery of cultural resources (i.e., burnt animal bone, midden soils, projectile points or other humanly-modified lithics, historic artifacts, etc.), all work within 50 feet of the find shall be halted until a professional archaeologist can evaluate the significance of the find in accordance with PRC §21083.2(g) and §21084.1, and CEQA Guidelines §15064.5(a). If any find is determined to be significant by the archaeologist, the City shall meet with the archaeologist to determine the appropriate course of action. If necessary, a Treatment Plan prepared by an archeologist outlining recovery of the resource, analysis, and reporting of the find shall be prepared. The Treatment Plan shall be reviewed and approved by the City prior to resuming construction.
- MM 4.5.2** In the event that human remains are encountered during construction activities, the City shall comply with §15064.5 (e) (1) of the CEQA Guidelines and PRC §7050.5. All project-related ground disturbance within 100 feet of the find shall be halted until the County coroner has been notified. If the coroner determines that the remains are Native American, the coroner will notify the NAHC to identify the most likely descendants of the deceased Native Americans. Project-related ground disturbance in the vicinity of the find shall not resume until the process detailed in §15064.5 (e) has been completed.

DOCUMENTATION

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4.6 ENERGY

Would the Project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to energy that apply to the proposed project.

STATE

Renewables Portfolio Standard

In 2002, SB 1078 was passed to establish the State's Renewables Portfolio Standard (RPS) Program, with the goal of increasing the amount of electricity generated and sold to retail customers from eligible renewable energy resources. The initial goal was to increase the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2017. The Renewables Portfolio Standard has been subsequently amended by the following actions:

Date	Legislation/Plan	Action
May 3, 2003	Energy Action Plan I	Accelerated the 20 percent renewable energy target to 2010.
September 21, 2005	Energy Action Plan II	Recommended a goal of 33 percent renewable energy by 2020.
September 26, 2006	SB 107	Codified the 20 percent renewable energy by 2010 target set forth in the Energy Action Plan I.
November 17, 2008	EO S-14-08 (Schwarzenegger)	Required 33 percent renewable energy by 2020 as recommended in the Energy Action Plan II.
September 15, 2009	EO S-21-09 (Schwarzenegger)	Directed the CARB to adopt regulations by July 31, 2010, consistent with the 33 percent renewable energy by 2020 target set forth in EO S-14-08.
April 12, 2011	Senate Bill X1-2	Codified the 33 percent renewable energy by 2020 target set forth in EO S-14-08; this new target applied to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators.
October 7, 2015	SB 350	Codified a target of 50 percent renewable energy by 2030. Also requires California utilities to develop integrated resource plans that incorporate a GHG emission reduction planning component beginning January 1, 2019.
September 10, 2018	SB 100	Codified targets of 60 percent renewable energy by 2030 and 100 percent renewable energy by 2045.

California Building Standards Code

Title 24 of the CCR, also known as the California Building Standards Code (CBSC), is based on the International Building Code (IBC) used widely throughout the country. The CBSC has been modified for California conditions to include more detailed and/or more stringent regulations. The CBSC consists of 13 parts, including the California Building Code, Energy Code, and Green Building Standards Code.

California Energy Code

The California Energy Code (Part 6 of the CBSC), also known as the State's Energy Efficiency Standards, was established by the California Building Standards Commission in 1978 with a goal of reducing California's energy consumption for residential and nonresidential buildings. The Standards include mandatory measures related to building envelopes, mechanical systems, indoor and outdoor lighting, and electrical power distribution. For all newly constructed nonresidential buildings over 10,000 square feet, building commissioning must be included in the design and construction process to verify that the building's energy systems and components meet State requirements for energy efficiency. The Standards are periodically updated by the California Energy Commission (CEC).

An Initial Study was completed for the 2016 Energy Efficiency Standards, which are currently in effect, and estimated that implementation of the 2016 Standards may reduce statewide annual

electricity consumption by approximately 281 gigawatt-hours per year, electrical peak demand by 195 megawatts, and natural gas consumption by 16 million therms per year. The potential effect of these energy savings to air quality may be a net reduction in the emission of nitric oxide by approximately 508 tons per year, sulfur oxides by 13 tons per year, carbon monoxide by 41 tons per year and particulate matter less than 2.5 microns in diameter by 13.57 tons per year. Additionally, CEC staff estimated that the implementation of the 2016 Standards may reduce greenhouse gas (GHG) emissions by 160,000 metric tons CO₂e per year.

The 2019 update to the Energy Efficiency Standards goes into effect on January 1, 2020. The Initial Study prepared for the update estimates that implementation of the 2019 Standards will reduce the energy use of typical new residential buildings by about 7 percent and nonresidential buildings by about 31 percent compared to buildings constructed under the current standards. In addition, the 2019 Standards are projected to decrease water consumption of approximately 246 million gallons per year, reduce statewide annual electricity consumption by about 650 gigawatt-hours per year, and reduce statewide natural gas consumption by 9.8 million therms per year. In addition, there will be a net reduction in the emissions of nitrous oxide by roughly 100 metric tons per year, sulfur oxides by 0.27 metric tons per year, carbon monoxide by 28 metric tons per year, and particulate matter less than 2.5 micrometers in diameter (PM 2.5) by 3.36 metric tons per year. The Standards are also anticipated to reduce growth in statewide GHG emissions by 230,000 metric tons of carbon dioxide (CO₂e) per year.

California Green Building Standards Code

In 2007, the California Building Standards Commission (CBSC) developed green building standards in an effort to meet the goals established by the Global Warming Solutions Act of 2006. These standards are referred to as the CALGreen Code and are included as Part 11 of the CBSC.

The CALGreen Code, requires new residential and commercial buildings to comply with mandatory measures related to planning and design, energy efficiency, water efficiency/conservation, material conservation, resource efficiency, and environmental quality. The most recent update to the CALGreen Code went into effect January 1, 2017. Although it was adopted as part of the State's efforts to reduce GHG emissions, the CALGreen Code has the added benefit of reducing energy consumption from residential and nonresidential buildings that are subject to the Code.

California Environmental Quality Act (CEQA)

Section 15126.2(b) of the CEQA Guidelines states that if analysis of a project's energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, the effects must be mitigated. The Guidelines provide suggestions of topics that may be included in the energy analysis, including identification of energy supplies that would serve the project and energy use for all project phases and components. In addition to building code compliance, other relevant considerations may include the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project. The energy use analysis may be included in related analyses of air quality, GHG emissions, transportation, or utilities at the discretion of the lead agency.

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Open Space and Conservation Element		
Goals	OC-12	Strive to conserve energy resources.
	OC-13	Encourage the development of sustainable energy sources.
Policies	OC-13.1	Work with individuals and companies to correctly site, connect and operate alternative energy systems such as wind, solar, hydro, and other sustainable sources.
IMs	OC-12.1(a)	Where feasible, require all new buildings and subdivisions to be designed and oriented in such a way as to take maximum advantage of the sun and winds for natural heating and cooling.
	OC-12.1(b)	In addition to enforcing the energy efficiency requirements of state law and the Uniform Building Code, encourage the incorporation of additional energy conservation techniques, such as innovation building construction, high-efficiency HVAC systems, etc. in new construction.
	OC-13.1(a)	Support the development of alternative sources of energy such as roof-mounted solar panels, fuel cells or new technology.

DISCUSSION OF IMPACTS

Question A

Also see discussion in Section 4.8 (Greenhouse Gas Emissions).

Construction-Related Energy Use

Energy consumption during construction would occur from diesel and gasoline used for construction equipment, haul trucks, and construction workers travelling to and from the work site. In addition, electrical power would be used during certain phases of development. The use of electricity during construction would be minimal and would not be considered wasteful, inefficient, or unnecessary. Construction equipment would comply with regulations that restrict idling when not in use (see **Mitigation Measure MM 4.13.3**). Construction equipment must also comply with State regulations that require the use of fuel-efficient equipment. With implementation of **MM 4.13.3**, and compliance with existing State regulations that require the use of fuel-efficient equipment, impacts during construction would be less than significant.

Operational Energy Use

As stated in Section 4.3 under Questions A and B, project emissions were estimated using CalEEMod. CalEEMod reports a Project's operational emissions based on all operational activities, including vehicle traffic, electricity usage in the buildings and for lighting in parking lots, water use, wastewater treatment, solid waste disposal, use of architectural coatings, etc. CalEEMod estimates electricity use for the proposed Project at 266,583 kilowatt hours per year (kWh/yr) for the school and 11,584 kWh/yr for parking lot lighting (278,167 kWh/yr total). For comparison, according to a report published by the CPUC in 2015, *Comparative Analysis of Utility Services and Rates in California*, electric use for a single-family residence in California averages 557 kWh per month (6,684 kWh per year). The proposed Project's energy use would be equivalent to ± 42 single-family dwelling units.

As discussed under Regulatory Context above, the proposed Project must comply with the CALGreen Code that was established to reduce the State's energy consumption and provide energy efficiency for residential and nonresidential buildings. The Code includes mandatory measures for planning and design, energy efficiency, water efficiency/conservation, material conservation, resource efficiency, and environmental quality.

In accordance with CALGreen Code §5.410 (Building Maintenance and Operation), building commissioning is required to verify that the building systems and components satisfy the Project's requirements. Among other things, the commissioning process includes functional performance testing for heating, ventilation, air conditioning systems, and lighting controls in compliance with the State Energy Code. A final commissioning report is required to document compliance with the Code.

The Project's operational energy-related impacts would be less than significant because the proposed Project does not include any energy-intensive stationary sources or operational activities that would result in wasteful, inefficient, or unnecessary consumption of energy resources; construction documents would be reviewed by the City's Building Official to ensure that all State mandatory energy efficiency measures are implemented; and building commissioning would be required to verify compliance with applicable State codes.

Question B

As stated under Regulatory Context above, the City's General Plan includes goals, policies, and implementation measures that conserve energy resources and encourage the development of sustainable energy sources. The State's Energy Efficiency standards require that newly constructed nonresidential buildings have an allocated solar zone that is free of obstructions and is not shaded. The solar zone identifies a suitable location for installation of photovoltaic (PV) solar panels or solar water-heating (SWH) systems. In addition, the Energy Standards require that the construction documents depict a plan for connecting a PV and SWH system to the electrical or plumbing system of a building. For areas of the roof designated as a solar zone, the plans must also clearly indicate the structural design loads for roof dead load and roof live load.

GECS indicates that the school plans to install rooftop solar panels in the future when funding becomes available. In addition, as stated under Question A, the City's Building Official will review all construction documents to ensure that the proposed Project implements the State's mandatory energy efficiency measures. Compliance with these measures will ensure that the proposed Project does not conflict with or obstruct a State or local plan for renewable energy or energy efficiency; there would be no impact.

CUMULATIVE IMPACTS

Completion of the proposed Project and other potential cumulative projects in the region, including growth resulting from build-out of the City's General Plan, could result in potentially significant impacts due to the wasteful, inefficient, or unnecessary consumption of energy resources. However, as stated under Regulatory Context, all new development projects in the State are required to comply with the State's Energy Efficiency Standards (CALGreen Code). These regulations are intended to reduce the potential for cumulative impacts related to energy use and GHG emissions. The Initial Study prepared for the 2019 Energy Efficiency Standards estimates that implementation of the 2019 Standards will reduce statewide annual electricity consumption by about 653 gigawatt-hours per year, and natural gas consumption by 9.8 million therms per year. In addition, on February 11, 2019, the Mt. Shasta City Council approved a contract with Johnson Controls to complete a City PV solar energy project that would provide the City with ±600 kW of solar PV capacity. The solar improvements will include a combination of ground-mounted and rooftop solar arrays at three locations in the City. The City's solar project will reduce the City's use of energy generated from fossil fuels.

Because all new development projects in the City will comply with the State's energy efficiency standards, the proposed Project's cumulative impacts on energy resources would be less than significant.

MITIGATION

Implementation of **Mitigation Measure MM 4.13.3.**

DOCUMENTATION

- California Energy Commission.** 2015. 2016 Nonresidential Compliance Manual for the 2016 Building Energy Efficiency Standards. <https://www.energy.ca.gov/2015publications/CEC-400-2015-033/CEC-400-2015-033-CMF.pdf>. Accessed February 2019.
- _____. 2015. Initial Study/Proposed Negative Declaration for the 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. <https://www.energy.ca.gov/2015publications/CEC-400-2015-012/CEC-400-2015-012.pdf>. Accessed February 2019.
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- City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Open Space and Conservation Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/5OpenSpaceandConservationElement.pdf>. Accessed December 2018.
- Commissioning Collaborative.** 2006. California Commissioning Guide: New Buildings. https://www.cacx.org/resources/documents/CA_Commissioning_Guide_New.pdf. Accessed March 2019.

4.7 GEOLOGY AND SOILS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

National Earthquake Hazards Reduction Act

The National Earthquake Hazards Reduction (NEHR) Act was passed in 1977 to reduce the risks to life and property from future earthquakes in the United States. The Act established the National Earthquake Hazards Reduction Program, which was most recently amended in 2004. The Federal Emergency Management Agency (FEMA) is designated as the lead agency of the program. Other NEHR Act agencies include the National Institute of Standards and Technology, National Science Foundation, and the U.S. Geological Survey (USGS).

STATE

California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (PRC §2621 *et seq.*) was passed in 1972 to reduce the risk to life and property from surface faulting in California. The Act prohibits the siting of most structures intended for human occupancy on the surface trace of active faults. Before a project can be permitted in a designated Alquist-Priolo Fault Study Zone, a geologic investigation must be prepared to demonstrate that proposed buildings would not be constructed across active faults.

California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act (SHMA) of 1990 (PRC §2690–2699.6) addresses non-surface fault rupture earthquake hazards, including strong ground shaking, liquefaction and seismically induced landslides. The SHMA also addresses expansive soils, settlement, and slope stability. Under the SHMA, cities and counties may withhold development permits for sites within seismic hazard areas until geologic/geotechnical investigations have been completed and measures to reduce potential damage have been incorporated into development plans.

California Building Standards Code

As discussed in Section 4.6, the CBSC consists of 13 parts, including the California Building Code, Energy Code, Fire Code, and Green Building Standards Code. Part 2 of the CBSC is the California Building Code (CBC) that includes standards for structural design, excavation, grading, seismic design, drainage, and erosion control.

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Safety Element		
Goal	SF-2	Assure life and property are adequately protected from seismic hazards in the area.
Policy	SF-2.1	Avoid development in areas of steep slope and high erosion potential.
IM	SF-2.1(c)	Ensure that site development on steep slopes is designed to avoid creating areas that may be subject to slippage or movement from storm events.
Open Space and Conservation Element		
IM	OC-8.1(f)	When approving construction projects, the City shall incorporate the following mitigation measures, or similar measures that would fulfill the intent: Should any potentially unique paleontological resources (fossils) be encountered during development activities, work shall be suspended and the City Planning Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with a qualified paleontologist. The project proponent shall be required to implement mitigation necessary for the protection of paleontological resources. The City and the project applicant shall consider the mitigation recommendations of the qualified paleontologist for unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

DISCUSSION OF IMPACTS

Question A

i and ii)

According to the Alquist-Priolo Earthquake Fault Zoning Map, there are no Alquist-Priolo Special Study Zones in the Project area. The nearest Alquist-Priolo Special Study Zone is the Cedar Mountain Fault Zone, approximately 24 miles to the east. According to the California Department of Conservation (DOC), two potentially active unnamed faults are located northeast of the Project area. One is a north-south trending fault running through the top of Mount Shasta; the other is an east-west trending fault that runs from the top of Mount Shasta to a point north of Black Butte.

Although the proposed Project does not include any components that would result in rupture of an earthquake fault, according to the City's General Plan, the Project area is potentially subject to ground shaking from faults located in eastern Siskiyou county and volcanic activity at Mount Shasta. As stated under Regulatory Context above, the CBC provides minimum standards for building design and construction, including seismic design. It is the responsibility of the City's Building Official to ensure that buildings are designed in accordance with State regulations for seismic safety. Compliance with existing building code standards ensures that impacts are less than significant.

iii)

Liquefaction results from an applied stress on the soil, such as earthquake shaking or other sudden change in stress condition, and is primarily associated with saturated, cohesionless soil layers located close to the ground surface. During liquefaction, soils lose strength, and ground failure may occur. Building foundations can sink, break apart or tilt, and gravity-fed pipelines can back up. This is most likely to occur in alluvial deposits (geologically recent, unconsolidated sediments), stream channel deposits, and glacial outwash deposits, especially when the

groundwater table is high. As shown in **Table 4.7-1**, the soil type in the Project site is prone to liquefaction.

In accordance with CBC Chapter 18 (Soils and Foundations), a geotechnical report must be submitted with a building permit application for new construction. The geotechnical report must evaluate potential geologic and seismic hazards, including slope instability, liquefaction, total and differential settlement, and surface displacement due to faulting or seismically induced lateral spreading or lateral flow. The geotechnical report will include recommendations for foundation type and depths, structural systems, ground stabilization, and/or other measures applicable to soils and geological conditions in the Project site.

It is the responsibility of the City's Building Official to ensure that recommendations included in the geotechnical report are incorporated into the building design. Implementation of recommendations in the geotechnical report will reduce potential impacts of seismic-related ground failure, including liquefaction, to a less-than-significant level.

TABLE 4.7-1
Soil Type and Characteristics

Soil Name	Landform and Parent Material	Erosion Potential	Drainage	Surface Runoff	Permeability	Shrink-Swell Potential
Deetz gravelly loamy sand, 5 to 15 percent slopes (126)	Outwash fans; Glaciofluvial deposits derived from igneous rock	Moderate	Somewhat excessively drained	Very low	Rapid	Low

Source: U.S. Department of Agriculture, Natural Resources Conservation Service, 2019.

iv)

According to the City's General Plan, there are a few steep, denuded slopes in various locations around the City where small landslides have occurred during heavy rainfall events. Earthwork that alters the shape of a slope or imposes new loads on an existing slope could increase the potential for landslides. However, the Project site is relatively flat with little risk of landslides; therefore, impacts would be less than significant.

Question B

Construction of the proposed Project would involve excavation, grading activities, and installation of Project components, which would result in the temporary disturbance of soil and would expose disturbed areas to potential storm events. This could generate accelerated runoff, localized erosion, and sedimentation. In addition, construction activities could expose soil to wind erosion that could adversely affect on-site soils and the re-vegetation potential of the area.

As shown in **Table 4.7-1**, soils on the Project site have a moderate potential for erosion. However, as discussed in Section 4.4 under Questions B and C, the applicant is required to develop and implement an effective SWPPP that includes BMPs to minimize erosion. Because BMPs for erosion and sediment control would be implemented in accordance with existing requirements, the potential for soil erosion and loss of top soil would be less than significant.

Question C

See discussion under Questions A and Question B above. Unstable soils consist of loose or soft deposits of sands, silts, and clays. Although soils in the Project site have the potential to become unstable, a geotechnical report must be completed in accordance with CBC requirements to evaluate potential geologic and seismic hazards on the Project site. The geotechnical report will include recommendations for building foundations, structural systems, ground stabilization, and/or other

measures applicable to soils and geological conditions in the Project site. Because the City's Building Official will ensure that recommendations included in the geotechnical report are incorporated into the building design, impacts would be less than significant.

Question D

Some soils have a potential to swell when they absorb water and shrink when they dry out. These expansive soils generally contain clays that expand when moisture is absorbed into the crystal structure. When these soils swell, the change in volume can exert significant pressure on loads that are upon them, such as buildings or underground utilities. As shown in **Table 4.7-1**, the soil in the Project site has a low shrink-swell potential. The required geotechnical study will include site-specific engineering design measures and construction methods to ensure that impacts associated with expansive soils (if present) are less than significant.

Question E

The project does not propose the installation or use of alternative wastewater disposal systems. Therefore, there would be no impact.

Question F

As stated above, the Project site includes one soil type: Deetz gravelly loamy sand, 5 to 15 percent slopes. According to Meyer's (2013) soil reference, this soil dates to the Late Holocene (4,000-2,000 BP). Late Holocene-age landforms are typically not old enough to contain paleontological resources; however, they may overlie older Pleistocene landforms that have a high potential to contain paleontological resources. Although there is no record of paleontological resources in the Project area, and there are no unique geological features in the Project site, there is always some potential for previously unknown paleontological resources to be encountered during site excavation. Implementation of **Mitigation Measures MM 4.7.1** would ensure that potential impacts to inadvertent discoveries of paleontological resources would be less than significant.

CUMULATIVE IMPACTS

Completion of the proposed Project and other potential cumulative projects in the region, including growth resulting from build-out of the City's General Plan, could result in increased erosion and soil hazards and could expose additional structures and people to seismic hazards. However, these impacts can be fully mitigated with implementation of construction-related erosion control programs and with the incorporation of standard seismic safety and engineering design measures; therefore, cumulative impacts are less than significant.

MITIGATION

MM 4.7.1 If paleontological resources (fossils) are discovered during construction, all work within 50 feet of the find shall be halted until a professional paleontologist can evaluate the significance of the find. If any find is determined to be significant by the paleontologist, the City shall meet with the paleontologist to determine the appropriate course of action. If necessary, a Treatment Plan prepared by a paleontologist outlining recovery of the resource, analysis, and reporting of the find shall be prepared. The Treatment Plan shall be reviewed and approved by the City prior to resuming construction.

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_____. 2010 Geologic Map of California. <http://www.quake.ca.gov/gmaps/GMC/stategeologicmap.html>. Accessed January 2019.

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U.S. Geological Survey. 2019. Interactive Fault Map. <http://earthquake.usgs.gov/hazards/qfaults/map/>. Accessed January 2019.

4.8 GREENHOUSE GAS EMISSIONS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

U.S. Environmental Protection Agency

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gas emissions (GHGs) are air pollutants covered by the federal Clean Air Act (CAA). In reaching its decision, the Court also acknowledged that climate change is caused, in part, by human activities. The Supreme Court's ruling paved the way for the regulation of GHG emissions by the USEPA under the CAA. The USEPA has enacted regulations that address GHG emissions, including, but not limited to, mandatory GHG reporting requirements, carbon pollution standards for power plants, and air pollution standards for oil and natural gas.

STATE

California Executive Order (EO) S-3-05

EO S-03-05 was signed by the Governor on June 1, 2005, and established the goal of reducing statewide GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Assembly Bill 32 (Global Warming Solutions Act of 2006)

The California Global Warming Solutions Act of 2006 (AB 32) established a statewide GHG emissions cap for 2020 based on 1990 emissions levels as set forth in EO S-3-05. As required by AB 32, CARB adopted the initial Climate Change Scoping Plan in 2008 that identified the State's strategy to achieve the 2020 GHG emissions limit via regulations, market-based mechanisms, and other actions. AB 32 requires that the Scoping Plan be updated every five years. CARB's first update to the Climate Change Scoping Plan (2014) addressed post-2020 goals and identified the need for a 2030 mid-term target to establish a continuum of actions to maintain and continue reductions, rather than only focusing on targets for 2020 or 2050. In December 2017, CARB adopted the second update to the Scoping Plan that includes strategies to achieve the 2030 mid-term target established by EO B-30-15 (discussed below).

Senate Bill 375 (Sustainable Communities and Climate Protection Act of 2008)

Under SB 375, the CARB sets regional targets for the reduction of GHG emissions from passenger vehicles and light duty trucks. Each Metropolitan Planning Organization (MPO) in the State, or Regional Transportation Planning Agency for regions without a MPO, must include a Sustainable Communities Strategy in the applicable Regional Transportation Plan that demonstrates how the region will meet the GHG emissions reduction targets.

Senate Bill 391

SB 391, enacted in 2009, requires the California Transportation Plan to support an 80 percent reduction in GHG emissions below 1990 levels by 2050.

Executive Order B-16-12

EO B-16-12 calls for a GHG emissions reduction target of 80 percent below 1990 levels by 2050, specifically for transportation.

California Executive Order B-30-15

EO B-30-15 was signed by the Governor on April 29, 2015. It sets interim GHG targets of 40 percent below 1990 levels by 2030, to ensure California will meet its 2050 target set by EO S-3-05. It also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

Senate Bill 32/Assembly Bill 197

These two bills were signed into legislation on September 8, 2016. As set forth in EO B-30-15, SB 32 requires CARB to reduce GHG emissions to 40 percent below the 1990 levels by 2030. AB 197 requires that GHG emissions reductions be achieved in a manner that benefits the State's most disadvantaged communities. AB 197 requires CARB to prioritize direct GHG emission reductions in a manner that benefits the state's most disadvantaged communities and to consider social costs when adopting regulations to reduce GHG emissions. AB 197 also provides more legislative oversight of CARB by adding two new legislatively appointed non-voting members to the CARB Board and limiting the term length of Board members to six years.

Mobile Source Strategy

CARB's Mobile Source Strategy, adopted in 2016, describes the State's strategy for containing air pollutant emissions from vehicles, and demonstrates how the State can simultaneously meet air quality

standards, achieve GHG emission reduction targets, decrease health risks from transportation emissions, and reduce petroleum consumption over the next fifteen years.

California Executive Order B-48-18

EO B-48-18 was issued by the Governor in January 2018, calling for 5 million zero-emission vehicles (ZEVs) by 2030 and the installation of 250,000 electric vehicle chargers and 200 hydrogen fueling stations by 2025. The State's 2016 ZEV Action Plan outlines 200 specific actions that state agencies will take to continue advancing the ZEV market in California. The 2018 ZEV Action Plan refines the top priority actions.

Renewables Portfolio Standard

As discussed in Section 4.6 (Energy), the State's Renewables Portfolio Standard (RPS) Program was enacted to increase the amount of electricity generated and sold to retail customers from eligible renewable energy resources. The initial goal was to increase the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2017. The Renewables Portfolio Standard has been subsequently amended, most recently in September 2018 by SB10 to establish a target of 60 percent renewable energy by 2030 and 100 percent renewable energy by 2045.

California Executive Order B-55-18

EO B-55-18 was issued by the Governor on September 10, 2018. It sets a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets.

California Green Building Standards Code

In 2007, the California Building Standards Commission (CBSC) developed green building standards in an effort to meet the goals established by the Global Warming Solutions Act of 2006 to reduce GHG emissions. These standards are referred to as the CALGreen Code and are included as Part 11 of the CBSC.

New residential and nonresidential buildings must comply with mandatory measures related to planning and design (e.g., install secure bicycle parking facilities, designated parking for clean air vehicles, improvements to facilitate the future installation of electric vehicle supply equipment, light pollution reduction, etc.), energy efficiency, water efficiency/conservation (e.g., water efficient landscaping, low-flow plumbing fixtures, etc.), material conservation/resource efficiency (weather protection, construction waste reduction/recycling, recycling facilities for building occupants, building commissioning, systems testing, etc.). The local Building Official is responsible for ensuring compliance with the CALGreen Code.

CEQA Guidelines

§15064.4 of the CEQA Guidelines states that the lead agency should focus its GHG emissions analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A lead agency has the discretion to determine whether to use a model or methodology to quantify GHG emissions or to rely on a qualitative or performance-based standard.

The GHG analysis should consider 1) the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting; 2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project and 3) the extent to which the project complies with any regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Greenhouse Gases Defined

Table 4.8-1 provides descriptions of the GHGs identified in California Health and Safety Code §38505(g).

TABLE 4.8-1
Greenhouse Gases

Greenhouse Gas	Description
Carbon dioxide (CO ₂)	Carbon dioxide (CO ₂) is the primary greenhouse gas emitted through human activities. In 2014, CO ₂ accounted for about 80.9 percent of all U.S. greenhouse gas emissions from human activities. The main human activity that emits CO ₂ is the combustion of fossil fuels (coal, natural gas, and oil) for energy and transportation, although certain industrial processes and land-use changes also emit CO ₂ .
Methane (CH ₄)	Methane (CH ₄) is the second most prevalent greenhouse gas emitted in the United States from human activities. Methane is emitted by natural sources such as wetlands, as well as human activities such as the raising of livestock; the production, refinement, transportation and storage of natural gas; methane in landfills as waste decomposes; and in the treatment of wastewater.
Nitrous oxide (N ₂ O)	In 2014, nitrous oxide (N ₂ O) accounted for about 6 percent of all U.S. greenhouse gas emissions from human activities. Nitrous oxide is naturally present in the atmosphere as part of the Earth's nitrogen cycle. Human activities such as agricultural soil management (adding nitrogen to soil through use of synthetic fertilizers), fossil fuel combustion, wastewater management, and industrial processes are also increasing the amount of N ₂ O in the atmosphere.
Hydrofluorocarbons (HFCs)	Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products such as refrigerants, aerosol propellants, solvents, and fire retardants. They are released into the atmosphere through leaks, servicing, and disposal of equipment in which they are used.
Perfluorocarbons (PFCs)	Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF ₄), perfluoroethane (C ₂ F ₆), perfluoropropane (C ₃ F ₈), perfluorobutane (C ₄ F ₁₀), perfluorocyclobutane (C ₄ F ₈), perfluoropentane (C ₅ F ₁₂), and perfluorohexane (C ₆ F ₁₄). Perfluorocarbons are produced as a byproduct of various industrial processes associated with aluminum production and the manufacturing of semiconductors.
Sulfur hexafluoride (SF ₆)	Sulfur hexafluoride (SF ₆) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF ₆ is primarily used in magnesium processing and as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80 percent of all SF ₆ produced worldwide.
Nitrogen trifluoride (NF ₃)	Nitrogen trifluoride is a colorless, odorless, nonflammable gas that is highly toxic by inhalation. It is one of several gases used in the manufacture of liquid crystal flat-panel displays, thin-film photovoltaic cells and microcircuits.

LOCAL

There are no local regulations pertaining to GHGs that apply to the proposed project.

DISCUSSION OF IMPACTS

Question A

Gases that trap heat in the atmosphere create a greenhouse effect that results in global warming and climate change. These gases are referred to as greenhouse gases (GHGs). As described in **Table 4.8-1**, some GHGs occur both naturally and as a result of human activities, and some GHGs are exclusively the result of human activities.

The atmospheric lifetime of each GHG indicates how long the gas stays in the atmosphere before natural processes (e.g., chemical reactions) remove it. A gas with a long lifetime can exert more warming influence than a gas with a short lifetime. In addition, different GHGs have different effects on the atmosphere. For this reason, each GHG is assigned a global warming potential (GWP) which is a measure of the heat-trapping potential of each gas over a specified period of time.

Gases with a higher GWP absorb more heat than gases with a lower GWP, and thus have a greater effect on global warming and climate change. The GWP metric is used to convert all GHGs into CO₂ equivalent (CO₂e) units, which allows policy makers to compare impacts of GHG emissions on an equal basis. The GWPs and atmospheric lifetimes for each GHG are shown in **Table 4.8-2**.

TABLE 4.8-2
Greenhouse Gases: Global Warming Potential and Atmospheric Lifetime

GHG	GWP (100-year time horizon)	Atmospheric Lifetime (years)
CO ₂	1	50 -200
CH ₄	25	12
N ₂ O	298	114
HFCs	Up to 14,800	Up to 270
PFCs:	7,390-12,200	2,600 – 50,000
SF ₆	22,800	3,200
NF ₃	17,200	740

Source: U.S. Environmental Protection Agency, 2018.

Neither Siskiyou County nor the City have adopted thresholds of significance for GHG emissions. Because there are no local quantitative GHG thresholds, predicted Project-related GHG emissions were compared to thresholds established by the Bay Area Air Quality Management District and Sacramento Metropolitan Air Quality Management District, which are widely adopted GHG emissions thresholds, as shown in **Table 4.8-3**. These thresholds are tied directly to AB 32 and state-wide emissions reduction goals.

**TABLE 4.8-3
Greenhouse Gas Emissions Thresholds**

Category	Bay Area AQMD	Sacramento Metropolitan AQMD
Construction	None Recommended	1,100 tons/year CO ₂ e
Stationary Sources ³	10,000 metric tons/year CO ₂ e	10,000 metric tons/year CO ₂ e
Land Development Projects (Operational)	1,100 metric tons/year CO ₂ e or 4.6 tons CO ₂ e/service population/year	1,100 metric tons/year CO ₂ e

The City has determined the commonly adopted numeric thresholds for land development projects of 1,100 metric tons of CO₂e per year for construction emissions, and 1,100 metric tons of CO₂e per year for operational emissions are appropriate for the proposed Project. If construction or operational emissions exceed 1,100 metric tons of CO₂e, then the impact is considered significant.

Project GHG Emissions

GHG emissions for the proposed Project were estimated using the CalEEMod.2016.3.1 software. CalEEMod is a statewide model designed to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

CalEEMod also includes the intensity factors for CO₂, CH₄, and N₂O for the utility company that will serve the proposed project. Therefore, CalEEMod uses PacifiCorp's mix of renewable and non-renewable energy sources to estimate indirect GHG emissions associated with electricity use.

Site-specific inputs and assumptions include, but are not limited to, the following:

- Although the Project is proposed to be constructed in phases, with the play field and gymnasium constructed in the future when funding becomes available, in order to represent a worst-case scenario, reported emissions from the CalEEMod analysis are based on all phases of the Project being constructed concurrently.
- Emissions from construction are based on all construction-related activities associated with proposed and future uses, including but not limited to grading, use of construction equipment, material hauling, trenching, and site preparation.
- Emissions from operation of the proposed Project are based on all proposed and future operational activities, including vehicle traffic, electricity usage in the buildings and for lighting in parking lots, water use, wastewater treatment, solid waste disposal, use of architectural coatings, etc.
- Construction would commence in 2019 and be completed in eight months.

Output files, including all site-specific inputs and assumptions, are provided in **Appendix B**.

³ Stationary sources are typically associated with industrial processes (e.g., boilers, heaters, flares, cement plants, combustion equipment, etc.).

Construction Emissions

Construction of the proposed Project would emit GHG emissions as shown in **Table 4.8-4**, primarily from the combustion of diesel fuel in heavy equipment. CO₂e associated with construction of the proposed Project is well below the referenced threshold of 1,100 metric tons/year. Because the proposed Project would not exceed the numerical threshold, construction-related impacts would be less than significant.

TABLE 4.8-4
Construction-Related Greenhouse Gas Emissions

Total Construction Emissions (Metric Tons)			
Carbon Dioxide (CO ₂)	Methane (CH ₄)	Nitrous Oxide (N ₂ O)	Carbon Dioxide Equivalent (CO ₂ e)
265.08	0.04	0	266.17

Operational Emissions

The proposed Project would result in the generation of operational GHG emissions as shown in **Table 4.8-5**. The majority of operational emissions are attributed to mobile sources (e.g., vehicle trips for employees, students, vendors, deliveries, etc.), and energy use due to the generation of electricity for the proposed Project through the combustion of fossil fuels.

TABLE 4.8-5
Operational Greenhouse Gas Emissions

Total Annual Operational Emissions (Metric Tons)				
Source	Carbon Dioxide (CO ₂)	Methane (CH ₄)	Nitrous Oxide (N ₂ O)	Carbon Dioxide Equivalent (CO ₂ e)
Area	Trace	Trace	0	0.002
Energy	241.94	Trace	Trace	242.46
Mobile	707.30	0.05	0	708.57
Waste	11.35	0.67	0	28.11
Water	12.53	0.03	Trace	13.65
Total	973.12	0.75	Trace	992.79

As discussed under Regulatory Context, the State has adopted numerous policies that call for the development of additional State regulations to reduce GHG emissions to achieve the 2030 target of 40 percent emissions reductions below 1990 levels.

It is estimated that the State's 2016 Mobile Source Strategy will result in a state-wide reduction in GHG emissions of 45 percent, and a 50 percent reduction in the consumption of petroleum-based fuels in the transportation sector. In addition, the State's RPS Program was enacted to increase the amount of electricity generated and sold to retail customers from eligible renewable energy resources. The RPS, as amended, establishes a target of 60 percent renewable energy by 2030 and 100 percent renewable energy by 2045.

Electricity for the proposed Project would be provided by PacifiCorp, a company based in Portland, Oregon, that provides electric service to certain areas in California, Oregon, Washington, Utah, Wyoming, and Idaho. PacifiCorp's company-owned net generation capacity is 10,887 megawatts. PacifiCorp obtains power from contracted solar- and wind-powered generation facilities and also has 72 generating plants as follows:

- Coal-fueled facilities (10)
- Hydroelectric facilities (41)
- Natural gas facilities (7)
- Wind facilities (13)
- Geothermal facilities (1)

Renewable and non-carbon resources currently make up 25 percent of PacifiCorp's owned and contract generation capacity. PacifiCorp's 2017 Integrated Resource Plan (IRP) (updated in May 2018), presents steps to transition to cleaner energy sources with near-term investments in both existing and new renewable resources, new transmission infrastructure, and energy efficiency programs. The IRP calls for adding more than 1,100 megawatts of incremental solar and wind capacity through long-term power purchase agreements. In addition, PacifiCorp is in the process of reducing reliance on coal by closing and/or converting coal-fired generation facilities. The IRP calls for reduced reliance on coal by 2,800 megawatts by 2034 and projects that CO₂ emissions will decrease by 22 percent by 2036.

Indirect GHG emissions from the production of electricity will continue to decrease through implementation of State regulations that require electricity to be generated from renewable energy sources. GHG emissions in the transportation sector will also continue to decrease with implementation of State regulations.

Therefore, because the proposed Project would not exceed the numerical threshold of 1,100 metric tons/year of CO₂e during construction or operation, and GHG emissions would continue to decrease with implementation of State regulations, impacts would be less than significant.

Question B

See discussion under Regulatory Context above. The City's Building Official is responsible for reviewing construction documents to ensure mandatory measures included in the CALGreen Code are implemented into the Project design. The Building Official verifies implementation of the mandatory measures during final inspection of the building. The plan review and inspection process ensures that the proposed Project does not conflict with any local or State regulations or plans adopted for the purpose of reducing GHG emissions; there would be no impact.

CUMULATIVE IMPACTS

GHG emissions and global climate change are, by nature, cumulative impacts. Unlike criteria pollutants, which are pollutants of regional and local concern, GHGs are global pollutants and are not limited to the area in which they are generated. As discussed under Regulatory Context above, the State legislature has adopted numerous programs and regulations to reduce statewide GHG emissions, including indirect emissions that are produced when electricity is generated from fossil fuels. All new residential and nonresidential developments are required to implement applicable CALGreen Code mandatory measures that were enacted to reduce statewide GHG emissions.

As documented above, construction-related and operational GHG emissions would not exceed the numerical threshold of 1,100 metric tons/year CO₂e. Further, GHG emissions in the transportation sector will continue to decrease with implementation of State regulations. As the use of renewable energy sources for electricity generation increases in accordance with existing State regulations, GHG emissions associated with the use of electricity will continue to decrease. Therefore, the Project's contribution to cumulative GHG emissions is less than significant.

MITIGATION

None necessary

DOCUMENTATION

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4.9 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) is the primary federal law for the regulation of solid waste and hazardous waste in the United States and provides for the “cradle-to-grave” regulation that requires businesses, institutions, and other entities that generate hazardous waste to track such waste from the point of generation until it is recycled, reused, or properly disposed of. The USEPA has primary responsibility for implementing the RCRA.

USEPA’s Risk Management Plan

Section 112(r) of the federal CAA (referred to as the USEPA’s Risk Management Plan) specifically covers “extremely hazardous materials” which include acutely toxic, extremely flammable, and highly explosive substances. Facilities involved in the use or storage of extremely hazardous materials must implement a Risk Management Plan (RMP), which requires a detailed analysis of potential accident factors and implementation of applicable mitigation measures.

Federal Occupational Safety and Health Administration (OSHA)

The Occupational Safety and Health Act (OSHA) prepares and enforces occupational health and safety regulations with the goal of providing employees a safe working environment. OSHA regulations apply to the work place and cover activities ranging from confined space entry to toxic chemical exposure.

U.S. Department of Transportation

The United States Department of Transportation regulates the interstate transport of hazardous materials and wastes through implementation of the Hazardous Materials Transportation Act. This act specifies driver-training requirements, load labeling procedures, and container design and safety specifications.

Transporters of hazardous wastes must also meet the requirements of additional statutes such as the RCRA.

STATE

California Code of Regulations (CCR), Title 22, Definition of Hazardous Material

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, State, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22, §66260.10, of the CCR as: *“A substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.”*

Department of Toxic Substances Control

The California Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under the RCRA and the State Hazardous Waste Control Law. Both laws impose “cradle-to-grave” regulatory systems for handling hazardous waste in a manner that protects human health and the environment.

California Occupational Safety and Health Administration (Cal/OSHA)

The California Occupational Safety and Health Administration (Cal/OSHA) has primary responsibility for developing and enforcing state workplace safety regulations, including requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation.

Regional Water Quality Control Board

The SWRCB and RWQCBs regulate hazardous substances, materials, and wastes that may affect surface water or groundwater through a variety of state statutes, including the Porter-Cologne Water Quality Control Act and underground storage tank cleanup laws. Any person proposing to discharge waste within the State must file a Report of Waste Discharge with the appropriate regional board. The proposed Project is located within the jurisdiction of the CVRWQCB.

Hazardous Materials Emergency Response/Contingency Plan

Chapter 6.95, §25503, of the California Health and Safety Code requires businesses that handle/store a hazardous material or a mixture containing a hazardous material to establish and implement a Business Plan for Emergency Response (Business Plan). A Business Plan is required when the amount of hazardous materials exceeds 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases. A Business Plan is also required if federal thresholds for extremely hazardous substances are exceeded. The Business Plan includes procedures to deal with emergencies following a fire, explosion, or release of hazardous materials that could threaten human health and/or the environment.

California Accidental Release Prevention Program

The goal of the California Accidental Release Prevention Program (CalARP) is to prevent accidental releases of substances that pose the greatest risk of immediate harm to the public and the environment. Facilities are required to prepare a Risk Management Plan in compliance with CCR Title 19, Division 2, Chapter 4.5, if they handle, manufacture, use, or store a federally regulated substance in amounts above established federal thresholds; or if they handle a state regulated substance in amounts greater than state thresholds and have been determined to have a high potential for accident risk.

LOCAL

The City of Mt. Shasta's General Plan includes the following Goals, Policies, and Implementation Measures (IM) that apply to the proposed Project:

Safety Element		
Goals	SF-4	Protect property and life from fire hazards.
	SF-5	Protect people and the environment from hazardous materials exposure.
Policies	SF-4.2	Adopt and enforce development standards that provide adequate fire protection.
	SF-5.1	Assure that the use, storage and transportation of hazardous materials complies with federal and state regulations.
IM	SF-5.1(a)	Working with the State Department of Health and the County Health Department, enforce the applicable provisions of State law related to hazardous material storage.

