California Environmental Quality Act

Initial Study

Minnewawa-International Elementary School Project

Clovis, California

(State Clearinghouse No. 2018031050)

Lead Agency:

Clovis Unified School District

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Table of Contents

Appendices

Tables

Figures

Executive Summary

The project encompasses the acquisition of an approximately 22.7-acre site on the southeast corner of Minnewawa and International Avenues, north of the City of Clovis in Fresno County, and the construction and operation of an elementary school on the site. The elementary school would serve 750 students in grades TK-6 and would have approximately 28 classrooms, administrative offices, a multi-purpose building, hardcourt areas and athletic fields that could potentially be lighted. The project would also include annexation of the site to the City of Clovis.

Based on the California Environmental Quality Act Guidelines (CEQA Guidelines), the purpose of this Initial Study is to provide Clovis Unified School (District) with environmental information on the project to use as the basis for deciding whether to prepare an Environmental Impact Report or a Negative Declaration for the project.

This Initial Study concluded:

1. The Initial Study identified a number of potentially significant environmental effects of the project in the following subject areas: aesthetics, air quality, biological resources, cultural resources, noise, traffic, and tribal cultural resources. The District can avoid or reduce to an insignificant level these impacts by incorporating in the project the mitigation measures listed in the table on the following pages.
2. The project would have a less than significant impact or no impact on many of the environmental resources and conditions evaluated in the Initial Study. The Initial Study explains why there would be no impacts or the impacts would be less than significant.
3. Based on items 1 and 2, above, the District should adopt a Mitigated Negative Declaration for the project.

TABLE 1
Mitigation Measures

	Aesthetics: Mitigation for Potential Lighting Impacts **AE-1.** All parking area lighting shall have full cut-off type fixtures. A full cut-off type fixture is a luminaire or lighting fixture that, by design of the housing, does not allow any light dispersion or direct glare to shine above a 90-degree horizontal plane from the base of the fixture. Full cut-off type fixtures must be installed in a horizontal position as designed. **AE-2.** All external signs and lighting shall be lit from the top and shine downward except where uplighting is required for safety or security purposes. The lighting shall also be, as much as physically possible, contained to the target area. **AE-3.** Exterior building lighting for security or aesthetics shall be full cut-off or a shielded type design to minimize any upward distribution of light. **AE-4.** Non-essential lighting shall be turned off by 10:00 pm.
	Air Quality: Mitigation Measures for to Reduce Localized Pollutant Concentrations The following measures shall be implemented to reduce potential expose of sensitive receptors to localized concentrations of construction-generated PM at nearby sensitive receptors and land uses during project construction: **AQ-1.** On-road diesel vehicles shall comply with Section 2485 of Title 13 of the California Code of Regulations. This regulation limits idling from diesel-fueled commercial motor vehicles with gross vehicular weight ratings of more than 10,000 pounds and licensed for operation on highways. It applies to California and non-California based vehicles. In general, the regulation specifies that drivers of said vehicles: a. Shall not idle the vehicle's primary diesel engine for greater than 5 minutes at any location, except as noted in Subsection (d) of the regulation; and, b. Shall not operate a diesel-fueled auxiliary power system to power a heater, air conditioner, or

any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5.0 minutes at any location when within 1,000 feet of a restricted area, except as noted in Subsection (d) of the regulation.

AQ-2. Off-road diesel equipment shall comply with the 5-minute idling restriction identified in Section 2449(d)(2) of the California Air Resources Board's In-Use Off-road Diesel regulation. The specific requirements and exceptions in the regulations can be reviewed at the following web sites: www.arb.ca.gov/msprog/truck-idling/2485.pdf and ww.arb.ca.gov/regact/2007/ordiesl07/frooal.pdf.

AQ-3. Signs shall be posted at the project site construction entrance to remind drivers and operators of the state's five-minute idling limit.

AQ-4. To the extent available, replace fossil-fueled equipment with alternatively-fueled (e.g., natural gas) or electrically-driven equivalents.

AQ-5. Construction truck trips shall be scheduled, to the extent possible, to occur during non-peak hours.

AQ-6. The burning of vegetative material shall be prohibited.

AQ-7. The proposed project shall comply with SJVAPCD Regulation VIII for the control of fugitive dust emissions. Regulation VIII can be obtained on the SJVAPCD's website at website URL: https://www.valleyair.org/rules/1ruleslist.htm. At a minimum, the following measures shall be implemented:

a. All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.

b. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.

c. All land clearing, grubbing, scraping, excavation, land leveling, grading, and cut & fill activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

d. When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.

e. Trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)

f. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

g. On-road vehicle speeds on unpaved surfaces of the project site shall be limited to 15 mph.

h. Sandbags or other erosion control measures shall be installed sufficient to prevent silt runoff to public roadways from sites with a slope greater than one percent.

i. Excavation and grading activities shall be suspended when winds exceed sustained speeds of 20 miles per hour (Regardless of wind speed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation).

AQ-8. The above measures for the control of construction-generated emissions shall be printed on or otherwise included with site grading and construction plans.

Biological Resources: Mitigation for Potential Impacts to Special Status Bird Species

BR-1. <u>Avoidance.</u> If feasible, any vegetation removal will take place between September 1 and February 1 to avoid impacts to nesting birds in compliance with the Migratory Bird Treaty Act. If vegetation removal must occur during the nesting season, project construction may be delayed due to actively nesting birds and their required protective buffers.

BR-2. Pre-construction Surveys

a. If vegetation removal or ground disturbance will commence between February 1 and August 31, a qualified biologist will conduct a pre-construction survey for nesting birds within 14 days of the initiation of disturbance activities. This survey will cover:

    a. Potential nest sites in trees, bushes, or grass within species-specific buffers of the project area (Swainson's hawk – 0.5 mile, other raptor species such as white-tailed kite – 500 ft, non-raptor species (loggerhead shrike, magpie etc. – 250 ft).

    b. Survey protocol developed by the Swainson's Hawk Technical Advisory Committee (TAC) should be followed (CDFG 2000), which includes survey timing and requirements for repeated visits.

b. Surveys for burrowing owl will occur within 14 days prior to any ground disturbance, no matter the season. This survey will cover potential burrowing owl burrows in the project area and suitable habitat within 150 m (500 ft). Evaluation of use by owls shall be in accordance with California Department of Fish and Wildlife survey guidelines (CBOC 1993, CDFG 1995, CDFG 2012). Surveys will document if burrowing owls are nesting or using habitat in or directly adjacent to the project area. Survey results will be valid only for the season (breeding (Feb 1-Aug 31) or non-breeding (Sept 1-Jan 31) during which the survey is conducted.

c. If no active nests or burrows are detected during the pre-construction survey, then no further action is required. If an active nest or burrow is detected, then the following minimization measures will be implemented.

BR-3. Minimization/Establish Buffers

a. Swainson's hawk, white-tailed kite, loggerhead shrike, Lawrence's goldfinch, yellow-billed magpie, Nuttall's woodpecker, oak titmouse, and MTBA -protected species:

   If any active nests are discovered (and if construction will occur during bird breeding season), the USFWS and/or CDFW will be contacted to determine protective measures required to avoid take. These measures could include fencing off an area where a nest occurs, or shifting construction work temporally or spatially away from the nesting birds. Biologists are required on site to monitor construction while protected migratory birds are nesting in the project area. If an active nest is found after the completion of the pre-construction surveys and after construction begins, all construction activities will stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest.

b. Burrowing owl

   If burrowing owls are detected within the survey area, CDFW should be consulted to determine the suitable buffer. These buffers will take into account the level of disturbance of the project activity, existing disturbance of the site (vehicle traffic, humans, pets, etc.), and time of year (nesting vs. wintering). If avoidance is not feasible, the District will work with CDFW to determine appropriate mitigation, such as passive exclusion or translocation, and associated mitigation land offset (CDFG 2012).

BR-4. If avoidance is not possible, a qualified biologist will develop appropriate mitigations that will reduce project impacts to sensitive biological resources to a less than significant level. The type and amount of mitigation will depend on the resources impacted, the extent of the impacts, and the quality of habitats to be impacted. Mitigations may include, but are not limited to: 1) Compensation for lost habitat in the form of preservation or creation of in-kind habitat protected by conservation easement; 2) Purchase of appropriate credits from an approved mitigation bank or land trust servicing the Fresno County Area; 3) Payment of in-lieu fees.

	Cultural Resources: Mitigation for Potential Discovery of Subsurface Resources **CR-1.** If subsurface historic or prehistoric archaeological or paleontological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified cultural resources professional or paleontologist shall be consulted to determine whether the resource requires further study. If the resources are determined to be significant, mitigation measures shall be identified by the cultural resources professional or paleontologist and recommended to the District. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. **CR-2.** If human remains are unearthed during excavation and/or construction activities, all activity shall cease immediately. No further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains. Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the District shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the District has discussed and conferred with the most likely descendants regarding their recommendations.
	Hazards and Hazardous Materials: Mitigation for High-Volume Water Pipelines **HZ-1.** To help mitigate potential physical impacts in the unlikely event of a catastrophic pipeline rupture, site development plans shall take into consideration the presence of the east-west trending GWD 12/14-inch diameter irrigation water pipeline that traverses the northern edge of project site, with the goal of minimizing student and staff use of areas within 20 feet of the pipeline alignment. Areas in closest proximity to this high-volume pipeline should be considered for low average occupancy level uses, such as parking lots, or designated as landscaped "buffer" areas. **HZ-2.** Emergency plan documents that are prepared for the new elementary school site shall identify the presence of the high-volume irrigation water pipelines and include an emergency contact list with phone numbers to be used in the event of an incident.
	Noise: Mitigation for Construction Noise **N-1.** Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the hours of 7:00 a.m. and 10:00 p.m. Construction activities shall be prohibited on Sundays and legal holidays. **N-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. **N-3.** When not in use, all equipment shall be turned off and shall not be allowed to idle. Provide clear signage that posts this requirement for workers at the entrances to the site.
	Transportation/Traffic: Mitigation for Increased Traffic Generated by Project and Pedestrian and Bicycle Safety **TT-1.** Clovis Unified shall prepare a project-specific traffic and transportation impact study prior to construction of the proposed elementary school. The study shall reflect the site plan the District prepares for the school, traffic and street conditions existing at the time the study is prepared, and the City of Clovis and/or Fresno County traffic impact study requirements applicable at the time the study is prepared. The District shall prepare the study with the input and review of the City of Clovis, County of Fresno, and Caltrans. The study should identify improvements that development of the school would necessitate to ensure the street, pedestrian, and bicycle transportation systems in the project vicinity operate following applicable standards of the agencies having jurisdiction over them.

	Tribal Cultural Resources: Mitigation for Potential Discovery of Subsurface Resources **TC-1.** If subsurface tribal cultural resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified tribal cultural resources professional shall be consulted to determine whether the resources require further study. If the resources are determined to be significant, mitigation measures shall be identified by the cultural resources professional and recommended to the District. If human remains are discovered, the procedures of Mitigation Measure CR-2 shall also apply.

A. Project Background Information

1. Project Title, Lead Agency, and Lead Agency Contact Information

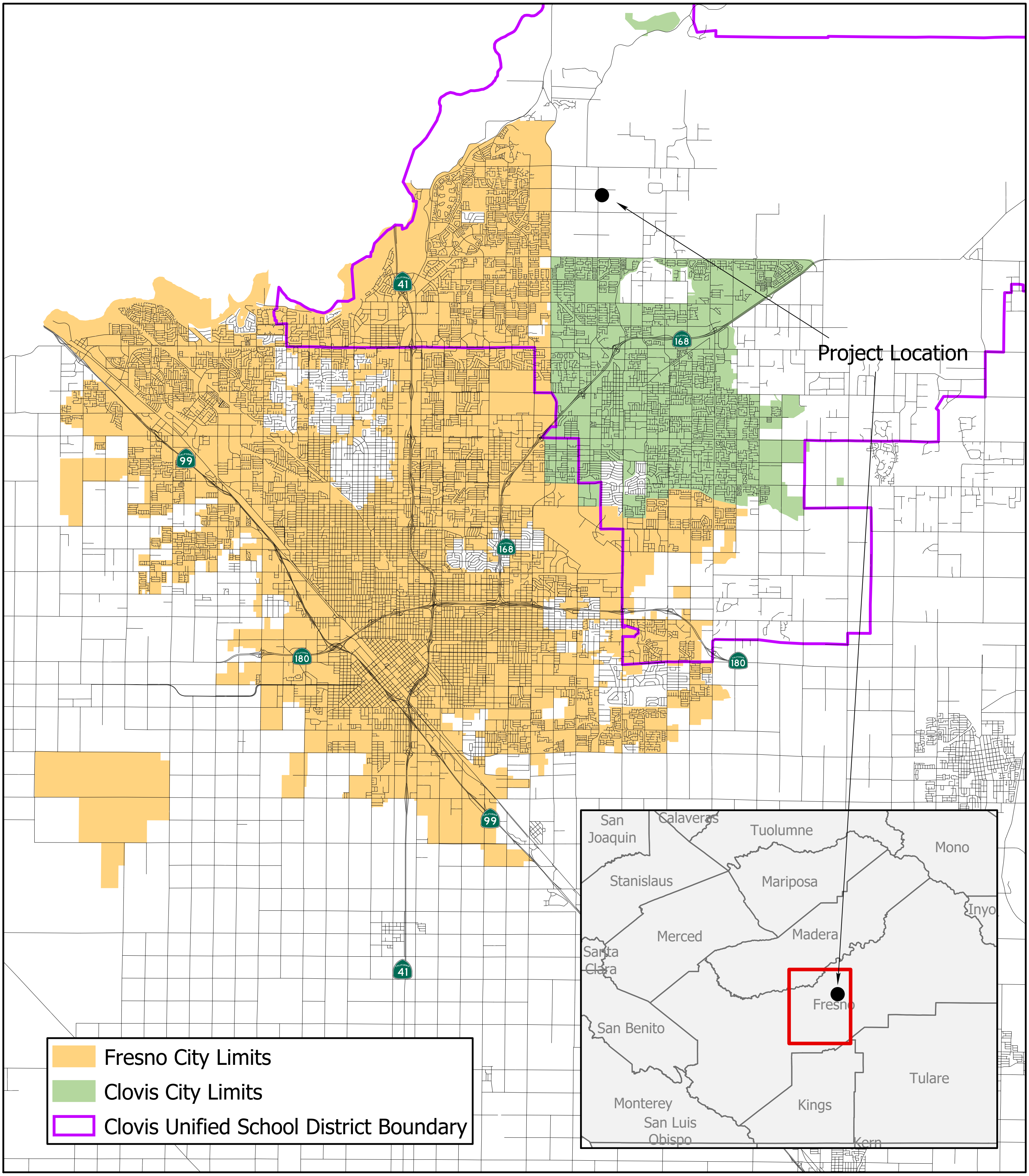
- Project Title: Minnewawa-International Elementary School Project
- Lead Agency: Clovis Unified School District
- Contact: Kevin Peterson, Assistant Superintendent – Facility Services
  1450 Herndon Avenue, Clovis, CA 93611
  Phone: (559) 327-9260
  Email: kevinpeterson@cusd.com

2. Project Location

The location proposed for the project is in an unincorporated area approximately 1.25 miles north of the City of Clovis' city limits and one mile east of the northeastern portion of the City of Fresno's city limits (see Table A-1 and Figures 1, 2, and 3). The project site is within the City of Clovis' Sphere of Influence. The proposed site encompasses approximately 22.7 acres, which includes land for public improvements.

TABLE A-1
Project Location

City	Unincorporated (Within the City of Clovis Sphere of Influence)
County	Fresno
Zip Code	93619
Assessor's Parcel Number	580-080-16; portion of 580-080-02
Nearest Existing Major Cross Streets	International and Minnewawa Avenues
Elevation	Approximately 390 ft. AMSL
USGS Map	Friant Quadrangle
Section, Township & Range	Portion of Section 17, Township 12 South, Range 21 East, Mount Diablo Base and Meridian
Latitude/Longitude	36°53'18"N, -119°42'40"W