DISCUSSION OF IMPACTS

Questions A and B

The Project would not result in any long-term impacts related to the transport of hazardous materials. During construction activities, it is anticipated that limited quantities of hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, paints, etc. would temporarily be brought into areas where improvements are proposed. There is a possibility of accidental release of hazardous substances into the environment, such as spilling petroleum-based fuels used for construction equipment. However, construction contractors would be required to comply with applicable federal and state environmental and workplace safety laws and implement BMPs for the storage, use, and transportation of hazardous materials. Therefore, impacts would be less than significant.

Question C

According to the Siskiyou County Office of Education, Mt. Shasta Elementary School on Cedar Street is approximately 0.25 miles southeast of the Project site. As described under Questions A and B, the Project would not result in any long-term impacts related to the transport of hazardous materials. Although Project construction would involve the use of relatively small quantities of hazardous substances work would be conducted in accordance with these existing requirements, and potential impacts could occur only during construction activities, impacts would be less than significant.

Question D

The following databases were reviewed to locate hazardous waste facilities, land designated as hazardous waste property, and hazardous waste disposal sites in accordance with California Government Code §65962.5:

- List of Hazardous Waste and Substances sites from the Department of Toxic Substances Control (DTSC) EnviroStor database.
- SWRCB GeoTracker Database
- List of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit.

- List of “active” Cease and Desist Orders and Clean-Up and Abatement Orders from the SWRCB.

A Phase I Environmental Site Assessment (ESA) was prepared by Lawrence & Associates in April 2018 to identify the presence or the likely presence of hazardous substances or petroleum products in the Project site based on historical and current land uses. The potential for naturally occurring hazardous materials (e.g., asbestos, oil, and gas) was also assessed. According to the ESA, aerial photographs indicate that the property has remained undeveloped since at least 1951, with the exception of a small barn and the construction of I-5 along the western boundary of the Project site.

The ESA concluded that there is no evidence of any hazardous substances or petroleum products in the Project site. No current or former landfill areas, chemical plants, oil fields, refineries, fuel storage facilities, abandoned farms or dairies, or agricultural areas where pesticides and fertilizers have been heavily used were identified in proximity to the Project site. Further, no naturally occurring asbestos, oil, gas, or other naturally occurring hazardous materials were identified.

DTSC does not identify any active clean-up sites within a 0.5-mile radius of the Project site. The SWRCB GeoTracker Database identifies the following two clean-up sites within a 0.5-mile radius of the Project site:

North Mt. Shasta Boulevard Kerosene Spill

This clean-up site is located ± 0.2 miles southeast of the Project site. This case was opened on October 1, 2018, after City crews that were replacing a water meter on private property encountered red-dye diesel in the excavation. The SWRCB is in the process of working with the property owner to conduct preliminary site investigations to assess the soil and groundwater in the vicinity of the encountered release. Due to the distance from the Project site, this cleanup site would have no impact on the Project site.

Private Residence on Cedar Street

This clean-up site is located ± 0.18 miles southeast of the Project site. This case was opened after an above-ground storage tank leaked an unknown amount of heating oil in May 2018. A site assessment work plan was prepared by Broadbent & Associates, Inc. and approved by the CVRWQCB on November 27, 2018. Broadbent is in the process of conducting site investigations to determine the severity and extent of contamination and to identify necessary remedial actions. Due to the distance from the Project site, this cleanup site would have no impact on the Project site.

Therefore, because the ESA concluded that there is no evidence of any hazardous substances, petroleum products, or naturally occurring hazardous materials in the Project site; the ESA did not identify past or present hazardous uses in proximity to the Project site; and the proposed Project would not affect or be affected by the active SWRCB clean-up sites, there would be no impact.

Question E

The Dunsmuir Municipal-Mott Airport is located approximately four miles southeast of the southerly boundary of the Project site. According to the Siskiyou County Airport Land Use Compatibility Plan, no portion of the Project site is located within an airport influence area. According to the Federal Aviation Administration, the Project site is not located in the vicinity of a private airstrip. Therefore, there would be no impact.

Question F

Although a temporary increase in traffic could occur during construction and could interfere with emergency response times, construction-related traffic would be minor due to the overall scale of the construction activities. Further, construction-related traffic would be spread over the duration of the

construction schedule and would be minimal on a daily basis. In addition, pursuant to Cal/OSHA requirements, temporary traffic control during completion of activities that require work in the public right-of-way is required and must adhere to the procedures, methods and guidance given in the current edition of the California Manual on Uniform Traffic Control Devices (MUTCD).

In addition, pursuant to the City's conditions for issuance of an encroachment permit, which would be obtained by the applicant's contractor, safety measures must be employed to safeguard travel by the general public. At the discretion of the City, the contractor may be required to submit a temporary traffic control plan for review and approval prior to issuance of an encroachment permit. The plan would illustrate the location of the work, affected roads and types and locations of temporary traffic control measures (i.e., signs, cones, flaggers, etc.) that would be implemented during the work. Implementation of these measures ensures that construction activities do not hinder emergency response or evacuations.

In terms of operational impacts, according to the Traffic Impact Study prepared for the proposed Project by Traffic Works, LLC, the Project is anticipated to generate 496 average daily trips (ADTs), with 162 trips during the A.M. peak hour (7:00 A.M. to 9:00 A.M.) and 116 P.M. peak hour trips (2:00 P.M. to 4:00 P.M. - when school is dismissed). The traffic study concludes that the proposed Project would not significantly impact traffic flows in the area (see discussion in Section 4.17).

Access to the site would be via two driveways off of Pine Street. In addition, an emergency-only access route to Cedar Street would be provided at the southern area of the Project site. In order to provide adequate sight distance for vehicles exiting the Project site onto Pine Street, the proposed Project would prohibit on-street parking ± 55 feet north of the driveway and ± 35 feet south of the driveway.

The proposed Project would also implement improvements identified in Chapter 7 of the MUTCD (Traffic Control for School Areas), including establishing reduced school speed limits and installing school zone signs. Therefore, because operational traffic levels would not significantly impact traffic flows in the area, a secondary emergency access route from Cedar Street would be provided in the southern Project area, on-street parking would be prohibited to ensure adequate sight distance when leaving the Project site, and the site would be established as a school zone in accordance with MUTCD standards, impacts would be less than significant.

Question G

As documented in Section 4.20 (Wildfires), the proposed Project does not include any development or improvements that would increase the long-term risk of wildland fires or expose people or structures to wildland fires. However, equipment used during construction activities may create sparks, that could ignite dry grass. Also, the use of power tools and/or acetylene torches may increase the risk of wildland fire hazard. Mitigation Measure **MM 4.8.1** will ensure impacts are less than significant.

CUMULATIVE IMPACTS

The potential for hazard-related impacts during construction are site specific and have the potential to affect only a limited area on a temporary basis during completion of the improvements. The transport of hazardous chemicals would be regulated in a similar fashion to other cumulative projects that require the transport of hazardous chemicals for site-specific activities. Completion of the proposed improvements requires implementation of measures to reduce the potential for adverse impacts associated with hazards and hazardous materials. In terms of operational impacts, the proposed Project does not include the routine transport, use, or disposal of hazardous materials, would not emit hazardous emissions, and would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires (refer to Section 4.20, Wildfire). Therefore, the proposed Project's potential for cumulative impacts would be less than significant with implementation of **Mitigation Measure MM 4.8.1**.

MITIGATION

- MM 4.8.1** During construction, all areas in which work will be completed using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a fire break.

DOCUMENTATION

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- Lawrence & Associates.** 2018. Phase I Environmental Site Assessment, Proposed Golden Eagle Charter School Site, Pine Street Campus, Assessor's Parcel Numbers (APNs) 057-031-030 and -060, 057-044-020, 057-010 and -020, 057-064-010 and -030, and 057-071-010 and -040, Mt. Shasta, Siskiyou County, California.
- Siskiyou County Office of Education.** 2018. Siskiyou County Schools. <https://www.siskiyoucoe.net/schools>. Accessed October 2018.
- State Water Resources Control Board.** 2019. GeoTracker. <http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Mt.+shasta>. Accessed February 2019.
- Traffic Works, LLC.** 2018. Traffic Impact Study for Golden Eagle Charter School, Mount Shasta, CA.

4.10 HYDROLOGY AND WATER QUALITY

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner that would:				
(i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(ii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

Clean Water Act (CWA)

The CWA (33 USC §1251-1376), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality and was established to “*restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.*” Pertinent sections of the Act are as follows:

1. Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
2. Section 401 (Water Quality Certification) requires an applicant for any federal permit that would authorize a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the Act.
3. Section 402 establishes the NPDES, a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program is administered by the SWRCB and is discussed in detail below.
4. Section 404, jointly administered by the USACE and USEPA, establishes a permit program for the discharge of dredged or fill material into waters of the United States.

Federal Anti-Degradation Policy

The federal Anti-Degradation Policy is part of the CWA (Section 303(d)) and is designed to protect water quality and water resources. The policy directs states to adopt a statewide policy that protects designated uses of water bodies (e.g., fish and wildlife, recreation, water supply, etc.). The water quality necessary to support the designated use(s) must be maintained and protected.

Safe Drinking Water Act

Under the 1974 Safe Drinking Water Act, most recently amended in 1996, USEPA regulates contaminants of concern to domestic water supply, which are those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are classified as either

primary or secondary Maximum Contaminant Levels (MCLs). MCLs and the process for setting these standards are reviewed triennially.

Federal Emergency Management Agency (FEMA)

FEMA is responsible for mapping flood-prone areas under the National Flood Insurance Program (NFIP). Communities that participate in the NFIP are required to adopt and enforce a floodplain management ordinance to reduce future flood risks related to new construction in a flood hazard area. In return, property owners have access to affordable federally-funded flood insurance policies.

National Pollution Discharge Elimination System (NPDES)

Under Section 402(p) of the CWA, the USEPA established the NPDES to enforce discharge standards for both point-source and non-point-source pollution. Dischargers can apply for individual discharge permits, or apply for coverage under the General Permits that cover certain qualified dischargers. Point-source discharges include municipal and industrial wastewater, stormwater runoff, combined sewer overflows, sanitary sewer overflows, and municipal separate storm sewer systems. NPDES permits impose limits on discharges based on minimum performance standards or the quality of the receiving water, whichever type is more stringent in a given situation.

STATE

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code §13000 *et seq.*) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of waters of the State. The Porter-Cologne Act applies to surface waters, wetlands, and groundwater, and to both point and non-point sources of pollution. The Act requires a Report of Waste Discharge for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the state. The RWQCBs enforce waste discharge requirements identified in the Report.

State Anti-Degradation Policy

In 1968, as required under the Federal Anti-Degradation Policy, the SWRCB adopted an Anti-Degradation Policy, formally known as the *Statement of Policy with Respect to Maintaining High Quality Waters in California* (State Water Board Resolution No. 68-16). Under the Anti-Degradation Policy, any actions that can adversely affect water quality in surface or ground waters must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial use of the water, and not result in water quality less than that prescribed in water quality plans and policies.

National Pollution Discharge Elimination System

Pursuant to the federal CWA, the responsibility for issuing NPDES permits and enforcing the NPDES program was delegated to the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB). NPDES permits are also referred to as waste discharge requirements (WDRs) that regulate discharges to waters of the United States. Below is a description of relevant NPDES general permits.

Construction Activity and Post-Construction Requirements

Discharges from construction sites that disturb one acre or more of total land area are subject to the NPDES permit for *Discharges of Storm Water Runoff associated with Construction Activity* (currently Order No. 2009-009-DWQ), also known as the Construction General Permit. The permitting process requires the development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP). Coverage under the Construction General Permit is obtained by submitting a Notice of Intent (NOI) to the SWRCB and preparing the SWPPP prior to the beginning of construction. The SWPPP must include BMPs to reduce pollutants and any more stringent controls necessary to meet

water quality standards. Dischargers must also comply with water quality objectives as defined in the applicable Basin Plan. If Basin Plan objectives are exceeded, corrective measures are required.

The Construction General Permit includes post-construction requirements for areas in the State not covered by a Standard Urban Storm Water Management Plan (SUSWMP) or a Phase I or Phase II MS4 Permit. These requirements are intended to ensure that the post-construction conditions at the project site do not cause or contribute to direct or indirect water quality impacts (i.e., pollution and/or hydromodification) upstream or downstream.

Where applicable, the SWPPP submitted to the SWRCB with the NOI must include a description of all post-construction stormwater management measures. The SWRCB SMARTS post-construction calculator or similar method would be used to quantify the runoff reduction resulting from implementation of the measures. The applicant must also submit a plan for long-term maintenance with the NOI. The maintenance plan must be designed for a minimum of five years and must describe the procedures to ensure that the post-construction stormwater management measures are adequately maintained.

Dewatering Activities (Discharges to Surface Waters and Storm Drains)

Construction dewatering activities that involve the direct discharge of relatively pollutant-free wastewater that poses little or no threat to the water quality of waters of the U.S., are subject to the provisions of CVRWQCB Order R5-2016-0076-01 (NPDES No. CAG995002), *Waste Discharge Requirements, Limited Threat Discharges to Surface Water*, as amended. WDRs for this order include discharge prohibitions, receiving water limitations, monitoring, and reporting, etc. Coverage is obtained by submitting a NOI to the applicable RWQCB.

Dewatering Activities (Discharges to Land)

Construction dewatering activities that are contained on land and do not enter waters of the U.S. are authorized under SWRCB Water Quality Order No. 2003-003-DWQ, provided that the dewatering discharge is of a quality as good as or better than the underlying groundwater, and there is a low risk of nuisance.

Water Quality Control Plans (Basin Plans)

Each of the State's RWQCBs is responsible for developing and adopting a basin plan for all areas within its region. The Plans identify beneficial uses to be protected for both surface water and groundwater. Water quality objectives for all waters addressed through the plans are included, along with implementation programs and policies to achieve those objectives. Waste discharge requirements (WDRs) were adopted in order to attain the beneficial uses listed for the Basin Plan areas.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA), enacted in September 2014, established a framework for groundwater resources to be managed by local agencies in areas designated by the Department of Water Resources as "medium" or "high" priority basins. Basins were prioritized based, in part, on groundwater elevation monitoring conducted under the California Statewide Groundwater Elevation Monitoring (CASGEM) program. Of the 517 groundwater basins in the State, 109 are identified as medium- and high-priority basins. Critical conditions of overdraft have been identified in 21 groundwater basins (Department of Water Resources, 2019).

The SGMA requires local agencies in medium- and high-priority basins to form Groundwater Sustainability Agencies by July 1, 2017, and be managed in accordance with locally-developed Groundwater Sustainability Plans (GSPs). Basins identified as critically overdrafted are required to be managed under a GSP by January 31, 2020. All other medium- and high-priority basins must be managed under a GSP by January 31, 2022. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans.

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Open Space and Conservation Elements		
Goal	OC-10	Protect the drinking water of Mt. Shasta residents.
Policies	OC-10.1	Maintain a safe drinking water supply.
	OC-10.2	Protect the City's drinking water sources from contamination.
IMs	OC-10.1(a)	Comply with drinking water standards.
	OC-10.2(a)	When reviewing development proposals for projects with the potential to contaminate drinking water supplies, ensure that the environmental and project review process incorporates appropriate measures to avoid drinking water contamination.
Safety Element		
Goal	SF-1	Protect people and property from flooding.
Policy	SF-1.1	Identify areas subject to inundation.
IM	SF-1.1(a)	Require that the limits of flooding resulting from a one hundred-year storm event be shown on all permit site plans where lands may be subject to inundation.

The City of Mt. Shasta has adopted the City of Redding's (COR) Construction Standards. COR Standard 200.00 (Drainage Criteria) and COR Standard 200.10 (Hydraulic Criteria) outline requirements for the drainage/hydrology study and design of the storm drain system. All new development projects are required to be designed to ensure that runoff from the project will not increase the 10-, 25-, or 100-year flows downstream.

DISCUSSION OF IMPACTS

Questions A and E

The proposed Project has the potential to temporarily degrade water quality due to increased erosion during Project construction; however, as discussed under Regulatory Context above, and in Section 4.6 under Question B, the CVRWQCB Construction General Permit requires implementation of an effective SWPPP that includes BMPs to control construction-related erosion and sedimentation and prevent damage to streams, watercourses, and aquatic habitat.

Because the City is not subject to a SUSWMP or a Phase I or Phase II MS4 Permit, the proposed Project is subject to post-construction requirements included in the CVRWQCB Construction General Permit to ensure that the post-construction conditions at the project site do not cause or contribute to direct or indirect impacts from stormwater runoff (i.e., pollution and/or hydromodification) upstream or downstream.

Post-construction measures are defined as structural and non-structural controls that detain, retain, or filter the release of pollutants to receiving waters after final stabilization is attained. Non-structural controls are required unless the discharger demonstrates that non-structural controls are infeasible or that structural controls will produce greater reduction in water quality impacts. Nonstructural controls

may include vegetated swales, soil quality enhancement, setbacks, buffers and/or rooftop and impervious surface disconnection. Nonstructural controls can be included as a landscape amenity.

The SWPPP submitted to the SWRCB with the NOI for the proposed Project must include a description of all post-construction stormwater management measures and a plan for long-term maintenance. The maintenance plan must be designed for a minimum of five years and must describe the procedures to ensure that the post-construction stormwater management measures are adequately maintained.

In addition, if dewatering is required during construction, the Project is subject to a CVRWQCB General Order that includes specific requirements for monitoring, reporting, and implementing BMPs for construction dewatering activities. The applicant must also obtain a State Water Quality Certification (or waiver) from the CVRWQCB to ensure that the project will not violate established State water quality standards. The applicant also must file a Report of Waste Discharge for any discharge of waste to land or surface waters that may impair a beneficial use of surface or groundwater of the state.

As discussed under Regulatory Context above, the SGMA established a framework for groundwater resources to be managed by local agencies in areas designated by the Department of Water Resources as medium or high priority basins. The Project site is not located in a medium or high priority basin, and there is not a sustainable groundwater management plan that applies to the proposed Project.

Compliance with CVRWQCB permit conditions ensures that the Project would not violate any water quality standards or waste discharge requirements or conflict with or obstruct implementation of a water quality control plan. Impacts would be less than significant.

Question B

The proposed Project would not require groundwater supplies for construction or operation. The proposed Project includes the addition of approximately 2.5 acres of impervious surfaces (e.g., buildings, driveways, and parking lots). The addition of impervious surfaces would decrease the area available for water penetration, thereby reducing local groundwater recharge potential. The increase in impervious surfaces represents a very small percentage of the entire surface area of the hydrologic region. In addition, as discussed under Question C below, runoff from impervious surfaces would be directed to on-site vegetated swales or detention facilities to the extent feasible.

Because runoff would eventually be directed to areas with pervious surfaces, and the open space area north of the school site would continue to provide for groundwater recharge, the proposed Project would not substantially interfere with groundwater recharge. Therefore, impacts on groundwater supplies or recharge are less than significant.

Question C

Storm drainage within the City of Mt. Shasta and adjacent areas consists of both surface and subsurface drainage features. Surface storm drainage features consist of natural waterways, man-made ditches, and/or remnants of natural watercourses. Subsurface storm drainage features consist of historical drainages that have been enclosed with some type of pipe (e.g., iron, corrugated metal, clay, or concrete).

Storm drain features in the study area include a perennial creek that bisects the property north of the development site. The perennial creek originates at a diversion of Spring Creek near the Mt. Shasta City Park, approximately 0.75 miles north of the study area. The perennial creek enters the property from a 24-inch culvert located under Pine Street, and drains southwest across the project site toward I-5. In addition, vegetated ditches on the Project site receive drainage from a 16-inch culvert under

Pine Street. The ditch segments traverse the southern boundary of the site before draining to a channelized stream south of the study area boundary.

The proposed Project would result in an increase in impervious surface (building roofs, parking areas, and driveways) that would generate stormwater runoff. If drainage is not adequately handled, the proposed Project would increase the amount of runoff in a manner that could increase flooding on- or off-site or generate additional sources of polluted runoff.

A Preliminary Site Hydrology and Tributary Drainage Analysis was prepared for the proposed Project by Rolls, Anderson & Rolls in November 2018 to determine pre- and post-development runoff associated with the proposed Project. According to the Hydrology/Drainage report, there are two distinct drainage basins located on the Project site. Basin 1 is approximately 3.5 acres and encompasses the proposed school, driveways, and parking areas. Basin 2 is approximately 13.5 acres and includes the open space area north of the school site and the area proposed for the future gymnasium and play field.

According to the Rolls, Anderson & Rolls report, the estimated pre- and post-development runoff for Basin 1 is as shown in **Table 4.10-1**. Because the specific size and layout of the future gymnasium and play field is not known, the increased runoff will be determined when a specific development plan is prepared.

TABLE 4.10-1
Estimated Pre- and Post-Development Stormwater Runoff

Storm Event Category	Estimated Runoff - Cubic Feet per Second		
	Existing	Post-Development	Increase
10-year, 6-hour design storm	2	7	+5
100-year, 6-hour design storm	4	12	+8

As discussed under Regulatory Context, the City's Construction Standards require that the proposed Project must be designed to ensure that runoff from the project will not increase the 10-, 25-, or 100-year flows downstream. **Mitigation Measure MM 4.10.1** requires that a final drainage study be completed in accordance with the City's Construction Standards and CVRWQCB requirements to ensure that post-construction runoff does not result in flooding on- or off-site.

Therefore, because implementation of **Mitigation Measure MM 4.10.1** will ensure that the Project does not result in flooding on- or -off site, or exceed the capacity of the City's storm drain system, and implementation of post-construction measures in accordance with CVRWQCB requirements will ensure that the Project does not result in an increase in polluted runoff, impacts would be less than significant.

Question D

A tsunami is a wave generated in a large body of water (typically the ocean) by fault displacement or major ground movement. The Project site is located over 90 miles east of the Pacific Ocean and is not in a tsunami zone. A seiche is a large wave generated in an enclosed body of water in response to ground shaking. The closest large body of water to the Project site is Lake Siskiyou, approximately two miles to the southwest. Seiches could potentially be generated in Lake Siskiyou due to very strong ground-shaking; however, due to the distance from the Project site, the Project site has no potential for inundation by seiche. According to the FEMA Flood Map Service Center (Panel 06093C3025D, effective January 19, 2011), the Project site is not located within a designated flood hazard zone. Therefore, because the proposed Project is not within a flood hazard, tsunami or seiche zone, there would be no impact.

CUMULATIVE IMPACTS

The proposed Project and other potential cumulative projects in the region, including growth resulting from build-out of the City's General Plan, could result in degradation of water quality, adverse impacts to groundwater supplies and groundwater recharge, and an increased risk of flooding due to additional surface runoff generated by the projects.

All projects in the State that result in land disturbance of one acre or more are required to comply with the State Water Board General Construction NPDES permit which requires implementation of post-construction measures to ensure that new development does not cause or contribute to impacts from stormwater runoff upstream or downstream. In addition, the City's Construction Standards require that the proposed Project be designed to ensure that runoff from the project will not increase the 10-, 25-, or 100-year flows downstream.

These regulations are intended to reduce the potential for cumulative impacts, both during and post-construction. Implementation of **Mitigation Measure MM 4.10.1**, in combination with compliance with State regulations, would ensure that the Project's cumulative contribution to hydrology and water quality impacts is less than significant.

MITIGATION

MM 4.10.1 Prior to issuance of a building permit or any earth disturbance for any phase of development, a final drainage/hydrology study shall be submitted to the City Engineer for review and approval. The drainage/hydrology study shall be prepared by a registered professional engineer and shall include drainage calculations and a storm drain plan that demonstrates that post-construction runoff from the project will not increase the 10-, 25-, or 100-year flows downstream in accordance with the City's adopted Construction Standards. The storm drain plan shall be consistent with the post-construction measures outlined in the State Water Resources Control Board's NPDES permit for *Discharges of Storm Water Runoff associated with Construction Activity*.

DOCUMENTATION

City of Mt. Shasta. 2007. Mt. Shasta General Plan, Open Space/Conservation Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/5OpenSpaceandConservationElement.pdf>. Accessed August 2018.

_____. 2007. Mt. Shasta General Plan, Safety Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/6SafetyElement.pdf>. Accessed August 2018.

Federal Emergency Management Agency. National Flood Hazard Map (Panel 06093C3025D), effective January 19, 2011. <https://msc.fema.gov/portal/search?AddressQuery=Mt%20Shasta%2C%20CA#searchresultsanchor>. Accessed August 2018.

Rolls, Anderson & Rolls. 2018. Preliminary Site Hydrology and Tributary Drainage Analysis, Golden Eagle Charter School.

State of California, Department of Water Resources. 2019. Sustainable Groundwater Management Act, 2018 Basin Prioritization. <https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Basin-Prioritization/Files/2018-Sustainable-Groundwater-Management-Act-Basin-Prioritization.pdf?la=en&hash=B9F946563AA3E6B338674951A7FFB0D80B037530>. Accessed March 2019.

4.11 LAND USE AND PLANNING

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause a significant environmental impact due to a conflict with any applicable land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to land use and planning that apply to the proposed project.

STATE

California Government Code

California Government Code (CGC) §65300 *et seq.* contains many of the State laws pertaining to the regulation of land uses by cities and counties. These regulations include requirements for general plans, specific plans, subdivisions, and zoning. State law requires that all cities and counties adopt General Plans that include seven mandatory elements: land use, circulation, conservation, housing, noise, open space, and safety. A General Plan is defined as a comprehensive long-term plan for the physical development of the county or city, and any land outside its boundaries that is determined to bear relation to its planning. A development project must be found to be consistent with the General Plan prior to project approval.

LOCAL

City of Mt. Shasta

The City's General Plan includes goals, policies, and implementation measures designed for the purpose of avoiding or minimizing environmental effects. The Mt. Shasta Municipal Code implements the City's General Plan. The purpose of the land use and planning provisions of the Code (Title 18, Zoning) is to provide for the orderly and efficient application of regulations and to implement and supplement related laws of the state of California, including but not limited to CEQA.

DISCUSSION OF IMPACTS

Question A

Land use impacts are considered significant if a proposed Project would physically divide an existing community (a physical change that interrupts the cohesiveness of the neighborhood). The proposed Project would not create a barrier for existing or planned development; therefore, there would be no impact.

Question B

As discussed in each resource section of this Initial Study, the proposed Project is consistent with applicable Goals, Policies, and Implementation Measures of the Mt. Shasta General Plan and regulations of the regulatory agencies identified in Section 1.6 of this Initial Study. Where necessary, mitigation measures are included to reduce impacts to less-than-significant levels. Therefore, with implementation of the Mitigation Measures identified in Section 1.9, the proposed Project would not conflict with any plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. No additional mitigation measures are necessary.

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the Project area, including population growth resulting from build-out of the City's and County's General Plan, would be developed in accordance with local and regional planning documents. Thus, cumulative impacts associated with land use compatibility are expected to be less than significant. In addition, with implementation of the recommended mitigation measures, the proposed Project is consistent with goals, policies, and implementation measures included in the General Plan, and would not contribute to the potential for adverse cumulative land use effects.

MITIGATION

None necessary.

DOCUMENTATION

City of Mt. Shasta. 2007. Mt. Shasta General Plan. <https://mtshastaca.gov/planning/>. Accessed December 2018.

_____. 2018. Mt. Shasta Municipal Code. Title 18, Zoning. <http://www.codepublishing.com/CA/MtShasta/>. Accessed December 2018.

4.12 MINERAL RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to mineral resources that apply to the proposed Project.

STATE

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act (SMARA), Chapter 9, Division 2 of the Public Resources Code (PRC), provides a comprehensive surface mining and reclamation policy to ensure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition.

Mineral Resource Zones (MRZs) are applied to sites determined by the California Geological Survey (CGS) as being a resource of regional significance, and are intended to help maintain mining operations and protect them from encroachment of incompatible uses. The Zones indicate the potential for an area to contain significant mineral resources as follows:

MRZ-1: Areas with little or no likelihood for presence of significant mineral resources.

MRZ-2a: Lands that contain discovered mineral deposits and are of prime importance due to known economic mineral deposits.

MRZ-2b: Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present.

MRZ-3a: Areas containing known mineral occurrences of undetermined significance.

MRZ-3b: Areas containing inferred mineral occurrences of undetermined significance.

MRZ-4: Areas of no known mineral occurrences where geologic information does not rule out the presence or absence of significant mineral resources.

LOCAL

There are no local regulations pertaining to mineral resources that apply to the proposed Project.

DISCUSSION OF IMPACTS

Questions A and B

The CGS identifies two active mines within a two-mile radius of the Project site. The Spring Hill Mine is a ±66-acre sand and gravel quarry located within the City limits approximately two miles northwest of the Project site. The Mt. Shasta Pit is a ±6.8-acre rock quarry located outside the City limits ±1.75 miles northwest of the Project site. Due to the distance from the Project site, the Project would have no impact on existing mining operations. According to the CGS, there are no designated Mineral Resource Zones in Siskiyou County. In addition, the City's Zoning Code allows mineral resource extraction and production as a conditional use in the Resource Lands (R-L) zone district. According to the City's Zoning Map, there are presently no lands in the City limits that are zoned R-L. Further, the Project site is in an urbanized area that is not conducive to mining operations. Therefore, the proposed Project would not result in the loss of availability of a locally important mineral resource.

CUMULATIVE IMPACTS

As documented herein, the proposed Project would not result in impacts to mineral resources; therefore, the project would not contribute to adverse impacts associated with cumulative impacts to mineral resources.

MITIGATION

None necessary

DOCUMENTATION

City of Mt. Shasta. 2007. Mt. Shasta General Plan, Open Space and Conservation Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/5OpenSpaceandConservationElement.pdf>. Accessed December 2018.

_____. 2016. Mt. Shasta Municipal Code Title 18, Zoning, Chapter 18.80 (Surface Mining and Reclamation). <http://www.codepublishing.com/CA/MtShasta/>. Accessed December 2018.

State of California, Department of Conservation, California Geological Survey. SMARA Mineral Lands Classification Data Portal. <http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc>. Accessed December 2018.

_____. 2019. SMARA Mines Interactive Map. <http://maps.conservation.ca.gov/mol/index.html>. Accessed December 2018.

4.13 NOISE

Would the project result in:

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

NOISE FUNDAMENTALS

Commonly used technical acoustical terms are defined as follows:

Acoustics	The science of sound.
Ambient Noise	The distinctive pre-project acoustical characteristics of a given area consisting of all noise sources audible at that location.
Attenuation	The reduction of noise.
A-Weighting	The sound level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.
Decibel, or dB	The fundamental unit of measurement that indicates the intensity of a sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.

CNEL	Community Noise Equivalent Level. The average sound level over a 24-hour period, with a penalty of 5 dB added during evening hours (between 7:00 PM and 10:00 PM) and a penalty of 10 dB added during nighttime hours (between 10:00 PM and 7:00 AM).
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
L50	The A-weighted sound level that is exceeded 50 percent of the sample time.
Ldn	Day-Night Average Sound Level. The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of 10 decibels to sound levels in the night after 10 p.m. and before 7 a.m. (Note: CNEL and Ldn represent daily levels of noise exposure averaged on an annual or daily basis).
Leq	The sound level in decibels, equivalent to the total sound energy measured over a stated period of time. Leq includes both steady background sounds and transient short-term sounds.
L_{max}	The maximum A-weighted noise level during the measurement period.

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to noise that apply to the proposed project.

STATE

California Government Code §65302(f)

California Government Code §65302(f) requires a Noise Element to be included in all city and county General Plans. The Noise Element must identify and appraise major noise sources in the community (e.g., highways and freeways, airports, railroad operations, local industrial plants, etc.). A noise contour diagram depicting major noise sources must be prepared and used as a guide for establishing land use patterns to minimize the exposure of residents to excessive noise. The Noise Element must include implementation measures and possible solutions that address existing and foreseeable noise levels.

California Building Code

The CBC (CCR Title 24, Part 2) includes noise insulation standards that apply to all new construction. The CBC requires that interior noise levels attributable to exterior sources not exceed 45 dB in any habitable room. The noise metric (i.e., day-night average sound level [Ldn] or the community noise equivalent level [CNEL]) must be consistent with the Noise Element of the jurisdiction's General Plan. Additional requirements are included for multi-family residential buildings. Compliance with the noise insulation standards is verified through the building permit process.

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goal, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Noise Element		
Goal	NZ-1	Protect City residents from the harmful and annoying effects of exposure to excessive noise.

Policies	NZ-1.1	Enforce standards for noise exposure from proposed and existing non-transportation noise sources. The General Plan Noise Standards for the City of Mt. Shasta for new uses affected by non-transportation noise sources are shown on Table 7-5 [of the General Plan Noise Element]. The standards of Table 7-5 shall be applied to both new noise-sensitive land uses and new noise-generating uses, with the responsibility for noise attenuation placed on the new use. For example, if a developer proposes construction of a new apartment complex near an existing industry, the developer would be responsible for including appropriate noise attenuation in the project design to achieve compliance with the standards of Table 7-5 at the new apartments. Conversely, if a new industry was proposed near an existing apartment complex, the industry would be responsible for including appropriate noise attenuation in the project design to achieve compliance with the Table 7-5 standards at the existing apartment building.
	NZ-1.2	Review impacts more closely when a project is potentially a high noise generator.
	NZ-1.4	Enforce General Plan noise standards for noise exposure from proposed and existing transportation noise sources. The General Plan Noise Standards for the City of Mt. Shasta for new uses affected by transportation noise sources are shown on Table 7-6 [of the Noise Element]. Where the noise level standards of Table 7-6 are expected to be exceeded at proposed new uses that would be affected by traffic or railroad noise, appropriate noise mitigation measures shall be included in the project design to reduce projected noise levels to comply with the standards of Table 7-6.
	NZ-1.7	Noise attenuation measures required to achieve acceptable noise standards shall emphasize site planning and project design.
	NZ-1.8	Monitor compliance with noise standards.
IMs	NZ-1.1(b)	When noise levels due to non-transportation noise sources exceed acceptable noise level standards as indicated in Table 7-5, noise mitigation measures shall be required to comply with the standards.
	NZ-1.1(c)	Noise created by new proposed non-transportation noise sources shall not exceed the noise level standards indicated in Table 7-5 at the property line.
	NZ-1.2(a)	Proposed non-residential land uses that are likely to produce noise levels exceeding the acceptable noise standards at existing or planned noise sensitive uses shall require an acoustical analysis as part of the application review process to ensure that methods of achieving noise standards are included in project design.
	NZ-1.4(a)	Evaluate transportation noise sources of proposed projects according to the noise level standards shown in Table 7-6.
	NZ-1.4(b)	Using acceptable acoustical engineering and construction standards, incorporate design features to reduce traffic noise to achieve the noise standards shown in Table 7-6.
	NZ-1.4(c)	Noise created by new transportation noise sources, including roadway improvements, shall be mitigated to comply with the noise level standards shown in Table 7-6.
	NZ-1.6(a)	Proposed noise-sensitive land uses in areas exposed to existing or projected exterior noise levels, which exceed acceptable noise standards, shall require an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design. When an acoustical analysis is required by the City to assess compliance with the City's Noise

	Element standards, the analysis shall follow the guidelines of Table 7-7 [of the General Plan Noise Element].
NZ-1.7(a)	Use creative concepts and accepted acoustical engineering standards to achieve acceptable noise standards.
NZ-1.7(b)	The use of noise barriers, such as soundwalls, shall be considered a supplemental means of achieving the noise standards after all practical design related noise mitigation measures have been integrated into the project. When soundwalls and noise barriers are proposed, the City will consider the visual impacts in addition to their effectiveness in attenuating noise.
NZ-1.8(a)	Develop and employ procedures to monitor compliance with the standards of the Noise Element after completion of projects where noise mitigation measures were required.
NZ-1.8(b)	Building design shall be reviewed to enforce the State Noise Insulation Standards (California Code of Regulations, Title 24) and Chapter 35 of the Uniform Building Code (UBC).
NZ-1.8(c)	Noise associated with construction activity between the hours of 7 a.m. and 5 p.m. shall be exempt from the standards cited in Table 7-5 [Noise Standards for New Uses Affected by Non-Transportation Noise]. Construction activity outside of this period may exceed the cited standards if an exemption is granted by the City to cover special circumstances.

See Tables 7-5, 7-6, and 7-7 of the General Plan Noise Element in Appendix D (Environmental Noise Analysis).

Tables 4.13-1 and 4.13-2 include noise standards that are applicable to the proposed Project based on proposed uses and existing sensitive receptors in the Project area. **Table 4.13-1** shows the standards that apply to new uses affected by non-transportation noise (e.g., stationary sources, playgrounds, parks, other outdoor activities, etc.).

Pursuant to General Plan Implementation Measure NZ-1.8(c), noise associated with construction activity between the hours of 7 a.m. and 5 p.m. is exempt from the standards shown in **Table 4.13-1**; construction activity outside of this period may exceed the cited standards if an exemption is granted by the City to cover special circumstances. **Table 4.13-2** shows the standards that apply to new uses affected by traffic and railroad noise.

**Table 4.13-1
Noise Standards for New Uses Affected by Non-Transportation Noise**

New Land Use	Outdoor Activity Area Leq		Interior Area Leq	Notes
	Daytime	Nighttime	Daytime and Nighttime	
All Residential	50	45	35	1, 2, 3
Hospital	50	45	35	4
Schools	55	N/A	40	5
Playgrounds	65	65	N/A	-
1. Outdoor activity areas for single-family residential uses are defined as back yards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.				

2.	For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas or tennis courts.
3.	It may not be possible to achieve compliance with this standard at residential uses located immediately adjacent to loading dock areas of commercial uses while trucks are unloading. The daytime and nighttime noise level standards applicable to loading docks shall be 55 and 50 dBA Leq, respectively.
4.	Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5.	The outdoor activity areas of schools are not typically utilized during nighttime hours.
General: The standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the General Plan noise level standards, then the noise level standards shall be increased at 5 dB increments to encompass the ambient noise level.	

Source: City of Mt. Shasta General Plan Noise Element, 2007.

Table 4.13-2
Noise Standards for New Uses Affected by Traffic and Railroad Noise

New Land Use	Outdoor Activity Area Ldn	Interior Area Ldn/Peak Hour Leq ¹	Notes
All Residential	60 - 65	45	2, 3, 4
Hospital	60	45	5
Schools	60	40	-
Playgrounds	70	-	-
<p>1. For traffic noise within the City, Ldn and peak-hour Leq values are estimated to be approximately similar.</p> <p>Interior noise level standards are applied within noise-sensitive areas with windows and doors in the closed positions.</p> <p>2. Outdoor activity areas for single-family residential uses are defined as back yards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.</p> <p>3. For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas or tennis courts.</p> <p>4. Where it is not possible to reduce noise in outdoor activity areas to 60 dBA Ldn or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dBA Ldn may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.</p> <p>5. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.</p>			

Source: City of Mt. Shasta General Plan Noise Element, 2007.

DISCUSSION OF IMPACTS

Question A

Some individuals and groups of people are considered more sensitive to noise than others and are more likely to be affected by the existence of noise. Locations that may contain high concentrations of noise-sensitive receptors include residential areas, schools, parks, churches, hospitals, and long-term care facilities. As shown in **Figure 4.13-1**, sensitive receptors in the Project area include Mercy

Medical Center, ±275 feet northeast of the Project site; Eskaton Washington Manor, a senior housing facility on Kingston Road, ±600 feet north of the Project site; multi-family residences on Pine Street, directly adjacent to the Project's proposed southern driveway; and single-family residences on W. Field Street, Spring Street, and Cedar Street, ±275 feet south of the future play field.

An Environmental Noise Analysis was prepared for the proposed Project by j.c. brennan & associates, Inc., in May 2018 and is included as **Appendix D**. The purpose of the study was to identify potential noise impacts associated with traffic on I-5 and railroad operations and determine how those noise sources may affect sensitive receptors (students) on the Project site. In addition, the analysis evaluated the proposed Project's potential noise impacts on sensitive receptors in the Project area.

The effects of noise on people can include annoyance, nuisance, and dissatisfaction; interference with activities such as speech, sleep, and learning; and physiological effects such as hearing loss or sudden startling. A common method to predict human reaction to a new noise source is to compare a project's predicted noise level to the existing environment (ambient noise level). A change of 1 dBA generally cannot be perceived by humans; a 3 dBA change is considered to be a barely noticeable difference; a 5 dBA change is typically noticeable; and a 10 dBA increase is considered to be a doubling in loudness and can cause an adverse response. As stated in the Environmental Noise Analysis, interior noise levels are about 25 decibels lower than exterior noise levels with the windows closed.

To obtain an estimate of existing ambient noise levels in the Project area, j.c. brennan & associates, Inc., conducted continuous 24-hour noise measurements on the Project site on March 12, 2010. According to the Mt. Shasta Weather Station, temperatures ranged from 33.1° Fahrenheit to 48° Fahrenheit. Precipitation over the 24-hour period totaled 0.14 inches. The mean wind speed was 4.26 miles per hour (MPH). The maximum sustained wind speed was 12.77 MPH, and the maximum wind gust was 25.32 MPH. Sound measurement equipment consisted of a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter. The meter was calibrated with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

The sound level meter was placed 85 feet from the centerline of I-5 (shown as Site A in Figure 2 of **Appendix D**. Monitoring results for ambient noise levels at the monitoring site are shown in **Table 4.13-3**.

Table 4.13-3
Noise Monitoring Results (Ambient Noise Levels)

Site	Measured Ldn	Average Hourly Daytime (7:00 A.M. – 10:00 P.M.)			Average Hourly Nighttime (10:00 P.M. to 7:00 A.M.)		
		Leq	L50	Lmax	Leq	L50	Lmax
A	74 dBA	72 dBA	70 dBA	81 dBA	67 dBA	59 dBA	79 dBA

Source: j.c. brennan & associates, 2018.

Construction Noise

Temporary noise impacts would occur due to an increase in traffic from construction workers commuting to the site; however, it is not anticipated that worker commutes would significantly increase daily traffic volumes. Noise would be generated during delivery of construction equipment and materials to the Project site; however, heavy equipment would remain on-site for the duration of construction. Noise impacts resulting from construction activities would depend on: 1) the noise generated by various pieces of construction equipment; 2) the timing and duration of noise-generating activities; 3) the distance between construction noise sources and noise-sensitive receptors; and 4) existing ambient noise levels.