Regional Location

Figure 1

Minnewawa-International Elementary School Project

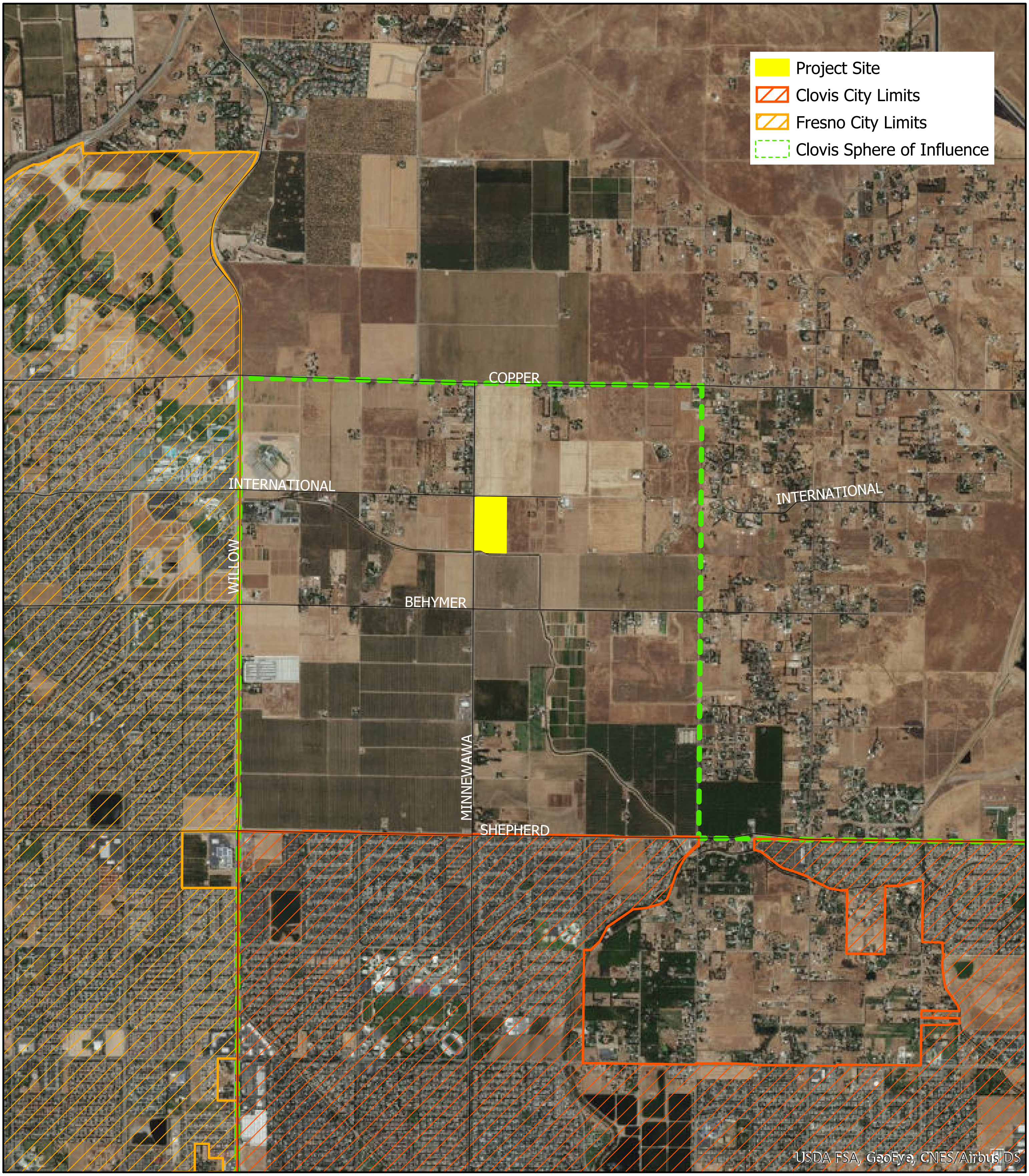
Clovis Unified School District

ODELL Planning & Research, Inc.

Environmental Planning • School Facility Planning • Demographics

0 2 4 8 Miles

N

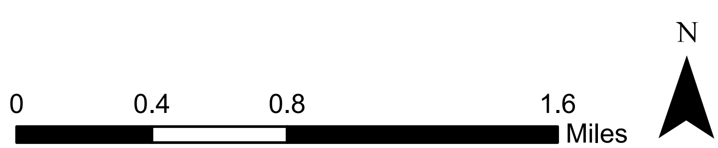


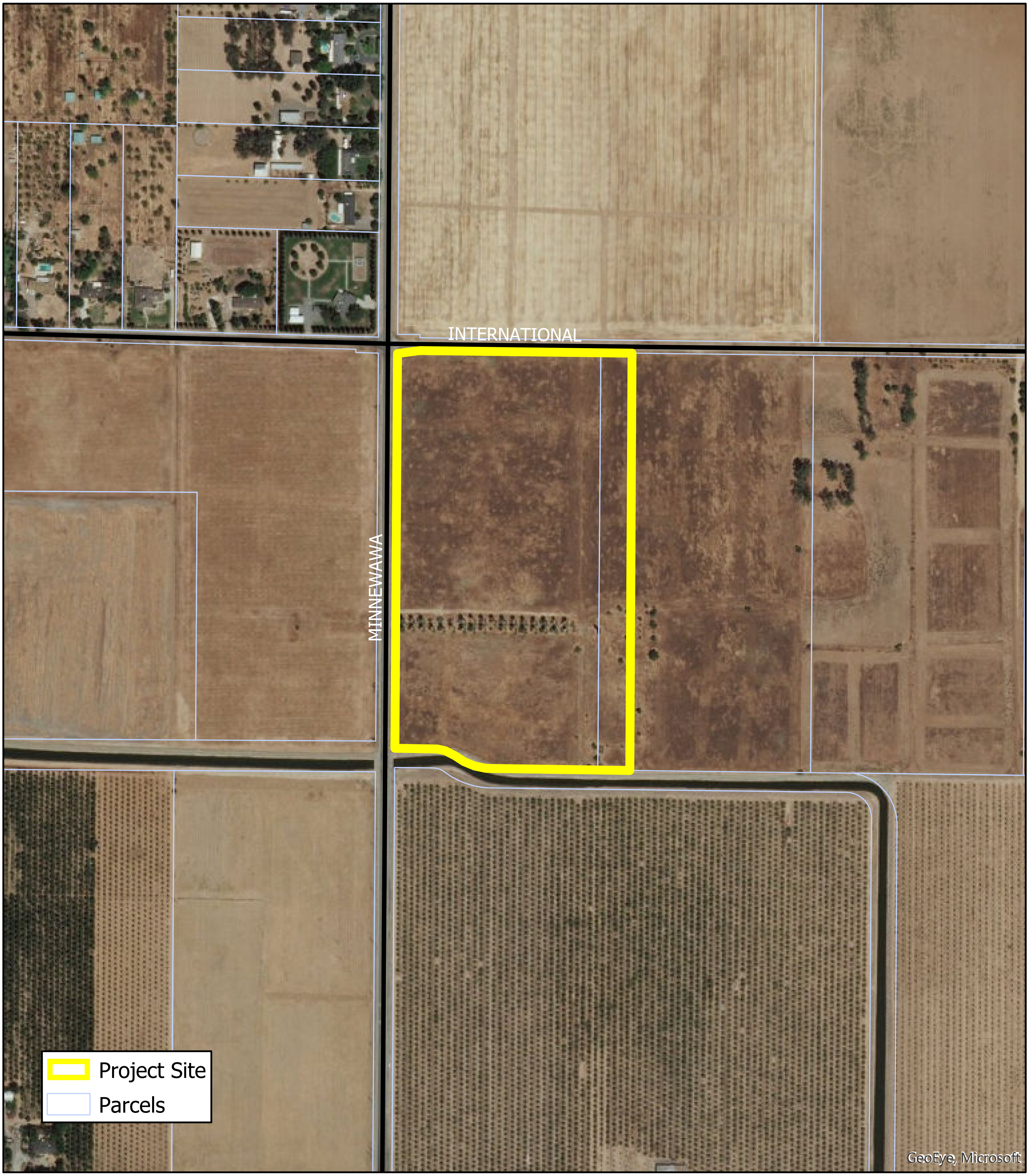
Project Location

Figure 2

Minnewawa-International Elementary School Project
Clovis Unified School District

ODELL Planning & Research, Inc.
Environmental Planning • School Facility Planning • Demographics





Project Site

Figure 3

Minnewawa-International Elementary School Project
Clovis Unified School District

ODELL Planning & Research, Inc.
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0 0.05 0.1 0.2 Miles

N

3. Project Description

Following are the major design, construction, and operational characteristics of the proposed school project:

- *Project Type:* The project encompasses the acquisition of a 22.7-acre elementary school site at the southeast corner of Minnewawa and International Avenues plus the construction and operation of an elementary school on the site.
- *Project Objective:* To serve students generated by planned urban development the Heritage Grove planning area of the City of Clovis.
- *Planned Grade Levels and Enrollment:* The school would serve an enrollment of approximately 750 students in kindergarten (including transitional kindergarten) through sixth grades.
- *Estimated Employment:* The school would have approximately 50 employees, including administrators, faculty, and support staff. Not all employees would be on the campus at the same time.
- *School Schedule:* The school would be in regular session on weekdays from late August to early June. The school may host special events and classes during evenings, on weekends, and during the summer recess.
- *Planned Facilities:* The school would have approximately 28 classrooms, administrative offices, a multi-purpose building, hardcourt areas and athletic fields that could potentially be lighted.
- *Annexation and Detachment:* The project site is planned to be annexed to the City of Clovis, which will entail concurrent detachment from the Fresno County Fire Protection District and Kings River Conservation District. It is expected that the site will continue to be served by the Consolidated Mosquito Abatement District and Clovis Cemetery District.

4. Actions Required to Implement Project

The Clovis Unified School District must undertake the following actions in order to implement the project:

- Complete the California Environmental Quality Act process for the project. This would involve either the adoption of a mitigated negative declaration for the project or the preparation of an environmental impact report. Based on the results of this Initial Study, Clovis Unified should consider the adoption of a mitigated negative declaration for the project;
- Adopt and implement the Mitigation Monitoring and Reporting Program identified in Section F of this Initial Study;
- Approve the project;
- Complete the California Department of Education school site approval process;
- Secure approvals, permits, and agreements, as necessary, from agencies and utilities that are responsible for public facilities the project would construct, modify, or otherwise affect within or near the school site.

5. Project Schedule

Clovis Unified would acquire the school site when the required site approval processes are completed. The timing for construction of the school would depend on enrollment growth and funding availability. The District estimates that the school could be constructed in approximately five years.

6. Project Setting

a. Existing Land Uses

The proposed school site is currently vacant. Nearby land uses include rural residential development, orchards, and fallow fields. Additionally, the Enterprise Canal is located immediately south of the southern boundary of the project site. Beyond the immediate periphery there is urban residential development in the City of Clovis and the City of Fresno. Residential subdivisions within Clovis exist approximately 1.25 miles south of the site at Shepherd Avenue. Residential subdivisions and public educational facilities (including Clovis Community College and the Clovis North Educational Complex) exist approximately one mile west of the site at Willow Avenue in Fresno.

b. Public Land Use Policy

Clovis General Plan

The *City of Clovis General Plan* (adopted August 2014) guides land use policy for the City of Clovis and areas within the City's Sphere of Influence. One of the major organizational components of the City's General Plan is "Urban Centers", which are defined in the General Plan as "unique sub-communities of Clovis that enable the City to grow while maintaining authentic, small town character and overall livability." Among the goals of the General Plan is "Orderly and sustainable outward growth into three urban centers with neighborhoods that provide a balanced mix of land uses and development types to support a community lifestyle and small-town character." (Clovis General Plan, Goal 3). The project site is located within the Heritage Grove Urban Center (formerly named the "Northwest Urban Center" and referred to as such in the Clovis General Plan).

Following are goals and policies from the Land Use Element that are particularly relevant to the project:

> **Goal 3:** Orderly and sustainable outward growth into three Urban Centers with neighborhoods that provide a balanced mix of land uses and development types to support a community lifestyle and small town character.
>
> <u>Policy 3.2 Individual development project.</u> When projects are proposed in an Urban Center, require a conceptual master plan to show how a proposed project could relate to possible future development of adjacent and nearby properties. The conceptual master plan should generally cover about 160 acres or the adjacent area bounded by major arterials, canals, or other major geographical features. The conceptual master plan should address:
>
> A. Compliance with the comprehensive design document
> B. A consistent design theme
> C. A mix of housing types
> D. Adequate supply and distribution of neighborhood parks
> E. Safe and direct pedestrian and bicycle linkages between residential areas and school sites, parks, and community activity centers.
>
> <u>Policy 3.7 Urban Village Neighborhood Concept.</u> Residential developments in Urban Centers must contribute to and become a part of a neighborhood by incorporating a central park feature, a school complex, a hierarchy of streets, pedestrian pathways, or other neighborhood amenities. Higher density residential should be next to lands designated Mixed Use Village. The City may also require the application of the urban village neighborhood concept in areas outside of an Urban Center.
>
> <u>Policy 3.8 Land use compatibility.</u> Within Urban Centers, new development that is immediately adjacent to properties designated for rural residential and agricultural uses shall bear the major responsibility of achieving land use compatibility and buffering.
>
> <u>Policy 3.9 Connected development.</u> New development in Urban Centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.
>
> **Goal 4:** Orderly development of the General Plan outside of the city boundary.
>
> **Goal 6:** A city that grows and develops in a manner that implements its vision, sustains the integrity of its guiding principles, and requires few and infrequent amendments to the General Plan.

Heritage Grove Design Guidelines

In December 2016, the City of Clovis adopted the Heritage Grove Design Guidelines[1], which generally augment the goals and policies of the General Plan by providing more detailed guidance for the overall aesthetic theme and quality for development within Heritage Grove. Below is an excerpt from the Heritage Grove Design Guidelines:

> *Heritage Grove has two predominate characteristics; an authentic cultural and agricultural heritage. The thrust of these design guidelines is to memorialize and celebrate these characteristics in an efficient, simple, durable and aesthetic manner. Using qualities of the adjacent Sierra foothill oak/grasslands, as well as elements of agriculture, these guidelines serve in developing a contemporary palette of landscaping and urban features that celebrate a developing, youthful and healthy lifestyle community that is respectful of its place on earth. Ease of maintenance, durable materials and water efficiency are significant guiding principles.*

The stated purpose of the Design Guidelines are as follows:

1. Establish an overall theme and quality for Heritage Grove.
2. Illustrate and direct the intended architectural, landscape and site elements to reinforce the theme and quality.
3. Provide criteria and examples of expected design qualities and treatments.
4. Refine and implement the Goals and Objectives of the Clovis General Plan.

In both the General Plan Land Use Diagram and the Heritage Grove Plan Area Diagram, the project site is designated as Medium Density Residential.

c. Zoning

The project site is currently zoned by Fresno County as AE-20 (Exclusive Agricultural District, 20-acre minimum parcel size). Section 816 of the Fresno County Zoning Ordinance states, “The ‘AE’ District is intended to be an exclusive district for agriculture and for those uses which are necessary and an integral part of the agricultural operation. . . [and] to protect the general welfare of the agricultural community from encroachments of non-related agricultural uses which by their nature would be injurious to the physical and economic well-being of the agricultural district.” As described in the Zoning Ordinance, the AE-20 Zone District permits public schools subject to Director Review and Approval.

There is currently no City of Clovis zoning designation for the proposed project site, as the project site is located beyond the Clovis city limits.

d. Streets and Highways

International Avenue and Minnewawa Avenue are the existing streets nearest the project site. Currently, Minnewawa Avenue is a two-lane thoroughfare designated as an arterial roadway in the Fresno County General Plan, and International Avenue is a narrow rural collector road. Existing street improvements are limited to bike lanes along Minnewawa Avenue and very minimal curbing; no sidewalks, street lighting, or traffic controls (aside from a two-way stop sign at International crossing Minnewawa) exist in the vicinity. The Clovis General Plan’s Circulation Element classifies both Minnewawa Avenue and International Avenue as collector roads in the vicinity of the site.

The Circulation Plan in the Heritage Grove Design Guidelines shows that the existing intersection of Minnewawa and International Avenues is planned to be reconfigured such that Minnewawa will curve into International Avenue (see Heritage Grove Design Guidelines page 2.1). Additionally, the Design Guidelines designates Minnewawa Avenue as a thematic street or “Academic Boulevard” and includes a conceptual cross-section illustrating the planned streetscape in the vicinity of the project site (see Design Guidelines page 2.6); features of the planned streetscape include a bike path, trail, landscape buffers, and thematic

[1] Adoption of the Heritage Grove Design Guidelines was based on the directive in the General Plan for subsequent adoption of more specific development guidelines for the Northwest Urban Center (see Policy 3.1 and Clovis General Plan page LU-14: “The General Plan provides fairly specific land use planning for the Northwest Urban Center, with policies that require a comprehensive design document to provide additional development and land use guidance.”)

lighting and signage.

(Please see Part E, Section 17 for additional information on streets and highways.)

e. Public Utilities and Services

Municipal water, sewer, and storm drainage facilities do not currently exist at the site. The City of Clovis' water and sewer systems would serve the proposed project. Existing water and sewer facilities are located in the vicinity of Shepherd Avenue, and these facilities would be extended to the project site area if the project is approved. The location and design of the water and sewer facilities would be subject to review and approval by the City of Clovis.

The Fresno Metropolitan Flood Control District (FMFCD) manages storm drainage for the greater Fresno-Clovis area, including at the project site. The project is located in the "BY2" drainage area, which includes proposed pipelines located along both International Avenue and Minnewawa Avenue. Storm drainage facilities would be subject to review and approval by FMFCD.

The project site is currently served by the Fresno County Sheriff's Department for law enforcement services and the Fresno County Fire Protection District for fire prevention services. Within the City of Clovis city limits, law enforcement services are provided by the Clovis Police Department and fire and emergency services are provided by the Clovis Fire Department. The project would be served by these agencies in the event the site is annexed to the City of Clovis. It is noted that Clovis Unified has its own police department, which would provide police services to the elementary school.

(Please see Part E, Sections 15 and 19 for additional information on Public Utilities and Services.)

7. Request for Preliminary Comment

Clovis Unified distributed a Request for Preliminary Comment for the proposed school project to responsible, trustee and other agencies that might have an interest in the project. The Request for Preliminary Comment provided an opportunity for the agencies to comment on the potential environmental effects of the project, including whether an Environmental Impact Report, Mitigated Negative Declaration, or Negative Declaration should be prepared for the project. Clovis Unified also sent the Request for Preliminary Comment to residents and property owners in the project vicinity.

8. Other Public Agencies Whose Approval is Required

Implementation of the proposed school project would require approvals from the following public agencies in addition to Clovis Unified:

TABLE A-2
Responsible Agencies

Public Agency	Approval(s)
California Department of Education, School Facilities Planning Division	Review and approve proposed school for conformance with applicable state rules and regulations governing the siting of public schools
California Department of Toxic Substances Control	Responsible for ensuring that the proposed school sites are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy the new schools. Review and approve compliance with Education Code sections 17213.1 and 17213.2
City of Clovis	Staff: Review and approve the location, design. and construction of street, water, and sewer improvements
County of Fresno	Planning Commission: Determine if the project is consistent with the Fresno County General Plan

Fresno Local Agency Formation Committee (LAFCo)	Approve annexation of the school site to the City of Clovis (Note: Although annexation is not required for the project to be developed, the District prefers that the site be annexed)
Fresno Metropolitan Flood Control District (FMFCD)	Review and approve the design and construction of FMFCD flood control facilities necessary for the school

B. Environmental Factors Potentially Affected

Based on the evaluations in Part E, the project would have a less than significant impact on the environmental factors listed in the following table. Those factors that require mitigation to be incorporated into the project to be less than significant are noted with an "X".