Path: N:\companyfiles\01-Jobs\Active\032-46 PACE - Mt. Shasta Golden Eagle Charter School\3-Project GIS\3-Map Documents\Initial Study\Figure 4.13-1 - Sensitive Receptors 032219.mxd



Study Area Boundary

Noise-Sensitive Receptors

0

200

Feet

Figure 4.13-1
Location of Noise-Sensitive Receptors

All depictions are approximate. Not a survey product. 03.22.19

Figure 4.13-2 shows noise levels of common activities to enable the reader to compare construction-noise with common activities. Noise levels from construction-related activities would fluctuate, depending on the number and type of construction equipment operating at any given time. As shown in **Table 4.13-4**, construction equipment anticipated to be used for project construction typically generates maximum noise levels ranging from 74 to 89 dBA at a distance of 50 feet.

Figure 4.13-2
Noise Levels of Common Activities

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime		Library
Quiet Rural Nighttime	30	Bedroom at Night, Concert Hall (Background)
	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans, 2016

TABLE 4.13-4
Examples of Construction Equipment
Noise Emission Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source
Roller	74
Concrete Vibrator	76
Pump	76
Saw	76
Backhoe	80
Air Compressor	81
Generator	81
Compactor	82
Concrete Pump	82
Compactor (ground)	83
Crane, Mobile	83
Concrete Mixer	85
Dozer	85
Excavator	85
Grader	85
Loader	85
Jack Hammer	88
Truck	88
Paver	89
Scraper	89

Sources: U.S. Department of Transportation, Federal Transit Administration, 2018. Federal Highway Administration, 2017.

Noise from construction activities generally attenuates at a rate of 6 dBA per doubling of distance, assuming the intervening ground is a smooth surface without much vegetation. At an attenuation rate of 6 dBA, 74 to 89 dBA noise levels would drop to 68 to 83 dBA at a distance of 100 feet; 62 to 77 dBA at a distance of 200 feet; and 58 to 73 dBA at a distance of 300 feet. At a distance of 25 feet, 74 to 89 dBA noise levels would increase to 80 to 95 dBA.

Because it is a logarithmic unit of measurement, a decibel cannot be added or subtracted arithmetically. The combination of two or more identical sound pressure levels at a single location involves the addition of logarithmic quantities as shown in **Table 4.13-5**. A doubling of identical sound sources results in a sound level increase of approximately 3 dBA. Three identical sound sources would result in a sound level increase of approximately 4.8 dBA.

For example, if the sound from one backhoe resulted in a sound pressure level of 80 dBA, the sound level from two backhoes would be 83 dBA, and the sound level from three backhoes would be 84.8 dBA.

TABLE 4.13-5
Cumulative Noise: Identical Sources

Number of Sources	Increase in Sound Pressure Level (dBA)
2	3
3	4.8
4	6
5	7
10	10
15	11.8
20	13

Sources: U.S. Department of Transportation, Federal Transit Administration, 2018. The Engineering Toolbox, 2018.

In addition, as shown in **Table 4.13-6**, the sum of two sounds of a different level is only slightly higher than the louder level. For example, if the sound level from one source is 80 dBA, and the sound level from the second source is 85 dBA, the level from both sources together would be 86 dBA; if the sound level from one source is 80 dBA, and the sound level from the second source is 89 dBA, the level from both sources together would be 89.5 dBA.

TABLE 4.13-6
Cumulative Noise: Different Sources

Sound Level Difference between two sources (dB)	Decibels to Add to the Highest Sound Pressure Level
0	3
1	2.5
2	2
3	2
4	1.5
5	1
6	1
7	1
8	0.5
9	0.5
10	0.5
Over 10	0

Sources: U.S. Department of Transportation, Federal Transit Administration, 2018. The Engineering Toolbox, 2018.

With two pieces of equipment with a noise level of 89 dBA operating simultaneously, noise levels could sporadically reach approximately 95 dBA at the exterior of the residence on Pine Street, immediately south of the Project's proposed southern driveway. As noted above, interior noise levels within residential units are approximately 25 decibels lower than exterior noise levels with the windows closed. Interior noise levels could sporadically reach 70 dBA when equipment operates directly adjacent to the residence, provided that the windows were closed.

In addition to noise from construction equipment, OSHA regulations (Title 29 CFR, §1926.601(b)(4)(i) and (ii) and §1926.602(a)(9)(ii)) state that no employer shall use any motor vehicle, earthmoving, or compacting equipment that has an obstructed view to the rear unless the

vehicle has a reverse signal alarm audible above the surrounding noise level or the vehicle is backed up only when an observer signals that it is safe to do so.

Although these regulations require an alarm to be only at a level that is distinguishable from the surrounding noise level (± 5 dB), some construction vehicles are pre-equipped with non-adjustable alarms that range from 97 to 112 dBA at the source; such noise levels could temporarily be experienced at the exterior of the residence on Pine Street, immediately south of the Project's proposed southern driveway. Depending on the decibel level of the alarm, interior noise levels could sporadically reach 72 to 87 dBA, provided that the windows were closed.

As discussed above, the average hourly ambient noise level in the Project area is estimated at 72 dBA Leq during daytime hours (7:00 A.M. to 10:00 P.M.) when construction activities would occur. In comparison to ambient noise levels, construction noise would be substantially greater during use of reverse signal alarms.

The exposure to loud noises (above 85 dBA) over a long period of time may lead to hearing loss. The longer the exposure, the greater the risk for hearing loss, especially when there is not enough time for the ears to rest between exposures. Hearing loss can also result from a single extremely loud sound at very close range, such as sirens and firecrackers (Centers for Disease Control, 2018). Even when noise is not at a level that could result in hearing loss, excessive noise can affect quality of life, especially during nighttime hours.

The California Division of Safety and Health and OSHA have established thresholds for exposure to noise in order to prevent hearing damage. The maximum allowable daily noise exposure is 90 dBA for 8 hours, 95 dBA for 4 hours, 100 dBA for 2 hours, 105 dBA for 1 hour, 110 dBA for 30 minutes, and 115 dBA for 15 minutes (Caltrans, 2013).

In the worst-case scenario, exterior noise levels from construction equipment operation could sporadically reach approximately 95 dBA at the residence on Pine Street immediately south of the Project's proposed southern driveway, and could reach approximately 97 dBA to 112 dBA if reverse signal alarms are used. Interior noise levels due to construction equipment operation could sporadically reach approximately 70 dBA, and could reach approximately 87 dBA if reverse signal alarms are used.

However, reverse signal alarms are needed only intermittently, and each occurrence involves only seconds of elevated noise levels. In addition, construction equipment does not operate continuously throughout the entire work day. Therefore, while construction noise may reach considerable levels for short instances, average construction noise levels at the nearby residences would be moderate. In addition, given the linear nature of the proposed driveway, construction equipment would be operating within 25 feet of the residence on Pine Street for a relatively short duration.

In order to minimize impacts from construction noise, **Mitigation Measure MM 4.13.1** limits construction activities to between the hours of 7:00 A.M. and 5:00 P.M. in accordance with the City's General Plan. Any construction outside of this timeframe may occur only if the City issues an exemption for activities that require interruption of utility services to allow work during low demand periods, or to alleviate traffic congestion and safety hazards. **MM 4.13.2** requires that construction equipment be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, and **MM 4.13.3** prohibits motorized construction equipment to be left idling for more than five minutes when not in use.

Therefore, because no work would be conducted during nighttime hours, and **Mitigation Measures MM 4.13.1 through MM 4.13.3** would be implemented, impacts during construction would be less than significant and the proposed Project would be in compliance with the City's General Plan.

Operational Noise

As discussed under Regulatory Context, the City's noise level standard for a new school affected by traffic and railroad noise is 40 dBA Ldn for interior noise (with windows and doors closed) and 60 dBA Ldn at the exterior of the school. In addition, the outdoor standard for the future play field is 70 dBA Ldn. The noise standard for a new school affected by non-transportation noise is 40 dBA Leq for interior noise (with windows and doors closed) and 55 dBA Leq at the exterior of the school.

As noted in **Table 4.13-1** above, if the existing ambient noise level exceeds the General Plan noise level standards, then the noise level standards shall be increased at 5 dB increments to encompass the ambient noise level. If a new Project adversely impacts an occupant or tenant of a new use or an existing sensitive receptor in the project area, the new Project is responsible for including appropriate noise attenuation in the Project design (see General Plan Policy NZ-1.1).

Potential Impacts to On-Site Sensitive Receptors (Students)

Railroad Noise

According to the City's General Plan, railroad activity in the City includes freight rail services provided by the Union Pacific Railroad UPRR. In addition, Amtrak provides daily passenger service through the City. Major noise sources associated with train operations in the City are the train engines and warning horns. The UPRR track is located approximately 675 feet east of the nearest edge of the Project site. According to the General Plan, the distance to the 60 dBA Ldn noise contour associated with UPRR operations is 631 feet. This does not take into consideration shielding provided by intervening structures or topography. Therefore, it is not anticipated that noise from UPRR operations would adversely affect the proposed Project.

I-5 Traffic Noise

In addition to the 24-hour noise monitoring that was conducted to determine ambient noise levels in the Project area, j.c. brennan & associates used the Federal Highway Administration's Highway Traffic Noise Prediction Model (FHWA RD-77-108) to estimate current and future traffic noise levels from I-5. This model is based on the Calven reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the Project site. The FHWA model was developed to predict hourly Leq values for free-flowing traffic conditions.

Short-term noise level measurements and concurrent counts of traffic on I-5 were conducted to determine the accuracy of the FHWA model in describing the existing noise environment on the Project site. Site conditions such as intervening structures, actual travel speeds, and roadway grades were taken into consideration. Sound measurement equipment consisted of a LDL Model 824 precision integrating sound level meter that was calibrated in the field before use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The noise measurement site is identified as Site 1 in Figure 2 of **Appendix D**. As indicated, the site is adjacent to the future gymnasium. Monitoring results are shown in **Table 4.13-7**.

Table 4.13-7
Comparison of FHWA Model to Measured Existing Traffic Noise Levels

Vehicles/Measurement Period					Speed (MPH)	Distance (Feet)	Measured Leq	Modeled Leq*	Difference
Site	Roadway	Autos	Medium Trucks	Heavy Trucks					
1	I-5	148	3	36	65	350	57.9 dBA	62.8 dBA	±4.9 dBA

* Acoustically "soft" site assumed
Source: j.c. brennan & associates, 2018.

As indicated in **Table 4.13-7**, the FHWA model was found to over-predict I-5 traffic noise at the Project site by about 4.9 dBA due to shielding by buildings to the south and the overpass to the north. Therefore, a conservative -3 dBA correction was applied to the predicted future traffic noise levels.

Future traffic volumes for year 2026 and truck mix percentages for I-5 were obtained from Caltrans and the City's General Plan. **Table 4.13-8** shows predicted I-5 noise levels on the Project site.

Table 4.13-8
Traffic Noise Levels and Distances to Contours

Roadway	Location	Ldn	Distance to Contours		
			70 dBA	65 dBA	60 dBA
I-5	150 Feet from Centerline of I-5	71 dBA	176 Feet	380 Feet	819 Feet

Source: *j.c. brennan & associates, 2018.*

As stated in the Environmental Noise Analysis, the proposed school building is located within the 60 to 65 dBA Ldn noise contour for I-5. Standard construction measures required by the CBC are anticipated to reduce interior noise levels by 25 dBA with the windows closed. Therefore, interior noise levels at the school would not exceed the City's 40 dBA Ldn standard.

The Environmental Noise Analysis concludes that the proposed gymnasium could be exposed to traffic noise levels of up to 70 dBA Ldn, and interior noise levels could exceed the City's 40 dBA Ldn standard. In addition, a small corner of the play field is located within the 70 dBA Ldn noise contour for I-5.

Mitigation Measure MM 4.13.4 requires that prior to issuance of a building permit, interior noise levels for the gymnasium shall be evaluated to ensure compliance with the interior noise level standard of 40 dBA Ldn. Additional noise attenuation measures (e.g., additional wall insulation, thicker window glass, exterior noise barriers, etc.) would be implemented to ensure compliance with the City's noise standards.

Mitigation Measure 4.13.5 requires that the project be designed so that no portion of the play field is located within the 70 dBA Ldn noise contour for I-5. If this is not feasible, a barrier in the form of a sound wall or berm, at an elevation of six feet, could be installed to mitigate noise impacts to users on the play field.

It should be noted that depending on the final design, construction of a sound wall or berm could result in the fill of up to ±0.068 acres of seasonal wet meadow. As discussed in Section 4.4 (Biological Resources), because the applicant would comply with conditions of resource agency permits and implement **Mitigation Measure MM 4.4.1**, impacts to wetlands that could occur with installation of a sound wall or berm would be less than significant.

Implementation of **Mitigation Measures MM 4.13.4 and MM 4.13.5** would reduce potential impacts from I-5 traffic noise to sensitive receptors on the school property to a less-than-significant level.

Potential Impacts of the Proposed Project on Sensitive Receptors in the Project Area

Off-Site Project-Related Traffic Noise

The FHWA model was used to determine future off-site traffic noise levels associated with the proposed Project. **Table 4.13-9** indicates both existing estimated traffic noise levels and anticipated noise levels with the addition of the Project.

**Table 4.13-9
Traffic Noise Levels for the Local Street System**

Location	Scenario	Traffic Noise Level at 75 feet	Change
Pine Street, North of Ivy Street	Existing	57 dBA Ldn	±1 dBA
	Existing Plus Project	58 dBA Ldn	
Pine Street, South of Ivy Street	Existing	57 dBA Ldn	±1 dBA
	Existing Plus Project	58 dBA Ldn	

Source: j.c. brennan & associates, 2018.

As stated above, a change of 1 dBA generally cannot be perceived by humans; therefore, the Project's incremental increase in off-site traffic noise on the local street system is less than significant.

On-Site Outdoor Activities

The proposed Project would result in an increase in ambient noise levels in the Project area due to increased outdoor play during school recesses, and sports games on the future play field. According to the Environmental Noise Analysis, average noise levels generated during outdoor activities with approximately 100 children are approximately 60 dBA Leq at a distance of 75 feet from the focal point or noise center of the play area; noise levels could occasionally reach 75 dBA at a distance of 75 feet from the noise center.

Residences on Pine Street would be ±250 feet from the eastern edge of the play field and ±350 feet southeast of the center of the play field. Residences on W. Field Street would be ±250 feet from the southern edge of the play field, and ±350 feet south of the center of the play field.

Based on the distance from the center of the play field, the predicted exterior noise level would be ±47 dBA Leq and could occasionally reach ±62 dBA at the nearest residences. Even if the noise center was on the edge of the play field, exterior noise levels are not expected to exceed 50 dBA Leq at the closest residences.

In addition, as noted in **Table 4.13-1**, the City's General Plan Noise Element states that if the existing ambient noise level exceeds the City's standards, then the noise level standards shall be increased at 5 dB increments to encompass the ambient noise level.

As indicated in **Table 4.13-3**, the existing average daytime ambient noise level at the monitoring site was ±72 dBA. It is estimated that the average hourly daytime ambient noise level near the sensitive receptors on Pine Street is ±63 dBA, and the estimated average hourly daytime ambient noise level near the sensitive receptors on W. Field Street is between ±64 dBA and ±67 dBA. Because noise levels related to the play field are not expected to exceed the existing ambient noise levels, impacts would be less than significant.

On-Site Traffic and Parking Lot Activities

As stated above, the Project's proposed southern driveway would be used to access the parking lot south of the school, primarily by employees of the school and visitors attending special school functions. As shown in **Figure 2**, a parking area would also be installed adjacent to the drop-off/pick-up aisle along Pine Street. It is anticipated that most visitors would use this parking area, and the parking area south of the school would be used by employees and for over-flow parking.

On-site traffic and parking lot activities, including car doors slamming, music, and people conversing, are expected to generate noise levels of ±60 to ±65 dBA at the source.

The closest sensitive receptor to the Project's southern driveway is the residence on Pine Street ± 25 feet south of the driveway. It is anticipated that noise levels in this area could intermittently reach 65 dBA during the A.M. and P.M. peak hours when employees enter and exit the site. The closest sensitive receptors to the parking lot south of the school are residences on W. Field Street, ± 300 feet to the southeast, and the residence on Pine Street, ± 100 feet to the northeast. Exterior noise levels associated with this parking lot could intermittently reach 60 dBA at the exterior of the closest sensitive receptor on Pine Street.

Therefore, estimated noise levels attributable to on-site traffic and parking lot activity would not exceed the City's daytime exterior noise level standard of 60 to 65 dBA Ldn. In addition, these activities are not expected to increase ambient noise levels by more than ± 2 dBA, which would be a barely noticeable difference.

Outdoor Mechanical Equipment

Mechanical equipment (e.g., heating, ventilation, and air conditioning systems, etc.) has the potential to generate noise during operations. The City's Building Official is responsible for reviewing mechanical plans for all new construction projects in the city to determine compliance with the City's standards, including the City's General Plan noise standards for stationary sources. If required, the building design would incorporate noise attenuation measures (e.g., shielding) to ensure compliance with the City's noise standards. In accordance with the MSMC, screening for roof-mounted mechanical equipment must conform architecturally with the design of the building.

Trash Collection and Snow Removal

Trash collection services in the City occur one time per week. In accordance with MSMC Section 18.70.130(B)(2)(b), trash collection areas may not be located adjacent to residential property. Trash collection areas must include a solid acoustic buffer as necessary. The City will review the final site plan in conjunction with construction plan review to ensure that outdoor trash storage areas comply with the City's noise level standards.

Snow removal occurs intermittently throughout the City during the snow season, which is generally November through March of each year. Although the proposed Project would require snow removal services, these are services that are presently provided in this area of the City, and the proposed Project would not significantly increase noise levels above those that presently occur during snow removal operations.

Therefore, because **Mitigation Measures MM 4.13.4 and MM 4.13.5** would be implemented to minimize impacts; the Building Official would review construction documents to ensure compliance with the City's noise level standards; and the proposed Project would not significantly increase the ambient noise levels in a manner that would adversely affect existing sensitive receptors in the Project vicinity, operational impacts would be less than significant.

Question B

Typical sources of ground-borne vibration include construction equipment, steel-wheeled trains, and vehicles on rough roads. The proposed Project does not include any components that would result in long-term impacts associated with vibration. Vibration during construction would occur only when high vibration equipment (e.g., compactors, large dozers, etc.) are operated. The proposed Project may require limited use of equipment with high vibration levels during construction. Potential effects of ground-borne vibration include perceptible movement of building floors, rattling windows, shaking of items on shelves or hangings on walls, and rumbling sounds. In extreme cases, vibration can cause damage to buildings. Both human and structural response to ground-borne vibration are influenced by various factors, including ground surface, distance between the source and the receptor, and duration.

The most common measure used to quantify vibration amplitude is the peak particle velocity (PPV). PPV is a measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state. Although there are no federal, state, or local regulations for ground-borne vibration, Caltrans has developed criteria for evaluating vibration impacts, both for potential structural damage and for human annoyance. The Caltrans Transportation and Construction Vibration Guidance Manual (2013), was referenced in the analysis of construction-related vibration impacts. **Table 4.13-10** includes the potential for damage to various building types as a result of ground-borne vibration. Transient sources include activities that create a single isolated vibration event, such as blasting. Continuous, frequent, or intermittent sources include jack hammers, bulldozers, and vibratory rollers.

TABLE 4.13-10
Structural Damage Thresholds from Ground-Borne Vibration

Structure Type	Vibration Level (Inches per Second PPV)	
	Transient Sources	Continuous/Frequent/ Intermittent Sources
Older residential structures	0.5	0.3
Newer residential structures	1.0	0.5
Historic and some old buildings	0.5	0.25
Newer industrial/commercial buildings	2.0	0.5

Source: Caltrans, 2013

Table 4.13-11 indicates the potential for annoyance to humans as a result of ground-borne vibration.

TABLE 4.13-11
Human Response to Ground-Borne Vibration

Human Response	Vibration Level (Inches per Second PPV)	
	Transient Sources	Continuous/ Frequent/ Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.10
Disturbing	2.0	0.4

Source: Caltrans, 2013

Table 4.13-12 indicates vibration levels for various types of construction equipment that may be used for the proposed Project.

TABLE 4.13-12
Examples of Construction Equipment Ground-Borne Vibration

Equipment Type	Inches per Second PPV at 25 feet
Bulldozer (small)	0.003
Bulldozer (large)	0.089
Jackhammer	0.035
Loaded trucks	0.076
Vibratory roller	0.210

Source: Caltrans Transportation and Construction Vibration Guidance Manual, 2013.

As shown in **Table 4.13-10**, these vibration levels would not cause structural damage to older residences. In addition, as shown in **Table 4.13-11**, these levels would be strongly perceptible, but would not be considered disturbing. Further, increased ground-borne vibration is temporary and would cease at completion of the Project. Therefore, impacts would be less than significant.

Questions E and F

The Dunsmuir Municipal-Mott Airport is located approximately four miles southeast of the southerly boundary of the proposed Golden Eagle Charter School. According to the Siskiyou County Airport Land Use Compatibility Plan, no portion of the Project site is located within an airport influence area. According to the Federal Aviation Administration, the Project site is not located in the vicinity of a private airstrip. Therefore, the project would not expose people residing or working in the Project area to excessive noise levels associated with an airport or private airstrip; there would be no impact.

CUMULATIVE IMPACTS

As noted in Section 3.3, the City's Water Distribution System Improvements project includes work on Pine Street adjacent to the Project site, and there is a possibility that construction periods may overlap. In addition, construction contractors for the Downtown Collection System Improvements project may travel on the same streets as contractors for the GECS improvements. The Water Distribution System Improvements project would contribute to temporary cumulative construction noise and vibration impacts and traffic noise impacts if the project is constructed simultaneously with the GECS improvements. The Downtown Collection System improvements would contribute to cumulative traffic noise impacts during construction if construction contractors travel on the same streets as contractors for the GECS improvements. Given the linear nature of the City's water infrastructure improvements, project noise and vibration would be intermittent and occur for short periods of time until the equipment proceeds to the next work area.

Construction-related traffic would also be minor due to the overall scale of the construction activities. Further, construction-related traffic for the cumulative projects would be spread over the duration of the construction schedule and would be minimal on a daily basis. In addition, all projects in the City of Mt. Shasta are subject to time limits for construction activities and appropriate mitigation measures to minimize construction noise and vibration. With implementation of **Mitigation Measures MM 4.13.1 through MM 4.13.3**, the proposed Project's contribution to cumulative noise and vibration impacts during construction would be less than significant.

In terms of cumulative operational impacts, all new development projects in the City are required to comply with adopted interior and exterior noise standards. Noise attenuation is required as necessary to ensure compliance with the noise standards. Implementation of noise attenuation measures is verified by the City's Building Official during construction plan review and inspection. With implementation of **Mitigation Measures MM 4.13.4 and MM 4.13.5**, the proposed Project's contribution to cumulative operational noise and vibration impacts would be less than significant.

MITIGATION

- | | |
|------------------|---|
| MM 4.13.1 | Construction activities shall be limited to between the hours of 7:00 a.m. and 5:00 p.m. Exceptions to these limitations may be approved by the City's Public Works Director or his/her designee for activities that require interruption of utility services to allow work during low demand periods, or to alleviate traffic congestion and safety hazards. |
| MM 4.13.2 | Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. |

- MM 4.13.3** When not in use, motorized construction equipment shall not be left idling for more than five minutes.
- MM 4.13.4** Prior to issuance of a building permit for the gymnasium, the applicant shall provide documentation that the building complies with the City's interior noise level standard for schools of 40 dBA Ldn. The analysis shall be prepared by a registered Engineer qualified in acoustical analysis.
- Any noise attenuation features that are required to meet the City's noise standards (e.g., additional wall insulation, thicker window glass, exterior noise barriers, etc.) shall be depicted on the construction plans and shall be verified by the Building Official. Implementation of the noise attenuation measures shall be verified by the Building Official during final inspection of the buildings.
- MM 4.13.5** Prior to any earth disturbance associated with the play field, the applicant shall provide documentation that the play field is not located within the 70 dBA Ldn noise contour of Interstate 5. If it is not possible for the play field to be located outside of the 70 dBA Ldn noise contour, the applicant shall submit plans to the City for installation of a noise barrier (earthen berm or wall) along with documentation by a registered Engineer qualified in acoustical analysis that demonstrates that the play field complies with the City's exterior noise level standard of 70 dBA Ldn.
- The noise barrier shall be depicted on the construction plans and shall be verified by the Building Official. Implementation of the noise attenuation measures shall be verified by the Building Official during final inspection of the noise barrier.

DOCUMENTATION

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- Farmer's Almanac.** 2019. Weather History for Mount Shasta, California (for the Mount Shasta, CA, USA, Weather Station). <https://www.almanac.com/weather/history/zipcode/96067/2010-03-12>. Accessed January 2019.
- Federal Aviation Administration.** 2018. Airport Facilities Data. https://www.faa.gov/airports/western_pacific/. Accessed January 2019.
- International Code Council.** 2016 California Building Code, Part 2, Volume 1, Chapter 12 (Interior Environment). <https://codes.iccsafe.org/content/chapter/10004/>. Accessed March 2019.
- Siskiyou County.** 2001. Airport Land Use Compatibility Map. <https://static1.squarespace.com/static/54c9a764e4b0ee5502d31f04/t/5611ff3de4b0890ee930ae5d/1444020029221/20151001120556.pdf>. Accessed January 2019.

4.14 POPULATION AND HOUSING

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to population or housing that apply to the proposed project.

STATE

California Government Code §65581

California Government Code §65581 *et seq.* requires a Housing Element to be included in all city and county General Plans. State Housing Element law mandates that jurisdictions provide sufficient land to accommodate a variety of housing opportunities for all economic segments of the community. Compliance with this requirement is measured by the jurisdiction's ability to provide adequate land to accommodate a share of the region's projected housing needs for the applicable planning period. This share is known as the Regional Housing Needs Allocation (RHNA).

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Housing Element		
Goals	HO-1	Provide an adequate supply of sound, affordable housing for existing and future residents of Mt. Shasta.
Policies	HO-1.5	With all due consideration to financial constraints, and consistent with other General Plan policies, the City shall encourage, participate, and cooperate in extension of City services to currently unserved and underserved areas, including direct financial participation when deemed appropriate by the City Council.
IMs	HO-1.5.2	The City shall continue to develop and implement plans to expand domestic water and sewage collection and treatment systems such that planned development over the General Plan 20-year timeframe can be accommodated.

DISCUSSION OF IMPACTS

Question A

As discussed in Section 3.0 (Project Description), Golden Eagle Charter School presently operates at 2405 South Mount Shasta Boulevard in the City of Mount Shasta. The purpose of the proposed Project is to provide a larger school to accommodate a growing number of students. The Project does not involve construction of residences or businesses; therefore, the Project would not directly induce population growth. The Project would connect to existing City utility infrastructure, and no new roadways or other infrastructure would be constructed. Therefore, the Project would not induce substantial unplanned population growth, either directly or indirectly, and there would be no impact.

Question B

No structures would be demolished to accommodate the proposed improvements; therefore, the proposed Project would not directly impact any housing units. Indirect impacts could occur if the Project removes land identified in the General Plan Housing Element as land that is required to accommodate the City's housing needs.

As discussed under Regulatory Context, State Housing Element law mandates that jurisdictions provide sufficient land to accommodate a variety of housing opportunities for all economic segments of the community. This share is known as the Regional Housing Needs Allocation (RHNA).

Pursuant to California Government Code (GC) Section 65863(b), *"No city...shall, by administrative, quasi-judicial, legislative, or other action, reduce, or require or permit the reduction of, the residential density for any parcel, or allow development of any parcel at a lower residential density...unless the City...makes written findings supported by substantial evidence of both of the following:*

- 1. The reduction is consistent with the adopted general plan, including the housing element.*
- 2. The remaining sites identified in the housing element are adequate to accommodate the jurisdiction's share of the regional housing need.*

As stated in GC Section 65863(g)(2)(A)(ii), "lower residential density," for sites on which residential and nonresidential uses are permitted, means *"a use that would result in the development of fewer than 80 percent of the number of residential units that would be allowed under the maximum residential density for the site."*

The City's share of the 2014-2019 RHNA is 45 units (6 extremely-low income; 5 very-low-income; 7 low-income; 8 moderate income; and 19 above-moderate income). To accommodate lower-income housing, the State considers lands zoned for a density of at least 15 units per acre as being able to accommodate affordable housing for lower-income households.

The City's Housing Element identifies the majority of the proposed Project site as undeveloped land that is appropriate to meet its share of the regional housing needs. It is estimated that the "realistic potential units" that could be accommodated on the property is approximately 114 housing units.

According to the Housing Element, the remaining undeveloped land in the City that is zoned R-3 could accommodate 690 lower-income housing units; because the City's RHNA for lower-income housing units for the current planning period is 18, this is more than sufficient to meet the current RHNA. Therefore, the City would be able to adopt a finding that the reduction is consistent with the adopted general plan, including the Housing Element, and the remaining sites identified in the housing element are adequate to accommodate the City's share of the regional housing need. Therefore, the proposed Project would not indirectly impact housing.

CUMULATIVE IMPACTS

The proposed Project would not induce substantial unplanned population growth in the area and would not directly or indirectly displace housing or people; therefore, it would not contribute to cumulative impacts related to population and housing.

MITIGATION

None necessary.

DOCUMENTATION

- City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Housing Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/8HousingElement.pdf>. Accessed December 2018.
- _____. 2018. Mt. Shasta Municipal Code Title 18, Zoning. <http://www.codepublishing.com/CA/MtShasta/>. Accessed December 2018.
- _____. 2007. Final Environmental Impact Report, City of Mt. Shasta General Plan Update Project (SCH No. 2005082099). <http://mtshastaca.gov/wp/wp-content/uploads/2015/11/Draft-MASTER-EIR.pdf>. Accessed December 2018.

4.15 PUBLIC SERVICES

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

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

REGULATORY CONTEXT

There are no federal or State regulations pertaining to public services that apply to the proposed project.

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Land Use and Open Space and Conservation Elements		
Goals	LU-11	Provide adequate fire protection services.
	LU-12	Provide adequate facilities for the police department.
	LU-13	Support efforts to provide adequate education to all age levels.
	OC-9	Provide park and recreation facilities to meet the growing population of Mt. Shasta.
Policies	LU-11.1	Provide fire management services which meet area needs.
	LU-11.4	Provide adequate fire fighting facilities.
	LU-12.1	Develop programs to ensure adequate police services capabilities.
	LU-12.2	Provide adequate facilities for the police department.
	LU-13.1	Ensure that the school districts participate in the review of residential development proposals.
	OC-9.1	Strive to provide neighborhood parks to meet the needs of developing areas.
	OC9.2	Continue to meet community park and recreation needs.
IMs	LU-11.1(a)	Incorporate fire prevention measures in the land development code for the design and construction of new buildings and facilities, such as sprinklers, fire resistant construction, use of fire resistant vegetation, and other fire protection and defensible space.
	LU 11.1(b)	Utilize planning and design standards to reduce risk of structural damage from fire. This includes the use of loop roads adequate for all-weather fire apparatus access and evacuation, limitations on the lengths of cul-de-sacs, and elimination of extended driveways for “flag” lots.
	LU-11.4(a)	When population growth requires, the City will construct a new fire department branch facility.
	LU-12.1(a)	Determine and maintain a desirable ratio of sworn police personnel to population as the community continues to grow.
	LU-12.2(a)	Consider creating a capital facility fund paid for from funds generated by new development as a means of acquiring monies to construct a new police department facility.
	OC-9.2(b)	Maintain a ratio of not less than five acres of neighborhood parks per one thousand City population.
	OC-9.2(c)	Maintain a ratio of not less than five acres of community park land per one thousand City population.

DISCUSSION OF IMPACTS

Questions A, B, D, and E

Fire protection services within the City are provided by the City of Mt. Shasta Fire Department. The Department has a mutual aid agreement with the Mt. Shasta Fire Protection District, which provides fire protection services to the unincorporated area of the County surrounding the City. The

Department is also a partner with all other fire protection agencies in Siskiyou County through a countywide mutual aid agreement.

Police protection services and emergency response within the City are provided by the Mt. Shasta Police Department. Other public services provided by the City include street maintenance and snow removal. The main public works facility is the City's Corporation Yard, located in the southern area of the City on Mt. Shasta Boulevard. City parks are operated by the Mt. Shasta Recreation and Parks District, a special district that was organized in 1948 to provide recreational programs and maintain recreational facilities in the City.

Although the proposed Project would be provided fire protection, police protection, emergency services, and other public services as necessary, the Project demand would not result in a substantial impact on current level of service ratios or response times, and no new or physically altered governmental facilities are required. Because no new governmental facilities would need to be constructed and no existing facilities would need to be expanded, the Project would have no impact.

Question C

The proposed Project would not result, either directly or indirectly, in an increase in population requiring additional schools, or the expansion of existing schools; rather, the Project would accommodate existing demand for school services in the area. Therefore, there would be no impact.

CUMULATIVE IMPACTS

As documented above, the proposed Project would not require the construction or expansion of government facilities; therefore, no cumulatively considerable impacts would occur.

MITIGATION

None necessary

DOCUMENTATION

- City of Mt. Shasta.** 2007. Mt. Shasta General Plan, Land Use Element.
<https://mtshastaca.gov/wp/wp-content/uploads/2016/01/3LandUseElement.pdf>. Accessed December 2018.
- _____. 2007. Mt. Shasta General Plan, Open Space and Conservation Element.
<http://mtshastaca.gov/wp/wp-content/uploads/2016/01/5OpenSpaceandConservationElement.pdf>. Accessed December 2018.

4.16 RECREATION

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

b. Does the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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REGULATORY CONTEXT

There are no federal or State regulations pertaining to public services that apply to the proposed project.

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Open Space and Conservation Element		
Goals	OC-9	Provide park and recreation facilities to meet the growing population of Mt. Shasta.
Policies	OC-9.1	Strive to provide neighborhood parks to meet the needs of developing areas.
	OC9.2	Continue to meet community park and recreation needs.
IMs	OC-9.2(b)	Maintain a ratio of not less than five acres of neighborhood parks per one thousand City population.
	OC-9.2(c)	Maintain a ratio of not less than five acres of community park land per one thousand City population.

DISCUSSION OF IMPACTS

Questions A and B

The proposed Project does not include the construction of houses or businesses that would increase the population in the area and result in an increased demand for recreational facilities. As discussed in Section 3.0, the proposed Project includes a play field that would be constructed when funding becomes available. Potential impacts related to construction of the play field are discussed in the applicable resource sections of this Initial Study. Implementation of applicable Mitigation Measures identified in Section 1.9 and compliance with regulatory agency permit conditions ensures that impacts associated with construction of the play field would be less than significant.

CUMULATIVE IMPACTS

The proposed Project would not impact any existing recreational facilities or require the construction or expansion of recreational facilities other than the on-site play field. Potential environmental effects associated with the play field are addressed in the applicable resource sections of this Initial Study. As documented in this Initial Study, the Project's contribution toward cumulative impacts to recreational facilities is less than significant.

MITIGATION

None necessary

DOCUMENTATION

City of Mt. Shasta. 2007. Mt. Shasta General Plan, Open Space and Conservation Element.
<http://mtshastaca.gov/wp/wp-content/uploads/2016/01/5OpenSpaceandConservationElement.pdf>.
Accessed December 2018.

4.17 TRANSPORTATION

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b)? (criteria for analyzing transportation impacts – vehicle miles traveled).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to transportation/traffic that apply to the proposed project.

STATE

California Streets and Highways Code

California Streets and Highways Code §660 *et seq.* requires that an encroachment permit be obtained from Caltrans prior to the placement of structures or fixtures within, under, or over State highway right-of-way (ROW). This includes, but is not limited to, utility poles, pipes, ditches, drains, sewers, or other above-ground or underground structures.

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Circulation Element		
Goals	CI-1	Ensure that land development does not exceed road capacities.
	CI-4	Ensure that new roads are sited to meet demands of growth.

	CI-5	Abandon streets that serve no public purpose.
	CI-8	Promote safe and efficient pedestrian and bicycle transportation and other modes of non-motorized transportation.
Policies	CI-1.1	Level of service shall be the standard for judging whether a road has adequate remaining capacity for average daily traffic generated by a proposed project.
	CI-1.2	Level of service "C" shall be the minimum acceptable service level during normal conditions. Peak-hour reduction to level of service "D" may be permitted provided there are plans in place to make improvements required to improve the level of service.
	CI-1.2.1	The City shall recognize the Circulation Map of [the] Circulation Element as designating arterial and collector streets and proposed streets in the General Plan planning area.
	CI-4.1	Construct, or require construction of, identified new roads as development or redevelopment occurs.
	CI-5.1	When an application is submitted to vacate a street or easement, ensure that the City has no need for the route.
	CI-8.1	Promote the development of bikeways, sidewalks, pedestrian pathways and multi-use paths that connect residential neighborhoods with other neighborhoods, schools, employment centers, commercial centers and public open space, and that separate bicyclists, skateboarders and pedestrians from vehicular traffic whenever possible. Ensure that pedestrian facilities follow logical routes designed to serve pedestrian needs and are not constructed as "sidewalks to nowhere".
IMs	CI-1.2(d)	The City shall require traffic analysis to be conducted for all projects that will generate sufficient traffic to use ten (10) percent or more of the capacity of the roadway at LOS C. When a project will potentially impact a state highway, consideration will be given to the Caltrans Guide for the Preparation of Traffic Impact Studies to determine when and how a related traffic study should be completed.
	CI-1.2(e)	Projects that will impact streets and/or intersections that currently, or are projected to operate, at below LOS C, shall prepare a traffic analysis to determine the extent to which they impact the streets and/or intersections. For facilities that are (short-term conditions), or will be (cumulative condition), operating at unacceptable Levels of Service without the project, an impact is considered significant if the project: 1) increases the average delay at intersections by more than five seconds, or 2) increases the volume-to-capacity ratio by 0.05 or more on a roadway segment.
	CI-1.2(f)	If a street and/or intersection is impacted by a project for short-term conditions, and the project's pro-rata share is equal to or above twenty-five (25) percent, then the project shall be required to construct the necessary improvements to maintain an acceptable level of service.
	CI-1.2(g)	If a street and/or intersection is impacted by a project for cumulative conditions, and the project's pro-rata share is below twenty-five (25) percent, then the project shall be required to pay their pro-rata share of the cost of constructing these improvements.

CI-3.1(a)	Where a development is required to perform new roadway construction or road widening, the entire roadway shall be completed by the developer to its ultimate planned and designated width from curb-to-curb prior to operation of the project for which the improvements were constructed, unless otherwise approved by the City Engineer. All such roadway construction shall also provide facilities adequate to ensure pedestrian safety as determined by the City Engineer.
CI-3.1(c)	Typically, all streets should have sufficient pavement width to provide for parking on both sides of the street and enough remaining pavement width to provide for fire and emergency access. However, the City may consider alternative street designs including narrower streets, one-way streets, restricted parking and other similar methods intended to reduce the amount of area that must be paved and maintained.
CI-4.1(a)	Construct, or require construction of, identified new roads as development or redevelopment occurs.
CI-4.1(b)	If the design of the project requires that portions of the new road be constructed offsite to form a connection, the proponent shall be required to pay a proportion of the offsite costs attributable to the proposed project.
CI-4.1(c)	If the cost of the improvements funded by the project proponent are greater than the project's proportional share, the City and proponent may enter into an agreement to collect future impact fees from other projects benefiting from the improvements to be reimbursed to the proponent.
CI-4.1(d)	Require connectivity between adjacent projects as appropriate to ensure adequate and safe circulation.
CI-4.1(a)	Construct, or require construction of, identified new roads as development or redevelopment occurs.
CI-4.1(d)	Require connectivity between adjacent projects as appropriate to ensure adequate and safe circulation.
CI-5.1(a)	Utilize the provisions of California law to consider the abandonment of a street or easement for which the City has no use.
CI-8.1(a)	Amend the development code to require that new sidewalks, pedestrian pathways, multi-use paths and/or bikeways be constructed for new development based upon current and foreseeable future needs in the area of proposed projects.
CI-8.1(b)	When siting sidewalks, pedestrian pathways, bikeways and/or multi-use paths, the City shall examine where existing facilities are located and determine if there are other more logical travel patterns that should also be served.

In addition to the General Plan, the City developed a Bicycle, Pedestrian, and Trails Master Plan in 2009 to identify potential bicycle and pedestrian paths, as well as supporting facilities, in the City. The plan identifies goals and policies for the development of sidewalks, pedestrian pathways, bicycle routes, and shared-use paths to improve safety for pedestrians and bicyclists.

DISCUSSION OF IMPACTS

Questions A and B

As discussed under Regulatory Context above, the City's General Plan states that level of service (LOS) shall be the standard for determining whether a road has adequate remaining capacity for traffic generated by a proposed project. LOS "C" shall be the minimum acceptable service level

during normal conditions. Peak-hour reduction to LOS “D” may be permitted provided there are plans in place to make improvements required to improve the LOS.

SB 743 of 2013 (CEQA Guidelines §15064.3 *et seq.*) was enacted as a means to balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHGs. Pursuant to SB 743, traffic congestion is no longer considered a significant impact on the environment under CEQA. The new metric bases the traffic impact analysis on vehicle-miles travelled (VMT). VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. A lead agency has discretion to choose the most appropriate methodology to evaluate a project’s VMT, including whether to express the change in absolute terms, per capita, per household, or in any other measure. The requirement to use the VMT metric becomes effective statewide on July 1, 2020, although lead agencies have the option to commence using a VMT analysis immediately.

A Traffic Impact Study (TIS) for the proposed Project was prepared by Traffic Works in May 2018 and is included as **Appendix E**. The TIS evaluated potential operational traffic impacts associated with the proposed Project. Because the City has not transitioned to the VMT metric or adopted thresholds of significance for the VMT metric, the TIS uses the LOS metric in accordance with the City’s current General Plan policies.

Operational Traffic

Trip generation for the proposed Project was based on the Institute of Transportation Engineer’s (ITE) Trip Generation Manual (10th Edition). The ITE land use category for a private school (K-12) was used. The TIS identified existing conditions and existing plus project conditions. Average daily trips, A.M. peak hour trips and P.M. peak hour trips were also identified. The TIS included an analysis of the following intersections:

- Cedar Street and W. Ivy Street
- Pine Street and W. Ivy Street
- Pine Street and W. Lake Street
- Pine Street and the proposed Project’s southern driveway
- Pine Street and the proposed Project’s northern driveway (entrance for the drop-off/pick-up area)

According to the TIS, the Project is anticipated to generate 496 average daily trips (ADTs), with 162 trips during the A.M. peak hour (7:00 A.M. to 9:00 A.M.) and 116 trips during the P.M. peak hour (2:00 P.M. to 4:00 P.M. – when school is dismissed). The TIS concludes that all study intersections would continue to operate at acceptable LOS A or B.