TABLE B-1
Environmental Factors Potentially Affected

X	Aesthetics		Agricultural & Forestry Resources	X	Air Quality
X	Biological Resources	X	Cultural Resources		Energy Resources
	Geology & Soils		Greenhouse Gas Emissions		Hazards & Hazardous Materials
	Hydrology & Water Quality		Land Use & Planning		Mineral Resources
X	Noise		Population & Housing		Public Services
	Recreation	X	Transportation & Traffic	X	Tribal Cultural Resources
	Utilities & Service Systems		Mandatory Findings of Significance		

C. Determination

Based on this Initial Study, I find that the Minnewawa-International Elementary School Project could have significant effects on the environment but mitigation measures incorporated in the project by the Clovis Unified School District will avoid or reduce the effects to less than significant. Therefore, a Mitigated Negative Declaration will be prepared.

K Peterson 12/20/18

Signature Date

KEVIN PETERSON ASST. SUPERINTENDENT, FACILITIES

Print Name Title

D. Evaluation of Environmental Impacts

1. State CEQA Guidelines Appendix G: Environmental Checklist Form

Part E in this Initial Study addresses all of the environmental issues that Appendix G in the State CEQA Guidelines[2] suggests an Initial Study should address. In addition, it addresses several environmental

[2] This report uses the recently updated version of the Appendix G Checklist presented in Governor's Office of Planning and Research's proposed updates to the Guidelines, except for Section 17 (Transportation/Traffic). A copy of the proposed Appendix G Checklist can be viewed at: http://opr.ca.gov/docs/20171127_Comprehensive_CEQA_Guidelines_Package_Nov_2017.pdf

issues that the California Department of Education requires be considered in the selection and approval of a school site.

The discussion of each impact in Part E concludes with a determination that the impact is potentially significant, less than significant with mitigation, less than significant, or does not involve any impact (no impact).

The "potentially significant" determination is applied if there is substantial evidence that an effect may be significant. Under the State CEQA Guidelines, a significant effect, or impact, on the environment means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. (sec. 15382) The District must prepare an Environmental Impact Report for the project if the Initial Study identifies one or more potentially significant impacts.

The "less than significant impact with mitigation incorporated" determination applies when the incorporation by the District of mitigation measures in the project would reduce an impact from potentially significant to less than significant. This Initial Study describes each mitigation measure the District has incorporated in the project to reduce potentially significant impacts to a less than significant level.

The "less than significant" determination applies when the project would not result in a significant effect on a resource or condition. The less than significant determination is used only in cases where no mitigation measures are required to reduce an impact to a less than significant level.

The "no impact" determination applies when the project would have no impact on a resource or condition or the resource or condition does not apply to the project or its location. The no impact determination is used only in cases where no mitigation measures are required to avoid or eliminate an impact.

The discussion of impacts in this Initial Study lists each potential impact as stated in Appendix G, provides an analysis of the impact, describes each mitigation measure required to avoid the impact or reduce it to an insignificant level, and concludes with a determination of the level of significance of the impact. References to documents that would provide background information on an impact are provided where applicable.

This Initial Study incorporates by reference all documents and other sources of information cited in Parts E and H, Sources Consulted.

2. Tiering

a. Tiering Concept

This Initial Study uses the tiering concept authorized State CEQA Guidelines section 15152 as part of the process used to determine if the proposed school project may have significant effects on the environment. As described in section 15152:

> "Tiering" refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy document) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broad EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project.
>
> This [tiering] approach can eliminate repetitive discussions of the same issues and focus the later EIR or negative declaration on the actual issues ripe for decision at each level of environmental review.

The "City of Clovis General Plan and Development Code Update Program Environmental Impact Report" (PEIR) is the broader EIR this Initial Study uses to analyze general matters in relation to the proposed school project and to concentrate the evaluation in this Initial Study on issues specific to the project. The PEIR consists of a Draft Program EIR (Draft PEIR) and a Final Program EIR (Final PEIR). The Draft PEIR is the primary document that evaluates the environmental effects of the General Plan Update. The Final PEIR consists of the Draft PEIR, a list of the agencies and interested persons that commented on the Draft PEIR, copies of the comment letters received during the public review period, the City's responses to the written comments, and appropriate revisions to the Draft PEIR text and figures.

The City of Clovis certified the Final PEIR on August 25, 2014. The public may review the documents that comprise the PEIR at www.ci.clovis.ca.us or at the City of Clovis Planning Development Services Department Engineering Division, 1033 Fifth Street, Clovis, California 93612. This Initial Study incorporates the PEIR by reference.

The PEIR evaluates the impacts that would result from implementation of the City of Clovis General Plan. The planning area for the General Plan encompasses approximately 48,000 acres and includes the City of Clovis, its 2000 Sphere of Influence, and adjacent land within unincorporated Fresno County. The General Plan focuses on the preservation and enhancement of the existing Clovis community while allowing the continued development of three urban centers: the Northwest Urban Center (subsequently renamed Heritage Grove), the Northeast Urban Center, and the Loma Vista Urban Center. The location proposed for the Minnewawa-International Elementary School is located within the Heritage Grove Urban Center.

b. Consistency with General Plan and Zoning

Under State CEQA Guidelines section 15152, use of the tiering concept "is limited to situations where the project is consistent with the general plan and zoning of the city or county in which the project is located, except that a project requiring a rezone to achieve or maintain conformity with a general plan may be subject to tiering."

The location for the proposed school is on unincorporated land within the City of Clovis' Sphere of Influence and Planning Area. Fresno County General Plan Policy LU-G.1 provides that "cities have primary responsibility for planning within their LAFCO-adopted spheres of influence and are responsible for urban development and the provision of urban services within their spheres of influence." Based on the County's policy, the Clovis General Plan Update is the primary planning document for the area in which the school is proposed

This Initial Study has determined that the proposed school site is consistent with the Clovis General Plan Update and the zoning of the City of Clovis. This conclusion reflects the following considerations:

- The Clovis General Plan Update does not designate specific locations for new elementary schools. Instead, the General Plan, under Policy 3.2, specifies that the city will "coordinate with the school districts to locate primary school facilities to maximize access, walkability, and safety while minimizing impacts to surrounding neighborhoods." As prescribed, Clovis Unified is coordinating with the City of Clovis in planning for this proposed school site.
- The proposed location for the school is in an area the Clovis General Plan Update has designated for single-family residential development. The General Plan, in Table LU-2, Land Use Designations, specifies that existing or proposed public or private school sites "are a permitted use in all single family residential areas." While the specific zoning for the project site would not be implemented until annexation of the site, the proposed school use is a permissible use under any of the single-family residential zone districts that could be applied to the project site.

3. Existing Laws, Regulations, Policies, and Mitigation Measures

Introduction: In some cases, an impact that might appear significant is determined to be less than significant because it is subject to state, regional, or local laws, regulations, or policies, the application of which would reduce the impact to a less than significant level or avoid the impact entirely. In evaluating impacts, this Initial Study considered the applicable laws, regulations, and policies to determine the effect they would have on preventing or reducing potentially significant impacts. The Initial Study, however, does not cite them as mitigation measures because they would apply to the project regardless of the outcome of the Initial Study.

For the proposed project, applicable laws, regulations, and policies include but are not limited to the following:

State of California: The selection and approval of a site for a public school in California is subject to numerous state rules and regulations, most of which the California Department of Education administers and protect the health and safety of students and staff at the school. Before the Department of Education will approve a school site and the school becomes eligible for state funding, a school district must certify that "the proposed site is suitable for educational purposes and is free, or will be free prior to occupancy, from hazards that could be considered harmful to student and staff health and safety. The school district has complied with and will comply with all applicable laws and policies associated with the acquisition of the school site, including commitments for Department of Toxic Substances Control required activities…" (SFPD 4.03, 2). The state requirements include but are not limited to the following:

- *Education Code Section 17210-17224:* Specifies the environmental review process the Department of Toxic Substance Control (DTSC) administers for new school sites. DTSC ensures that proposed school sites are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy the new school. All proposed school sites that will receive State funding for acquisition or construction are required to go through a rigorous environmental review and cleanup process under DTSC's oversight.
- *Education Code Section 17212.5; California Code of Regulations, Title 5, Section 14010 Geological and Other Environmental Hazards Report:* District must prepare a Geological Hazards Report and other environmental hazards report as described in Appendix H of the *School Site Selection and Approval Guide, 2000 Edition*. This will include a survey of high-pressure pipelines, liquid storage tanks, railroads, airports, electrical transmission lines, and areas subject to flooding, dam inundation, seismic faulting, and liquefaction.
- *Education Code Section 17213, Public Resources Code Section 21151.8; and California Code of Regulations, Title 5, Section 14011[h],[i]; Title 14, Section 15093:* Requires District Board to adopt findings stating: (1) the proposed school site is not a current or former waste disposal site; (2) the site is not a hazardous substance release site; (3) the site does not contain pipelines; and (4) whether a qualified freeway and/or qualified traffic corridor is located within 500 feet of the site. In addition, requires board-adopted findings for hazardous air emitters and hazardous material handlers located within a 1/4 mile of the site.
- *Education Code Section 17215 and California Code of Regulations, Title 21, Division 2.5, Chapter 2.1:* airports: Requires providing a notice to the State Department of Education if a proposed school site is within two nautical miles, measured by air line, of that point on an airport runway or a potential runway included in an airport master plan that is nearest to the site. The Department of Education is required to consult with the Department of Transportation as to the safety of the site in relation to airport operations.
- *Public Resources Code Section 21151.2 and Government Code sections 53094, 65402[c]:* Require consultation with local Planning Commission to determine compatibility of proposed school site with general plan.
- *Public Resources Code Section 21151.4:* Addresses CEQA consultation requirements for the proposed construction or alteration of a facility within one-quarter mile of school that might reasonably be anticipated to emit or handling of hazardous or acutely hazardous material
- *Title 5, California Code of Regulations, Article 2, Section 14010, Standards for School Site Selection:* The standards address: possible hazards related to power line easements, railroads, airports, major streets, above ground pipelines, underground pipelines, above ground storage tanks, traffic, noise, seismicity, geology, soils, flooding, dam flood inundation, incompatible zoning, and other safety-related factors.
- *Title 24, California Code of Regulations, Part 1 through Part 12:* Specifies the State of California building regulations for public schools. The Division of the State Architect is responsible for

administering the regulations.

San Joaquin Valley Air Pollution Control District
(https://www.valleyair.org/rules/1ruleslist.htm)

- District Rule 9510 – Indirect Source Review (ISR)
- Regulation VIII – Fugitive PM10 Prohibitions

Fresno County Department of Public Health, Environmental Health
(http://www.co.fresno.ca.us/DivisionPage.aspx?id=990)

Public Health is responsible for permitting and inspecting retail food businesses, including school cafeterias, reviewing construction plans and inspection of new and remodeled food facilities, investigating complaints regarding violations involving unsanitary conditions, investigates suspected food borne illnesses, etc.

City of Clovis

- City of Clovis General Plan
- City of Clovis Municipal Code
  http://www.codepublishing.com/CA/Clovis/
- Standard Construction Drawings
- National pollutant Discharge Elimination System (NPDES) Construction General Permit

Clovis Unified School District

- CUSD Building Specifications
  https://www.cusd.com/wp-content/uploads/2015/06/Building-Standard.pdf

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E. Environmental Checklist

(The questions in Part E, Sections 1-21 are from the State CEQA Guidelines, Appendix G: Environmental Checklist Form, Evaluation of Environmental Impacts).

1. Aesthetics

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

Less than Significant

The impact of the project on scenic resources would be less than significant. The reasons for this conclusion are follows:

- The Clovis General Plan identifies views of the Sierra Nevada Mountain Range, foothills, and Owens Mountain as a scenic backdrop for the eastern portion City of Clovis, and it suggests that the Northwest Urban Center should "capitalize on views of Owens Mountain and the Sierra Nevada" (see Page LU-14). The project site is situated in the northwest portion of the City's planning area and is separated from the foothills and mountain views by agricultural and rural residential land uses. No aspects of the design or scale of the school would significantly detract from the viewing quality of the Sierra Nevada or Owens Mountain.
- Visual reconnaissance of the project site did not identify any scenic resources on or near the project site including, but not limited to, specimen or heritage trees, rock outcroppings, or historic buildings. (See for reference the Cultural Resources Survey prepared for the project, included as Appendix 3)
- The existing project area and the adjoining land do not constitute a scenic vista, and the project would not block any vistas in the area, scenic or otherwise.

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

No Impact

There are no scenic highways within the project area. Also see discussion regarding visual reconnaissance of the project site in Section 1(a) above.

c. Would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant

Although the project would change the visual character of the site from agricultural to urban, the proposed educational facilities are common visual elements in an urban setting as is planned for land surrounding the site. Rural residents in the area may consider the change from an agricultural to urban visual character an adverse impact. This change, however, is inevitable, as the City of Clovis has planned the subject site and surrounding land for urban development. Schools are typically a common and congruent visual feature within residential areas. Elementary schools designed for suburban predominantly residential neighborhoods typically have classroom and administrative buildings which are visually compatible or congruent with the surrounding community.

The Heritage Grove Design Guidelines include relatively comprehensive standards concerning the aesthetic form of development within the Heritage Grove Urban Center. Examples include utilizing qualities of the adjacent Sierra foothill oak/grasslands and elements of agriculture as part of the landscaping and urban features within Heritage Grove. Of particular relevance to the project, Minnewawa Avenue (which fronts the west side of the proposed school site) has been designated as a thematic street or "Academic Boulevard", and the Design Guidelines includes a cross-sectional illustration of the Academic Boulevard that displays the desired relation of people, roadways, pedestrian pathways, and landscape features along the street (see Heritage Grove Design Guidelines page 2.6). As stated in the Design Guidelines, major attributes of the Academic Boulevard are:

1. Segregated pedestrian trail and bike path including a public transportation route that provides connectivity between educational facilities.
2. Safe path of travel for students and the community.
3. Street messaging and seasonal celebrations connected with academic programs through the use of banners and flag brackets at street lights.

No aspects of the proposed elementary school would inherently conflict with the Design Guidelines, although it is noted that the Urban Center's design elements and planned dimensions for features near the project site (e.g. dimensions for features of the Academic Boulevard) should be taken into consideration as part of the design and site planning process for the school. The impact is thus less than significant.

d. Would the project create a new source of light and glare that would adversely affect day or nighttime views in the area?

Less than Significant with Mitigation

The project includes features that may increase light and glare in its vicinity, namely buildings and parking areas that will be lighted in the evenings for the safety and security of the students and staff. Headlights from vehicles arriving and departing the school during evening hours would be the only potential source of glare from the project. The project's lighting would not be unusual within the urban environment planned for the area surrounding the site and would have no effect on agricultural uses nearby. However, to ensure that adjacent existing and future land uses are not significantly impacted, the following mitigation measures will be incorporated in the project.

- **AE-1:** All parking area lighting shall have full cut-off type fixtures. A full cut-off type fixture is a luminaire or lighting fixture that, by design of the housing, does not allow any light dispersion or direct glare to shine above a 90-degree horizontal plane from the base of the fixture. Full cut-off type fixtures must be installed in a horizontal position as designed.
- **AE-2:** All external signs and lighting shall be lit from the top and shine downward except where uplighting is required for safety or security purposes. The lighting shall also be, as much as physically possible, contained to the target area.
- **AE-3:** Exterior building lighting for security or aesthetics shall be full cut-off or a shielded type design to minimize any upward distribution of light.
- **AE-4:** Non-essential lighting shall be turned off by 10:00 pm.

2. Agriculture and Forestry Resources

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

Less than Significant

According to the Fresno County Important Farmland Map, the proposed project site contains no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The site is designated Farmland of Local Importance. Farmland of Local Importance in Fresno County refers to "All farmable lands within Fresno County that do not meet the definitions of Prime, Statewide, or Unique. This includes land that is or has been used for irrigated pasture, dryland farming, confined livestock and dairy, poultry facilities, aquaculture and grazing land."

The project site is vacant and has not been used for agricultural purposes for at least ten years. The project site is within the City of Clovis Sphere of Influence, is designated by the Clovis General Plan for medium density residential use, and is situated in an area with a significant amount of existing urban development to the west and south. Thus, it is unlikely that the project site would be used for agricultural purposes and it is likely that the site would be developed with urban uses regardless if the proposed project is approved.

Because the project site is not Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and given the small size of the site and the fact it has not been farmed during at least the last ten years, the project's impact with respect to Farmland conversion is considered less than significant.

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

No Impact

The proposed project site is not under Williamson Act contract (Department of Conservation, 2016).

The project site is zoned by the Fresno County as AE-20 (Exclusive Agricultural, 20-acre minimum parcel size), which is intended to primarily support agricultural uses but also allows public schools subject to the Director Review and Approval process. Since public schools are a permissible use in areas zoned AE-20, the project would not conflict with the existing agricultural zoning. Further, it is noted that because the project site is within the Clovis Sphere of Influence and has been designated for urban use, the existing agricultural zoning in the vicinity is likely to be phased out as planned development of the area proceeds.

c. Would the project conflict with existing zoning for, or cause rezoning of, forestland, timberland, or timberland zoned timberland production?

No Impact

The proposed school project would have no impact on forestland or timberland as the site is not in an area where these resources exist.

d. Would the project result in the loss of forestland or conversion of forestland to non-forest use?

No Impact

This impact is addressed in Section 2(c) above.

e. Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forestland to non-forest use?