Alternative Transportation

The City’s Bicycle, Pedestrian, and Trails Master Plan identifies proposed bicycle and pedestrian improvements in the City, including the following facilities:

- Class I shared-use paths that provide an off-street path for bikes and pedestrians. Class I paths are intended to allow pedestrians and bicyclists easy access to all parts of the City.
- Class II bike lanes provide an on-street lane for bikes designated by pavement markings on the roadway. Class II bicycle lanes are intended to create a primary network of on-street bicycle facilities.
- Class III bike routes identify on-street routes for bicycles with signage only. Class III facilities identify travel alternatives on lower traffic streets.

The Master Plan identifies the following future bicycle and pedestrian facilities in the Project area.

- A portion of a Class I off-street shared-use path for bicyclists and pedestrians is proposed along the Project's western boundary; the path is shown connecting to Pine Street north of the development site.
- A portion of a Class II bike lane is proposed on Pine Street along the Project site's frontage.
- A Class III bike route is proposed along Cedar Street; the route is shown extending into the portion of Cedar Street in the Project site.

The proposed Project does not include any improvements that would hinder establishing the proposed Class II bike lane on Pine Street.

The proposed Project would abandon the portion of Cedar Street within the Project site. At the time the Bicycle, Pedestrian, and Trails Master Plan was prepared, it was assumed that the Project site would eventually be developed with residential uses; the Class III bike lane on Cedar Street was intended to provide a connection between future residential uses on the Project site and Mt. Shasta Elementary School to the south; however, development of the site with the proposed charter school would preclude the need for the Class III bike route on the Project site.

Development of the proposed Class I shared-use path on the Project site may be hindered if a sound barrier is constructed to provide noise attenuation for the future play field (see discussion in Section 4.13 under Question A). However, as stated above, the Master Plan was prepared with the assumption that the Project site would be developed with residential uses. Development of the Project site with the proposed charter school would preclude the need for the Class I path on the Project site.

Public transportation (bus service) in the City is provided by Siskiyou County STAGE. Services include scheduled pick-up times throughout the day and on-call services. The closest transit stop to the Project site is on the opposite side of Pine Street in front of the hospital. The proposed Project does not include any components that would conflict with the transit stop or otherwise hinder transit services in the City.

As documented above, the proposed Project would not conflict with goals, policies, and implementation measures included in the City's General Plan; would not significantly increase traffic in the area or result in an unacceptable LOS; would not conflict with the City's Bicycle, Pedestrian, and Trails Master Plan; and would not hinder public transit services in the City; therefore, impacts would be less than significant.

Question C

The proposed Project would introduce two new driveways off of Pine Street. Presently, vehicles are allowed to park on the street along the property frontage. Because parked vehicles in this location would hinder sight distance for vehicles exiting the Project site from the southern driveway, the Project includes prohibiting on-street parking on Pine Street 55 feet north of the proposed driveway and 35 feet south of the proposed driveway; these no-parking areas will be designated with red curb. Establishing the no-parking zones will ensure that impacts are less than significant.

Question D

As discussed in Section 4.9 under Question F, there would be short-term increases in traffic in the area associated with construction workers and equipment. In order to ensure adequate emergency access during construction, temporary traffic control during work in the public right-of-way would be provided in accordance with the current MUTCD. The City also has the discretion to require a temporary traffic control plan that would identify temporary traffic control measures that would be implemented during the work.

Emergency access to the site would be provided by two new driveways off of Pine Street. In addition, an emergency-only route would be provided to the Project site from Cedar Street at the southern end of the Project site. The Project does not include any components that would hinder emergency access in other areas of the City. Therefore, because traffic control would be provided throughout construction, and adequate emergency access would be provided during operations, impacts would be less than significant.

CUMULATIVE IMPACTS

As noted in Section 3.3, the City's Water Distribution System Improvements project includes work on Pine Street adjacent to the Project site, and there is a possibility that construction periods may overlap. In addition, construction contractors for the Downtown Collection System Improvements project may travel on the same streets as contractors for the GECS improvements. The City's infrastructure improvement projects would contribute to temporary cumulative traffic impacts if the projects are constructed simultaneously with the GECS improvements. Construction-related traffic would be minor due to the overall scale of the construction activities. Further, construction-related traffic for the cumulative projects would be spread over the duration of the construction schedules and would be minimal on a daily basis. In addition, temporary traffic control is required for all projects that require work in the public ROW to protect the travelling public. These measures ensure that the Project's cumulative traffic impacts during construction are less than significant.

In terms of cumulative operational impacts, all new development projects in the City are required to comply with the goals, policies, and implementation measures included in the City's General Plan. Implementation Measure CI-1.2(d) requires a traffic analysis to be completed for all projects that will generate sufficient traffic to use ten (10) percent or more of the capacity of the roadway at LOS C. In addition, Implementation Measure CI-1.2(e) requires that a traffic analysis be completed if a project impacts a street and/or intersection with a current or projected unacceptable LOS (below LOS C). If a project's traffic impacts are significant, mitigation is required to minimize impacts to the City's street network. Mitigation could include construction of roadway improvements or payment of a proportional fair-share of the costs of the improvement in accordance with Implementation Measures CI-1.2(f) and CI-1.2(g). Compliance with the City's regulations pertaining to the circulation system reduces cumulatively considerable impacts to a less-than-significant level.

MITIGATION

None necessary.

DOCUMENTATION

City of Mount Shasta. 2007. Mt. Shasta General Plan, Circulation Element. <https://mtshastaca.gov/wp/wp-content/uploads/2016/01/4TrafficCirculation.pdf>. Accessed December 2018.

_____. 2009. City of Mt. Shasta Bicycle, Pedestrian, and Trails Master Plan. https://mtshastaca.gov/wp/wp-content/uploads/2017/03/Bicycle_Master_Plan_File2.pdf. Accessed December 2018.

Office of Planning and Research. 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Accessed January 2019.

Traffic Works, LLC. 2018. Traffic Impact Study for Golden Eagle Charter School, Mount Shasta, CA.

4.18 TRIBAL CULTURAL RESOURCES

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code (PRC) 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:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. A resource listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth PRC section 5024.1(c)? In applying the criteria set forth in PRC Section 5024.1(c), the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to tribal cultural resources that apply to the proposed project.

STATE

California Environmental Quality Act

Assembly Bill 52 of 2014 (Public Resources Code [PRC] §21084.2) establishes that *“a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.”* In order to determine whether a project may have such an effect, a lead agency is required to consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if:

1. The tribe requested to the lead agency, in writing, to be informed through formal notification of proposed projects in the geographical area; and
2. The tribe responds, in writing, within 30 days of receipt of the formal notification and requests the consultation.

The consultation must take place prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report. Pursuant to PRC §21084.3, lead agencies must, when feasible, avoid damaging effects to a tribal cultural resource and must consider measures to mitigate any identified impact.

PRC §21074 defines “tribal cultural resources” as either of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the CRHR; or are included in a local register of historical resources as defined in PRC §5020.1(k).

2. A resource determined by the lead agency, taking into consideration the significance of the resource to a California Native American tribe, to be significant pursuant to criteria set forth in PRC §5024.1(c).

In addition, a cultural landscape that meets one of these criteria is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. A historical resource described in §21084.1, a unique archaeological resource as defined in §21083.2(g), or a “nonunique archaeological resource” as defined in §21083.2(h) may also be a tribal cultural resource if it meets one of these criteria.

LOCAL

There are no local regulations pertaining to tribal cultural resources that apply to the proposed project.

DISCUSSION OF IMPACTS

Questions A and B

No California Native American tribe submitted a written request to the City for formal consultation pursuant to AB 52 (2014). Therefore, the requirements of PRC §21080.3.1 have been satisfied. As stated in Section 4.5 under Question A, no comments were submitted to the City by any Native American tribe in response to the City’s request for comments. The City has not identified any resources in the Project area that would be significant to a California Native American tribe. **Mitigation Measures MM 4.5.1 and 4.5.2** address the inadvertent discovery of cultural resources to ensure impacts are less than significant.

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the Project area have the potential to impact tribal cultural resources. Tribal cultural resources are afforded special legal protections designed to reduce the cumulative effects of development. Potential cumulative projects and the proposed Project would be subject to the protection of tribal cultural resources afforded by Public Resources Code §21084.3. Given the non-renewable nature of tribal cultural resources, any impact to tribal cultural sites, features, places, landscapes or objects could be considered cumulatively considerable. As discussed above, no cultural resources of significance to a California Native American tribe were identified within the Project area. In addition, **Mitigation Measures MM 4.5.1 and 4.5.2** address the inadvertent discovery of cultural resources; therefore, the proposed Project would have less than significant cumulative impacts to tribal cultural resources.

MITIGATION

Implementation of **Mitigation Measures MM 4.5.1 and 4.5.2**.

DOCUMENTATION

Furry, John. Cultural Resource Specialties. 2018. Archaeological/Historical Survey of the Golden Eagle Charter School Property in the City of Mt. Shasta, Siskiyou County, California. On file at NEIC.

4.19 UTILITIES AND SERVICE SYSTEMS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to utilities and service systems that apply to the proposed project.

STATE

Senate Bill 610 (2001)

Under SB 610, enacted in 2001, water supply assessments must be included in any environmental documentation for certain projects that are subject to CEQA. As stated in Water Code §10912(b), “[if] a public water system has fewer than 5,000 service connections, then “project” means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections...” Water Code §10910(c)(4) states that the water supply assessment for the project shall include a discussion with regard to whether the City's water supply during normal, single dry and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses.

California Integrated Waste Management Act

The California Integrated Waste Management Act (CIWMA) of 1989, as amended, was enacted to reduce, recycle, and reuse solid waste generated in the State. The CIWMA requires cities and counties to divert 50 percent of the total waste stream from landfill disposal. Under the CIWMA, cities and counties must prepare Solid Waste Management Plans and Source Reduction and Recycling Elements to implement CIWMA goals.

Solid Waste Reuse and Recycling Access Act

The Solid Waste Reuse and Recycling Act of 1991 (AB 1327) requires that cities and counties adopt regulations that require commercial, industrial, or institutional buildings, and multifamily residential dwellings of five units or more, to provide adequate storage areas for the collection of recyclable materials.

Assembly Bill 341 (2011)

AB 341, enacted in 2011, established a statewide goal that 75 percent of solid waste be reduced, recycled, or composted by 2020. AB 341 established a statewide mandatory commercial recycling program. A business or public entity that generates four cubic yards or more of commercial solid waste per week, or a multifamily residential dwelling of five units or more, must arrange for recycling services no later than July 1, 2012. Cities and Counties are required to implement a commercial solid waste recycling program to meet this requirement.

Assembly Bill 1826 (2014)

AB 1826, enacted in 2014, requires businesses to recycle their organic waste (food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste), depending on the amount of waste generated per week. Local jurisdictions are required to implement an organic waste recycling program to divert organic waste generated by businesses, including multi-family dwellings of five or more units (multi-family dwellings are not required to have a food waste diversion program). Exemptions are allowed for jurisdictions in rural areas. CalRecycle has exempted the City of Mt. Shasta from the organic waste recycling program.

Senate Bill 1383 (2016)

SB 1383, enacted in 2016 established targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from 2014 levels by 2020 and a 75 percent reduction by 2025. The law grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that not less than 20 percent of currently disposed edible food is recovered for human consumption by 2025.

California Building Standards Code

The CALGreen Code, included as Part 11 of the CBSC, includes requirements for construction waste reduction, disposal, and recycling. The intent of this requirement is to reduce the amount of waste from new construction and demolition that would be sent to landfills, and to encourage reuse and recycling of construction waste products (e.g., carpet, wood, aggregate, shingles, wallboard, and other materials that have recyclable value). A minimum of 65 percent of nonhazardous construction and demolition waste must be recycled and/or salvaged for reuse. The CALGreen Code requires that a Construction Waste Management Plan be submitted with the building permit application and approved by the Building Official prior to issuance of a building permit.

The CALGreen Code also includes mandatory water conservation measures for both indoor and outdoor water use. Indoor measures require the use of water conserving plumbing fixtures and fittings. Outdoor measures require that landscape areas in excess of 500 square feet comply with the California Department of Water Resources Model Water Efficiency Landscape Ordinance (MWELO), or a local water efficient landscape ordinance that is at least as effective as the State's MWELO. The MWELO is intended to reduce outdoor water use by requiring more efficient irrigation systems, graywater usage, and onsite stormwater capture, and by limiting the portion of landscapes that can be covered in turf.

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals, Policies, and Implementation Measures (IMs) that apply to the proposed Project:

Land Use Element		
Goals	LU-18	Maintain a water supply and distribution system that meets drinking water standards and that serves the domestic and fire protection needs of the community.
	LU-19	Provide for the efficient collection, transport, and discharge of stormwater in a safe manner and protect people and property from flooding.
Policies	LU-18.1	Ensure that the growth of the community does not outstrip the water supply and distribution system of the City.
	LU-19.1	Utilize the Storm Drainage Master Plan to improve existing storm drainage conditions and ensure adequate storm drainage infrastructure design and construction for future developments.
IMs	LU-18.1(b)	Update the City Water Master Plan and utilize the updated Water Master Plan to prioritize water infrastructure improvements and expansion programs to serve the existing and planned development of the community.
	LU-18.2(a)	The City shall encourage the enforcement of all federal, state, regional and county regulations and shall enforce local regulations regarding the preservation and enhancement of water quality as it relates to the City's water sources.
Circulation Element		
Goal	CI-9	Ensure adequate utilities to meet community needs.
Policy	CI-9.1	Encourage participation of public utilities in the project review process.
IM	CI-9.1(b)	Support efforts by utilities to upgrade and improve service to the Mt. Shasta area.

DISCUSSION OF IMPACTS

Question A

Also see discussion in Section 4.10 under Question C. The proposed Project would connect to existing public utilities that are located in Pine Street along the property frontage, and in the segment of Cedar Street that bisects the Project site. Although the proposed Project would increase water use and generate wastewater, the City's existing water and wastewater treatment facilities are adequate to serve the proposed Project (see discussion under Question C below).

As discussed in Section 4.4 under Questions B and C, depending on the final drainage study and storm drain improvement plan, construction of the Project's southern driveway and the drop-off/pick-up aisle along Pine Street could impact a vegetated ditch. Disturbance of the vegetated ditch may be subject to a Section 404 permit from the USACE, a Section 401 Permit from the CVRWQCB, and/or a Streambed Alteration Agreement from the CDFW. Compliance with regulatory agency permit conditions ensures that impacts associated with storm water drainage improvements are less than significant.

Question B

The City of Mt. Shasta (City) provides potable water service to a population of approximately 3,500. The City obtains water from a combination of spring and well sources that have a combined effective capacity of 3.7 million gallons per day (MGD). The primary source of water for the City is from Cold Springs, located approximately two miles east of the City limits at an elevation of about 4,300 feet.

Water from the two natural springs is collected in covered and secured works and transported via pipeline to the three storage reservoirs located at Quail Hill. This primary source of water is supplemented by Well No. 1, located on Washington Drive, just south of the Lake Street intersection, and Well No. 2, located on Mt. Shasta High School property north of Rockfellow Drive. The City has four untreated water storage reservoirs totaling approximately 1.7 million gallons (MG) in capacity. The City is in the process of replacing a 203,000-gallon tank on Quail Hill with a 500,000-gallon tank.

The City's water distribution system consists of approximately 185,000 feet of water mains that include steel, cast iron, asbestos cement, and polyvinyl chloride (PVC) piping. With funding through the Department of Water Resources, the City is in the process of completing improvements to the water distribution system that will help the City conserve water and meet the City's water needs into the future.

Indoor and outdoor water demands for the proposed Project were calculated based on CalEEMod default values. CalEEMod estimates the proposed Project's water demand at 4.46 million gallons per year (MGD) (13.7 acre feet per year). The majority of water use (9.8 MGD) is associated with outdoor water use. However, outdoor water use is anticipated to be less because the proposed Project is required to comply with CALGreen non-residential mandatory measures related to outdoor water use. As discussed under Regulatory Context, the CALGreen Code mandates that the Project comply with the State's MWELO, or local water efficient landscape regulations that are at least as effective as the State's MWELO.

During normal and dry years, the City has sufficient water supplies available to serve the proposed Project and other developments in the City. During multiple dry years, Cold Springs may be particularly vulnerable to drought. In June 2015, the City Council adopted a Resolution that recognized that the City's primary water source, Cold Springs, was producing less water than any point in the past 20 years. Due to the unprecedented low spring production, the City adopted an Emergency Drought Condition Water Reduction Policy to ensure an adequate water supply for domestic use and fire suppression. The Policy required all major water users and residential customers to reduce water usage by 30 percent. The City is also subject to State-adopted emergency water use reductions during prolonged drought.

Therefore, because the City enacts water use restrictions during periods of drought that apply to all customers in the City's water service area, the City would have sufficient water supplies to serve the Project and other reasonably foreseeable future development projects during normal, dry, and multiple dry years; impacts would be less than significant.

Question C

On May 9, 2016, the City adopted a Mitigated Negative Declaration (MND) for the State-Mandated Wastewater Treatment and Outfall Improvement Project. The project entails replacement of the existing treatment lagoon system with a new treatment facility, installation of pipelines from the existing WWTP headworks to the replacement treatment facility, and installation of a new diffuser at the existing Sacramento River outfall. These improvements are necessary to comply with CVRWQCB requirements for wastewater discharge. With implementation of the WWTP improvements, the capacity of the WWTP would increase to accommodate an average dry weather flow (ADWF) of 0.9 million gallons per day (MGD). This increase in capacity accounts for existing needs plus an allocation for anticipated future growth at a rate of one percent over the next 20 years. According to the City, the WWTP has adequate capacity to serve the proposed Project; therefore, there is no impact.

Questions D and E

As discussed under Regulatory Context above, the City is subject to the CIWMA, which requires the diversion of 50 percent of the total waste stream from landfill disposal. The City coordinates with Siskiyou County to implement CIWMA requirements. To satisfy the annual reporting requirement,

the City submits an annual report to the Siskiyou County Integrated Solid Waste Management Regional Authority (ISWMRA) that identifies the City's efforts, and this information is submitted to the State by the ISWMRA.

The City provides for the collection and disposal of garbage, rubbish, and waste matter in the City. These services are covered by a fixed monthly charge paid by solid waste customers. The Siskiyou Opportunity Center provides commercial recycling pickup and sorting services as well as solid waste removal in the downtown area.

Solid waste is collected and disposed of at the Black Butte Transfer Station on Spring Hill Road in the City. The Black Butte Transfer Station is permitted through the California Integrated Waste Management Board (CIWMB). The maximum permitted throughput is 100 tons per day and the site capacity is a total of 150 tons. The Transfer Station is subject to periodic inspections by Siskiyou County to ensure compliance with the CIWMB permit. Although the transfer station occasionally reaches capacity and is unable to accept additional waste on certain days, waste and recycled materials can be disposed of at another transfer station in the County. The average volume at the transfer station is 60 to 65 tons per day.

Because there are no active landfills in Siskiyou County, all solid waste in the County is trucked to the Dry Creek Landfill in southern Oregon. The Dry Creek Landfill was expanded to a regional facility in 1999 and has a projected operational life exceeding 100 years.

Construction

As discussed under Regulatory Context, the CALGreen Code requires that a Construction Waste Management Plan be submitted with the building permit application and approved by the Building Official prior to issuance of a building permit. Because the City's Building Official would ensure compliance through the plan check and inspection processes, impacts during construction are less than significant.

Operational

Solid waste generation rates for schools vary throughout the State. Some jurisdictions have based the calculation on square footage of the building; others have estimated waste generation based on number of students and/or number of employees. CalRecycle has also posted estimates for solid waste generation for various land uses to provide a general level of information for planning purposes. According to the posted data, generation rates for schools/educational facilities ranges between 0.50 and 1 pound per day per student. Using this metric, solid waste generation for the proposed Project would range from 100 to 200 pounds per day (19 to 37 tons per year). This represents about 0.15 percent of the current average volume at the transfer station of 60 to 65 tons per day, which is a less-than significant impact.

Compliance with City regulations pertaining to the disposal of solid waste ensures that the Project's impacts are less than significant.

CUMULATIVE IMPACTS

Cumulative projects, including growth resulting from build-out of the City's General Plan, would result in the need for new utility infrastructure. There would also be an increased demand for potable water and wastewater treatment, and increased generation of solid waste.

All new development projects in the City are reviewed on a case-by-case basis to determine the need for new or expanded infrastructure improvements. Required improvements are constructed in accordance with local and State requirements, and any required mitigation measures are identified during the environmental review process to ensure that impacts are less than significant.

During drought years, the City will adopt an Emergency Drought Condition Water Reduction Policy and enact mandatory water use restrictions to ensure adequate water for domestic use and fire suppression. The Policy requires all major water users and residential customers to reduce water usage by 30 percent, or as may be required to ensure an adequate water supply. The City is also subject to State-adopted emergency water use restrictions during prolonged drought.

In addition, all development projects are required to comply with local and State regulations pertaining to solid waste disposal and recycling. The Black Butte Transfer Station is subject to periodic inspections by Siskiyou County to ensure compliance with the CIWMB permit.

Compliance with existing local and State regulations ensures that the proposed Project's contribution to cumulative impacts to utility and service systems is less than significant.

MITIGATION

None necessary.

DOCUMENTATION

- CalRecycle.** 2019. Estimated Solid Waste Generation Rates.
<https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates>. Accessed March 2019.
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<http://mtshastaca.gov/wp/wp-content/uploads/2016/01/3LandUseElement.pdf>. Accessed December 2018.
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<https://roguedisposal.com/about-us/our-landfill>. Accessed March 2019.
- PACE Engineering, Inc.** 2011. City of Mt. Shasta 2010 Master Water Plan.
- Siskiyou County Local Agency Formation Commission.** 2011. Municipal Services Review Report for the City of Mt. Shasta.
https://www.co.siskiyou.ca.us/sites/default/files/fileattachments/lafco/page/1111/lafco_2011_0412_mtshasta_msr.pdf. Accessed December 2019.

4.20 WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to wildfire that apply to the proposed project.

STATE

California Department of Forestry and Fire Protection (CAL FIRE)

The Bates Bill (AB 337), enacted in 1992, required CAL FIRE to work with local governments to identify high fire hazard severity zones throughout each county in the State. CAL FIRE adopted Fire Hazard Severity Zone (FHSZ) Maps for State Responsibility Areas (SRAs) in November 2007. Pursuant to California Government Code §51175-51189, CAL FIRE also recommended FHSZs for Local Responsibility Areas (LRAs). Over the years, CAL FIRE has updated the maps and provided new recommendations to local governments based on fire hazard modeling.

The fire hazard model considers wildland fuels (natural vegetation that burns during the wildfire); topography (fires burn faster as they burn up-slope); weather (fire burns faster and with more intensity when air temperature is high, relative humidity is low, and winds are strong); and ember production and movement (how far embers move and how receptive the landing site is to new fires). The model recognizes that some areas of California have more frequent and severe wildfires than other areas. The proposed Project is not located in a SRA FHSZ.

California Fire and Building Codes

California Fire Code, Part 9, Chapter 49 (Wildland-Urban Interface Fire Areas), and California Building Code Chapter 7A (Materials and Construction Methods for Exterior Wildfire Exposure) include standards for new construction in Wildland-Urban Interface Fire Areas (fire hazard severity zones). A Wildland-Urban Interface Fire Area is defined as a geographic area identified by the State as a Fire Hazard Severity Zone in accordance with PRC §4291 through §4204, and Government Code §51175 through §51189, or other areas designated by the local enforcing agency to be at a significant risk from wildfires. The purpose of the standards is to prevent a building from being ignited by flying embers that can travel as much as a mile away from a wildfire and to contribute to a systematic reduction in fire-related losses through the use of performance and prescriptive requirements.

LOCAL

City of Mt. Shasta

The City's General Plan includes the following Goals that apply to the proposed Project:

Safety Element		
Goals	SF-4	Protect property and life from fire hazards.
	SF-7	Identify and maintain emergency evacuation routes.

Chapter 7.60 of the Mt. Shasta Municipal Code establishes Very High FHSZs within the City, which includes the northern and eastern areas of the City. Although the Project site is not located within the Very High FHSZ, MSMC Chapter 7.15 (Fire Prevention – Burn Permit Required) states the Mt. Shasta Fire Chief has included the entire City in the High FHSZ, and the fire prevention requirements set forth in California Government Code §51182 (defensible space requirements) apply to all properties in the City.

DISCUSSION OF IMPACTS

Question A

See Section 4.9, Question G, for a discussion of potential construction-related impacts. Emergency access to the site would be provided by two driveways off of Pine Street. In addition, an emergency-only route is provided at the southern end of the Project site from Cedar Street. The Project does not include any components that would hinder emergency access in other areas. Therefore, the Project would not impair an emergency response plan or emergency evacuation plan, and there would be no impact.

Question B

As discussed under Regulatory Context above, the Project site is within a high FHSZ as designated by the City. As such, the project is subject to the provisions of Chapter 7A of the CBC (Material and Construction Methods for Exterior Wildfire Exposure). The purpose of Chapter 7A is to protect life and property by increasing the ability of a building to resist the intrusion of flames or burning embers projected by a vegetation fire. In addition to specific requirements related to ignition-resistant construction, roofing, vents, exterior coverings, exterior windows and doors, and decking, these provisions mandate that the proposed Project comply with CGC §51182, which requires a minimum of 100 feet of defensible space be maintained around each side of an occupied structure.

The City's Building Official confirms that the required measures are implemented into the construction plans for the building. Compliance with defensible space requirements is confirmed by the Building Official prior to building permit final approval. In accordance with MSMC Section 6.05.080, it is the duty of the City's Fire Chief, or his/her designee, to make periodic inspections of all property in the City to identify areas with weeds, grass, or other material that is likely to become ignited, and to notify the property owner of corrective actions needed to reduce the risks of wildfires. Because the Project will comply with existing local and State codes intended to reduce the risk of wildfire, including the requirement to maintain defensible space around buildings, and the City's Fire Chief would ensure on-going maintenance of the defensible space, the Project would not exacerbate wildfire risks or expose Project occupants to increased risks associated with wildfires; impacts would be less than significant.

Question C

As discussed in Section 4.9 under Question G, equipment used during construction activities may create sparks that could ignite dry grass. Also, the use of power tools and/or acetylene torches may increase the risk of wildland fire hazard. Mitigation Measure **MM 4.8.1** ensures impacts during construction are less than significant. The proposed Project would not require installation of infrastructure that could exacerbate fire hazards (e.g., power lines in vegetated areas); would not construct roads or otherwise intrude into natural spaces in a manner that would increase wildlife hazards in the long term; and would not require installation of emergency water sources, or other fire

prevention/suppression infrastructure. Therefore, the increased risk of fire due to project infrastructure and the potential for ongoing impacts due to fire-related infrastructure are less than significant.

Question D

The proposed Project would not expose people or structures to significant post-fire risks. The project site consists of gently sloping lands with little potential for post-fire erosion, landslides or other slope instability, or drainage changes or flooding; therefore, there would be no impact.

CUMULATIVE IMPACTS

The proposed Project would not impair an adopted emergency response plan or emergency evacuation plan; therefore, it would not contribute to cumulative impacts related to such plans. In addition, the proposed project would not contribute individually or cumulatively to increased risks associated with post-fire hazards. Because the City is located within a Fire Hazard Severity Zone, all new construction in the City is required to comply with State Building and Fire Codes that were adopted to protect life and property from wildfire risks. Because the proposed Project will comply with adopted standards related to wildfire risks, the Project's cumulative impact to increased risks of wildfire would be less than significant.

MITIGATION

Implementation of **Mitigation Measure MM 4.8.1.**

DOCUMENTATION

California Department of Forestry and Fire Protection (CAL FIRE). 2008. Siskiyou County, Very High Fire Hazard Severity Zones in SRA.

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City of Mt. Shasta. 2007. Mt. Shasta General Plan, Safety Element. <http://mtshastaca.gov/wp/wp-content/uploads/2016/01/6SafetyElement.pdf>. Accessed August 2018.

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4.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

DISCUSSION OF IMPACTS

Question A

As discussed in the applicable environmental resource section above, the proposed Project could result in visual impacts, loss of riparian habitat, loss of wetlands, disturbance of nesting migratory birds (if present), impacts to paleontological, cultural, and tribal cultural resources (if present), increased runoff due to the addition of impervious surfaces, the introduction and spread of noxious weeds during construction, temporarily increased risk of wildfires, temporarily increased air emissions, temporarily increased noise and vibration levels, and exposure of sensitive receptors to elevated noise levels. However, mitigation measures are included to reduce all potential impacts to a less-than-significant level.

Question B

The potential cumulative impacts of the proposed Project have been analyzed within the discussion of each environmental resource area above. The mitigation measures identified in Section 1.9 reduce all potential impacts to a less-than-significant level.

Question C

As discussed in the applicable environmental resource sections above, the proposed Project could result in adverse effects on human beings due to temporarily increased risk of wildfires, temporarily increased air emissions, temporary construction-related noise and vibration levels, and exposure of sensitive receptors to elevated noise levels. However, mitigation measures are included to reduce all potential impacts to a less-than-significant level.

SECTION 5.0 LIST OF PREPARERS

ENPLAN

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City of Mt. Shasta

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SECTION 6.0 ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
ADTs	Average Daily Trips
ANSI	American National Standards Institute
AQMD	Air Quality Management District
APCD	Air Pollution Control District
APE	Area of Potential Effects
BMP	Best Management Practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalARP	California Accidental Release Prevention
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAP	Criteria Air Pollutants
CARB	California Air Resources Board
CASGEM	California Statewide Groundwater Elevation Monitoring
CBC	California Building Code
CBSC	California Building Standards Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH ₄	Methane
City	City of Mt. Shasta
CIWMA	California Integrated Waste Management Act
CIWMB	California Integrated Waste Management Board
CNDDB	California Natural Diversity Data Base
CO	Carbon Monoxide
COR	City of Redding
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
County	Siskiyou County

CRHR	California Register of Historical Resources
CRI	Cultural Resources Inventory
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CY	Cubic Yards
dBA	Decibels
DOC	Department of Conservation
DTSC	California Department of Toxic Substances Control
DWSRF	Drinking Water State Revolving Fund
EHD	Environmental Health Department
EO	Executive Order
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Act
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FMMP	Farmland Mapping and Monitoring Program
GC	Government Code
GHG	Greenhouse Gas Emissions
GSP	Groundwater Sustainability Plans
GWP	Global Warming Potential
H ₂ S	Hydrogen Sulfide
HCP	Habitat Conservation Plan
HDD	Horizontal Directional Drill
HFC	Hydrofluorocarbons
HMP	Hazard Mitigation Plan
HSC	California Health and Safety Code
IBC	International Building Code
IM	Implementation Measure
ISWMRA	Integrated Solid Waste Management Regional Authority
IS	Initial Study
ITE	Institute of Transportation Engineers
I-5	Interstate 5
LRA	Local Responsibility Area
MACT	Maximum Achievable Control Technology
MCL	Maximum Contaminant Level

MG	Million Gallons
MGD	Million Gallons per Day
mg/m ³	Milligrams per Cubic Meter
MND	Mitigated Negative Declaration
MPH	Miles per Hour
MPO	Metropolitan Planning Organization
MRZ	Mineral Resource Zone
MSMC	Mt. Shasta Municipal Code
MS4	Municipal Separate Storm Sewer System
MTBA	Migratory Bird Treaty Act
MWEL	Model Water Efficiency Landscape Ordinance
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEIC/CHRIS	Northeast Information Center/California Historical Resources Information System
NEPA	National Environmental Policy Act
NF ₃	Nitrogen Trifluoride
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
N ₂	Nitrogen
N ₂ O	Nitrous Oxide
NO	Nitric Oxide
NOI	Notice of Intent
NO ₂	Nitrogen Dioxide
NO _x	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSVAB	Northern Sacramento Valley Air Basin
NWP	Nationwide Permit
O ₂	Oxygen
O ₃	Ozone
OHWM	Ordinary High Water Mark
OSHA	Occupational Safety and Health Act
Pb	Lead
PCB	Polychlorinated biphenyls
PCP	Pentachlorophenol



PFC	Perfluorocarbons
PHD	Peak Hour Demand
PM _{2.5}	Particulate Matter, 2.5 microns in size
PM ₁₀	Particulate Matter, 10 microns in size
PPB	Parts per Billion
PPM	Parts per Million
PRC	Public Resources Code
PRV	Pressure Reducing Valve
Project/ Proposed Project	Golden Eagle Charter School
PV	Photovoltaic
PVC	Polyvinyl Chloride
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
ROG	Reactive Organic Gases
ROW	Right-of-Way
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCAPCD	Siskiyou County Air Pollution Control District
SCEHD	Siskiyou County Environmental Health Department
SCS	Sustainable Communities Strategy
SDWA	Safe Drinking Water Act
SF ₆	Sulfur Hexafluoride
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMARA	The Surface Mining and Reclamation Act
SO ₂	Sulfur Dioxide
SO ₄	Sulfates
SO _x	Sulfur Oxides
SRA	State Responsibility Area
SUSWMP	Standard Urban Storm Water Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TBA	Targeted Brownsfield Assessment

TPH	Total Petroleum Hydrocarbons
TPZ	Timberland Production Zone
U.S.	United States
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWA	United States Fish and Wildlife Service
VMT	Vehicle Miles Travelled
VOC	Volatile Organic Compounds
WDRs	Waste Discharge Requirements
µg/m ³	Micrograms per Cubic Meter

APPENDIX A

PRELIMINARY LIGHTING PLAN

Calculation Summary											
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Description	PtSpcLr	PtSpcTb	Meter Type
CalcPts_1	Illuminance	Fc	1.57	3.3	0.6	2.62	5.50	Readings taken @ 0'-0" AFG	10	10	Horizontal

Luminaire Schedule											
Symbol	Qty	Tag	Label	Arrangement	Lum. Lumens	LLF	Description	Lum. Watts	Total Watts	Filename	BUG Rating
	3	B	SLIM12YD10	SINGLE	1815	1.000	SLIM12Y_D10	14.1	42.3	SLIM12YD10 - Warm - RAB04262.IES	B1-U1-G0
	28	C	ALED5T52Y	SINGLE	5516	1.000	ALED5T52Y_D10 (Type V - Short - Semicutoff)	54.6	1528.8	ALED5T52Y.ies	B3-U2-G2

Expanded Luminaire Location Summary						
LumNo	Tag	X	Y	MTG HT	Orient	Tilt
1	C	246.347	330.364	13	0	0
2	C	311.134	330.296	13	0	0
4	C	370.633	330.296	13	0	0
5	C	238.956	379.82	13	270	0
16	C	245.865	279.989	13	0	0
26	C	244.38	56.079	13	0	0
33	C	625.245	72.538	13	68.071	0
38	C	368.954	115.378	13	0	0
40	B	414.825	111.647	12	270	0
41	B	480.607	111.647	12	270	0
42	B	447.133	111.6	12	270	0
44	C	296.881	395.721	13	0	0
45	C	350.881	395.721	13	0	0
46	C	396.65	365.15	13	0	0
47	C	390.866	280.46	13	0	0
48	C	296.881	264.349	13	0	0
49	C	350.793	263.935	13	0	0
53	C	245.865	219.989	13	0	0
54	C	245.865	159.989	13	0	0
55	C	245.865	99.989	13	0	0
56	C	310.519	55.748	13	0	0
57	C	373.519	55.748	13	0	0
58	C	436.519	55.748	13	0	0
59	C	499.519	55.748	13	0	0
60	C	562.519	55.748	13	0	0
61	C	303.262	106.152	13	0	0
62	C	579.617	106.556	13	0	0
63	C	514.664	115.028	13	0	0
64	C	183.956	379.82	13	270	0
65	C	128.956	379.82	13	270	0
66	C	73.956	379.82	13	270	0
Total Quantity: 31						

NOTES:

* The light loss factor (LLF) is a product of many variables, only lamp lumen depreciation (LLD) has been applied to the calculated results unless otherwise noted. The LLD is the result (quotient) of mean lumens / initial lumens per lamp manufacturers' specifications.

* Illumination values shown (in footcandles) are the predicted results for planes of calculation either horizontal, vertical or inclined as designated in the calculation summary. Meter orientation is normal to the plane of calculation.

* The calculated results of this lighting simulation represent an anticipated prediction of system performance. Actual measured results may vary from the anticipated performance and are subject to means and methods which are beyond the control of RAB Lighting Inc.

* Mounting height determination is job site specific, our lighting simulations assume a mounting height (insertion point of the luminaire symbol) to be taken at the top of the symbol for ceiling mounted luminaires and at the bottom of the symbol for all other luminaire mounting configurations.

* It is the Owner's responsibility to confirm the suitability of the existing or proposed poles and bases to support the proposed fixtures, based on the weight and EPA of the proposed fixtures and the owner's site soil conditions and wind zone. It is recommended that a professional engineer licensed to practice in the state the site is located be engaged to assist in this determination.

* The landscape material shown hereon is conceptual, and is not intended to be an accurate representation of any particular plant, shrub, bush, or tree, as these materials are living objects, and subject to constant change. The conceptual objects shown are for illustrative purposes only. The actual illumination values measured in the field will vary.

* Photometric model elements such as buildings, rooms, plants, furnishings or any architectural details which impact the dispersion of light must be detailed by the customer documents for inclusion in the RAB lighting design model. RAB is not responsible for any inaccuracies caused by incomplete information on the part of the customer, and reserves the right to use best judgement when translating customer requests into photometric studies.

* RAB Lighting Inc. luminaire and product designs are protected under U.S. and International intellectual property laws. Patents issued or pending apply.



PROPOSED POLES TO BE MOUNTED
ON 24" TALL CONCRETE BASE.
BASE TO BE DESIGNED BY OTHERS.

PS4-11-10WT

The Lighting Analysis, all aspects, design, layout and the illumination "Quality Design" provided by RAB Lighting Inc. ("RAB") represents an anticipated prediction of system performance based on design parameters and information supplied by others. The photometric data, luminaire and information provided by others have not been field tested or field tested and therefore the actual results may vary from those calculated. The information is not intended to be used as a basis for construction or other purposes.

RAB is not responsible for any inaccuracies caused by incomplete information on the part of the customer, and reserves the right to use best judgement when translating customer requests into photometric studies.

This lighting design is based on the information provided by the customer. It is not intended to be used as a basis for construction or other purposes. It is not intended to be used as a basis for construction or other purposes.

PROJECT # 97281

CASE # 00180472

Date: 6/4/2018

Filename: Golden Eagle Charter School Parking Lot Layout 00180472.AIA

Drawn By: Donald G. Andrews

Job Name: Golden Eagle Charter School Parking Lot
Mt Shasta, CA

Lighting Layout
Version A

Prepared For:
ALR Inc.
7777 Paradise Lane
Oakland, CA 94621
TEL: 510-638-3000

Filename: Z:\06 Files\ALR\CED\Chas 104044\Golden Eagle Charter School Parking Lot Layout 00180472A.AIA

RAB
LIGHTING
170 Ludlow Avenue, Northbrook, IL 60062
888.722.1030 • RABWEB.COM



High output LED pole top area light with IES type V circular distribution. Wide and uniform 360 degree pattern ideal for large outdoor areas such as parking lots, corporate parks, and retail settings.

Color: Bronze

Weight: 21.8 lbs

Project:

Golden Eagle Charter School Par

Type:

C

Prepared By:

Donald Andrews

Date:

6/4/18

Driver Info

Type: Constant Current
120V: 0.49A
208V: 0.31A
240V: 0.27A
277V: 0.24A
Input Watts: 55W
Efficiency: 95%

LED Info

Watts: 52W
Color Temp: 3000K
Color Accuracy: 73 CRI
L70 Lifespan: 100000
Lumens: 5516
Efficacy: 101 LPW

Technical Specifications

Electrical

Dimming Driver:

Driver includes dimming control wiring for 0-10V dimming systems. Requires separate 0-10V DC dimming circuit. Dims as low as 10%.

THD:

7.2% at 120V, 17% at 277V

Power Factor:

99.1% at 120V, 90.2% at 277V

Drivers (2):

Constant Current, 720mA, Class 2 with 6kV surge protection, 100-277VAC, 50/60 Hz

Listings

UL Listing:

Suitable for wet locations

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: PZCSBNJ9

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

LED Characteristics

LEDs:

4x13W high-output, long-life LEDs

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Maximum Ambient Temperature:

Suitable for use in 40°C (104°F) ambient temperatures

Effective Projected Area:

EPA = 1.2

Thermal Management:

Superior thermal management with external air-flow fins

Housing:

Precision die-cast aluminum, Type V distribution

Support Arms:

Extruded aluminum

Lens:

Clear tempered glass lens

Reflector:

Specular vacuum-metallized polycarbonate, Type V distribution

Gaskets:

High-temperature silicone

Finish:

Formulated for high-durability and long lasting color

Green Technology:

Mercury and UV-free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOCs or toxic heavy metals.

Other

Patents:

The designs of the ALED5T52 are protected by patents pending in US, Canada, China, Taiwan and Mexico

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

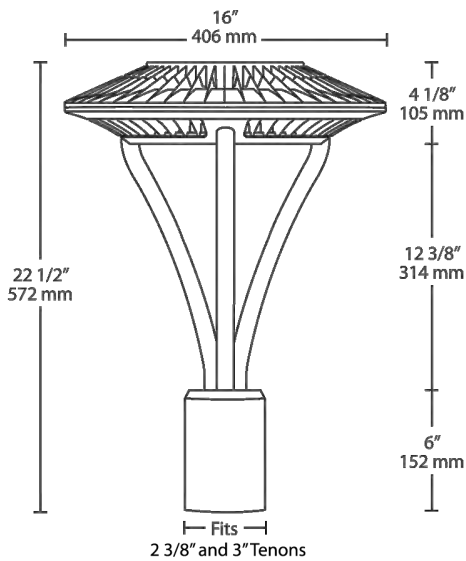
Technical Specifications (continued)

Optical

BUG Rating:

B2 U1 G1

Dimensions

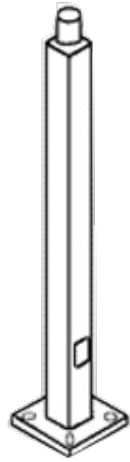


Features

- IES type V (circular) distribution
- 100,000-hour LED lifespan
- Compatible with standard 2 3/8" and 3" tenons
- Air-flow fins for maximum heat dissipation
- 5-Year, No-Compromise Warranty

Ordering Matrix

Family	Distribution	Wattage	Color Temp	Finish	Driver Option	Options
ALED	5T	52	Y		/D10	
	5T = Type V	78 = 78W 52 = 52W 26 = 26W	Blank = 5000K (Cool) N = 4000K (Neutral) Y = 3000K (Warm)	Blank = Bronze W = White	Blank = 120-277V /D10 = Dimmable /BL = Bi-Level /480 = 480V /480/D10 = 480V w/ Dimmable	Blank = No Option /PCT = 120-277V Twistlock Photocell /PCT4 = 480V Twistlock Photocell



Square steel poles with welded tenon included for use with floodlights. Designed for ground mounting. Poles are stocked nationwide for quick shipment. Protective packaging ensures poles arrive at the job site good as new.