Less than Significant

The conversion of farmland in the project vicinity was previously addressed in the Clovis General Plan EIR, which found the conversion of farmland to be a significant and unavoidable impact resulting from implementation of the General Plan. The discussion in the EIR particularly contemplates this impact in areas the General Plan identifies as urban centers, including the Heritage Grove Urban Center[3] where the project site is located. Because the proposed elementary school is consistent with the type of Urban Center development planned for the area, the project would not result in impacts different from what has been previously evaluated.

The only active farming operations are to the south of the site, separated by the Enterprise Canal. In the short term, developing school facilities adjacent to farmland could result in changes to farming practices. For example, farmers could be subject to additional restrictions on the types of herbicides and pesticides they could apply near the school property and the methods of application they could employ. Farming practices that generate dust and noise could be a nuisance to schools. However, as a practical matter, Clovis Unified and many other districts in Fresno County and the San Joaquin Valley successfully operate schools adjacent to active agricultural operations. Since the school project would not likely be developed for at least five years, and given plans for urban development in the area in accordance the adopted City plans, planned

[3] As noted elsewhere, the General Plan refers to the Northwest Urban Center, which was subsequently renamed Heritage Grove upon adoption of the Heritage Grove Master Plan and Design Guidelines.

residential development the area would likely occur prior to the school site development. Development of the school site and surrounding area would occur regardless of project approval.

The owners of nearby agricultural properties were notified of the project and provided with the Request of Preliminary Comment prior to the preparation of this Initial Study. No comments were received from adjacent agricultural land owners.

Based upon the above discussion, this impact is considered less than significant.

3. Air Quality

This section is based on an Air Quality Analysis completed for the project (Ambient 2018; Appendix 1). Table 3-1 provides definitions for the air quality terms used in this section.

TABLE 3-1
Air Quality Definitions

Carbon Monoxide (CO)

A colorless, odorless gas resulting from the incomplete combustion of hydrocarbon fuels. CO interferes with the blood's ability to carry oxygen to the body's tissues and results in numerous adverse health effects. Over 80 percent of the CO emitted in urban areas is contributed by motor vehicles. CO is a criteria air pollutant.

Nitrogen Oxides (Oxides of Nitrogen, NOx)

A general term pertaining to compounds of nitric oxide (NO), nitrogen dioxide (NO_2) and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes and are major contributors to smog formation and acid deposition. NO2 is a criteria air pollutant and may result in numerous adverse health effects.

Particulate Matter (PM)

Any material, except pure water, that exists in the solid or liquid state in the atmosphere. The size of particulate matter can vary from coarse, wind-blown dust particles to fine particle combustion products.

PM2.5

Includes tiny particles with an aerodynamic diameter less than or equal to a nominal 2.5 microns. This fraction of particulate matter penetrates most deeply into the lungs.

PM10 (Particulate Matter)

A criteria air pollutant consisting of small particles with an aerodynamic diameter less than or equal to a nominal 10 microns (about 1/7 the diameter of a single human hair). Their small size allows them to make their way to the air sacs deep within the lungs where they may be deposited and result in adverse health effects. PM10 also causes visibility reduction.

Reactive Organic Gas (ROG)

A photochemically reactive chemical gas, composed of non-methane hydrocarbons, that may contribute to the formation of smog. Also, sometimes referred to as Non-Methane Organic Gases (NMOGs). (See also Volatile and Hydrocarbons.)

Sulfur Dioxide (SO_2)

A strong smelling, colorless gas that is formed by the combustion of fossil fuels. Power plants, which may use coal or oil high in sulfur content, can be major sources of SO_2 and other sulfur oxides contribute to the problem of acid deposition. SO_2 is a criteria air pollutant.

Source: California Air Resources Board. *Glossary of Air Pollution Terms* (2015)

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

<u>Less than Significant with Mitigation</u>

In accordance with San Joaquin Valley Air Pollution Control District (SJVAPCD) recommended methodology for the assessment of air quality impacts, projects that result in significant air quality impacts at the project level are also considered to have a significant cumulative air quality impact. As noted in Section 3(b), short-term construction and long-term operational emissions would not exceed applicable thresholds. In addition, the proposed project's contribution to localized concentrations of emissions, including emissions of CO, TACs, and odors, are considered less than significant. However, as noted in Section 3(c), the proposed project could result in a significant contribution to localized PM concentrations for which the SJVAB is currently designated non-attainment. For this reason, implementation of the proposed project could conflict with air quality attainment or maintenance planning efforts. This impact would be considered potentially significant. Refer to Sections 3(b) and 3(c) for additional discussion of air quality impacts.

Mitigation Measure: Implement Mitigation Measures AQ-1 through AQ-8

b. Would the project violate any air quality standard or result in a cumulatively considerable net increase in an existing or projected air quality violation?

<u>Less than Significant</u>

Short-term Construction Emissions

The impact of the proposed school project on short-term construction emissions would be less than significant. The reasons for this conclusion are as follows:

- Clovis Unified would comply with all applicable San Joaquin Valley Air Pollution Control District rules and regulations, including, without limitation, Indirect Source Rule 9510.
- This Initial Study includes a technical assessment evaluating potential project construction-related air quality impacts. The following paragraphs and Appendix 1 present the assessment:

  Short-term increases in emissions would occur during the construction process. Construction-generated emissions are of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. The construction of the proposed school project would result in the temporary generation of emissions associated with site grading and excavation, paving, motor vehicle exhaust associated with construction equipment and worker trips, as well as the movement of construction equipment on unpaved surfaces.

  The SJVAPCD-recommended threshold of significance for annual short-term construction emissions of criteria air pollutants are as follows: 100 tons per year (TPY) of CO, 10 TPY of ROG or NOX, 27 TPY of SOX, or 15 TPY of PM10 or PM2.5. Additionally, SJVAPCD also recommends the use of daily emissions thresholds for the evaluation of project impacts on localized ambient air quality. A project would also be considered to result in a significant contribution to localized ambient air quality if on-site emissions or ROG, NOX, PM10, PM2.5, CO, or SO2 associated with either short-term construction or long-term operational activities would exceed a daily average of 100 pounds per day (lbs/day) for each of the pollutants evaluated (SJVAPCD 2015).

  Short-term construction emissions would result in increased emissions of ozone-precursor pollutants (i.e., Reactive Organic Gas and Nitrogen Oxides) and emissions of Particulate Matter. Emissions of ozone precursors would result from the operation of on-road and off-road motorized vehicles and equipment. Emissions of airborne Particulate Matter are largely dependent on the amount of ground disturbance associated with site preparation activities and can result in increased concentrations of Particulate Matter that can adversely affect nearby sensitive land uses.

  Table 3-2 shows construction-generated emissions of ozone-precursor pollutants and Particulate Matter projected for the project. Based on the modeling conducted, construction of the proposed project would generate maximum uncontrolled annual emissions of approximately 4.0 tons/year of ROG, 3.2 tons/year of NOx, 2.4 tons/year of CO, 0.4 tons/year of PM10, and 0.3 tons/year of PM2.5. Emissions of SO2 would be negligible (e.g., less than 0.1 tons/year). Estimated construction-generated emissions would not exceed the SJVAPCD's significance thresholds of 10 tons/year of ROG, 10 tons/year of NOx, or 15 tons/year PM10.

Table 3-3 shows the estimated daily on-site construction-generated emissions for the project. Based on the modeling conducted, the proposed school project would result in operational emissions of approximately 18 lbs/day of ROG, 50 lbs/day of NOX, 46 lbs/day of CO, 20 lbs/day of PM10, and 12 lbs/day of PM2.5. Emissions of SO2 would be negligible (e.g., less than 0.1 tons/year). Daily on-site construction emissions would not exceed the SJVAPCD's recommended localized ambient air quality significance thresholds of 100 lbs/day for each of the criteria air pollutants evaluated. Furthermore, the proposed project would be required to comply with SJVPACD Regulation VIII (Fugitive PM10 Prohibitions), which would further reduce emissions of fugitive dust from the project site and minimize the project's potential to adversely affect nearby sensitive receptors.

TABLE 3-2
Annual Construction Emissions

Construction Phase	Uncontrolled Maximum Annual Emissions (tons/year)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 2019						
Site Preparation	0	0.2	0.1	0	0.1	0.1
Grading	0.1	0.6	0.3	0	0.1	0.1
Building Construction	0.3	2.4	2.0	0	0.2	0.1
Total:	0.4	3.2	2.4	0	0.4	0.3
Year 2020						
Building Construction	0.1	0.5	0.5	0	<0.1	<0.1
Paving	0	0.1	0.1	0	0	0
Architectural Coatings	0.4	0.1	0.1	0	0	0
Total:	0.5	0.7	0.6	0	<0.1	<0.1
Maximum Annual Emissions:	0.5	3.2	2.4	0	0.4	0.3
SJVAPCD Significance Thresholds:	10	10	None	None	15	15
Annual Emissions Exceed SJVAPCD Thresholds/Significant Impact?	No	No	No	No	No	No

Based on CalEEMod computer modeling. Refer to Air Quality Analysis, Appendix A for modeling results and assumptions.