Color: Bronze

Weight: 101.0 lbs

Project:

Golden Eagle Charter School Par

Type:
Prepared By:

Donald Andrews

Date:

6/4/18

Lamp Info

Type: N/A
Watts: 0W
Shape/Size: N/A
Base: N/A
ANSI: N/A
Hours: N/A
Lamp Lumens: N/A
Efficacy: N/A

Ballast Info

Type: N/A
120V: N/A
208V: N/A
240V: N/A
277V: N/A
Input Watts: 0W

Technical Specifications

Listings
CSA Listed:

Suitable for wet locations

Construction
Shaft:

46,000 p.s.i. minimum yield.

Hand Holes:

Reinforced with grounding lug and removable cover

Base Plates:

Slotted base plates 36,000 p.s.i.

Shipping Protection:

All poles are shipped in individual corrugated cartons to prevent finish damage

Color:

Bronze powder coating

Tenon:

Welded 2 3/8" tenon included

Height:

10 FT

Gauge:

11

Wall Thickness:

1/8"

Shaft Size:

4"

Hand Hole Dimensions:

3" x 5"

Bolt Circle:

8 1/2"

Base Dimension:

8"

Weight:

101 lbs

Anchor Bolt:

Galvanized anchor bolts and galvanized hardware and anchor bolt template. All bolts have a 3" hook.

Anchor Bolt Templates:

WARNING Template must be printed on 11" x 17" sheet for actual size. CHECK SCALE BEFORE USING. Templates shipped with anchor bolts and available .

Pre-Shipped Anchor Bolts:

Bolts can be pre-shipped upon request for additional freight charge

MaxEPA's/Max Weights:

70MPH 27.6 ft_/690 lb
80MPH 21.1 ft_/530 lb
90MPH 16.4 ft_/410 lb
100MPH 13.1 ft_/330 lb
110MPH 10.5 ft_/265 lb
120MPH 8.6 ft_/215 lb
130MPH 7.0 ft_/175 lb
140MPH 5.8 ft_/145 lb
150MPH 4.8 ft_/120 lb.

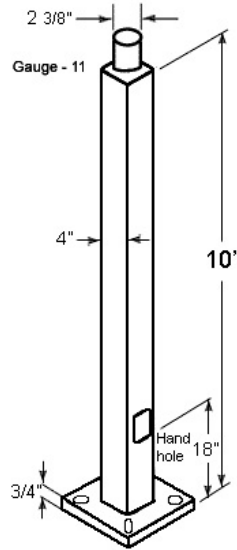
Other
Terms of Sale:

Pole Terms of Sale is available .

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Dimensions



Features

- Designed for ground mounting
- Heavy duty TGIC polyester coating
- Reinforced hand holes with grounding lug and removable cover for easy wiring access
- Anchor Bolt Kit includes pole cap and base cover (sold separately)
- Custom manufactured for each application

APPENDIX B

CALEEMOD AIR QUALITY/GREENHOUSE GAS EMISSIONS OUTPUT FILES

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

Golden Eagle Charter School
Siskiyou County APCD Air District, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	43.00	1000sqft	0.99	43,000.00	0
Parking Lot	39.40	1000sqft	0.90	39,400.00	0
Other Non-Asphalt Surfaces	35.00	1000sqft	0.80	35,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	85
Climate Zone	14			Operational Year	2020
Utility Company	PacifiCorp				
CO2 Intensity (lb/MWhr)	1656.39	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

Project Characteristics -

Land Use - Includes new school, future gymnasium, and future sports field.

Construction Phase -

Energy Use - No natural gas services.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Vehicle Trips - Trip generation per Traffic Impact Study prepared by Traffic Works, May 2018.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	WD_TR	15.43	11.53

2.0 Emissions Summary

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	3.2216	22.8237	20.0662	0.0378	6.6801	1.1149	7.7543	3.4014	1.0684	4.3897	0.0000	3,604.881 7	3,604.881 7	0.7748	0.0000	3,619.127 2
2020	105.1674	20.1037	19.1549	0.0375	0.7424	0.9665	1.7089	0.1995	0.9262	1.1257	0.0000	3,557.710 6	3,557.710 6	0.5532	0.0000	3,571.340 4
Maximum	105.1674	22.8237	20.0662	0.0378	6.6801	1.1149	7.7543	3.4014	1.0684	4.3897	0.0000	3,604.881 7	3,604.881 7	0.7748	0.0000	3,619.127 2

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	3.2216	22.8237	20.0662	0.0378	2.6831	1.1149	3.7574	1.3472	1.0684	2.3355	0.0000	3,604.881 7	3,604.881 7	0.7748	0.0000	3,619.127 2
2020	105.1674	20.1037	19.1549	0.0375	0.7424	0.9665	1.7089	0.1995	0.9262	1.1257	0.0000	3,557.710 6	3,557.710 6	0.5532	0.0000	3,571.340 4
Maximum	105.1674	22.8237	20.0662	0.0378	2.6831	1.1149	3.7574	1.3472	1.0684	2.3355	0.0000	3,604.881 7	3,604.881 7	0.7748	0.0000	3,619.127 2

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	53.85	0.00	42.24	57.05	0.00	37.24	0.00	0.00	0.00	0.00	0.00	0.00

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2349	1.1000e-004	0.0121	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0257	0.0257	7.0000e-005		0.0274
Energy	0.0182	0.1659	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0266	199.0266	3.8100e-003	3.6500e-003	200.2093
Mobile	1.7437	14.3580	17.8675	0.0606	3.1947	0.0725	3.2672	0.8571	0.0685	0.9256		6,178.8827	6,178.8827	0.4151		6,189.2600
Total	2.9968	14.5240	18.0189	0.0616	3.1947	0.0851	3.2799	0.8571	0.0812	0.9383		6,377.9349	6,377.9349	0.4190	3.6500e-003	6,389.4967

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1661	1.1000e-004	0.0121	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0257	0.0257	7.0000e-005		0.0274
Energy	0.0182	0.1659	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0266	199.0266	3.8100e-003	3.6500e-003	200.2093
Mobile	1.7437	14.3580	17.8675	0.0606	3.1947	0.0725	3.2672	0.8571	0.0685	0.9256		6,178.8827	6,178.8827	0.4151		6,189.2600
Total	2.9280	14.5240	18.0189	0.0616	3.1947	0.0851	3.2799	0.8571	0.0812	0.9383		6,377.9349	6,377.9349	0.4190	3.6500e-003	6,389.4967

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	2.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/13/2019	5/15/2019	5	3	
2	Grading	Grading	5/16/2019	5/23/2019	5	6	
3	Building Construction	Building Construction	5/24/2019	3/26/2020	5	220	
4	Paving	Paving	3/27/2020	4/9/2020	5	10	
5	Architectural Coating	Architectural Coating	4/10/2020	4/23/2020	5	10	

Acres of Grading (Site Preparation Phase): 4.5**Acres of Grading (Grading Phase): 3****Acres of Paving: 1.7****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 64,500; Non-Residential Outdoor: 21,500; Striped Parking Area: 4,464 (Architectural Coating – sqft)****OffRoad Equipment**

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	49.00	19.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854		2,426.5408	2,426.5408	0.7677		2,445.7341
Total	1.7557	21.5386	11.9143	0.0245	1.5908	0.8537	2.4445	0.1718	0.7854	0.9572		2,426.5408	2,426.5408	0.7677		2,445.7341

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

3.2 Site Preparation - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0866	0.0634	0.6543	1.1600e-003	0.1022	1.0200e-003	0.1032	0.0271	9.4000e-004	0.0280		114.6511	114.6511	7.0200e-003		114.8265
Total	0.0866	0.0634	0.6543	1.1600e-003	0.1022	1.0200e-003	0.1032	0.0271	9.4000e-004	0.0280		114.6511	114.6511	7.0200e-003		114.8265

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6204	0.0000	0.6204	0.0670	0.0000	0.0670			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854	0.0000	2,426.5408	2,426.5408	0.7677		2,445.7341
Total	1.7557	21.5386	11.9143	0.0245	0.6204	0.8537	1.4741	0.0670	0.7854	0.8524	0.0000	2,426.5408	2,426.5408	0.7677		2,445.7341

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

3.2 Site Preparation - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0866	0.0634	0.6543	1.1600e-003	0.1022	1.0200e-003	0.1032	0.0271	9.4000e-004	0.0280		114.6511	114.6511	7.0200e-003		114.8265
Total	0.0866	0.0634	0.6543	1.1600e-003	0.1022	1.0200e-003	0.1032	0.0271	9.4000e-004	0.0280		114.6511	114.6511	7.0200e-003		114.8265

3.3 Grading - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871		2,041.2539	2,041.2539	0.6458		2,057.3997
Total	2.0287	22.7444	10.1518	0.0206	6.5523	1.0730	7.6253	3.3675	0.9871	4.3546		2,041.2539	2,041.2539	0.6458		2,057.3997

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

3.3 Grading - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1083	0.0793	0.8179	1.4400e-003	0.1277	1.2800e-003	0.1290	0.0339	1.1800e-003	0.0351		143.3139	143.3139	8.7700e-003		143.5331
Total	0.1083	0.0793	0.8179	1.4400e-003	0.1277	1.2800e-003	0.1290	0.0339	1.1800e-003	0.0351		143.3139	143.3139	8.7700e-003		143.5331

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871	0.0000	2,041.253 9	2,041.253 9	0.6458		2,057.399 7
Total	2.0287	22.7444	10.1518	0.0206	2.5554	1.0730	3.6284	1.3133	0.9871	2.3005	0.0000	2,041.253 9	2,041.253 9	0.6458		2,057.399 7

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

3.3 Grading - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1083	0.0793	0.8179	1.4400e-003	0.1277	1.2800e-003	0.1290	0.0339	1.1800e-003	0.0351		143.3139	143.3139	8.7700e-003		143.5331
Total	0.1083	0.0793	0.8179	1.4400e-003	0.1277	1.2800e-003	0.1290	0.0339	1.1800e-003	0.0351		143.3139	143.3139	8.7700e-003		143.5331

3.4 Building Construction - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705
Total	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

3.4 Building Construction - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1331	2.5211	0.8041	5.6600e-003	0.1165	0.0185	0.1350	0.0336	0.0177	0.0513		590.4984	590.4984	0.0459		591.6446
Worker	0.5305	0.3885	4.0076	7.0800e-003	0.6259	6.2500e-003	0.6321	0.1660	5.7700e-003	0.1717		702.2379	702.2379	0.0430		703.3121
Total	0.6635	2.9096	4.8117	0.0127	0.7424	0.0248	0.7672	0.1995	0.0235	0.2230		1,292.7363	1,292.7363	0.0888		1,294.9567

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705
Total	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

3.4 Building Construction - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1331	2.5211	0.8041	5.6600e-003	0.1165	0.0185	0.1350	0.0336	0.0177	0.0513		590.4984	590.4984	0.0459		591.6446
Worker	0.5305	0.3885	4.0076	7.0800e-003	0.6259	6.2500e-003	0.6321	0.1660	5.7700e-003	0.1717		702.2379	702.2379	0.0430		703.3121
Total	0.6635	2.9096	4.8117	0.0127	0.7424	0.0248	0.7672	0.1995	0.0235	0.2230		1,292.7363	1,292.7363	0.0888		1,294.9567

3.4 Building Construction - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089		2,288.8877	2,288.8877	0.4646		2,300.5014
Total	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089		2,288.8877	2,288.8877	0.4646		2,300.5014

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3.4 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1106	2.3257	0.6922	5.6300e-003	0.1165	0.0123	0.1288	0.0336	0.0118	0.0453		587.5182	587.5182	0.0431		588.5956
Worker	0.4903	0.3444	3.5655	6.8600e-003	0.6259	5.9700e-003	0.6318	0.1660	5.5000e-003	0.1715		681.3047	681.3047	0.0376		682.2434
Total	0.6009	2.6701	4.2577	0.0125	0.7424	0.0183	0.7607	0.1995	0.0173	0.2168		1,268.8229	1,268.8229	0.0806		1,270.8390

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089	0.0000	2,288.8877	2,288.8877	0.4646		2,300.5014
Total	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089	0.0000	2,288.8877	2,288.8877	0.4646		2,300.5014

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

3.4 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1106	2.3257	0.6922	5.6300e-003	0.1165	0.0123	0.1288	0.0336	0.0118	0.0453		587.5182	587.5182	0.0431		588.5956
Worker	0.4903	0.3444	3.5655	6.8600e-003	0.6259	5.9700e-003	0.6318	0.1660	5.5000e-003	0.1715		681.3047	681.3047	0.0376		682.2434
Total	0.6009	2.6701	4.2577	0.0125	0.7424	0.0183	0.7607	0.1995	0.0173	0.2168		1,268.8229	1,268.8229	0.0806		1,270.8390

3.5 Paving - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051		1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.2358					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3905	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051		1,709.2180	1,709.2180	0.5417		1,722.7605

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

3.5 Paving - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1501	0.1054	1.0915	2.1000e-003	0.1916	1.8300e-003	0.1934	0.0508	1.6800e-003	0.0525		208.5627	208.5627	0.0115		208.8500
Total	0.1501	0.1054	1.0915	2.1000e-003	0.1916	1.8300e-003	0.1934	0.0508	1.6800e-003	0.0525		208.5627	208.5627	0.0115		208.8500

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051	0.0000	1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.2358					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3905	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051	0.0000	1,709.2180	1,709.2180	0.5417		1,722.7605

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

3.5 Paving - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1501	0.1054	1.0915	2.1000e-003	0.1916	1.8300e-003	0.1934	0.0508	1.6800e-003	0.0525		208.5627	208.5627	0.0115		208.8500
Total	0.1501	0.1054	1.0915	2.1000e-003	0.1916	1.8300e-003	0.1934	0.0508	1.6800e-003	0.0525		208.5627	208.5627	0.0115		208.8500

3.6 Architectural Coating - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	104.8252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	105.0673	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928

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3.6 Architectural Coating - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1001	0.0703	0.7277	1.4000e-003	0.1277	1.2200e-003	0.1290	0.0339	1.1200e-003	0.0350		139.0418	139.0418	7.6600e-003		139.2334
Total	0.1001	0.0703	0.7277	1.4000e-003	0.1277	1.2200e-003	0.1290	0.0339	1.1200e-003	0.0350		139.0418	139.0418	7.6600e-003		139.2334

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	104.8252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	105.0673	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928

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3.6 Architectural Coating - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1001	0.0703	0.7277	1.4000e-003	0.1277	1.2200e-003	0.1290	0.0339	1.1200e-003	0.0350		139.0418	139.0418	7.6600e-003		139.2334
Total	0.1001	0.0703	0.7277	1.4000e-003	0.1277	1.2200e-003	0.1290	0.0339	1.1200e-003	0.0350		139.0418	139.0418	7.6600e-003		139.2334

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Improve Pedestrian Network

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7437	14.3580	17.8675	0.0606	3.1947	0.0725	3.2672	0.8571	0.0685	0.9256		6,178.8827	6,178.8827	0.4151		6,189.2600
Unmitigated	1.7437	14.3580	17.8675	0.0606	3.1947	0.0725	3.2672	0.8571	0.0685	0.9256		6,178.8827	6,178.8827	0.4151		6,189.2600

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	495.79	0.00	0.00	1,060,700	1,060,700
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	495.79	0.00	0.00	1,060,700	1,060,700

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	14.70	6.60	6.60	65.00	30.00	5.00	63	25	12
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Elementary School	0.480138	0.040615	0.180049	0.120387	0.037372	0.006792	0.008746	0.115531	0.001256	0.001655	0.005192	0.001016	0.001248
Other Non-Asphalt Surfaces	0.480138	0.040615	0.180049	0.120387	0.037372	0.006792	0.008746	0.115531	0.001256	0.001655	0.005192	0.001016	0.001248
Parking Lot	0.480138	0.040615	0.180049	0.120387	0.037372	0.006792	0.008746	0.115531	0.001256	0.001655	0.005192	0.001016	0.001248

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0182	0.1659	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0266	199.0266	3.8100e-003	3.6500e-003	200.2093
NaturalGas Unmitigated	0.0182	0.1659	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0266	199.0266	3.8100e-003	3.6500e-003	200.2093

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	1691.73	0.0182	0.1659	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0266	199.0266	3.8100e-003	3.6500e-003	200.2093
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0182	0.1659	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0266	199.0266	3.8100e-003	3.6500e-003	200.2093

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	1.69173	0.0182	0.1659	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0266	199.0266	3.8100e-003	3.6500e-003	200.2093
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0182	0.1659	0.1393	1.0000e-003		0.0126	0.0126		0.0126	0.0126		199.0266	199.0266	3.8100e-003	3.6500e-003	200.2093

6.0 Area Detail

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1661	1.1000e-004	0.0121	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0257	0.0257	7.0000e-005		0.0274
Unmitigated	1.2349	1.1000e-004	0.0121	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0257	0.0257	7.0000e-005		0.0274

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6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2872					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9466					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1300e-003	1.1000e-004	0.0121	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0257	0.0257	7.0000e-005		0.0274
Total	1.2349	1.1000e-004	0.0121	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0257	0.0257	7.0000e-005		0.0274

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2872					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8778					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1300e-003	1.1000e-004	0.0121	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0257	0.0257	7.0000e-005		0.0274
Total	1.1661	1.1000e-004	0.0121	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0257	0.0257	7.0000e-005		0.0274

7.0 Water Detail

Golden Eagle Charter School - Siskiyou County APCD Air District, Summer

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Use Water Efficient Irrigation System

8.0 Waste Detail**8.1 Mitigation Measures Waste**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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11.0 Vegetation

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Golden Eagle Charter School

Siskiyou County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	43.00	1000sqft	0.99	43,000.00	0
Parking Lot	39.40	1000sqft	0.90	39,400.00	0
Other Non-Asphalt Surfaces	35.00	1000sqft	0.80	35,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	85
Climate Zone	14			Operational Year	2020
Utility Company	PacifiCorp				
CO2 Intensity (lb/MW hr)	1656.39	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use - Includes new school, future gymnasium, and future sports field.

Construction Phase -

Energy Use - No natural gas services.

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Vehicle Trips - Trip generation per Traffic Impact Study prepared by Traffic Works, May 2018.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	WD_TR	15.43	11.53

2.0 Emissions Summary

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2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2667	1.8324	1.6541	3.0600e-003	0.0783	0.0926	0.1709	0.0256	0.0886	0.1141	0.0000	265.0762	265.0762	0.0438	0.0000	266.1723
2020	0.6242	0.6932	0.6768	1.2700e-003	0.0234	0.0338	0.0572	6.3100e-003	0.0323	0.0386	0.0000	109.5739	109.5739	0.0180	0.0000	110.0247
Maximum	0.6242	1.8324	1.6541	3.0600e-003	0.0783	0.0926	0.1709	0.0256	0.0886	0.1141	0.0000	265.0762	265.0762	0.0438	0.0000	266.1723

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2667	1.8324	1.6541	3.0600e-003	0.0649	0.0926	0.1575	0.0192	0.0886	0.1078	0.0000	265.0760	265.0760	0.0438	0.0000	266.1721
2020	0.6242	0.6932	0.6768	1.2700e-003	0.0234	0.0338	0.0572	6.3100e-003	0.0323	0.0386	0.0000	109.5738	109.5738	0.0180	0.0000	110.0246
Maximum	0.6242	1.8324	1.6541	3.0600e-003	0.0649	0.0926	0.1575	0.0192	0.0886	0.1078	0.0000	265.0760	265.0760	0.0438	0.0000	266.1721

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	13.22	0.00	5.90	19.84	0.00	4.14	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-13-2019	8-12-2019	0.8208	0.8208
2	8-13-2019	11-12-2019	0.8280	0.8280
3	11-13-2019	2-12-2020	0.8018	0.8018
4	2-13-2020	5-12-2020	0.9586	0.9586
		Highest	0.9586	0.9586

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2253	1.0000e-005	1.0900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-003	2.1000e-003	1.0000e-005	0.0000	2.2400e-003
Energy	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	262.6765	262.6765	4.6500e-003	1.4400e-003	263.2208
Mobile	0.2212	1.9100	2.4786	7.6500e-003	0.3949	9.5200e-003	0.4044	0.1064	9.0000e-003	0.1154	0.0000	707.2993	707.2993	0.0507	0.0000	708.5671
Waste						0.0000	0.0000		0.0000	0.0000	11.3472	0.0000	11.3472	0.6706	0.0000	28.1122
Water						0.0000	0.0000		0.0000	0.0000	0.3956	13.5003	13.8959	0.0409	1.0100e-003	15.2180
Total	0.4498	1.9403	2.5051	7.8300e-003	0.3949	0.0118	0.4067	0.1064	0.0113	0.1177	11.7428	983.4782	995.2210	0.7668	2.4500e-003	1,015.1203

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2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2127	1.0000e-005	1.0900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-003	2.1000e-003	1.0000e-005	0.0000	2.2400e-003
Energy	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	241.9447	241.9447	4.2900e-003	1.3600e-003	242.4576
Mobile	0.2212	1.9100	2.4786	7.6500e-003	0.3949	9.5200e-003	0.4044	0.1064	9.0000e-003	0.1154	0.0000	707.2993	707.2993	0.0507	0.0000	708.5671
Waste						0.0000	0.0000		0.0000	0.0000	11.3472	0.0000	11.3472	0.6706	0.0000	28.1122
Water						0.0000	0.0000		0.0000	0.0000	0.3339	12.1952	12.5291	0.0345	8.5000e-004	13.6461
Total	0.4373	1.9403	2.5051	7.8300e-003	0.3949	0.0118	0.4067	0.1064	0.0113	0.1177	11.6811	961.4413	973.1224	0.7601	2.2100e-003	992.7852

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	2.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	2.24	2.22	0.88	9.80	2.20

3.0 Construction Detail**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/13/2019	5/15/2019	5	3	
2	Grading	Grading	5/16/2019	5/23/2019	5	6	
3	Building Construction	Building Construction	5/24/2019	3/26/2020	5	220	
4	Paving	Paving	3/27/2020	4/9/2020	5	10	
5	Architectural Coating	Architectural Coating	4/10/2020	4/23/2020	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.7

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 64,500; Non-Residential Outdoor: 21,500; Striped Parking Area: 4,464 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	49.00	19.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6300e-003	0.0323	0.0179	4.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281
Total	2.6300e-003	0.0323	0.0179	4.0000e-005	2.3900e-003	1.2800e-003	3.6700e-003	2.6000e-004	1.1800e-003	1.4400e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281

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3.2 Site Preparation - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.1000e-004	1.0100e-003	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1501	0.1501	1.0000e-005	0.0000	0.1504
Total	1.4000e-004	1.1000e-004	1.0100e-003	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1501	0.1501	1.0000e-005	0.0000	0.1504

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.3000e-004	0.0000	9.3000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6300e-003	0.0323	0.0179	4.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281
Total	2.6300e-003	0.0323	0.0179	4.0000e-005	9.3000e-004	1.2800e-003	2.2100e-003	1.0000e-004	1.1800e-003	1.2800e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281

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3.2 Site Preparation - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.1000e-004	1.0100e-003	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1501	0.1501	1.0000e-005	0.0000	0.1504
Total	1.4000e-004	1.1000e-004	1.0100e-003	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1501	0.1501	1.0000e-005	0.0000	0.1504

3.3 Grading - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0900e-003	0.0682	0.0305	6.0000e-005		3.2200e-003	3.2200e-003		2.9600e-003	2.9600e-003	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993
Total	6.0900e-003	0.0682	0.0305	6.0000e-005	0.0197	3.2200e-003	0.0229	0.0101	2.9600e-003	0.0131	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993

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3.3 Grading - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.9000e-004	2.5200e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3753	0.3753	2.0000e-005	0.0000	0.3759
Total	3.4000e-004	2.9000e-004	2.5200e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3753	0.3753	2.0000e-005	0.0000	0.3759

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.6700e-003	0.0000	7.6700e-003	3.9400e-003	0.0000	3.9400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0900e-003	0.0682	0.0305	6.0000e-005		3.2200e-003	3.2200e-003		2.9600e-003	2.9600e-003	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993
Total	6.0900e-003	0.0682	0.0305	6.0000e-005	7.6700e-003	3.2200e-003	0.0109	3.9400e-003	2.9600e-003	6.9000e-003	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993

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3.3 Grading - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.9000e-004	2.5200e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3753	0.3753	2.0000e-005	0.0000	0.3759
Total	3.4000e-004	2.9000e-004	2.5200e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3753	0.3753	2.0000e-005	0.0000	0.3759

3.4 Building Construction - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2021	1.4939	1.2051	1.9800e-003		0.0861	0.0861		0.0826	0.0826	0.0000	165.7059	165.7059	0.0345	0.0000	166.5677
Total	0.2021	1.4939	1.2051	1.9800e-003		0.0861	0.0861		0.0826	0.0826	0.0000	165.7059	165.7059	0.0345	0.0000	166.5677

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3.4 Building Construction - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0110	0.2008	0.0720	4.4000e-004	8.8200e-003	1.4800e-003	0.0103	2.5600e-003	1.4100e-003	3.9700e-003	0.0000	41.5604	41.5604	3.4800e-003	0.0000	41.6473
Worker	0.0445	0.0368	0.3251	5.4000e-004	0.0469	4.9000e-004	0.0474	0.0125	4.6000e-004	0.0130	0.0000	48.4271	48.4271	3.0600e-003	0.0000	48.5036
Total	0.0554	0.2376	0.3971	9.8000e-004	0.0558	1.9700e-003	0.0577	0.0151	1.8700e-003	0.0169	0.0000	89.9875	89.9875	6.5400e-003	0.0000	90.1509

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2021	1.4939	1.2051	1.9800e-003		0.0861	0.0861		0.0826	0.0826	0.0000	165.7057	165.7057	0.0345	0.0000	166.5675
Total	0.2021	1.4939	1.2051	1.9800e-003		0.0861	0.0861		0.0826	0.0826	0.0000	165.7057	165.7057	0.0345	0.0000	166.5675

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3.4 Building Construction - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0110	0.2008	0.0720	4.4000e-004	8.8200e-003	1.4800e-003	0.0103	2.5600e-003	1.4100e-003	3.9700e-003	0.0000	41.5604	41.5604	3.4800e-003	0.0000	41.6473
Worker	0.0445	0.0368	0.3251	5.4000e-004	0.0469	4.9000e-004	0.0474	0.0125	4.6000e-004	0.0130	0.0000	48.4271	48.4271	3.0600e-003	0.0000	48.5036
Total	0.0554	0.2376	0.3971	9.8000e-004	0.0558	1.9700e-003	0.0577	0.0151	1.8700e-003	0.0169	0.0000	89.9875	89.9875	6.5400e-003	0.0000	90.1509

3.4 Building Construction - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0709	0.5404	0.4618	7.8000e-004		0.0294	0.0294		0.0282	0.0282	0.0000	64.3698	64.3698	0.0131	0.0000	64.6964
Total	0.0709	0.5404	0.4618	7.8000e-004		0.0294	0.0294		0.0282	0.0282	0.0000	64.3698	64.3698	0.0131	0.0000	64.6964

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3.4 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5800e-003	0.0726	0.0244	1.7000e-004	3.4600e-003	3.9000e-004	3.8500e-003	1.0000e-003	3.7000e-004	1.3700e-003	0.0000	16.2221	16.2221	1.2800e-003	0.0000	16.2542
Worker	0.0161	0.0128	0.1130	2.0000e-004	0.0184	1.8000e-004	0.0186	4.9000e-003	1.7000e-004	5.0700e-003	0.0000	18.4355	18.4355	1.0400e-003	0.0000	18.4615
Total	0.0197	0.0854	0.1375	3.7000e-004	0.0219	5.7000e-004	0.0225	5.9000e-003	5.4000e-004	6.4400e-003	0.0000	34.6575	34.6575	2.3200e-003	0.0000	34.7157

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0709	0.5404	0.4618	7.8000e-004		0.0294	0.0294		0.0282	0.0282	0.0000	64.3697	64.3697	0.0131	0.0000	64.6963
Total	0.0709	0.5404	0.4618	7.8000e-004		0.0294	0.0294		0.0282	0.0282	0.0000	64.3697	64.3697	0.0131	0.0000	64.6963

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3.4 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5800e-003	0.0726	0.0244	1.7000e-004	3.4600e-003	3.9000e-004	3.8500e-003	1.0000e-003	3.7000e-004	1.3700e-003	0.0000	16.2221	16.2221	1.2800e-003	0.0000	16.2542
Worker	0.0161	0.0128	0.1130	2.0000e-004	0.0184	1.8000e-004	0.0186	4.9000e-003	1.7000e-004	5.0700e-003	0.0000	18.4355	18.4355	1.0400e-003	0.0000	18.4615
Total	0.0197	0.0854	0.1375	3.7000e-004	0.0219	5.7000e-004	0.0225	5.9000e-003	5.4000e-004	6.4400e-003	0.0000	34.6575	34.6575	2.3200e-003	0.0000	34.7157

3.5 Paving - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.1800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.9500e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143

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3.5 Paving - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	6.3000e-004	5.5800e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.9102	0.9102	5.0000e-005	0.0000	0.9115
Total	8.0000e-004	6.3000e-004	5.5800e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.9102	0.9102	5.0000e-005	0.0000	0.9115

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.1800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.9500e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143

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3.5 Paving - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	6.3000e-004	5.5800e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.9102	0.9102	5.0000e-005	0.0000	0.9115
Total	8.0000e-004	6.3000e-004	5.5800e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.9102	0.9102	5.0000e-005	0.0000	0.9115

3.6 Architectural Coating - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5241					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	0.5253	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791

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3.6 Architectural Coating - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.2000e-004	3.7200e-003	1.0000e-005	6.1000e-004	1.0000e-005	6.1000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.6068	0.6068	3.0000e-005	0.0000	0.6077
Total	5.3000e-004	4.2000e-004	3.7200e-003	1.0000e-005	6.1000e-004	1.0000e-005	6.1000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.6068	0.6068	3.0000e-005	0.0000	0.6077

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5241					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	0.5253	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791

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3.6 Architectural Coating - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	4.2000e-004	3.7200e-003	1.0000e-005	6.1000e-004	1.0000e-005	6.1000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.6068	0.6068	3.0000e-005	0.0000	0.6077
Total	5.3000e-004	4.2000e-004	3.7200e-003	1.0000e-005	6.1000e-004	1.0000e-005	6.1000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.6068	0.6068	3.0000e-005	0.0000	0.6077

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Improve Pedestrian Network

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2212	1.9100	2.4786	7.6500e-003	0.3949	9.5200e-003	0.4044	0.1064	9.0000e-003	0.1154	0.0000	707.2993	707.2993	0.0507	0.0000	708.5671
Unmitigated	0.2212	1.9100	2.4786	7.6500e-003	0.3949	9.5200e-003	0.4044	0.1064	9.0000e-003	0.1154	0.0000	707.2993	707.2993	0.0507	0.0000	708.5671

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	495.79	0.00	0.00	1,060,700	1,060,700
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	495.79	0.00	0.00	1,060,700	1,060,700

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	14.70	6.60	6.60	65.00	30.00	5.00	63	25	12
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Elementary School	0.480138	0.040615	0.180049	0.120387	0.037372	0.006792	0.008746	0.115531	0.001256	0.001655	0.005192	0.001016	0.001248
Other Non-Asphalt Surfaces	0.480138	0.040615	0.180049	0.120387	0.037372	0.006792	0.008746	0.115531	0.001256	0.001655	0.005192	0.001016	0.001248
Parking Lot	0.480138	0.040615	0.180049	0.120387	0.037372	0.006792	0.008746	0.115531	0.001256	0.001655	0.005192	0.001016	0.001248

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	208.9936	208.9936	3.6600e-003	7.6000e-004	209.3107
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	229.7254	229.7254	4.0200e-003	8.3000e-004	230.0739
NaturalGas Mitigated	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9511	32.9511	6.3000e-004	6.0000e-004	33.1469
NaturalGas Unmitigated	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9511	32.9511	6.3000e-004	6.0000e-004	33.1469

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5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Elementary School	617480	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9511	32.9511	6.3000e-004	6.0000e-004	33.1469
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9511	32.9511	6.3000e-004	6.0000e-004	33.1469

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Elementary School	617480	3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9511	32.9511	6.3000e-004	6.0000e-004	33.1469
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		3.3300e-003	0.0303	0.0254	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9511	32.9511	6.3000e-004	6.0000e-004	33.1469

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Elementary School	291970	219.3646	3.8400e-003	7.9000e-004	219.6974
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	13790	10.3608	1.8000e-004	4.0000e-005	10.3765
Total		229.7254	4.0200e-003	8.3000e-004	230.0739

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Elementary School	266583	200.2906	3.5100e-003	7.3000e-004	200.5944
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	11583.6	8.7031	1.5000e-004	3.0000e-005	8.7163
Total		208.9936	3.6600e-003	7.6000e-004	209.3107

6.0 Area Detail

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6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2127	1.0000e-005	1.0900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-003	2.1000e-003	1.0000e-005	0.0000	2.2400e-003
Unmitigated	0.2253	1.0000e-005	1.0900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-003	2.1000e-003	1.0000e-005	0.0000	2.2400e-003

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6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0524					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1728					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-003	2.1000e-003	1.0000e-005	0.0000	2.2400e-003
Total	0.2253	1.0000e-005	1.0900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-003	2.1000e-003	1.0000e-005	0.0000	2.2400e-003

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0524					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1602					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-003	2.1000e-003	1.0000e-005	0.0000	2.2400e-003
Total	0.2127	1.0000e-005	1.0900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1000e-003	2.1000e-003	1.0000e-005	0.0000	2.2400e-003

7.0 Water Detail

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7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	12.5291	0.0345	8.5000e-004	13.6461
Unmitigated	13.8959	0.0409	1.0100e-003	15.2180

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7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Elementary School	1.24687 / 3.20623	13.8959	0.0409	1.0100e-003	15.2180
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		13.8959	0.0409	1.0100e-003	15.2180

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Elementary School	1.05236 / 3.01065	12.5291	0.0345	8.5000e-004	13.6461
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		12.5291	0.0345	8.5000e-004	13.6461

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8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.3472	0.6706	0.0000	28.1122
Unmitigated	11.3472	0.6706	0.0000	28.1122

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Elementary School	55.9	11.3472	0.6706	0.0000	28.1122
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		11.3472	0.6706	0.0000	28.1122

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8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Elementary School	55.9	11.3472	0.6706	0.0000	28.1122
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		11.3472	0.6706	0.0000	28.1122

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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11.0 Vegetation

APPENDIX C

BIOLOGICAL REPORTS

Potential for Special-Status Species Identified by the USFWS and CNDDB to Occur on the Project Site
March 2019

COMMON NAME	SCIENTIFIC NAME	STATUS ¹	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
PLANTS							
Aleppo avens	<i>Geum aleppicum</i>	2B.2	Aleppo avens, an herbaceous plant, grows in meadows within Great Basin scrub and lower montane coniferous forest. The species is reported between 1,400 and 5,000 feet in elevation. The flowering period is June through August.	No	No	No	No potentially suitable habitat for Aleppo avens is present on the project site. The species was not observed during the botanical survey and is not expected to be present.
Baker's globe mallow	<i>Ilamna bakeri</i>	4.2	Baker's globe mallow occurs on rocky loam or in volcanic soils in chaparral or pinyon-juniper woodland between 3,300 and 8,200 feet in elevation above sea level. The flowering period is June through September.	No	No	No	No potentially suitable habitat for Baker's globe mallow is present on the project site. The species was not observed during the botanical survey and is not expected to be present.
Broad-nerved hump moss	<i>Meesia uliginosa</i>	2B.2	Broad-nerved hump moss occurs on damp soil around meadows, seeps, bogs, and fens in upper montane coniferous forests. The species is reported between 4,200 and 8,200 feet in elevation.	No	No	No	The project site is well below the elevational range for broad-nerved hump moss. The species is not expected to occur in the project site.
Gasquet rose	<i>Rosa gymnocarpa</i> var. <i>serpentina</i>	1B.3	Gasquet rose, a rhizomatous shrub, occurs on serpentine soils in chaparral and cismontane woodlands. Within these vegetation communities, it may occur along streams, roadsides, ridges, and openings. The species is reported between 1,200 and 4,700 feet in elevation. The flowering period is April through June.	No	No	No	According to CNDDB records, Gasquet rose has been reported one time in Siskiyou County in 1929. The project site does not include suitable soils for Gasquet rose; thus, the species would not be present.
Gentner's fritillary	<i>Fritillaria gentneri</i>	FE, 1B.1	Gentner's fritillary is a perennial bulbiferous herb that occurs in chaparral and cismontane woodland habitats, sometimes in serpentine soils. The species is found between 3,200 and 3,700 feet in elevation. The flowering period is April through May.	No	No	No	Gentner's fritillary is known from only two locations in California, both near the Oregon border; the nearest population is approximately 45 miles north of the project site. The species was not observed during the field survey and is not expected to occur in the project site.

Potential for Special-Status Species Identified by the USFWS and CNDDDB to Occur on the Project Site
March 2019

COMMON NAME	SCIENTIFIC NAME	STATUS ¹	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Hoover's spurge	<i>Chamaesyce hooveri</i>	FT, 1B.2	Hoover's spurge is an annual herb that occurs in vernal pools. The species is found between sea level and 900 feet in elevation. The flowering period is July through October.	No	No	No	The project site is well above the known elevational range of Hoover's spurge. In addition, there are no vernal pools in the Project site. Hoover's spurge was not observed during the botanical survey and is not expected to be present.
Jepson's dodder	<i>Cuscuta jepsonii</i>	1B.2	Jepson's dodder is an annual vine (parasitic) that occurs on streambanks in North Coast coniferous forest, and other mountainous areas, including Mount Shasta. The species is reported between 3,900 and 7,500 feet in elevation. The flowering period is July through September.	No	No	No	Jepson's dodder has been reported in Siskiyou County once, in 1954 around the southern slopes of Mount Shasta. Neither Jepson's dodder nor its host plants were observed during the botanical survey; the dodder is not expected to be present.
Marsh skullcap	<i>Scutellaria galericulata</i>	2B.2	Marsh skullcap is a perennial member of the mint family. It occurs in meadows, along streambanks and in other wet places at elevations of 3,000 to 7,000 feet. The flowering period is June through September.	No	No	No	According to CNDDDB records, marsh skullcap was observed one time in the general project area in 1894. The occurrence is broadly mapped to include the project site. Although potentially suitable habitat for marsh skullcap occurs in the Project site, the species was not observed during the botanical survey and is not expected to be present.
Northern adder's tongue	<i>Ophioglossum pusillum</i>	2B.2	Northern adder's tongue occurs along marsh and swamp edges, in meadows and seeps, in low pastures, and grassy roadside ditches. The species is reported between 3,200 and 6,600 feet in elevation. The flowering period is July through September.	Yes	No	No	According to CNDDDB records, northern adder's tongue was observed one time in the general project area in 1894. The occurrence is broadly mapped to include the project site. The species was not observed during the botanical survey and is not expected to be present.

Potential for Special-Status Species Identified by the USFWS and CNDDB to Occur on the Project Site
March 2019

COMMON NAME	SCIENTIFIC NAME	STATUS ¹	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Oregon fireweed	<i>Epilobium oreganum</i>	1B.2	Oregon fireweed is associated with springs, bogs, fens, and meadows in montane coniferous forest. The species sometimes occurs on serpentine soils. The species is reported between 1,600 and 7,400 feet in elevation. The flowering period is June through September.	Yes	No	No	Potentially suitable habitat for Oregon fireweed is present on the project site. However, the species was not observed during the botanical survey and is not expected to be present.
Pacific fuzzwort	<i>Ptilidium californicum</i>	4.3	Pacific fuzzwort, a liverwort, grows on trees, fallen and decaying logs, and occasionally on boulders in lower and upper montane coniferous forests. The species typically grows on firs or Douglas-fir in old-growth forests.	No	No	No	No potentially suitable habitat for Pacific fuzzwort is present on the project site. The species was not observed during the botanical survey and is not expected to be present.
Pallid bird's-beak	<i>Cordylanthus tenuis</i> spp. <i>palescens</i>	1B.2	Pallid bird's-beak occurs on open volcanic alluvium within lower montane coniferous forest. The species is reported between 2,200 and 5,400 feet in elevation. The flowering period is July through September.	No	No	No	No potentially suitable habitat for pallid bird's-beak is present on the project site. The species was not observed during the botanical survey and is not expected to be present.
Rattlesnake fern	<i>Botrychium virginianum</i>	2B.2	Rattlesnake fern occurs in bogs and fens. The species is reported between 2,400 and 4,300 feet in elevation. The flowering period is June through September.	Yes	No	No	Potentially suitable habitat for rattlesnake fern is present on the project site. However, the species was not observed during the botanical survey and is not expected to be present.
Shasta chaenactis	<i>Chaenactis suffrutescens</i>	1B.3	Shasta chaenactis occurs on rocky open slopes, cobbly river terraces, and along roadcuts. The species is found between 2,400 and 8,800 feet in elevation. The flowering period is May through September.	No	No	No	No potentially suitable habitat for Shasta chaenactis is present on the project site. The species was not observed during the botanical survey and is not expected to be present.

Potential for Special-Status Species Identified by the USFWS and CNDDB to Occur on the Project Site
March 2019

COMMON NAME	SCIENTIFIC NAME	STATUS ¹	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Siskiyou clover	<i>Trifolium siskiyouense</i>	1B.1	Siskiyou clover is a perennial herb that generally occurs in mountain meadows, seeps, or along streambanks between 2,800 and 4,900 feet in elevation. The flowering period is June and July.	Yes	No	No	According to CNDDB records, Siskiyou clover has been reported four times in California. The plant was reported from "Mt. Shasta and vicinity" in 1892. The last reported occurrence was in 1935, approximately 35 miles northwest of the project site. Although potentially suitable habitat for Siskiyou clover occurs in the project site, the species was not observed during the botanical surveys and is not expected to be present.
Slender Orcutt grass	<i>Orcuttia tenuis</i>	FT, 1B.1	Slender Orcutt grass is an annual herb that occurs in vernal pools and similar habitats, occasionally on reservoir edges or stream floodplains, on clay soils with seasonal inundation in valley grassland to coniferous forest or sagebrush scrub. The species is found between 100 and 5,800 feet in elevation. The flowering period is May through September.	No	No	No	No vernal pools or other potentially suitable habitats for slender Orcutt grass are present in the project site. Slender Orcutt grass was not observed during the botanical survey and is not expected to be present.
Subalpine aster	<i>Eurybia merita</i>	2B.3	Subalpine aster, a perennial herb, occurs on moist soils in upper montane coniferous forest. The species is reported between 4,000 and 6,300 feet in elevation. The flowering period is July through August.	No	No	No	The project site is below the elevational range for subalpine aster. The species was not observed during the botanical survey and is not expected to be present.
Thread-leaved beardtongue	<i>Penstemon filiformis</i>	1B.3	Thread-leaved beardtongue occurs on dry stony sites, grassy openings, and meadows in cismontane woodland and lower montane coniferous forest in Shasta, Trinity, and Siskiyou counties. The species is often found on serpentine soils. The species is reported between 1,400 and 6,000 feet in elevation. The flowering period is May through July.	No	No	No	No potentially suitable habitat for thread-leaved beardtongue is present on the project site. The species was not observed during the botanical survey and is not expected to be present.

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March 2019

COMMON NAME	SCIENTIFIC NAME	STATUS ¹	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Whitebark pine	<i>Pinus albicaulis</i>	FC	In California, whitebark pine typically occurs in cold, windy, high elevation sites in the Coast and Cascade ranges and the Sierra Nevada. The species is found at elevations ranging from 6,500 to 12,200 feet.	No	No	No	The project site is well below the elevational range for whitebark pine; thus, the species would not be present.
Woodnymph	<i>Moneses uniflora</i>	2B.2	Woodnymph is a perennial rhizomatous herb that occurs in upland broadleaf forest and North Coast coniferous forest. The species is reported between 300 and 3,600 feet in elevation. The flowering period is May through August.	No	No	No	According to CNDDB records, woodnymph was observed once in "Sisson," presumably prior to 1925 when the town was renamed as Mt. Shasta. The occurrence is broadly mapped to include the project site. No suitable habitat for woodnymph occurs in the project site. The species was not observed during the botanical survey and is not expected to be present.
Woolly balsamroot	<i>Balsamorhiza lanata</i>	1B.2	Woolly balsamroot, a perennial herb, occurs in open areas and grassy slopes in cismontane woodland in Siskiyou County. The species is reported between 2,600 and 6,300 feet. The flowering period is April through June.	No	No	No	According to CNDDB records, woolly balsamroot was observed in the general project area in 1998. The species was not observed during the botanical survey and is not expected to be present.
INVERTEBRATES							
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	FE	Conservancy fairy shrimp inhabit large, cool-water vernal pools with moderately turbid water.	No	No	No	No vernal pools or other potentially suitable habitats for Conservancy fairy shrimp are present in the project site. Thus, Conservancy fairy shrimp would not be present.
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT	Vernal pool fairy shrimp inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump or basalt-flow depression pools.	No	No	No	No vernal pools or other potentially suitable habitats for vernal pool fairy shrimp are present in the project site; thus, the species would not be present.

Potential for Special-Status Species Identified by the USFWS and CNDDB to Occur on the Project Site
March 2019

COMMON NAME	SCIENTIFIC NAME	STATUS ¹	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	FE	Vernal pool tadpole shrimp occur in vernal pools in California's Central Valley and in the surrounding foothills.	No	No	No	No vernal pools or other potentially suitable habitats for vernal pool tadpole shrimp are present in the project site; thus, the species would not be present.
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	The valley elderberry longhorn beetle is found only in association with elderberry shrubs (<i>Sambucus</i> spp.). The species' elevational range extends from sea level to 3,000 feet. The species is known to occur in the Central Valley and foothills.	No	No	No	No suitable habitat occurs on the project site for the valley elderberry longhorn beetle. Thus, the valley elderberry longhorn beetle would not be present.
BIRDS							
American peregrine falcon	<i>Falco peregrinus anatum</i>	FD, SD, SFP	American peregrine falcons frequent water bodies in open areas with cliffs and canyons nearby for nesting. This falcon feeds and breeds near water.	No	No	No	No suitable nesting habitat for the American peregrine falcon is present in the project site or vicinity; thus, the species would not nest in the project site.
Bald eagle	<i>Haliaeetus leucocephalus</i>	FD, SE, SFP	Bald eagles nest in large, old-growth trees or snags in mixed stands near open bodies of water. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles usually do not begin nesting if human disturbance is evident. In California, the bald eagle nesting season is from February through July.	No	No	No	No suitable nesting habitat for the bald eagle is present in the project site or vicinity. No bald eagles or eagle nests were observed during the wildlife survey; thus, the species would not nest in the project site.
Bank swallow	<i>Riparia riparia</i>	ST	Bank swallows require vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, or the ocean for nesting.	No	No	No	No vertical banks or cliffs are present in the project site; thus, the species would not nest on-site.
Northern goshawk	<i>Accipiter gentilis</i>	SSSC	Northern goshawks generally nest on north-facing slopes near water in old-growth coniferous and deciduous forests. Goshawks re-use old nests and maintain alternate nest sites.	No	No	No	No old-growth forest is present in the project site; thus, the species would not nest in the project site.

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Northern spotted owl	<i>Strix occidentalis caurina</i>	FT, SC, SSSC	Northern spotted owls inhabit dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir forests from sea level to approximately 7,600 feet in elevation. Northern spotted owls typically nest in tree cavities, the broken tops of trees, or in snags.	No	No	No	No old-growth forest or potentially suitable nesting trees/snags are present in the project site. Thus, the northern spotted owl would not nest in the project site.
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i> & <i>Coccyzus americanus</i>	FT, SE	Western yellow-billed cuckoos inhabit and nest in extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, and which abut slow-moving watercourses, backwaters, or seeps. Willows are almost always a dominant component of the vegetation.	No	No	No	According to CNDDB records, western yellow-billed cuckoo was most recently observed in Siskiyou County in 1951. Due to lack of suitable habitat, the species would not nest on the project site.
Yellow rail	<i>Coturnicops noveboracensis</i>	SSSC	Yellow rails inhabit dense, grassy marshes, wet meadows, fens, and seeps. Their nest is a shallow cup of sedges and grasses in a shallow part of a marsh, on damp soil or over water less than six inches deep. Yellow rails are highly elusive and are rarely seen. They are most commonly identified by the male's call during the breeding season, a unique metallic 5-note call easily imitated by tapping two stones together.	Yes	No	No	Yellow rails are occasionally sighted in the Mt. Shasta area; eBird records show that the most recent recorded sighting was in 2005. Although potentially suitable habitat for the yellow rail is present on the project site, the species was not detected during the wildlife survey and is not expected to be present.

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AMPHIBIANS							
California red-legged frog	<i>Rana draytonii</i>	FT	Suitable aquatic habitat for the California red-legged frog (CRLF) consists of permanent water bodies of virtually still or slow-moving fresh water, including natural and man-made ponds, backwaters within streams and creeks, marshes, lagoons, and dune ponds. The CRLF is not characteristically found in deep lacustrine habitats (e.g., deep lakes and reservoirs). Dense, shrubby riparian vegetation, e.g., willow (<i>Salix</i>) and bulrush (<i>Scirpus</i>) species, and bank overhangs are important features of CRLF breeding habitat. The CRLF tends to occur in greater numbers in deeper, cooler pools with dense emergent and shoreline vegetation.	No	No	No	Historically, inland populations of CRLF ranged as far north as Redding, in southern Shasta County. The project site is well outside the current and historical range for the California red-legged frog, and the species would not be present.
Cascades frog	<i>Rana cascadae</i>	SCE, SSSC	Standing water is required for reproduction. Breeding occurs between March and mid-August. Eggs are deposited in shallow water features with silty, sandy, or gravelly substrates. Adults are typically found in open, sunny areas along shorelines that provide basking and foraging opportunities; they can occasionally move between basins by crossing over mountain ridges.	No	No	No	CNDDB records show that a Cascades frog was observed in in 1941 ±1.5 miles southwest of the project site near the South Fork of the Sacramento River. Because the frog has not been observed in the area since 1941 and its typical habitat is at a much higher elevation, Cascades frog is not expected to occur in the study area.

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Foothill yellow-legged frog	<i>Rana boylei</i>	SCT, SSSC	Foothill yellow-legged frogs are typically found in shallow, partly-shaded, perennial streams in areas with riffles and rocky substrates. This frog needs at least some cobble-sized substrate for egg-laying. Foothill yellow-legged frogs generally prefer low- to moderate-gradient streams, especially for breeding and egg-laying, although juvenile and adult frogs may utilize moderate- to steep-gradient streams during summer and early fall.	No	No	No	No suitable habitat for the foothill yellow-legged frog is present on the project site. Thus, the foothill yellow-legged frog would not be present.
Oregon spotted frog	<i>Rana pretiosa</i>	FT, SSSC	Oregon spotted frog is typically found in or near a perennial body of water that includes zones of shallow water and abundant emergent or floating aquatic plants, which the frogs use as basking sites and for escape cover. The frog prefers large, warm marshes (minimum size of ±9 acres), and is thought to be extirpated from California.	No	No	No	No suitable habitat for the Oregon spotted frog is present on the project site. Thus, the Oregon spotted frog would not be present.
FISH							
Delta smelt	<i>Hypomesus transpacificus</i>	FT	Delta smelt primarily inhabit the brackish waters of Sacramento-San Joaquin River Delta. Most spawning occurs in backwater sloughs and channel edgewaters.	No	No	No	The project site is well outside the range for Delta smelt; thus, the species would not be present.
Longfin smelt	<i>Spirinchus thaleichthys</i>	FC	The longfin smelt is a pelagic fish that ranges from Alaska southward to the San Francisco Bay-Delta in California. The range includes at least 20 scattered populations found in estuaries, rivers, and lakes stretching from California to Alaska. The USFWS found that listing of the longfin smelt is warranted only for the Bay-Delta population, not range-wide.	No	No	No	No suitable habitat occurs on the project site for longfin smelt. Thus, the longfin smelt would not be present.

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MAMMALS							
Fisher - west coast DPS	<i>Martes pennanti</i>	SCT, SSSC	Fishers inhabit mixed conifer forests dominated by Douglas-fir, although they also are encountered frequently in higher elevation fir and pine forests, and mixed evergreen/broadleaf forests. Suitable habitat for fishers consists of large areas of mature, dense forest stands with snags and greater than 50 percent canopy closure. Fishers den in cavities in large trees, snags, logs, rocky areas, or shelters provided by slash or brush piles. Fishers are very sensitive to human activities. Den sites are most often found in areas with no human disturbance.	No	No	No	Although fishers could potentially stray near the project site, they would not routinely utilize or den in the area given the extent of human activity and urbanization in and adjacent to the project site.
Gray wolf	<i>Canis lupus</i>	FE, SE	Gray wolves are habitat generalists; populations can be found in any type of habitat in the Northern Hemisphere from about 20° latitude to the polar ice pack. Preferred habitats include a year-round abundance of prey, secluded denning and rendezvous sites, and minimal human disturbance. Dens may be a hollow log or a tunnel excavated in loose soil. Dens are often near water, and are usually elevated to detect approaching enemies. Wolf packs establish and defend territories that may range from 20 to 400 square miles. Wolves travel over large areas to hunt, and may cover as much as 30 miles in a day. Young wolves may disperse several hundred miles to seek a mate or to establish their own pack.	No	No	No	A gray wolf pack, known as the "Shasta Pack" became established in southeastern Siskiyou County in the spring of 2015. Continued dispersal of wolves into California is expected. Although gray wolves can travel approximately 30 miles each day, and could potentially stray near the project site, gray wolves would not be expected to stray onto or den in the project site given the extent of human activity and urbanization in and adjacent to the project site.

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Sierra Nevada red fox	<i>Vulpes vulpes necator</i>	FC, ST	The Sierra Nevada red fox inhabits remote mountainous areas where encounters with humans are rare. Preferred habitat appears to be red fir and lodgepole pine forests in the subalpine and alpine zones of the Sierra Nevada. This species may hunt in forest openings, meadows, and barren rocky areas associated with its high elevation habitats.	No	No	No	No suitable habitat occurs on the project site for Sierra Nevada red fox. Thus, the Sierra Nevada red fox would not be present.
Spotted bat	<i>Euderma maculatum</i>	SSSC	Spotted bats inhabit grasslands, mixed coniferous forests, and deserts. Spotted bats typically roost in cliff crevices, but may also roost in caves and manmade structures. Roosts usually occur near suitable foraging areas (i.e., open water, meadows, riparian habitat, and forest openings).	No	No	No	No potentially suitable roosting habitat for spotted bat is present in the project site; thus, the species is not expected to roost in the project site.
Western mastiff bat	<i>Eumops perotis californicus</i>	SSSC	The western mastiff bat is the largest native bat in the continental United States. This bat occurs in a variety of open, semi-arid to arid habitats. The western mastiff bat typically roosts in crevices in rocky canyons and cliffs where the canyon or cliff face is vertical or nearly vertical. The species may also roost in trees, tunnels, buildings, or other manmade structures. Suitable roost sites feature an unobstructed drop-off of at least 6.5 feet to provide takeoff or launching area for flight, with no obstructions.	No	No	No	No potentially suitable roosting habitat for western mastiff bats is present in the project site; thus, the species is not expected to be roost in the site.

¹ Status Codes

Federal:

FE Federally Listed – Endangered
 FT Federally Listed – Threatened
 FC Federal Candidate Species
 FP Federal Proposed Species
 FD Federal Delisted

State:

SFP State Fully Protected SSSC State Species of Special Concern
 SR State Rare
 SE State Listed - Endangered
 ST State Listed - Threatened
 SC State Candidate Species

Rare Plant Rank

- 1A Plants Presumed Extinct in California
- 1B Plants Rare, Threatened or Endangered in California and Elsewhere
- 2A Presumed extirpated in California, but more common elsewhere
- 2B Rare or Endangered in California, but more common elsewhere

Rare Plant Threat Rank

- 0.1 Seriously Threatened in California
- 0.2 Fairly Threatened in California
- 0.3 Not Very Threatened in California



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Yreka Fish And Wildlife Office

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In Reply Refer To:

January 30, 2019

Consultation Code: 08EYRE00-2018-SLI-0132

Event Code: 08EYRE00-2019-E-00113

Project Name: Golden Eagle Charter School

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies federally threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that this list does not reflect State listed species or fulfill requirements related to any California Department of Fish and Wildlife consultation. Additionally, this list does not include species covered by the National Marine Fisheries Service (NMFS). For NMFS species please see the related website at the following link:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

If your project does not involve Federal funding or permits and does not occur on Federal land, we recommend you review this list and determine if any of these species or critical habitat may be affected. If you determine that there will be no effects to federally listed or proposed species or critical habitat, there is no need to coordinate with the Service. If you think or know that there will be effects, please contact our office for further guidance. We can assist you in incorporating measures to avoid or minimize impacts, and discuss whether permits are needed.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential effects to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be

completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

If wetlands, springs, or streams are known to occur in the project area or are present in the vicinity of the project area, we ask that you be aware of potential impacts project activities may have on these habitats. Discharge of fill material into wetlands or waters of the United States is regulated by the U.S. Army Corps of Engineers (ACOE) pursuant to section 404 of the Clean Water Act of 1972, as amended. We recommend you contact the ACOE's Regulatory Section regarding the possible need for a permit.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html).

Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://>

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

The table below outlines lead Service field offices by county and land ownership/project type. Please refer to this table when you are ready to coordinate (including requests for section 7 consultation) with the field office corresponding to your project. Please send any documentation regarding your project to that office. Please note that the lead Service field office for your consultation may not be the office listed above in the letterhead. Please visit the following link to view a map of Service field office jurisdictional boundaries:

http://www.fws.gov/yreka/specieslist/JurisdictionalBoundaryES_R8_20150313.pdf

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of the letter you submit to our office along with any request for consultation or correspondence about your project.

Lead FWS offices by County and Ownership/Program

County	Ownership/Program	Species	Office Lead*
Alameda	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Alameda	All ownerships but tidal/estuarine	All	SFWO
Alpine	Humboldt Toiyabe National Forest	All	RFWO
Alpine	Lake Tahoe Basin Management Unit	All	RFWO
Alpine	Stanislaus National Forest	All	SFWO
Alpine	El Dorado National Forest	All	SFWO
Colusa	Mendocino National Forest	All	AFWO
Colusa	Other	All	By jurisdiction (see map)
Contra Costa	Legal Delta (Excluding ECCHCP)	All	BDFWO
Contra Costa	Antioch Dunes NWR	All	BDFWO

Contra Costa	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Contra Costa	All ownerships but tidal/estuarine	All	SFWO
Del Norte	All	All	AFWO
El Dorado	El Dorado National Forest	All	SFWO
El Dorado	LakeTahoe Basin Management Unit		RFWO
Glenn	Mendocino National Forest	All	AFWO
Glenn	Other	All	By jurisdiction (see map)
Humboldt	All except Shasta Trinity National Forest	All	AFWO
Humboldt	Shasta Trinity National Forest	All	YFWO
Lake	Mendocino National Forest	All	AFWO
Lake	Other	All	By jurisdiction (see map)
Lassen	Modoc National Forest	All	KFWO
Lassen	Lassen National Forest	All	SFWO
Lassen	Toiyabe National Forest	All	RFWO
Lassen	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Lassen	BLM Alturas Resource Area	All	KFWO
Lassen	Lassen Volcanic National Park	All (includes Eagle Lake trout on all ownerships)	SFWO
Lassen	All other ownerships	All	By jurisdiction (see map)

Marin	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Marin	All ownerships but tidal/estuarine	All	SFWO
Mendocino	Russian River watershed	All	SFWO
Mendocino	All except Russian River watershed	All	AFWO
Modoc	Modoc National Forest	All	KFWO
Modoc	BLM Alturas Resource Area	All	KFWO
Modoc	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Modoc	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Modoc	All other ownerships	All	By jurisdiction (See map)
Mono	Inyo National Forest	All	RFWO
Mono	Humboldt Toiyabe National Forest	All	RFWO
Napa	All ownerships but tidal/estuarine	All	SFWO
Napa	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Nevada	Humboldt Toiyabe National Forest	All	RFWO
Nevada	All other ownerships	All	By jurisdiction (See map)
Placer	Lake Tahoe Basin Management Unit	All	RFWO
Placer	All other ownerships	All	SFWO

Sacramento	Legal Delta	Delta Smelt	BDFWO
Sacramento	Other	All	By jurisdiction (see map)
San Francisco	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Francisco	All ownerships but tidal/estuarine	All	SFWO
San Mateo	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Mateo	All ownerships but tidal/estuarine	All	SFWO
San Joaquin	Legal Delta excluding San Joaquin HCP	All	BDFWO
San Joaquin	Other	All	SFWO
Santa Clara	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
Santa Clara	All ownerships but tidal/estuarine	All	SFWO
Shasta	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Shasta	Hat Creek Ranger District	All	SFWO
Shasta	Bureau of Reclamation (Central Valley Project)	All	BDFWO
Shasta	Whiskeytown National Recreation Area	All	YFWO
Shasta	BLM Alturas Resource Area	All	KFWO
Shasta	Caltrans	By jurisdiction	SFWO/AFWO

Shasta	Ahjumawi Lava Springs State Park	Shasta crayfish	SFWO
Shasta	All other ownerships	All	By jurisdiction (see map)
Shasta	Natural Resource Damage Assessment, all lands	All	SFWO/BDFWO
Sierra	Humboldt Toiyabe National Forest	All	RFWO
Sierra	All other ownerships	All	SFWO
Siskiyou	Klamath National Forest (except Ukonom District)	All	YFWO
Siskiyou	Six Rivers National Forest and Ukonom District	All	AFWO
Siskiyou	Shasta Trinity National Forest	All	YFWO
Siskiyou	Lassen National Forest	All	SFWO
Siskiyou	Modoc National Forest	All	KFWO
Siskiyou	Lava Beds National Volcanic Monument	All	KFWO
Siskiyou	BLM Alturas Resource Area	All	KFWO
Siskiyou	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Siskiyou	All other ownerships	All	By jurisdiction (see map)
Solano	Suisun Marsh	All	BDFWO
Solano	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Solano	All ownerships but tidal/estuarine	All	SFWO
Solano	Other	All	By jurisdiction (see map)

Sonoma	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Sonoma	All ownerships but tidal/estuarine	All	SFWO
Tehama	Mendocino National Forest	All	AFWO
Tehama	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Tehama	All other ownerships	All	By jurisdiction (see map)
Trinity	BLM	All	AFWO
Trinity	Six Rivers National Forest	All	AFWO
Trinity	Shasta Trinity National Forest	All	YFWO
Trinity	Mendocino National Forest	All	AFWO
Trinity	BIA (Tribal Trust Lands)	All	AFWO
Trinity	County Government	All	AFWO
Trinity	All other ownerships	All	By jurisdiction (See map)
Yolo	Yolo Bypass	All	BDFWO
Yolo	Other	All	By jurisdiction (see map)
All	FERC-ESA	All	By jurisdiction (see map)
All	FERC-ESA	Shasta crayfish	SFWO
All	FERC-Relicensing (non-ESA)	All	BDFWO

***Office Leads:**

AFWO=Arcata Fish and Wildlife Office

BDFWO=Bay Delta Fish and Wildlife Office

KFWO=Klamath Falls Fish and Wildlife Office

RFWO=Reno Fish and Wildlife Office

YFWO=Yreka Fish and Wildlife Office

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Yreka Fish And Wildlife Office

1829 South Oregon Street

Yreka, CA 96097-3446

(530) 842-5763

Project Summary

Consultation Code: 08EYRE00-2018-SLI-0132

Event Code: 08EYRE00-2019-E-00113

Project Name: Golden Eagle Charter School

Project Type: DEVELOPMENT

Project Description: Build a new Charter School called Golden Eagle Charter School 032-46

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/41.317185995376065N122.32230543887837W>



Counties: Siskiyou, CA

Endangered Species Act Species

There is a total of 15 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Wolf <i>Canis lupus</i> Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered

Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
Oregon Spotted Frog <i>Rana pretiosa</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6633	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened
Longfin Smelt <i>Spirinchus thaleichthys</i> Population: San Francisco Bay delta DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9011	Candidate

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Gentner's Fritillary <i>Fritillaria gentneri</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8120	Endangered
Hoover's Spurge <i>Chamaesyce hooveri</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3019	Threatened
Slender Orcutt Grass <i>Orcuttia tenuis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1063	Threatened

Conifers and Cycads

NAME	STATUS
Whitebark Pine <i>Pinus albicaulis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1748	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

TABLE 1
Rarefind (CNDDDB) Report Summary
 Five-Mile Radius of Project Site
 January 2019

Listed Element	Quadrangle ¹						Status ²
	CMS	DU	HO	MC	ME	MS	
ANIMALS							
American peregrine falcon		•					FD, SD, SFP
Bald eagle					•		FD, SE, SFP
Bank swallow	•						ST
Cascades frog	•						SCE, SSSC
Fisher-west coast DPS	•				•		SCT, SSSC
Foothill yellow-legged frog	•				•		SCT, SSSC
Franklin's bumblebee				•			None
Great blue heron	•						None
Long-eared myotis						•	None
North American porcupine	•						None
Northern goshawk				•			SSSC
Obscure bumblebee	•					•	None
Osprey	•						WL
Pacific marten						•	None
Sierra Nevada red fox						•	FC, ST
Silver-haired bat	•					•	None
Spotted bat	•						SSSC
Suckley's cuckoo bumble bee	•						None
Western bumblebee	•						None
Western mastiff bat	•						SSSC
Western yellow-billed cuckoo	•						FT, SE
Yellow rail	•						SSSC
PLANTS							
Aleppo avens	•						2B.2
Baker's globe mallow	•						4.2
Broad-nerved hump moss	•						2B.2
Gasquet rose	•						1B.3
Jepson's dodder				•			1B.2
Marsh skullcap	•						2B.2
Northern adder's tongue	•						2B.2
Oregon fireweed					•		1B.2
Pacific fuzzwort	•				•		4.3
Pallid bird's-beak	•		•				1B.2
Rattlesnake fern	•						2B.2
Shasta chaenactis	•						1B.3
Siskiyou clover	•						1B.1

Subalpine aster					•		2B.3
Thread-leaved beardtongue	•						1B.3
Three-ranked hump moss	•						4.2
Woodnymph	•						2B.2
Woolly balsamroot	•						1B.2
NATURAL COMMUNITIES							
Fen	•						None

Highlighting denotes the quadrangle in which the project site is located

¹QUADRANGLE CODE

CMS	City of Mt. Shasta	MC	McCloud
DU	Dunsmuir	ME	Mt. Eddy
HO	Hotlum	MS	Mt. Shasta

²STATUS CODES

Federal

FE	Federally Listed – Endangered
FT	Federally Listed – Threatened
FC	Federal Candidate Species
FP	Federal Proposed Species
FD	Federally Delisted
FSC	Federal Species of Concern

State

SFP	State Fully Protected
SR	State Rare
SE	State Listed – Endangered
ST	State Listed – Threatened
SC	State Candidate Species
SD	State Delisted
SSSC	State Species of Special Concern
WL	Watch List

Rare Plant Rank

1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened or Endangered in California and Elsewhere
2	Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3	Plants About Which We Need More Information (<i>A Review List</i>) (generally not considered special-status, unless unusual circumstances warrant)
4	Plants of Limited Distribution (<i>A Watch List</i>) (generally not considered special-status, unless unusual circumstances warrant)

Rare Plant Threat Ranks

0.1	Seriously Threatened in California
0.2	Fairly Threatened in California
0.3	Not Very Threatened in California

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Golden Eagle Charter School

May 6 and June 26, 2018

Apiaceae

Anthriscus caucalis
Cicuta sp.
Conium maculatum
Foeniculum vulgare

Apocynaceae

Apocynum androsaemifolium
Apocynum cannabinum

Araceae

Lemna sp.

Asteraceae

Achillea millefolium
Centaurea cyanus
Centaurea solstitialis
Cichorium intybus
Cirsium arvense
Erigeron canadensis
Gnaphalium palustre
Hypochaeris radicata
Matricaria discoidea
Taraxacum officinale
Tragopogon porrifolius

Betulaceae

Alnus incana ssp. *tenuifolia*
Alnus rhombifolia

Boraginaceae

Amsinckia menziesii
Lithospermum arvense
Myosotis discolor

Brassicaceae

Barbarea sp.
Cardamine californica
Draba verna
Isatis tinctoria
Lepidium campestre
Nasturtium officinale

Caprifoliaceae

Symphoricarpos albus var. *laevigatus*

Caryophyllaceae

Dianthus armeria subsp. *armeria*

Carrot Family

Bur-chervil
Water-hemlock
Poison hemlock
Fennel

Dogbane Family

Bitter dogbane
Indian-hemp

Arum Family

Duckweed

Sunflower Family

Common yarrow
Bachelor's button
Yellow star thistle
Chicory
Canadian thistle
Canadian horseweed
Western marsh cudweed
Rough cat's ear
Pineapple weed
Dandelion
Purple salsify

Birch Family

Creek alder
White alder

Borage Family

Menzie's fiddleneck
Gromwell
Yellow scorpion-grass

Mustard Family

Wintercress
Bittercress
Whitlow grass
Dyer's-woad
English peppergrass
Water cress

Honeysuckle Family

Common snowberry

Pink Family

Deptford pink

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Golden Eagle Charter School

Cupressaceae

Calocedrus decurrens
Juniperus sp.

Cypress Family

Incense cedar
Ornamental juniper

Cyperaceae

Carex angustata
Carex feta
Carex nebrascensis
Carex pellita
Carex stipata var. *stipata*
Carex subfusca
Eleocharis parishii
Scirpus microcarpus

Sedge Family

Narrow-spiked sedge
Green-sheathed sedge
Nebraska sedge
Woolly sedge
Striped sedge
Small-bract sedge
Parish's spikerush
Small-fruited bulrush

Dipsacaceae

Dipsacus fullonum

Teasel Family

Wild teasel

Equisetaceae

Equisetum arvense
Equisetum laevigatum

Horsetail Family

Common horsetail
Smooth scouring rush

Ericaceae

Arctostaphylos patula

Heath Family

Green-leaved manzanita

Euphorbiaceae

Chamaesyce maculata

Spurge Family

Spotted spurge

Fabaceae

Acmispon americanus var. *americanus*
Cytisus scoparius
Lathyrus latifolius
Lotus corniculatus
Lupinus polyphyllus
Melilotus sp.
Robinia pseudoacacia
Trifolium dubium
Trifolium hybridum
Trifolium pratense
Trifolium repens
Vicia sativa

Legume Family

Spanish lotus
Scotch broom
Perennial sweet pea
Birdsfoot trefoil
Blue-pod lupine
Sweetclover
Black locust
Little hop clover
Alsike clover
Red clover
White clover
Garden vetch

Fagaceae

Quercus kelloggii

Oak Family

California black oak

Geraniaceae

Erodium cicutarium

Geranium Family

Red-stemmed filaree

Hypericaceae

Hypericum perforatum

St. John's-wort Family

Klamath weed

Juglandaceae

Juglans hindsii

Walnut Family

Northern California black walnut

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Golden Eagle Charter School

Juncaceae

Juncus balticus subsp. *ater*
Juncus bufonius
Juncus effusus
Juncus ensifolius

Lamiaceae

Lamium purpureum
Mentha sp.

Malvaceae

Sidalcea oregana

Melanthiaceae

Veratrum californicum var. *californicum*

Montiaceae

Claytonia rubra subsp. *rubra*
Montia linearis

Onagraceae

Epilobium ciliatum
Oenothera sp.

Papaveraceae

Eschscholzia californica

Phrymaceae

Mimulus guttatus

Pinaceae

Pinus ponderosa

Plantaginaceae

Plantago lanceolata
Plantago major
Veronica arvensis

Poaceae

Alopecurus pratensis
Arrhenatherum elatius
Bromus carinatus var. *carinatus*
Bromus commutatus
Bromus diandrus
Bromus sterilis
Bromus tectorum
Dactylis glomerata
Elymus repens
Elymus triticoides
Festuca arundinacea
Festuca myuros
Glyceria declinata

Rush Family

Baltic rush
Toad rush
Soft rush
Sword-leaved rush

Mint Family

Red henbit
Mint

Mallow Family

Oregon checkerbloom

False-Hellebore Family

California false hellebore

Miner's Lettuce Family

Red-stemmed miner's lettuce
Linear-leaved montia

Evening-Primrose Family

Fringed willowherb
Hooker's evening-primrose

Poppy Family

California poppy

Lopseed Family

Common monkey-flower

Pine Family

Ponderosa pine

Plantain Family

English plantain
Broadleaf plantain
Field speedwell

Grass Family

Meadow foxtail
Tall oatgrass
California brome
Meadow brome
Ripgut grass
Poverty brome
Downy brome
Orchard grass
Quack grass
Alkali ryegrass
Tall fescue
Foxtail fescue
Low mannagrass

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Golden Eagle Charter School

<i>Holcus lanatus</i>	Common velvet grass
<i>Hordeum murinum</i> subsp. <i>murinum</i>	Wall barley
<i>Phleum pratense</i>	Cultivated timothy
<i>Poa bulbosa</i>	Bulbous bluegrass
<i>Poa compressa</i>	Canadian bluegrass
<i>Poa pratensis</i> subsp. <i>pratensis</i>	Kentucky bluegrass
<i>Secale cereale</i>	Rye

Polemoniaceae

Microsteris gracilis

Phlox Family

Slender phlox

Polygonaceae

Eriogonum nudum
Rumex acetosella
Rumex crispus

Buckwheat Family

Naked buckwheat
 Sheep sorrel
 Curly dock

Ranunculaceae

Ranunculus repens

Buttercup Family

Creeping buttercup

Rhamnaceae

Ceanothus cordulatus

Buckthorn Family

Whitethorn ceanothus

Rosaceae

Crataegus gaylussacia
Malus sp.
Potentilla gracilis
Potentilla recta
Prunus avium
Prunus subcordata
Prunus virginiana var. *demissa*
Rosa multiflora
Rosa pisocarpa
Rosa woodsii subsp. *ultramontana*
Rubus armeniacus
Poterium sanguisorba
Sorbus aucuparia
Spiraea douglasii

Rose Family

Klamath hawthorn
 Apple
 Slender cinquefoil
 Sulphur cinquefoil
 Sweet cherry
 Sierra plum
 Western choke-cherry
 Multiflora rose
 Cluster rose
 Interior rose
 Himalayan blackberry
 Garden burnet
 Rowan
 Douglas' spiraea

Rubiaceae

Galium aparine

Madder Family

Cleavers

Salicaceae

Populus balsamifera subsp. *trichocarpa*
Salix sp.
Salix lasiandra var. *lasiandra*
Salix lasiolepis

Willow Family

Black cottonwood
 Willow
 Pacific willow
 Arroyo willow

Sapindaceae

Acer negundo

Soapberry Family

Box elder

Scrophulariaceae

Verbascum thapsus

Snapdragon Family

Woolly mullein

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Golden Eagle Charter School

Typhaceae

Typha sp.

Cattail Family

Cattail

Valerianaceae

Plectritis congesta ssp. *brachystemon*

Valerian Family

Shortspur plectritis

APPENDIX D

NOISE STUDY

Golden Eagle Charter School Environmental Noise Analysis

Mount Shasta, California

May 21, 2018
jcb Project # 2018-132

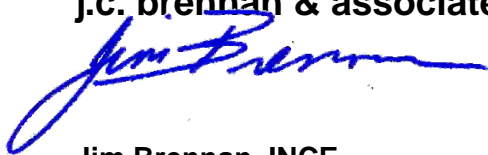
Prepared for:
Golden Eagle Charter School



2405 S. Mount Shasta Blvd. #3
Mount Shasta, CA 96067
Attn:
Shelley Blakely
c/o Nick Trover

Prepared by:

j.c. brennan & associates, Inc.



Jim Brennan, INCE
President
Member, Institute of Noise Control Engineering (INCE)



INTRODUCTION

The Golden Eagle Charter School (GECS) is looking to relocate and consolidate their programs with a new facility at the Pine Street property (See Figure 1 for the project location). The GECS students arrive and depart throughout the day as required for their learning plan. The school has up to 502 students, with only approximately 225-250 on site at any one time. The GECS proposes to construct a 35,513 square foot resource center and associated parking facilities. Future phases of construction include a large play field and a gymnasium. Construction activities will take place during the standard hours, and days which are consistent with the General Plan Noise Element. Figure 2 shows the site plan.

This analysis will evaluate the potential noise impacts associated with I-5 traffic and railroad operations, as it may affect the project site. This analysis will also evaluate on-site activities at the adjacent residential uses. In addition, this analysis will evaluate the potential increases in traffic noise levels due to the project.

ENVIRONMENTAL SETTING

Noise Background

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective. Often, someone's music is described as noise by another.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dBA. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dBA, and changes in levels (dBA) correspond closely to human perception of relative loudness.

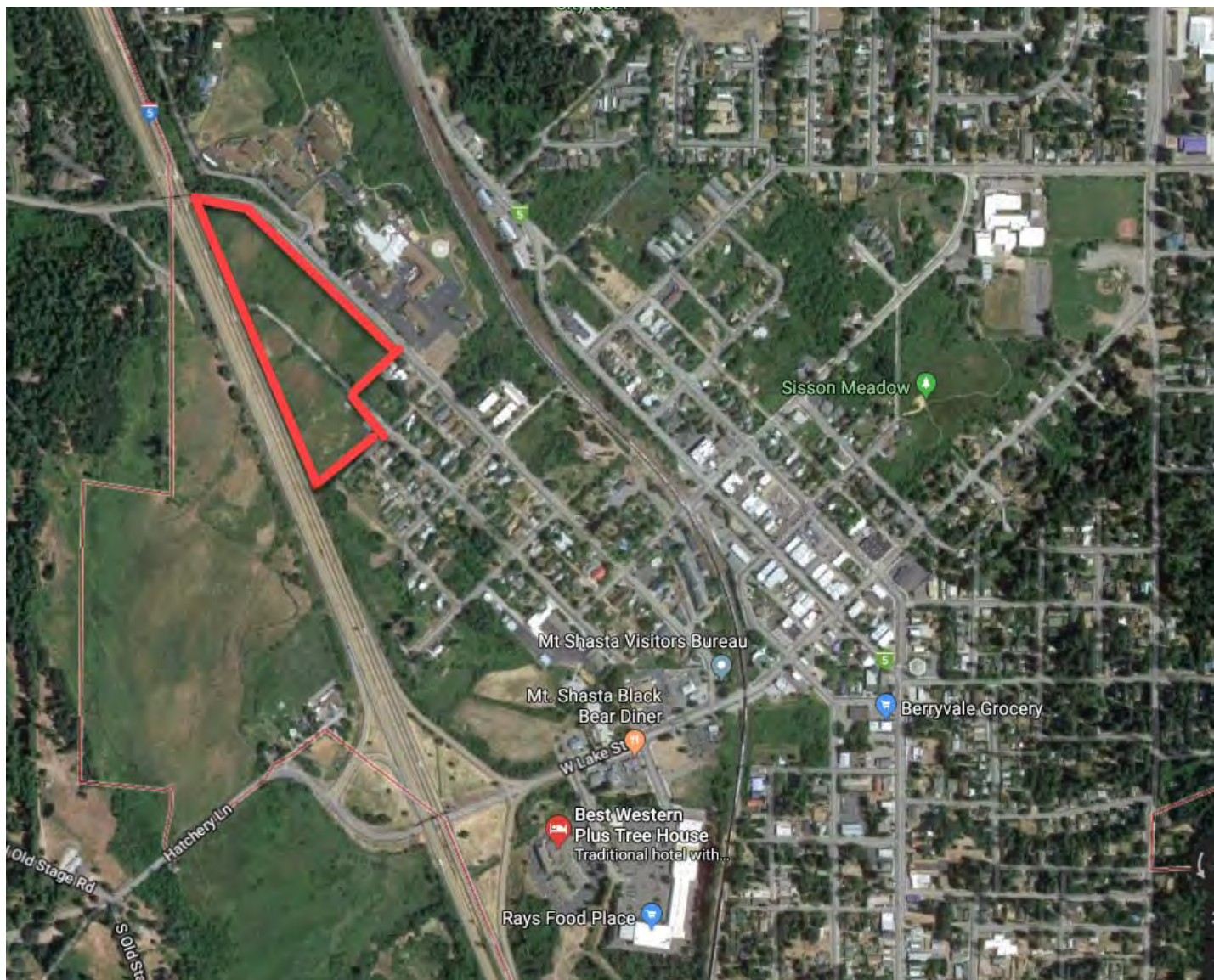
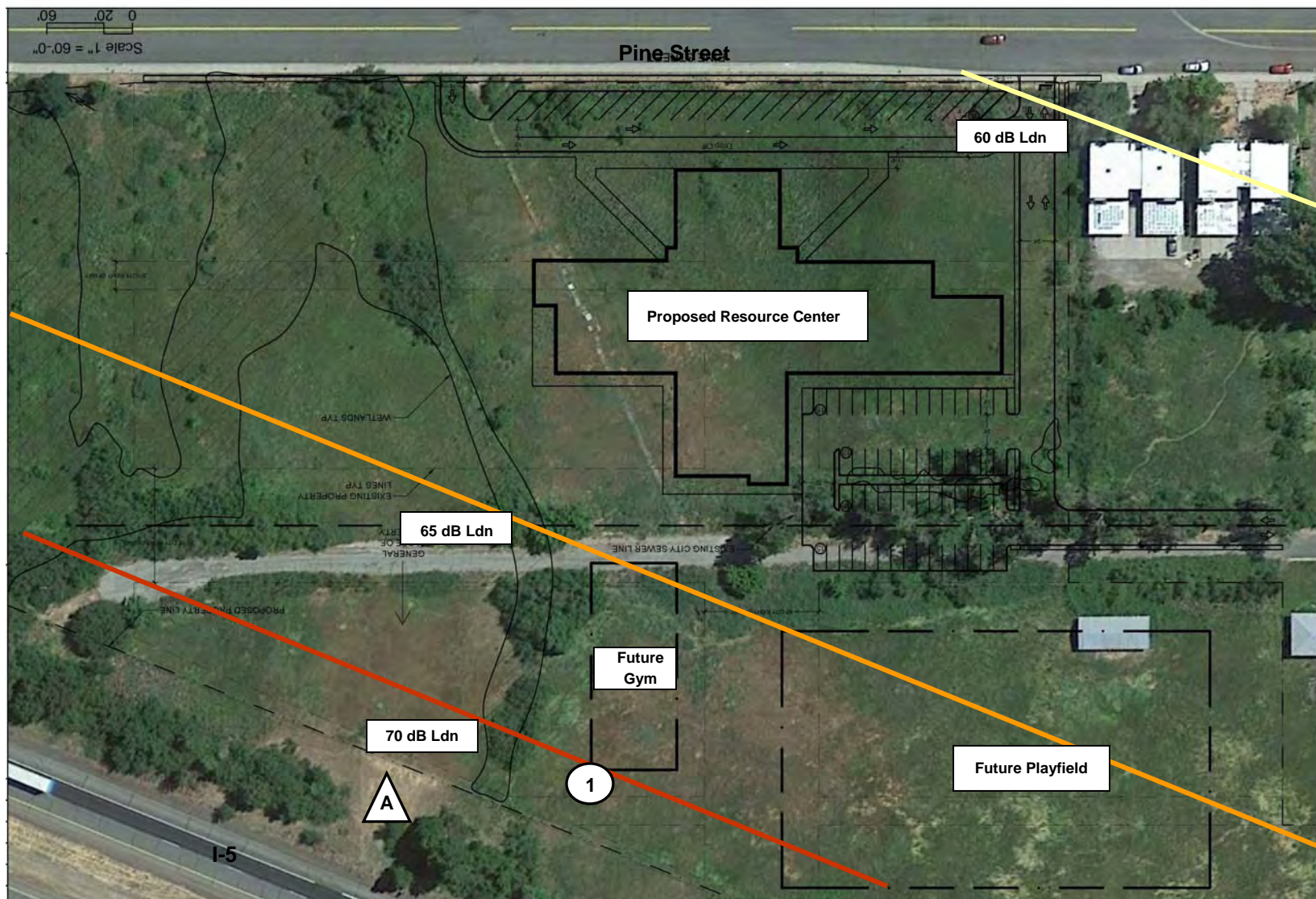


Figure 1
Project Location



Legend	
	: 24-Hour Noise Monitoring Site
	: Traffic Noise Calibration Site

Figure 2
Project Site Plan / Noise Measurement Sites /
Distances to I-5 Noise Contours



The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels.

There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but may be expressed as dBA, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dBA apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn} , and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of maximum noise levels associated with common noise sources.



Table 1

LOUDNESS COMPARISON CHART (dBA)

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 1000 ft	110	Rock Band
Gas Lawn Mower at 3 ft	100	
	90	Food Blender at 3 ft
Diesel Truck at 50 ft at 50 mph	80	Garbage Disposal at 3 ft
Noisy Urban Area, Daytime		Vacuum Cleaner at 10 ft
Gas Lawn Mower at 100 ft	70	Normal Speech at 3 ft
Commercial Area		
Heavy Traffic at 300 ft	60	Large Business Office
Quiet Urban, Daytime	50	Dishwasher Next Room
Quiet Urban, Nighttime		
Quiet Suburban, Nighttime	40	Theater, Large Conference Room (Background)
		Library
Quiet Rural, Nighttime	30	Bedroom at Night, Concert Hall (Background)
	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

An increase of 3 dBA is barely perceptible to the human ear.

j.c. brennan & associates
consultants in acoustics



Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dBA per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

A complete listing of acoustical terminology is provided in Appendix A.



EXISTING NOISE ENVIRONMENT IN PROJECT VICINITY

The primary noise sources in the project vicinity include roadway traffic on Interstate 5 (I-5), and some noise associated with the Union Pacific Railroad operations to the east.

To quantify existing ambient noise levels in the vicinity of the project site, j.c. brennan & associates, Inc., conducted continuous 24-hour noise measurements on the project site in March 2010. The noise level measurements were conducted to determine typical existing background noise levels associated with I-5 traffic at the site. A summary of the results of the continuous hourly ambient noise survey are shown in Table 2. Appendix B graphically shows the results of the noise measurements. Figure 2 shows the location of the noise measurement site.

Equipment used for the noise measurement survey included a Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter. The meter was calibrated with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).



Table 2 Summary of Measured Ambient Noise Levels Friday March 12, 2010 At 85-feet from the I-5 Centerline							
Site	Measured Ldn	Average Hourly Daytime (7:00am - 10:00pm)			Average Hourly Nighttime (10:00pm – 7:00am)		
		Leq	L50	Lmax	Leq	L50	Lmax
A	74 dB	72 dB	70 dB	81 dB	67 dB	59 dB	79 dB
Source: j.c. brennan & associates, Inc. - 2017							

REGULATORY FRAMEWORK

Federal

There are no federal regulations related to noise that apply to the Proposed Project.

State

There are no state regulations related to noise that apply to the Proposed Project.

Mount Shasta General Plan Noise Element

Mount Shasta has a General Plan which includes a Noise Element. The General Plan Noise Element includes criteria for both transportation noise sources, and stationary noise sources. Tables 3 and 4 below show the proposed Stationary and Transportation noise source criteria, respectively from the General Plan.



Table 3 (7-5 of the General Plan)
Noise Standards for New Uses Affected by Non-Transportation Noise
 Outdoor Activity Area -

New Land Use	Leq		Interior – Leq Day & Night	Notes
	Daytime	Nighttime		
All Residential	50	45	35	1, 2, 7
Transient Lodging	55	---	40	3
Hospitals & Nursing Homes	50	45	35	4
Theaters & Auditoriums	---	---	35	
Churches, Meeting Halls, Schools, Libraries, etc.	55	---	40	
Office Buildings	55	---	45	5, 6
Commercial Buildings	55	---	45	5, 6
Playgrounds, Parks, etc.	65	65	---	6
Industry	65	65	50	5

Notes:

1. Outdoor activity areas for single-family residential uses are defined as back yards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100 foot radius of the residence.
2. For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas or tennis courts.
3. Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas, and are not commonly used during nighttime hours.
4. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5. Only the exterior spaces of these uses designated for employee or customer relaxation have any degree of sensitivity to noise.
6. The outdoor activity areas of office, commercial and park uses are not typically utilized during nighttime hours.
7. It may not be possible to achieve compliance with this standard at residential uses located immediately adjacent to loading dock areas of commercial uses while trucks are unloading. The daytime and nighttime noise level standards applicable to loading docks shall be 55 and 50 dB Leq, respectively.



**Table 4 (Table 7-6 of the General Plan)
Noise Standards for New Uses Affected by Traffic and Railroad Noise**

New Land Use Notes	Outdoor Activity Area - Ldn	Interior - Ldn/Peak Hour Leq ¹	
All Residential	60-65	45	2, 3, 4
Transient Lodging	65	45	5
Hospitals & Nursing Homes	60	45	6
Theaters & Auditoriums	---	35	
Churches, Meeting Halls, Schools, Libraries, etc.	60	40	
Office Buildings	65	45	7
Commercial Buildings	65	50	7
Playgrounds, Parks, etc.	70	---	
Industry	65	50	7

Notes:

1. For traffic noise within the City, Ldn and peak-hour Leq values are estimated to be approximately similar. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
2. Outdoor activity areas for single-family residential uses are defined as back yards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.
3. For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas or tennis courts.
4. Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
5. Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas.
6. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.



Significance of Changes in Ambient Noise Levels

The significance of project-related noise impacts are also determined by comparison of project-related noise levels to existing no-project noise levels, as required by CEQA. An increase in similar noise levels of less than 3 dBA is generally not perceptible. An increase of at least 3 dBA in similar noise sources is usually required before most people will perceive a change in noise levels, and an increase of 5 dBA is required before the change will be clearly noticeable.

PROJECT IMPACT NOISE ASSESSMENT

Off-Site Traffic Noise Impacts

The proposed project will add traffic to the local street system. The road which will primarily be affected by increased traffic and resulting increased traffic noise is Pine Street. The FHWA traffic noise prediction model was used to determine the future traffic noise levels and the changes in traffic noise levels associated with the project. The traffic noise analysis assumes that the office space which the school will be utilizing is fully occupied as office. Table 5 shows the results of the analysis.

Table 5 Off-Site Traffic Noise Levels On the Local Street System			
Roadway	Scenario	Traffic Noise Level @ 75-feet	Change
Pine Street - North of Ivy St.	Existing	57 dB Ldn	
	Existing + Project	58 dB Ldn	+1 dB
Lonetree - South of Ivy St.	Existing	57 dB Ldn	
	Existing + Project	58 dB Ldn	+1 dB
Source: FHWA-RD-77-108 with inputs from Traffic Works and j.c. brennan & associates, Inc. *Distances to traffic noise contours are measured in feet from the centerlines of the roadways.			

Based upon Table 5, the project will not result in any significant increases in traffic noise levels as compared to the space being occupied as offices.

On-Site Play Field Activity Noise

Based upon the project site plan and descriptions the number of students (children) per recess is going to be approximately 100 students. Play area noise associated with children playing could generate noise by occasional shouting and cheering associated with typical play areas. j.c. brennan & associates, Inc. file data collected at various playgrounds and parks indicate that average noise levels generated during games with approximately 100 children is approximately 60 dB Leq at a distance of 75 feet from the focal point or effective noise center of the play areas. This assumes that the students are on the play area for the entire hour. Occasional maximum noise levels can reach 75 dB. The main play area on the site plan is the future play



field. The nearest residences are located approximately 350-feet to the south from the center of the future play field. Based upon that distance, the predicted noise levels would be 47 dB Leq, and 62 dB Lmax at the nearest residences. This is in compliance with the daytime (7:00 a.m. - 10:00 p.m.) exterior noise level standard of 50 dB Leq. It would also be considerably less than the background noise levels associated with I-5.

On-Site Traffic Noise Impacts

To predict existing noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calven reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

j.c. brennan & associates, Inc., staff conducted short-term noise level measurements and concurrent counts of traffic on I-5 on the project site. The purpose of the short-term traffic noise level measurements was to determine the accuracy of the FHWA model in describing the existing noise environment on the project site, while accounting for existing site conditions such as intervening structures, actual travel speeds, and roadway grade. Noise measurement results were compared to the FHWA model results by entering the observed traffic volume, speed, and distance as inputs to the FHWA model. Figure 2 shows the noise measurement site.

Instrumentation used for the measurement was a Larson Davis Laboratories (LDL) Model 824 precision integrating sound level meter which was calibrated in the field before use with an LDL CAL-200 acoustical calibrator. Table 6 shows the results of the traffic noise calibration. Appendix C provides the complete inputs and results of the FHWA model calibration procedures.

TABLE 6 COMPARISON OF FHWA MODEL TO MEASURED EXISTING TRAFFIC NOISE LEVELS									
VEHICLES / MEASUREMENT PERIOD					SPEED (MPH)	DIST. (FEET)	MEASURED, LEQ	MODELED, LEQ*	DIFFERENCE
SITE	ROADWAY	AUTOS	MED. TRK.	HVY. TRK.					
1	I-5	148	3	36	65	350	57.9 dBA	62.8 dBA	+4.9 dBA

* Acoustically "soft" site assumed

Source: j.c. brennan & associates, Inc. - 2010

Based upon Table 6, the FHWA model was found to over-predict I-5 traffic noise levels at the site by +4.9 dB. This was noted to be due to shielding by some buildings to the south, and the overpass to the north. Therefore, a conservative -3 dBA correction will be added to the calculated future traffic noise at the project site.



Future traffic volumes (2026) and truck mix percentages for I-5 were obtained Caltrans, and the General Plan EIR. Table 7 shows the predicted I-5 traffic noise levels on the project site. Figure 2 shows the locations of the 70 dB, 65 dB and 60 dB I-5 traffic noise contours. These contours account for the -3 dBA correction due to the calibration results shown in Table 6.

TABLE 7 TRAFFIC NOISE LEVELS AND DISTANCES TO CONTOURS INTERSTATE 5					
Roadway	Location	Ldn	Distance to Contours (feet)		
			70 dBA	65 dBA	60 dBA
I-5	150-feet from Roadway Centerline	71 dBA	176-feet	380-feet	819-feet

Notes: Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
Source: FHWA-RD-77-108 with inputs from Caltrans, and j.c. brennan & associates, Inc. 2018.

Based upon Table 7, and Figure 2, a small corner of the future play field will be exposed to I-5 traffic noise levels in excess of the 70 dBA Ldn exterior noise level standard. However, the majority of the playfield will comply with the standard. There are no outdoor activity areas associated with the future Gym or the Resource Center. Therefore, those areas are not subject to an exterior noise level standard.

Typical construction will result in an exterior to interior noise level reduction of 25 dBA. The proposed Resource Center will be exposed to traffic noise levels of less than 65 dB Ldn/Leq. Therefore, the Resource Center will comply with the interior noise level standard of 40 dBA Ldn/Leq.

The future Gym will be exposed to traffic noise levels of up to 70 dB Ldn. Therefore, the interior noise levels could exceed the 40 dB Ldn/Leq interior noise level standard without some analysis of interior noise levels when building plans and floor plans are available.

[On-Site Railroad Noise Impacts](#)

The Union Pacific Railroad (UPRR) track is located approximately 675-feet east of the nearest edge of the project site. Based upon noise measurements conducted for the General Plan Noise Element, the distance to the 60 dBA Ldn noise contour associated with the UPRR operations, is 631-feet. This does not assume any shielding which may occur due to intervening development or topography. Therefore, the UPRR operations are not expected to exceed any of the exterior or interior noise level standards.



CONCLUSIONS AND RECOMMENDATIONS

1. The project should consider moving the play field outside of the 70 dB Ldn I-5 noise contour shown on Figure 1. As an alternative, a barrier in the form of a berm, at an elevation of 6-feet, could be included in the project design as a means of mitigating traffic noise levels;
2. When building plans and elevations are available for the proposed gymnasium, interior noise levels should be evaluated to ensure compliance with the interior noise level standard of 40 dB Ldn / Leq.

Appendix A

Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
L_(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L ₅₀ is the sound level exceeded 50% of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the <i>A</i> Maximum ₀ level, which is the highest RMS level.
RT₆₀	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

Appendix B

Pine Street Property - Dry Day

24hr Continuous Noise Monitoring - Site A

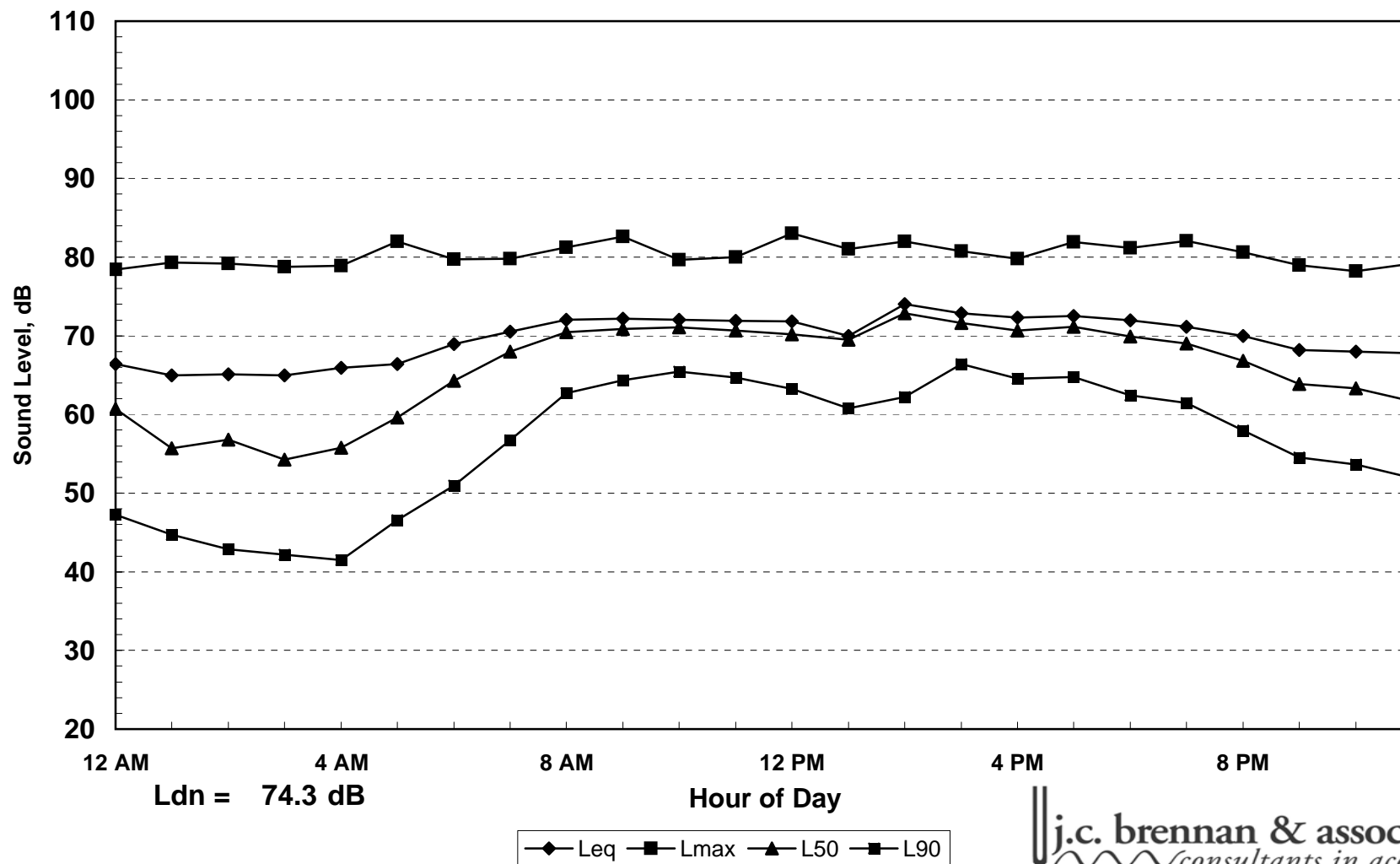
Thursday, March 11, 2010

Hour	Leq	Lmax	L50	L90
0:00	66	78	61	47
1:00	65	79	56	45
2:00	65	79	57	43
3:00	65	79	54	42
4:00	66	79	56	42
5:00	66	82	60	47
6:00	69	80	64	51
7:00	71	80	68	57
8:00	72	81	70	63
9:00	72	83	71	64
10:00	72	80	71	65
11:00	72	80	71	65
12:00	72	83	70	63
13:00	70	81	69	61
14:00	74	82	73	62
15:00	73	81	72	66
16:00	72	80	71	65
17:00	73	82	71	65
18:00	72	81	70	62
19:00	71	82	69	61
20:00	70	81	67	58
21:00	68	79	64	55
22:00	68	78	63	54
23:00	68	79	62	52

Statistical Summary						
Daytime (7 a.m. - 10 p.m.)				Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	74.0	68.2	71.8	69.0	65.0	66.7
Lmax (Maximum)	83.0	79.0	81.0	82.0	78.2	79.3
L50 (Median)	72.8	63.9	69.8	64.3	54.3	59.1
L90 (Background)	66.4	54.6	62.2	53.7	41.5	46.9

Computed Ldn, dB	74.3
% Daytime Energy	84%
% Nighttime Energy	16%

Appendix B
Pine Street Property - Dry Day
24hr Continuous Noise Monitoring - Site A
Thursday, March 11, 2010



Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2018-132

Description: Golden Eagle Charter School

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Existing Pine Street	North of Ivy	3,530	87		13	2	1	35	75	
2	Existing Pine Street	South of Ivy	3,700	87		13	2	1	35	75	
3											
4	Existing + Project Pine	North of Ivy	4,370	87		13	2	1	35	75	
5	Existing + Project Pine	South of Ivy	4,630	87		13	2	1	35	75	
6											
7											
8											
9											
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Appendix C**FHWA-RD-77-108 Highway Traffic Noise Prediction Model****Predicted Levels**

Project #: 2018-132
Description: Golden Eagle Charter School
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Existing Pine Street	North of Ivy	55.3	48.2	50.4	57
2	Existing Pine Street	South of Ivy	55.5	48.4	50.6	57
4	Existing + Project Pine	North of Ivy	56.3	49.1	51.3	58
5	Existing + Project Pine	South of Ivy	56.5	49.4	51.5	58

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2018-132

Description: Golden Eagle Charter School

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	----- Distances to Traffic Noise Contours -----				
			75	70	65	60	55
1	Existing Pine Street	North of Ivy	5	10	22	48	104
2	Existing Pine Street	South of Ivy	5	11	23	50	107
4	Existing + Project Pine	North of Ivy	6	12	26	56	120
5	Existing + Project Pine	South of Ivy	6	12	27	58	125

Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)

Calibration Worksheet

Project Information:

Job Number: 2010-113
Project Name: Pine Street Property
Roadway Tested: Interstate 5
Test Location: 4
Test Date: March 11, 2010

Weather Conditions:

Temperature (Fahrenheit): 40
Relative Humidity: Dry
Wind Speed and Direction: Calm
Cloud Cover: Clear

Sound Level Meter:

Sound Level Meter: LDL Model 824
Calibrator: LDL Model CAL200
Meter Calibrated: Immediately before and after test
Meter Settings: A-weighted, slow response

Microphone:

Microphone Location: On Project Site
Distance to Centerline (feet): 350
Microphone Height: 5 feet above ground
Intervening Ground (Hard or Soft): **Soft**
Elevation Relative to Road (feet): 2

Roadway Condition:

Pavement Type AC
Pavement Condition: Fair
Number of Lanes: 4
Posted Maximum Speed (mph): 65

Test Parameters:

Test Time: 2:43 PM
Test Duration (minutes): 10
Observed Number Automobiles: 148
Observed Number Medium Trucks: 3
Observed Number Heavy Trucks: 36
Observed Average Speed (mph): 65

Model Calibration:

Measured Average Level (L_{eq}): 57.9
Level Predicted by FHWA Model: 62.8

***Difference:* 4.9 dB**

Conclusions:



Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)

Noise Prediction Worksheet

Project Information:

Job Number: 2010-113
Project Name: Pine Street Property
Roadway Name: Interstate 5

Traffic Data:

Year: 2026
Average Daily Traffic Volume: 29,400
Percent Daytime Traffic: 83
Percent Nighttime Traffic: 17
Percent Medium Trucks (2 axle): 2
Percent Heavy Trucks (3+ axle): 26
Assumed Vehicle Speed (mph): 70
Intervening Ground Type (hard/soft): **Soft**

Traffic Noise Levels:

				-----L _{dn} , dB-----			
Location:	Description	Distance	Offset (dB)	Autos	Medium Trucks	Heavy Trucks	Total
1	300	150	-3	65	55	70	71

Traffic Noise Contours:

L _{dn} Contour, dB	Distance from Centerline, (ft)
75	82
70	176
65	380
60	819

Notes:



APPENDIX E

TRAFFIC STUDY

Traffic Impact Study

FOR

Golden Eagle Charter School

Mount Shasta, CA

May 29, 2018

PREPARED FOR:
Golden Eagle Charter School

PREPARED BY:



YOUR QUESTIONS ANSWERED QUICKLY

Why did you perform this study?

This Traffic Impact Study evaluates the potential traffic impacts associated with the proposed Golden Eagle Charter School project in Mount Shasta, CA. This study of potential transportation impacts was undertaken for planning purposes and to determine what traffic controls or other mitigations may be needed to reduce potential impacts, if any are identified.

What does the project consist of?

The project consists of a charter school serving Kindergarten through 12th Grade with approximately 350 students and 30 staff. However, due to intentional scheduling only 200 students and 15 staff will be on site at any one time. The analysis is based on the latter numbers.

How much traffic will the project generate?

The project is anticipated to generate 496 Daily, 162 AM peak hour, and 116 Afternoon peak hour (when school is dismissed) trips.

Are there any traffic impacts?

There are no significant traffic impacts.

Are any improvements recommended?

In order to provide adequate sight triangles for vehicles exiting the full access driveway on Pine Street, the project proposes to prohibit on-street parking 55 feet north of the driveway and 35 feet south of the driveway (see **Exhibit 2** on page 10).

Cedar Street is currently approximately 15 feet wide where the project would connect, which is adequate for an emergency access, but if the roadway were to become a full access connection in the future, half-street improvements would be needed to widen the roadway for two-way travel.

A school zone should be created on Pine Street in accordance with *California Manual on Uniform Traffic Control Devices (MUTCD)* standards.

LIST OF FIGURES

1. Project Location
2. Site Plan
3. Existing Lane Configurations, Controls, and Traffic Volumes
4. Project Trip Distribution and Assignment
5. Existing Plus Project Lane Configurations, Controls, and Traffic Volumes

LIST OF APPENDICES

- A. Existing LOS Calculations
- B. Existing Plus Project LOS Calculations

INTRODUCTION

This report summarizes the results of a Traffic Impact Analysis completed to assess the potential impacts to the local roadway network associated with the development of the Golden Eagle Charter School project in Mount Shasta, California. This Traffic Impact Study has been prepared to describe existing traffic conditions, identify potential impacts on all modes of transportation, document findings, and make recommendations to mitigate impacts, if any are found.

Study Area and Evaluated Scenarios

The proposed project is located east of Interstate 5 (I-5) between Pine Street and Cedar Street and across from Mount Shasta Mercy Hospital. The project location is shown on **Figure 1** and the project site plan is shown on **Figure 2**.

The following intersections are included in the analysis:

- Cedar Street / W. Ivy Street
- Pine Street / W. Ivy Street
- Pine Street / W. Lake Street
- Pine Street / South School Driveway (Plus Project Conditions only)
- Pine Street / School Drop-Off Entrance (Plus Project Conditions only)

The existing study intersection lane configurations and traffic controls are shown on **Figure 3**, attached.

This study includes analysis of the weekday AM peak hour and weekday Afternoon peak hour of school traffic (when school is dismissed) as these are the periods of time in which the project is expected to generate the most traffic. The evaluated development scenarios are:

- Existing Conditions (no project)
- Existing Plus Project Conditions

Future year scenarios have not been evaluated at this time due to very low levels of growth anticipated in the 20 year horizon. City staff is not aware of any significant planned development projects in the study area. Lacking other growth in the area, future (cumulative) conditions would not likely be substantially different than the Existing Plus Project scenario presented in this report.

ANALYSIS METHODOLOGY

Level of service (LOS) is a term commonly used by transportation practitioners to measure and describe the operational characteristics of intersections, roadway segments, and other facilities. This term equates seconds of delay per vehicle at intersections to letter grades "A" through "F" with "A" representing optimum conditions and "F" representing breakdown or over capacity flows.

Intersections

Intersection level of service methodology is established in the Highway Capacity Manual (HCM), 2010, published by the Transportation Research Board. The methodology for unsignalized (side-street stop controlled) intersections determines the level of service by comparing the average control delay for the worst movement/approach to the delay thresholds in **Table 1**.

Table 1: Level of Service Definition for Intersections

Level of Service	Brief Description	Average Delay (seconds per vehicle)
		Unsignalized Intersections
A	Free flow conditions.	< 10
B	Stable conditions with some affect from other vehicles.	10 to 15
C	Stable conditions with significant affect from other vehicles.	15 to 25
D	High density traffic conditions still with stable flow.	25 to 35
E	At or near capacity flows.	35 to 50
F	Over capacity conditions.	> 50

Source: Highway Capacity Manual (2010), Chapters 19, 20, and 21

Level of service calculations were performed using the Synchro 9 software package with results reported in accordance with the current HCM 2010 methodology.

Level of Service Policy

Siskiyou County

The 2016 Siskiyou County Regional Transportation Plan includes the following objectives and policies related to level of service:

Objective 3.3.1.2: *Maintain regionally significant roadways at acceptable safety standards and acceptable Level of Service.*

Policy 3.3.1.2.1: *Identify and eliminate unsafe conditions on State highways in coordination with Caltrans.*

Objective 3.3.1.3: *Maintain a target LOS at the transition between LOS C and LOS D or better for average daily conditions on designated State highways.*

Policy 3.3.1.2.1: *The traffic impacts of proposed land uses shall be evaluated and mitigated in relation to stated goals, objectives, and policies of the RTP.*

City of Mount Shasta

The *City of Mount Shasta 2007 General Plan* includes the goals, policies, and implementation measures related to level of service:

Goal C1-1: *Ensure that land development does not exceed road capacities.*

Policy C1-1.1: *Level of service shall be the standard for judging whether a road has adequate remaining capacity for average daily traffic generated by a proposed project.*

Policy C1-1.2: *Level of service "C" shall be the minimum acceptable service level during normal conditions. Peak-hour reduction to level of service "D" may be permitted provided there are plans in place to make improvements required to improve the level of service.*

Implementation Measures:

CI-1.2(a): *Public Works, in cooperation with Caltrans and Siskiyou County, shall regularly monitor traffic volume on roads that presently have levels of service of C or D. Average Daily Trips (ADT) shall be determined and made available to the Planning Department for review of development proposals.*

CI-1.2(b): *When a road segment or intersection is found to be approaching Level of Service C (defined as ADT being within ten percent of the highest LOS C traffic volume threshold), or to have significant safety issues related to the volume of use, the City shall initiate plans for improvements designed to increase capacity, and/or to improve other operational features of the roadway or intersection to improve the LOS and traffic safety.*

CI-1.2(c): *The improvements shall be designed to be initiated by the time traffic volume is approaching Level of Service D. This may result in the generation of impact fees as a means of accumulating funds for the improvements caused by private development.*

CI-1.2(d): *The City shall require traffic analysis to be conducted for all projects that will generate sufficient traffic to use ten (10) percent or more of the capacity of the roadway at LOS C as shown in Table 4-2. When a project will potentially impact a state highway, consideration will be given to the Caltrans Guide for the Preparation of Traffic Impact Studies to determine when and how a related traffic study should be completed.*

CI-1.2(e): *Projects that will impact streets and/or intersections that currently, or are projected to operate, at below LOS C, shall prepare a traffic analysis to determine the extent to which they impact the streets and/or intersections. For facilities that are (short-term conditions), or will be (cumulative condition), operating at unacceptable Levels of Service without the project, an impact is considered significant if the project: 1) increases the average delay at intersections by more than five seconds, or 2) increases the volume-to-capacity ratio by 0.05 or more on a roadway segment.*

CI-1.2(f): *If a street and/or intersection is impacted by a project for short-term conditions, and the project's pro-rata share is equal to or above twenty five (25) percent, then the project shall be required to construct the necessary improvements to maintain an acceptable level of service.*

CI-1.2(g): *If a street and/or intersection is impacted by a project for cumulative conditions, and the project's pro-rata share is below twenty five (25) percent, then the project shall be required to pay their pro-rata share of the cost of constructing these improvements.*

CI-1.2(h): *The City shall regulate truck travel as appropriate for the transport of goods, consistent with circulation, air quality, noise, and land use goals.*

CI-1.2(i): *The City may install, or require to be installed, traffic calming measures on existing and future streets.*

LOS C was used as the threshold (i.e. minimum acceptable level of service) for this analysis.

Parking Requirements

The *Mount Shasta Municipal Code* includes the following parking space requirements for Educational Facilities:

- Public, Private, or Parochial Elementary: 1 space per 500 square feet of floor area PLUS 1 space per employee PLUS adequate space for loading/unloading of students
- High School or College: 1 space per 10 students PLUS 1 space per employee PLUS adequate space for loading/unloading of students

EXISTING TRANSPORTATION FACILITIES

Roadway Facilities

A brief description of the key roadways in the study area is provided below.

Pine Street is a two-lane Arterial roadway from Lassen Lane to Lake Street. The roadway runs in a northwest-southeast direction and has a posted speed limit of 25 mph from Lake Street to Alma Street and 30 mph from Alma Street to Lassen Lane. Pine Street crosses over Interstate 5 (I-5) and is called Lassen Lane west of I-5.

Lake Street is a four-lane Arterial roadway with left-turn pockets from Morgan Way (west of Pine Street) to Pine Street. East of Pine Street, Lake Street has one-lane in the eastbound direction and two-lanes in the westbound direction. East of Maple Street, Lake Street is a two-lane roadway with one lane in each direction. Lake Street has a posted speed limit of 25 mph in the project area.

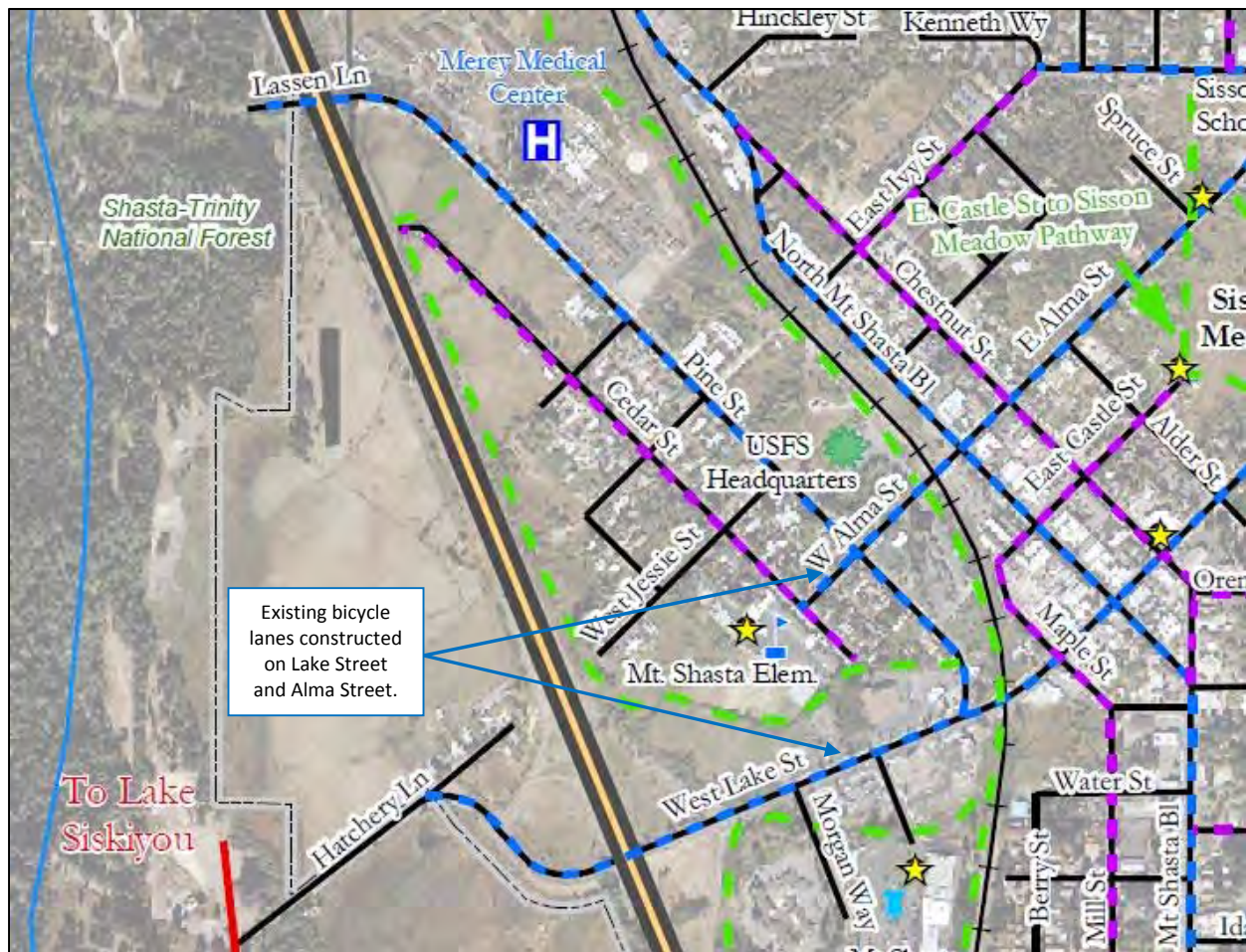
Cedar Street is a two-lane local roadway that runs parallel to Pine Street. Cedar Street primarily serves residential uses, as well as Mount Shasta Elementary School at its south end. Cedar Street will serve as a secondary emergency access roadway to the project site at its north end.

West Ivy Street is a local, residential roadway that connects Pine Street and Cedar Street, and serves residential uses.

Bicycle and Pedestrian Facilities

Existing bicycle facilities near the project site are limited. There are existing bicycle lanes on Lake Street and Alma Street. The City of Mount Shasta *Bicycle, Pedestrian, and Trails Master Plan 2009* (Alta Planning and Design) includes proposed Class II bicycle lanes on Pine Street from Lake Street to Lassen Lane, and a Class III bicycle route on Cedar Street. The Plan also proposes a Class I bicycle path that would border the west side of the project site and make a loop from the north end of Pine Street to the south end of Pine Street (shown in green on **Exhibit 1** below).

Exhibit 1: Proposed Bikeway System



Source: Map 3 - Mount Shasta Bicycle, Pedestrian, and Trails Master Plan (February 2009)

Existing pedestrian facilities are more readily available near the project site, with sidewalks along at least one side of Pine Street for its entire length between Lake Street and Lassen Lane. Sidewalks also exist along both sides of Lake Street east of Morgan Way in the project area. Sidewalks are intermittent along Cedar Street and Ivy Street. Crosswalks are available at most of the intersections on Pine Street and Lake

Street, however there are no crosswalks at the Cedar Street / W. Ivy Street and Pine Street / W. Ivy Street intersections.

Transit Facilities

The Siskiyou Transit and General Express (STAGE) provides transit service throughout Siskiyou County. STAGE provides service in Mount Shasta with a stop on Pine Street at Mercy Hospital, directly across from the proposed project site. Service is provided Monday through Friday from approximately 6:30 AM to 7:30 PM.

EXISTING CONDITIONS

Traffic Volumes

Existing AM (7:00 AM to 9:00 AM) and Afternoon (2:00 PM to 4:00 PM – when school is dismissed) peak hour turning movement volumes were collected at the study intersections on a mid-week day in March 2018 when schools were in full session. **Figure 3** shows the existing intersection turning movement volumes at the study intersections.

Note, the traffic volumes at the Cedar Street / Ivy Street intersection are very low (with multiple movements with zero volume). Synchro analysis software is not able to analyze intersections with zero volume movements, therefore the movements with zero volume were changed to 1 vehicle for analysis purposes.

Intersection Level of Service Analysis

Existing conditions intersection level of service analysis was performed using Synchro 9 software, with reports based on *HCM 2010* methodology. The peak hour factors (PHF) from the existing counts were used in the analysis. A default heavy vehicle percentage of 2 percent was also used in analysis. The level of service results are presented in **Table 2** and the calculation sheets are provided in **Appendix A**, attached.

Table 2: Existing Conditions Intersection Level of Service

Intersection	Control	AM		PM	
		Delay ¹	LOS	Delay ¹	LOS
Cedar St/Ivy St	Side-Street STOP				
Eastbound Approach		8.8	A	9.0	A
Westbound Approach		8.7	A	8.7	A
Northbound Left		7.2	A	7.2	A
Southbound Left		7.2	A	7.2	A
Pine St/Ivy St	Side-Street STOP				
Eastbound Approach		9.7	A	10.8	B
Westbound Approach		12.3	B	12.2	B
Northbound Left		7.6	A	7.7	A
Southbound Left		7.7	A	0	A
Lake St/Pine St	Side-Street STOP				
Southbound Approach		10.4	B	11.7	B
Eastbound Left		8.0	A	8.5	A

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for side-street stop controlled intersections.

Source: Traffic Works, 2018

As shown in the table, the existing study intersections currently operate at acceptable levels of service during the AM and PM peak hours.

PROJECT CONDITIONS

Project Description

The proposed project consists of a charter school serving Kindergarten through 12th Grade with approximately 350 students and 30 staff. However, due to intentional scheduling only 200 students and 15 staff will be on site at any one time. The analysis is based on the latter numbers. The project site is located on a vacant parcel west of Pine Street and east of Cedar Street, and across from Mount Shasta Mercy Hospital.

Project Access

As shown on the project site plan (**Figure 2**), the proposed project includes one full access driveway and one drop-off entrance on Pine Street, as well as an emergency access only driveway on Cedar Street. The full access driveway on Pine Street would also serve as the exit for the student drop-off zone.

On-street parking is currently allowed on both sides of Pine Street adjacent to the project site. To provide adequate sight triangles for vehicles exiting the full access (south) driveway on Pine Street, it is recommended that parking be prohibited on the north and south sides of that driveway. The American Association of State Highway and Transportation Officials (ASHTO) *Geometric Design of Highways and Streets 2004 (Green Book)* provides standards for determining adequate sight triangles for vehicles entering a major street from a stop sign based on the major street speed limit. The posted speed limit on

Pine Street is 30 mph. As shown on **Exhibit 2**, on-street parking should be prohibited for at least 55 feet north of the driveway and at least 35 feet south of the driveway.

Exhibit 2: Site Access Recommendations



Cedar Street north of W. Field Street (dirt road north of Ivy Street) narrows to approximately 15 feet wide (as shown on **Exhibit 3**), which can only accommodate one-lane of traffic. This is adequate for an emergency access, but if the roadway were to become a full access connection in the future, half-street improvements would be needed to widen the roadway for two-way traffic.

Emergency access would be adequately provided with multiple points of ingress and egress to the site.

Exhibit 3: Cedar Street at W. Field Street



Parking

The minimum number of parking spaces required was calculated based on the parking standards presented in the Analysis Methodology section above. The standards include requirements for an elementary school and a high school. This analysis assumes 31 percent of the students are high school students (assuming an even number of students per grade and 4 high school grades divided by a total of 13 grades). **Table 3** shows the parking requirements for the project.

Table 3: Parking Requirements

	Size ¹	Spaces Required	Number of Parking Spaces
Elementary School (69% of students attending)	24,504 s.f. (69% of total square footage)	1 space per 500 square feet	49
High School (31% of students attending)	62 students (31% of total students)	1 space per 10 students	6
Employees	15 employees	1 space per employee	15
Total Spaces			70

Notes: 1. Based on a total school square footage of 35,513 square feet, and 200 total students on campus at any given time.
Source: Traffic Works, 2018

As shown in **Table 3**, a minimum of 70 parking spaces are needed to adequately accommodate the project. As shown on **Figure 2**, the project would include 83 parking spaces for staff and students, more than the minimum required.

Trip Generation

Trip generation estimates for the proposed project were calculated based on average trip rates presented in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition*. The ITE land use 536 – Private School (K-12) was used, as this use best represents the proposed project with private automobile being the primary source of student arrival/departure. **Table 4** provides the Daily, AM, and Afternoon peak hour trip generation estimates for the proposed project. The Afternoon peak hour is between 2:00 PM and 4:00 PM when school is dismissed.

Table 4: Trip Generation Estimates

Land Use (ITE Code)	Size	Trips ¹						
		Daily	AM	AM In	AM Out	Afternoon	Afternoon In	Afternoon Out
Private School, K-12 (536)	200 students	496	162	99	63	116	49	67

Notes: 1. Based on the following trip generation rates presented in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition*: Daily – 2.48 trips per student; AM – 0.81 trips per student; PM – 0.58 trips per student
2. The Afternoon peak hour is between 2:00 PM and 4:00 PM when school is dismissed.

Source: Traffic Works, 2018

As shown in the table, the project would generate approximately 496 Daily, 162 AM peak hour, and 116 Afternoon peak hour trips.

Trip Distribution

Project generated traffic was distributed to the surrounding roadway network based on the location of the project in relation to complimentary land uses, major activity centers, and local roadway connections. The following trip distribution percentages were used:

- 20% to/from north on Pine Street
- 10% to/from east on Alma Street
- 30% to/from west on Lake Street
- 40% to/from east on Lake Street

The project trip distribution and assignment are shown on **Figure 4**.

EXISTING PLUS PROJECT CONDITIONS

Traffic Volumes

Existing Plus Project traffic volumes were developed by adding the project generated trips (**Figure 4**) to the existing traffic volumes (**Figure 3**) and are shown on **Figure 5**, attached.

Intersection Level of Service Analysis

Existing Plus Project intersection level of service analysis was performed using Synchro 9 software. The Existing Plus Project traffic volumes shown on **Figure 5**, as well as the existing peak hour factors were used in the analysis. **Table 5** shows the level of service results and the calculations sheets are provided in **Appendix B**.

Table 5: Existing Plus Project Conditions Intersection Level of Service

Intersection	Control	Existing				Existing Plus Project			
		AM		PM		AM		PM	
		Delay ¹	LOS	Delay ¹	LOS	Delay ¹	LOS	Delay ¹	LOS
Cedar St/Ivy St	Side-Street STOP								
Eastbound Approach		8.8	A	9.0	A	No traffic added to this intersection under this scenario			
Westbound Approach		8.7	A	8.7	A				
Northbound Left		7.2	A	7.2	A				
Southbound Left		7.2	A	7.2	A				
Pine St/Ivy St	Side-Street STOP								
Eastbound Approach		9.7	A	10.8	B	10.3	A	11.6	B
Westbound Approach		12.3	B	12.2	B	14.2	B	13.5	B
Northbound Left		7.6	A	7.7	A	7.8	A	7.8	A
Southbound Left		7.7	A	0	A	7.9	A	0	A
Lake St/Pine St	Side-Street STOP								
Southbound Approach		10.4	B	11.7	B	11.5	B	12.8	B
Eastbound Left		8.0	A	8.5	A	8.2	A	8.7	A
Pine St/ South School Dwy	Side-Street STOP								
Eastbound Approach		NA				10.2	B	9.9	A
Northbound Left						7.7	A	7.6	A
Pine St/ School Drop-Off Entrance	Side-Street STOP								
Northbound Left		NA				7.7	A	7.5	A

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for side-street stop controlled intersections.

Source: Traffic Works, 2018

As shown in the table, the study intersections and project driveways are expected to operate at acceptable levels of service under existing plus project conditions.

Cedar Street Access Alternative

If Cedar Street were to become a full access connection in the future, traffic volumes would change or increase at the Cedar Street / Ivy Street and Pine Street / Ivy Street intersections. Intersection level of service analysis was performed for this scenario assuming approximately 10 percent of vehicles would use Cedar Street instead of Pine Street. **Table 6** shows the level of service results for the Cedar Street / Ivy Street and Pine Street / Ivy Street intersections. Traffic volumes and level of service at the Lake Street / Pine Street intersection would not change, and volumes at the Pine Street driveway intersections would decrease, and therefore were not included the table.

Table 6: Existing Plus Project Conditions Intersection Level of Service

Intersection	Control	Existing				Existing Plus Project			
		AM		PM		AM		PM	
		Delay ¹	LOS	Delay ¹	LOS	Delay ¹	LOS	Delay ¹	LOS
Cedar St/Ivy St	Side-Street STOP								
Eastbound Approach		8.8	A	9.0	A	8.9	A	9.1	A
Westbound Approach		8.7	A	8.7	A	8.6	A	8.7	A
Northbound Left		7.2	A	7.2	A	7.2	A	7.2	A
Southbound Left		7.2	A	7.2	A	7.2	A	7.3	A
Pine St/Ivy St	Side-Street STOP								
Eastbound Approach		9.7	A	10.8	B	10.1	A	11.2	B
Westbound Approach		12.3	B	12.2	B	14.4	B	13.7	B
Northbound Left		7.6	A	7.7	A	7.8	A	7.8	A
Southbound Left		7.7	A	0	A	7.9	A	0	A

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for side-street stop controlled intersections.

Source: Traffic Works, 2018

As shown in the table, the Cedar Street / Ivy Street and Pine Street / Ivy Street intersections are expected to operate at acceptable levels of service if full access were provided to the project site via Cedar Street.

CEQA TRANSPORTATION IMPACT EVALUATION

The CEQA *Appendix G Environmental Checklist Form* was used to develop significance criteria for determining potential transportation impacts. The questions and answers below address the CEQA standard questions and other transportation related questions commonly asked in the review process.

Would the project:

Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

- The proposed project is not expected to conflict with any applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. The study intersections are expected to operate at acceptable levels of service under Existing Plus Project conditions. This is considered a *less than significant impact*.

Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

- There is no congestion management program applicable to the study area roadways or intersections. The study intersections are expected to operate at acceptable levels of service under Existing Plus Project conditions. Therefore, this is considered a *less than significant impact*.

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

- The project would not result in a change to air traffic patterns or a change in location for air traffic. Therefore, there would be *no impact*.

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

- The project would include one full access driveway and one drop-off entrance on Pine Street, as well as an emergency access only connection on Cedar Street. Existing on-street parking on Pine Street would inhibit visibility for vehicles exiting the full access driveway. Therefore, the project proposes to construct red curb to prohibited parking 55 feet north of the driveway and 35 feet south of the driveway (see **Exhibit 2** on page 10). With this improvement, the project would have a *less than significant* impact regarding safety.

Result in inadequate emergency access?

- The project would include one full access driveway and one drop-off entrance on Pine Street, as well as an emergency access only connection on Cedar Street. Emergency access would be adequately provided with multiple points of ingress and egress to the site. Therefore, this impact is *less than significant*.

Conflict with adopted policies, plans, programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

- The project site is currently served by public transit with a stop on Pine Street at Mercy Hospital directly across from the project site. The study intersections, including the project driveways, are expected to operate at acceptable levels of service under Existing Plus Project conditions and therefore would not significantly impact transit service. Sidewalks are available throughout the majority of the project area and would not change with the project. The project is not expected to interfere with existing or planned multi-modal facilities. Therefore, this impact is *less than significant*.

Conflict with adopted parking standards?

- The question of adequate parking has been removed from the CEQA environmental checklist with recent CEQA revisions, as availability or lack of convenient parking is generally no longer considered an “environmental impact.” However, the project must still meet applicable City of Mount Shasta Code as a matter of project entitlement and permitting. The project would provide adequate parking supply in accordance with *Mount Shasta Municipal Code*. Therefore, this impact is considered *less than significant*.

Conflict with adopted policies regarding Vehicle Miles Travelled (VMT)?

- The City of Mount Shasta does not have any specific thresholds or significance criteria related to VMT at this time. Generally speaking, the City and State of California have goals of reducing VMT and Green House Gas emissions. The project would increase travel and therefore can be expected to increase VMT to some degree. VMT is simplistically calculated by multiplying the number of daily trips by the trip lengths. Since Mount Shasta does not have a travel demand model, it is difficult to ascertain or quantify the trip lengths to/from the proposed project relative to the trips and their length made to existing schools. The trip lengths may be shorter, longer, or very similar. To be conservative, it should be assumed that an increase in VMT is probable with the project. Since no threshold values have been adopted by the City related to VMT, this impact is considered *less than significant*.

CONCLUSIONS & RECOMMENDATIONS

The following is a list of key findings and recommendations:

Proposed Project: The project consists of a charter school serving Kindergarten through 12th Grade with approximately 350 students and 30 staff. However, due to intentional scheduling only 200 students and 15 staff will be on site at any one time. The analysis is based on the latter numbers.

Project Trips: The project is anticipated to generate 496 Daily, 162 AM peak hour, and 116 Afternoon peak hour (when school is dismissed) trips.

Project Access: The proposed project includes one full access driveway and one drop-off entrance on Pine Street, as well as an emergency access only connection on Cedar Street. The full access driveway on Pine Street also serves as the exit for the student drop-off zone. Existing on-street parking on Pine Street would inhibit visibility for vehicles exiting the full access driveway; therefore, the project proposes to prohibit parking 55 feet north and 35 feet south of the south driveway by painting red curb to provide adequate sight lines (see **Exhibit 2** on page 10). Additionally, Cedar Street is currently approximately 15 feet wide where the project would connect, which is adequate for emergency access, but if the roadway were to become a full access connection in the future, half-street improvements would be needed to widen the roadway for two-way travel.

Existing Level of Service: The study intersections currently operate at acceptable levels of service during the AM and Afternoon peak hours.

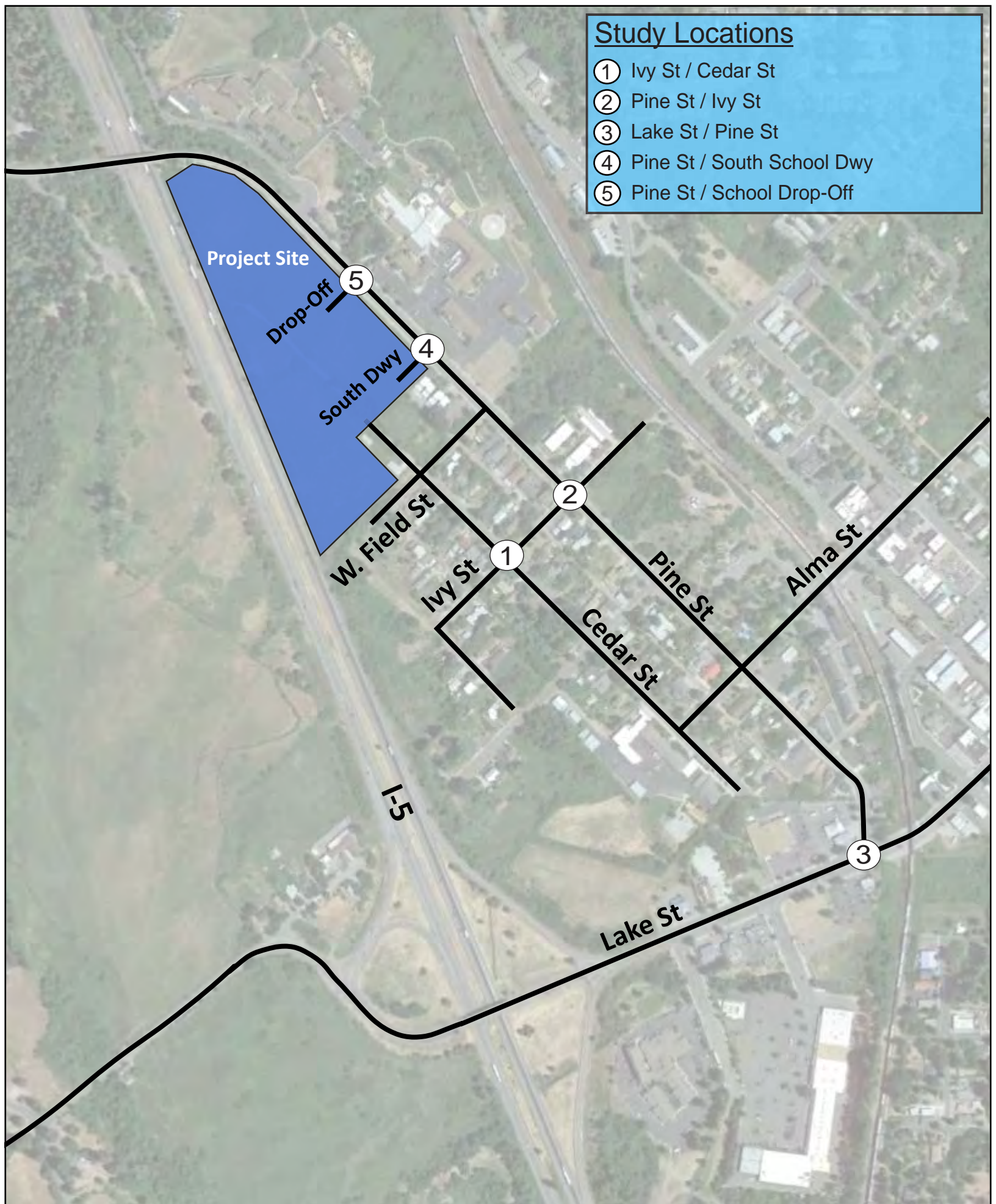
Existing Plus Project Level of Service: The study intersections and project driveways are expected to operate at acceptable levels of service with project generated traffic during the AM and Afternoon peak hours.

School Zone: The project proposes to implement a “school zone” in accordance with the Chapter 7 of the CA MUTCD.

Impact Evaluation: The project is not anticipated to cause any significant traffic impacts.

Study Locations

- ① Ivy St / Cedar St
- ② Pine St / Ivy St
- ③ Lake St / Pine St
- ④ Pine St / South School Dwy
- ⑤ Pine St / School Drop-Off



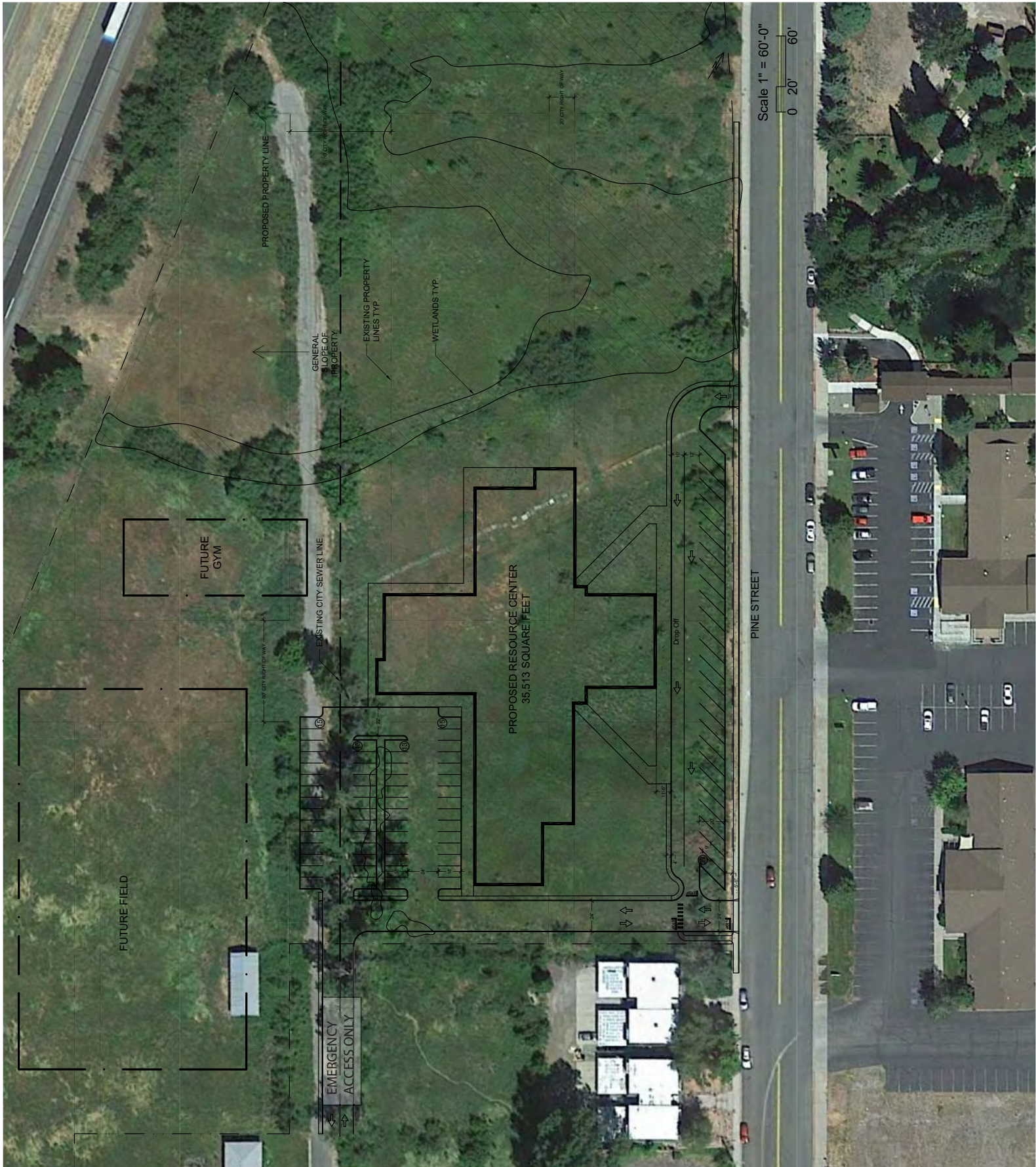
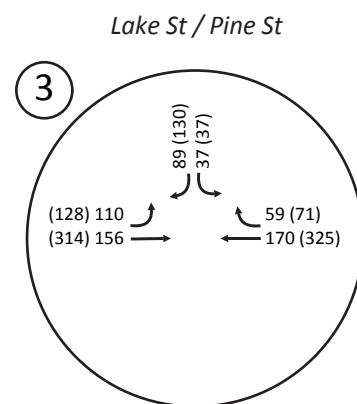
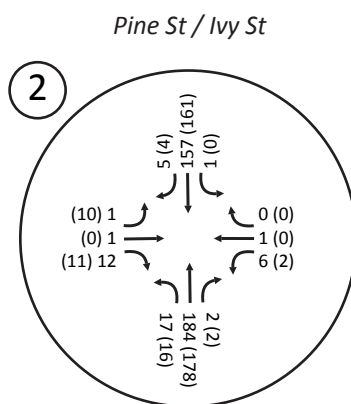
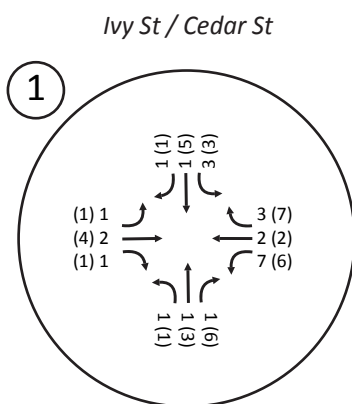
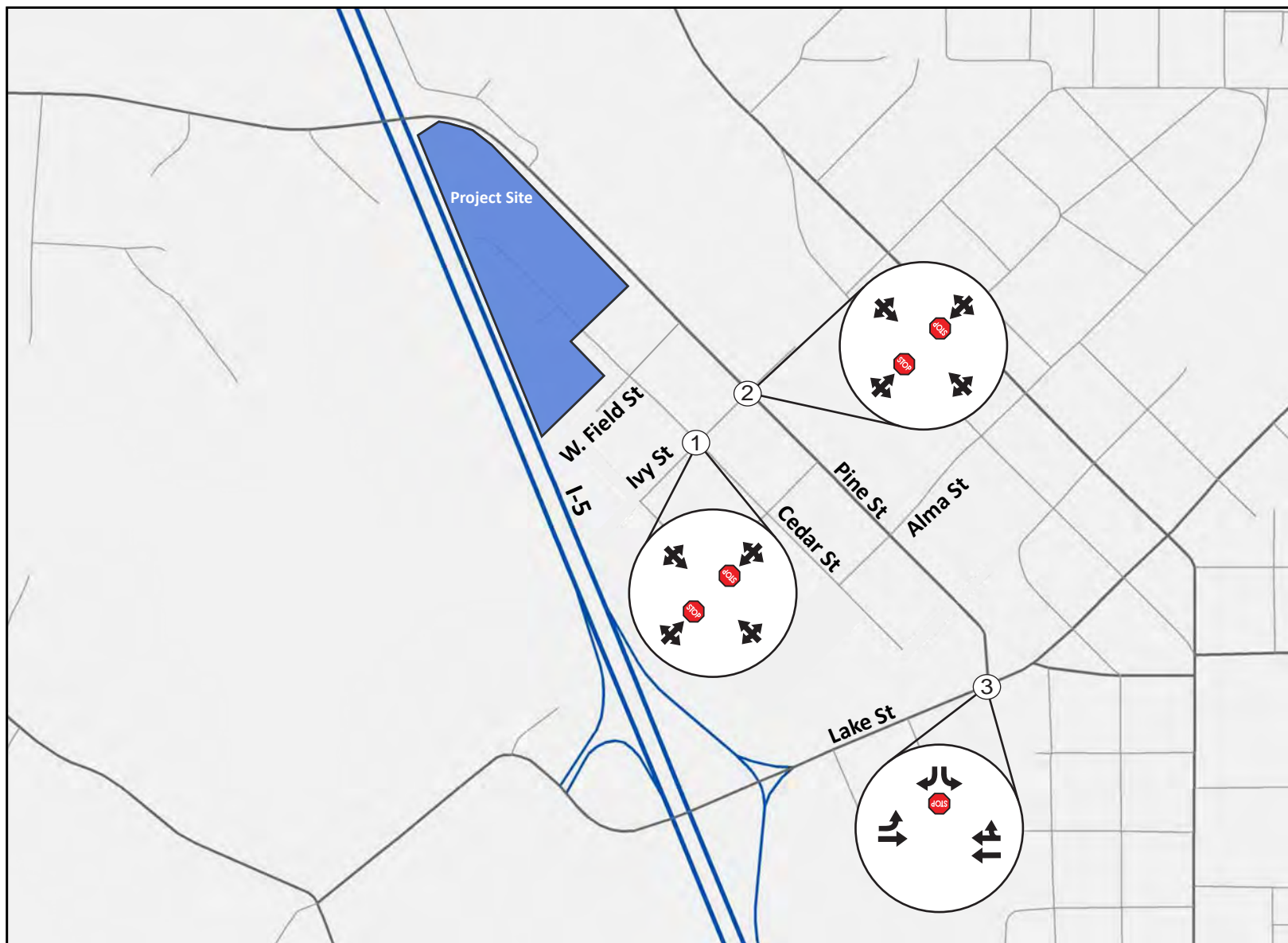


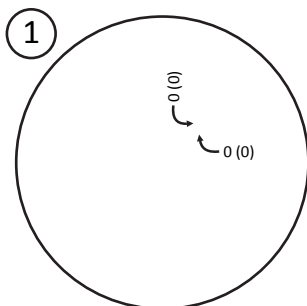
Figure 2



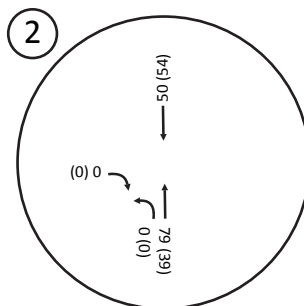
AM Peak Hour Volume (PM Peak Hour Volume)



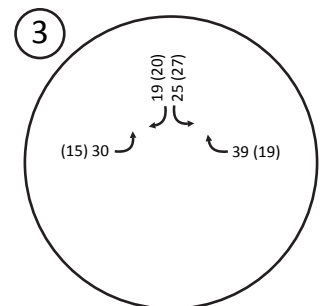
Ivy St / Cedar St



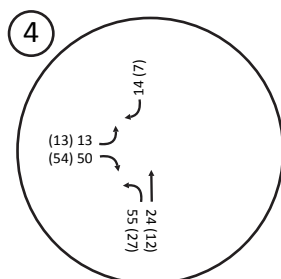
Pine St / Ivy St



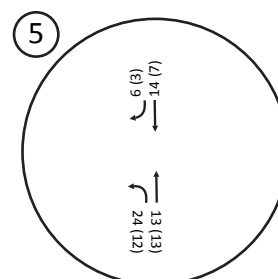
Lake St / Pine St



Pine St / South School Dwy



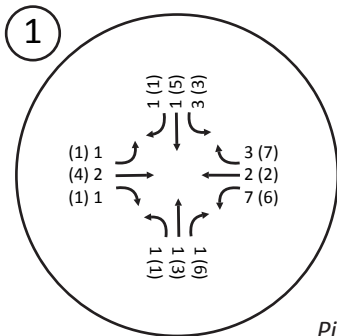
Pine St / School Drop-Off



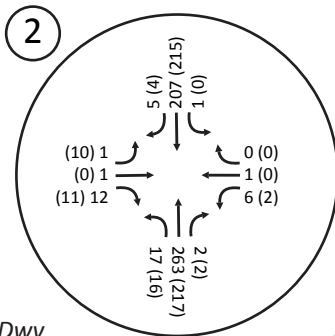
AM Peak Hour Volume (PM Peak Hour Volume)



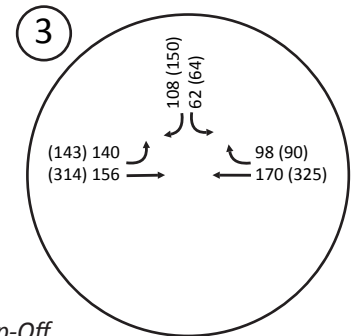
Ivy St / Cedar St



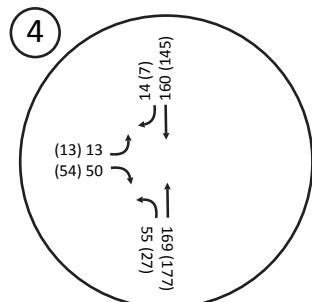
Pine St / Ivy St



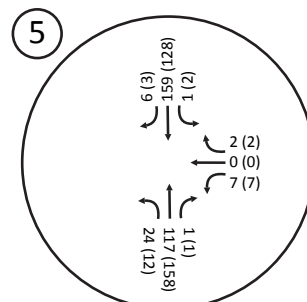
Lake St / Pine St



Pine St / South School Dwy



Pine St / School Drop-Off



AM Peak Hour Volume (PM Peak Hour Volume)

Appendix A

Existing LOS Calculations



HCM 2010 TWSC
1: Cedar St & Ivy St

Existing Conditions
AM Peak

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	2	1	7	2	3	1	1	1	3	1	1
Future Vol, veh/h	1	2	1	7	2	3	1	1	1	3	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	1	9	3	4	1	1	1	4	1	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	18	15	2	17	16	2	3	0	0	3	0	0
Stage 1	10	10	-	5	5	-	-	-	-	-	-	-
Stage 2	8	5	-	12	11	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	996	879	1082	998	878	1082	1619	-	-	1619	-	-
Stage 1	1011	887	-	1017	892	-	-	-	-	-	-	-
Stage 2	1013	892	-	1009	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	988	876	1082	992	875	1082	1619	-	-	1619	-	-
Mov Cap-2 Maneuver	988	876	-	992	875	-	-	-	-	-	-	-
Stage 1	1010	885	-	1016	891	-	-	-	-	-	-	-
Stage 2	1005	891	-	1003	884	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.8		8.7			2.4			4.3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1619	-	-	948	991	1619	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.006	0.016	0.002	-	-				
HCM Control Delay (s)	7.2	0	-	8.8	8.7	7.2	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				






HCM 2010 TWSC
2: Pine St & Ivy St

Existing Conditions
AM Peak

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	12	6	1	0	17	184	2	1	157	5
Future Vol, veh/h	1	1	12	6	1	0	17	184	2	1	157	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	14	7	1	0	20	214	2	1	183	6
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	443	444	185	450	446	215	188	0	0	216	0	0
Stage 1	188	188	-	255	255	-	-	-	-	-	-	-
Stage 2	255	256	-	195	191	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	525	508	857	519	507	825	1386	-	-	1354	-	-
Stage 1	814	745	-	749	696	-	-	-	-	-	-	-
Stage 2	749	696	-	807	742	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	517	499	857	503	498	825	1386	-	-	1354	-	-
Mov Cap-2 Maneuver	517	499	-	503	498	-	-	-	-	-	-	-
Stage 1	801	744	-	737	685	-	-	-	-	-	-	-
Stage 2	736	685	-	792	741	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.7		12.3		0.6		0					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1386	-	-	780	502	1354	-	-				
HCM Lane V/C Ratio	0.014	-	-	0.021	0.016	0.001	-	-				
HCM Control Delay (s)	7.6	0	-	9.7	12.3	7.7	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-				

HCM 2010 TWSC
3: Lake St & Pine St

Existing Conditions
AM Peak

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	110	156	170	59	37	89
Future Vol, veh/h	110	156	170	59	37	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	110	-	-	-	75	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	166	181	63	39	95
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	244	0	-	0	612	122
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	400	-
Critical Hdwy	4.13	-	-	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1321	-	-	-	440	907
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	676	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1321	-	-	-	401	907
Mov Cap-2 Maneuver	-	-	-	-	494	-
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	616	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.3	0		10.4		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1321	-	-	-	494	907
HCM Lane V/C Ratio	0.089	-	-	-	0.08	0.104
HCM Control Delay (s)	8	-	-	-	12.9	9.4
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3	0.3

HCM 2010 TWSC
1: Cedar St & Ivy St

Existing Conditions
PM Peak

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	4	1	6	2	7	1	3	6	3	5	1
Future Vol, veh/h	1	4	1	6	2	7	1	3	6	3	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	5	1	8	3	9	1	4	8	4	6	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	31	29	7	28	26	8	8	0	0	12	0	0
Stage 1	15	15	-	10	10	-	-	-	-	-	-	-
Stage 2	16	14	-	18	16	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	977	864	1075	981	867	1074	1612	-	-	1607	-	-
Stage 1	1005	883	-	1011	887	-	-	-	-	-	-	-
Stage 2	1004	884	-	1001	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	964	861	1075	972	864	1074	1612	-	-	1607	-	-
Mov Cap-2 Maneuver	964	861	-	972	864	-	-	-	-	-	-	-
Stage 1	1004	880	-	1010	886	-	-	-	-	-	-	-
Stage 2	992	883	-	991	879	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9		8.7			0.7			2.4			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1612	-	-	907	1000	1607	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.009	0.019	0.002	-	-				
HCM Control Delay (s)	7.2	0	-	9	8.7	7.2	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				






HCM 2010 TWSC
2: Pine St & Ivy St

Existing Conditions
PM Peak

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	11	2	0	0	16	178	2	0	161	4
Future Vol, veh/h	10	0	11	2	0	0	16	178	2	0	161	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	13	2	0	0	19	212	2	0	192	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	445	446	194	452	447	213	196	0	0	214	0	0
Stage 1	194	194	-	251	251	-	-	-	-	-	-	-
Stage 2	251	252	-	201	196	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	523	507	847	518	506	827	1377	-	-	1356	-	-
Stage 1	808	740	-	753	699	-	-	-	-	-	-	-
Stage 2	753	698	-	801	739	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	517	499	847	504	498	827	1377	-	-	1356	-	-
Mov Cap-2 Maneuver	517	499	-	504	498	-	-	-	-	-	-	-
Stage 1	795	740	-	741	688	-	-	-	-	-	-	-
Stage 2	741	687	-	789	739	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.8		12.2			0.6			0			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1377	-	-	650	504	1356	-	-				
HCM Lane V/C Ratio	0.014	-	-	0.038	0.005	-	-	-				
HCM Control Delay (s)	7.7	0	-	10.8	12.2	0	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-				

HCM 2010 TWSC
3: Lake St & Pine St

Existing Conditions
PM Peak

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	128	314	325	71	37	130
Future Vol, veh/h	128	314	325	71	37	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	110	-	-	-	75	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	324	335	73	38	134
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	408	0	-	0	960	204
Stage 1	-	-	-	-	372	-
Stage 2	-	-	-	-	588	-
Critical Hdwy	4.13	-	-	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1149	-	-	-	269	803
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1149	-	-	-	238	803
Mov Cap-2 Maneuver	-	-	-	-	362	-
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	490	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.5	0		11.7		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1149	-	-	-	362	803
HCM Lane V/C Ratio	0.115	-	-	-	0.105	0.167
HCM Control Delay (s)	8.5	-	-	-	16.1	10.4
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.4	0.6

Appendix B

Existing Plus Project LOS Calculations








HCM 2010 TWSC
2: Pine St & Ivy St

Existing Plus Project Conditions

AM Peak

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	12	6	1	0	17	263	2	1	207	5
Future Vol, veh/h	1	1	12	6	1	0	17	263	2	1	207	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	14	7	1	0	20	306	2	1	241	6
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	593	594	244	600	596	307	247	0	0	308	0	0
Stage 1	246	246	-	347	347	-	-	-	-	-	-	-
Stage 2	347	348	-	253	249	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	417	418	795	413	417	733	1319	-	-	1253	-	-
Stage 1	758	703	-	669	635	-	-	-	-	-	-	-
Stage 2	669	634	-	751	701	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	410	410	795	399	409	733	1319	-	-	1253	-	-
Mov Cap-2 Maneuver	410	410	-	399	409	-	-	-	-	-	-	-
Stage 1	744	702	-	657	624	-	-	-	-	-	-	-
Stage 2	656	623	-	736	700	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.3		14.2		0.5		0					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1319	-	-	701	400	1253	-	-				
HCM Lane V/C Ratio	0.015	-	-	0.023	0.02	0.001	-	-				
HCM Control Delay (s)	7.8	0	-	10.3	14.2	7.9	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-				

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	140	156	170	98	62	108
Future Vol, veh/h	140	156	170	98	62	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	110	-	-	-	75	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	149	166	181	104	66	115
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	285	0	-	0	697	143
Stage 1	-	-	-	-	233	-
Stage 2	-	-	-	-	464	-
Critical Hdwy	4.13	-	-	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1276	-	-	-	391	879
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1276	-	-	-	345	879
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	558	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.9	0		11.5		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1276	-	-	-	446	879
HCM Lane V/C Ratio	0.117	-	-	-	0.148	0.131
HCM Control Delay (s)	8.2	-	-	-	14.5	9.7
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.4	-	-	-	0.5	0.4

HCM 2010 TWSC
4: Pine St & South Dwy

Existing Plus Project Conditions

AM Peak

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	13	50	55	169	160	14
Future Vol, veh/h	13	50	55	169	160	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	54	60	184	174	15
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	485	182	189	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	541	861	1385	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	515	861	1385	-	-	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	713	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.2	1.9		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1385	-	756	-	-	
HCM Lane V/C Ratio	0.043	-	0.091	-	-	
HCM Control Delay (s)	7.7	0	10.2	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	

HCM 2010 TWSC
5: Pine St & Drop-Off Entrance

Existing Plus Project Conditions

AM Peak







Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	7	0	2	24	117	1	1	159	6
Future Vol, veh/h	0	0	0	7	0	2	24	117	1	1	159	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	73	92	73	92	73	73	73	73	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	10	0	3	26	160	1	1	218	7
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				437	440	161	224	0	0	162	0	0
Stage 1				213	213	-	-	-	-	-	-	-
Stage 2				224	227	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver				577	511	884	1345	-	-	1417	-	-
Stage 1				823	726	-	-	-	-	-	-	-
Stage 2				813	716	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver				564	0	884	1345	-	-	1417	-	-
Mov Cap-2 Maneuver				564	0	-	-	-	-	-	-	-
Stage 1				806	0	-	-	-	-	-	-	-
Stage 2				812	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				11		1.1		0				
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1345	-	-	613	1417	-	-					
HCM Lane V/C Ratio	0.019	-	-	0.02	0.001	-	-					
HCM Control Delay (s)	7.7	0	-	11	7.5	0	-					
HCM Lane LOS	A	A	-	B	A	A	-					
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	-	-					

HCM 2010 TWSC
2: Pine St & Ivy St

Existing Plus Project Conditions

PM Peak




Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	11	2	0	0	16	217	2	0	215	4
Future Vol, veh/h	10	0	11	2	0	0	16	217	2	0	215	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	13	2	0	0	19	258	2	0	256	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	556	557	258	563	559	260	261	0	0	261	0	0
Stage 1	258	258	-	298	298	-	-	-	-	-	-	-
Stage 2	298	299	-	265	261	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	442	439	781	437	438	779	1303	-	-	1303	-	-
Stage 1	747	694	-	711	667	-	-	-	-	-	-	-
Stage 2	711	666	-	740	692	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	436	432	781	424	431	779	1303	-	-	1303	-	-
Mov Cap-2 Maneuver	436	432	-	424	431	-	-	-	-	-	-	-
Stage 1	734	694	-	699	656	-	-	-	-	-	-	-
Stage 2	699	655	-	728	692	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	11.6		13.5			0.5			0			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1303	-	-	567 424	1303	-	-					
HCM Lane V/C Ratio	0.015	-	-	0.044 0.006	-	-	-					
HCM Control Delay (s)	7.8	0	-	11.6 13.5	0	-	-					
HCM Lane LOS	A	A	-	B B	A	-	-					
HCM 95th %tile Q(veh)	0	-	-	0.1 0	0	-	-					

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			 			
Traffic Vol, veh/h	143	314	325	90	64	150
Future Vol, veh/h	143	314	325	90	64	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	110	-	-	-	75	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	147	324	335	93	66	155
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	428	0	-	0	1000	214
Stage 1	-	-	-	-	381	-
Stage 2	-	-	-	-	619	-
Critical Hdwy	4.13	-	-	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1130	-	-	-	254	792
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	536	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1130	-	-	-	221	792
Mov Cap-2 Maneuver	-	-	-	-	345	-
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	466	-
Approach	EB		WB		SB	
HCM Control Delay, s	2.7		0		12.8	
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1130	-	-	-	345	792
HCM Lane V/C Ratio	0.13	-	-	-	0.191	0.195
HCM Control Delay (s)	8.7	-	-	-	17.9	10.6
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.7	0.7

HCM 2010 TWSC
4: Pine St & South Dwy

Existing Plus Project Conditions

PM Peak

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	54	27	177	145	7
Future Vol, veh/h	13	54	27	177	145	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	59	29	192	158	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	412	161	165	0	-	0
Stage 1	161	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	596	884	1413	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	582	884	1413	-	-	-
Mov Cap-2 Maneuver	582	-	-	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	773	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.9	1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1413	-	803	-	-	
HCM Lane V/C Ratio	0.021	-	0.091	-	-	
HCM Control Delay (s)	7.6	0	9.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	

HCM 2010 TWSC
5: Pine St & Drop-Off Entrance

Existing Plus Project Conditions

PM Peak

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	7	0	2	12	158	1	2	128	3
Future Vol, veh/h	0	0	0	7	0	2	12	158	1	2	128	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	86	92	86	92	86	86	86	86	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	8	0	2	13	184	1	2	149	3
Major/Minor												
	Minor1			Major1			Major2					
Conflicting Flow All				365	367	184	152	0	0	185	0	0
Stage 1				210	210	-	-	-	-	-	-	-
Stage 2				155	157	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver				635	562	858	1429	-	-	1390	-	-
Stage 1				825	728	-	-	-	-	-	-	-
Stage 2				873	768	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver				627	0	858	1429	-	-	1390	-	-
Mov Cap-2 Maneuver				627	0	-	-	-	-	-	-	-
Stage 1				817	0	-	-	-	-	-	-	-
Stage 2				871	0	-	-	-	-	-	-	-
Approach												
	WB			NB			SB					
HCM Control Delay, s				10.5			0.5			0.1		
HCM LOS				B								
Minor Lane/Major Mvmt												
	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1429	-	-	667	1390	-	-					
HCM Lane V/C Ratio	0.009	-	-	0.016	0.002	-	-					
HCM Control Delay (s)	7.5	0	-	10.5	7.6	0	-					
HCM Lane LOS	A	A	-	B	A	A	-					
HCM 95th %tile Q(veh)	0	-	-	0	0	-	-					

Intersection												
Int Delay, s/veh	7.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	2	1	7	2	13	1	1	1	9	1	1
Future Vol, veh/h	1	2	1	7	2	13	1	1	1	9	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	1	9	3	17	1	1	1	12	1	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	41	31	2	33	32	2	3	0	0	3	0	0
Stage 1	26	26	-	5	5	-	-	-	-	-	-	-
Stage 2	15	5	-	28	27	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	963	862	1082	974	861	1082	1619	-	-	1619	-	-
Stage 1	992	874	-	1017	892	-	-	-	-	-	-	-
Stage 2	1005	892	-	989	873	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	940	855	1082	965	854	1082	1619	-	-	1619	-	-
Mov Cap-2 Maneuver	940	855	-	965	854	-	-	-	-	-	-	-
Stage 1	991	868	-	1016	891	-	-	-	-	-	-	-
Stage 2	985	891	-	978	867	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	8.9		8.6		2.4		5.9					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1619	-	-	924	1018	1619	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.006	0.029	0.007	-	-				
HCM Control Delay (s)	7.2	0	-	8.9	8.6	7.2	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				

HCM 2010 TWSC
2: Pine St & Ivy St

Existing Plus Project Conditions

AM Peak

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	18	6	1	0	27	253	2	1	201	5
Future Vol, veh/h	1	1	18	6	1	0	27	253	2	1	201	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	21	7	1	0	31	294	2	1	234	6
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	598	598	237	608	600	295	240	0	0	297	0	0
Stage 1	239	239	-	358	358	-	-	-	-	-	-	-
Stage 2	359	359	-	250	242	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	414	416	802	408	415	744	1327	-	-	1264	-	-
Stage 1	764	708	-	660	628	-	-	-	-	-	-	-
Stage 2	659	627	-	754	705	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	404	404	802	388	403	744	1327	-	-	1264	-	-
Mov Cap-2 Maneuver	404	404	-	388	403	-	-	-	-	-	-	-
Stage 1	743	707	-	642	610	-	-	-	-	-	-	-
Stage 2	639	609	-	732	704	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.1		14.4		0.7		0					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1327	-	-	730	390	1264	-	-				
HCM Lane V/C Ratio	0.024	-	-	0.032	0.021	0.001	-	-				
HCM Control Delay (s)	7.8	0	-	10.1	14.4	7.9	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-				

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	4	1	6	2	12	1	3	6	10	5	1
Future Vol, veh/h	1	4	1	6	2	12	1	3	6	10	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	5	1	8	3	16	1	4	8	13	6	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	52	47	7	46	44	8	8	0	0	12	0	0
Stage 1	33	33	-	10	10	-	-	-	-	-	-	-
Stage 2	19	14	-	36	34	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	947	845	1075	955	848	1074	1612	-	-	1607	-	-
Stage 1	983	868	-	1011	887	-	-	-	-	-	-	-
Stage 2	1000	884	-	980	867	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	925	837	1075	943	840	1074	1612	-	-	1607	-	-
Mov Cap-2 Maneuver	925	837	-	943	840	-	-	-	-	-	-	-
Stage 1	982	861	-	1010	886	-	-	-	-	-	-	-
Stage 2	982	883	-	965	860	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		8.7			0.7			4.5			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1612	-	-	884	1004	1607	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.009	0.026	0.008	-	-				
HCM Control Delay (s)	7.2	0	-	9.1	8.7	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				

HCM 2010 TWSC
2: Pine St & Ivy St

Existing Plus Project Conditions

PM Peak

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	18	2	0	0	21	212	2	0	208	4
Future Vol, veh/h	10	0	18	2	0	0	21	212	2	0	208	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	21	2	0	0	25	252	2	0	248	5
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	554	555	250	565	556	254	252	0	0	255	0	0
Stage 1	250	250	-	304	304	-	-	-	-	-	-	-
Stage 2	304	305	-	261	252	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	443	440	789	436	439	785	1313	-	-	1310	-	-
Stage 1	754	700	-	705	663	-	-	-	-	-	-	-
Stage 2	705	662	-	744	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	436	430	789	417	429	785	1313	-	-	1310	-	-
Mov Cap-2 Maneuver	436	430	-	417	429	-	-	-	-	-	-	-
Stage 1	737	700	-	689	648	-	-	-	-	-	-	-
Stage 2	689	647	-	724	698	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.2		13.7		0.7		0					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1313	-	-	612	417	1310	-	-				
HCM Lane V/C Ratio	0.019	-	-	0.054	0.006	-	-	-				
HCM Control Delay (s)	7.8	0	-	11.2	13.7	0	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-	-				