TABLE 3-3
Daily On-Site Construction-Generated Emissions

Construction Year	Unmitigated Maximum Annual Emissions (lbs/day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Site Preparation	4	46	22	0	20	12
Grading	5	55	33	0	13	6
Building Construction-Year 2019	2	21	17	0	1	1
Building Construction-Year 2020	4	34	30	0	0	0

Paving	2	14	14	0	0	0
Architectural Coatings	12	2	2	0	0	0
Maximum Daily Onsite Uncontrolled Emissions	18	50	46	0	20	12
SJVAPCD Significance Thresholds	100	100	100	100	100	100
Annual Emissions Exceed SJVAPCD Thresholds/Significant Impact?	No	No	No	No	No	No

Based on CalEEMod computer modeling. Refer to Air Quality Analysis, Appendix A for modeling results and assumptions.

Long-term Operational Emissions

Estimated annual operational emissions for the proposed project are summarized in Table 3-4. As indicated, the proposed project would generate approximately 0.7 tons/year of ROG, 4.3 tons/year of NOx, 3.3 tons/year of CO, 0.8 tons/year of PM10, and 0.3 tons/year of PM2.5 during the initial year of operation. Operational emissions of SO2 would be negligible (i.e, less than 0.1 tons/year). Operational emissions would be projected to decline in future years, with improvements in fuel-consumption emissions standards. Operational emissions would not exceed SJVAPCD's mass-emissions significance thresholds. It is important to note that estimated operational emissions are conservatively based on the default vehicle fleet distribution assumptions contained in the model, which include contributions from medium and heavy-duty trucks. Mobile sources associated with schools typically consist largely to light-duty vehicles and buses. As a result, actual mobile source emissions would likely be less than estimated.

Estimated average-daily on-site operational emissions are also included in Table 3-4. Average-daily on-site operational emissions would be largely associated with area sources. Emissions would be largely associated with occasional landscape maintenance activities, as well as evaporative ROG emissions associated with the application of architectural coatings and use of consumer products. Average-daily on-site emissions of ROG would total approximately 7 lbs/day; emissions of other pollutants would be negligible (i.e., less than 0.1 lbs/day). Average-daily on-site emissions would not exceed the SJVAPCD's recommended localized ambient air quality significance thresholds of 100 lbs/day for each of the criteria air pollutants evaluated. The long-term operational impacts would therefore be less than significant.

TABLE 3-4
Long-Term Operational Emissions (Unmitigated)

Source	Unmitigated Annual Emissions (Tons/Year) [1]					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Sources	0.3	0	0	0	0	0
Energy Use	0	0.1	0.1	0	0	0
Motor Vehicles	0.4	4.4	3.4	0	0.9	0.3
Total:	0.82	1.61	5.63	0.01	0.60	0.18
Significance Thresholds (tons)	10	10	None	None	15	None
Annual Emissions Exceed SJVAPCD Thresholds/Significant Impact?	No	No	N/A	N/A	No	N/A
Average Daily Onsite Emissions (lbs)	7	Negligible				
Significance Thresholds (lbs)	100	100	100	100	100	100
Exceeds Thresholds/Significant Impact?	No	No	No	No	No	No

Based on CalEEMod computer modeling. Refer to Air Quality Analysis, Appendix A for modeling results and assumptions. Average Daily Onsite Emissions based on calculated annual operational emissions for area sources and an average of 200 operational days annually.

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

<u>Less than Significant with Mitigation</u>

Nearby sensitive land uses consist of residential land uses, the nearest of which are located immediately northwest of the project site. Below is a discussion of short-term and long-term localized air quality impacts:

Short-term Construction

<u>Naturally Occurring Asbestos</u>

Naturally-occurring asbestos (NOA), which was identified by ARB as a TAC in 1986, is located in many parts of California and is commonly associated with ultramafic rock. Per the Geologic and Environmental Hazards Review (Appendix 4, page 8), the nearest exposure of potentially asbestos-bearing ultramafic outcrops is located approximately 15 miles east of the project site, thus the potential for NOA to be present in project soils at elevated concentrations is considered low. As a result, risk of exposure to asbestos during the construction process would be considered less than significant.

<u>Localized PM Concentrations</u>

Construction of the proposed project would result in the generation of DPM emissions associated with the use of off-road diesel equipment for site grading and excavation, paving and other construction activities. Health-related risks associated with diesel-exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. The calculation of cancer risk associated with exposure of to TACs are typically calculated based on a 25- to 30-year period of exposure. The use of diesel-powered construction equipment, however, would be temporary and episodic and would occur over a relatively large area. Assuming that construction activities involving the use of diesel-fueled equipment would occur over an approximate 1.5-year period, project-related construction activities would constitute less than eight percent of the typical exposure period. In addition, construction of the proposed facilities would not be anticipated to require the import or export of soils that would result in more extensive site grading activities that would involve more extensive use of diesel-fueled off-road equipment. Furthermore, as noted in Section 3(b), construction-generated emissions of PM would not exceed the SJVAPCD's localized significance thresholds. As a result, exposure to construction-generated DPM would not be anticipated to exceed applicable thresholds (i.e., incremental increase in cancer risk of 20 in one million). As a result, this impact would be considered less than significant.

Construction of the proposed project may contribute to localized concentrations of PM, including emissions from on-site equipment and fugitive dust. Fugitive dust emissions would be primarily associated with earth-moving, and material handling activities, as well as, vehicle travel on unpaved and paved surfaces. Uncontrolled emissions of fugitive dust may contribute to increased occurrences of Valley Fever and may also result in increased nuisance impacts to nearby land uses and receptors. As a result, localized uncontrolled concentrations of construction-generated PM would be considered to have a potentially significant impact.

Long-term Operation

<u>Localized Mobile-Source CO Emissions</u>

Carbon monoxide is the primary criteria air pollutant of local concern associated with the proposed project. Under specific meteorological and operational conditions, such as near areas of heavily congested vehicle traffic, CO concentrations may reach unhealthy levels. Mobile-source emissions of CO are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. For this reason, modeling of mobile-source CO concentrations is typically recommended for sensitive land uses located near signalized roadway intersections that are projected to operate at unacceptable levels of service (i.e., LOS E or F). Localized CO concentrations associated with the proposed project would be considered less-than-significant impact if: (1) traffic generated by the proposed project would not result in deterioration of a signalized intersection to a level of service (LOS) of E or F; or (2) the project would not contribute additional traffic to a signalized intersection that already operates at LOS of E or F.

No signalized intersections are located in the project area that would be adversely affected by project implementation. As a result, the proposed project would not contribute substantially to localized CO concentrations that would exceed applicable standards. For this reason, this impact would be considered less than significant.

Toxic Air Contaminants

No major stationary sources of TACs or major agricultural operations are located within one-quarter mile of the project site. In addition, the project site is not located within 500 feet of a freeway or other busy traffic corridor (SJVAPCD 2017). Predicted on-site health risks for on-site student and staff are anticipated to be minor and would not be anticipated to exceed the SJVAPCD's significance thresholds. In addition, implementation of the proposed project would not result in the long-term operation of any major on-site stationary sources of TACs, nor would project implementation result in a significant increase in diesel-fueled vehicles traveling along area roadways. For these reasons, long-term exposure to TACs would be considered less than significant.

Mitigation Measures AQ-1 through AQ-8: Implement Measures to Reduce Localized Pollutant Concentrations

The following measures shall be implemented to reduce potential exposure of sensitive receptors to localized concentrations of construction-generated PM at nearby sensitive receptors and land uses during project construction:

AQ-1. On-road diesel vehicles shall comply with Section 2485 of Title 13 of the California Code of Regulations. This regulation limits idling from diesel-fueled commercial motor vehicles with gross vehicular weight ratings of more than 10,000 pounds and licensed for operation on highways. It applies to California and non-California based vehicles. In general, the regulation specifies that drivers of said vehicles:

a. Shall not idle the vehicle's primary diesel engine for greater than 5 minutes at any location, except as noted in Subsection (d) of the regulation; and,
b. Shall not operate a diesel-fueled auxiliary power system to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5.0 minutes at any location when within 1,000 feet of a restricted area, except as noted in Subsection (d) of the regulation.

AQ-2. Off-road diesel equipment shall comply with the 5-minute idling restriction identified in Section 2449(d)(2) of the California Air Resources Board's In-Use Off-road Diesel regulation. The specific requirements and exceptions in the regulations can be reviewed at the following web sites: www.arb.ca.gov/msprog/truck-idling/2485.pdf and ww.arb.ca.gov/regact/2007/ordiesl07/frooal.pdf.

AQ-3. Signs shall be posted at the project site construction entrance to remind drivers and operators of the state's five-minute idling limit.

AQ-4. To the extent available, replace fossil-fueled equipment with alternatively-fueled (e.g., natural gas) or electrically-driven equivalents.

AQ-5. Construction truck trips shall be scheduled, to the extent possible, to occur during non-peak hours.

AQ-6. The burning of vegetative material shall be prohibited.

AQ-7. The proposed project shall comply with SJVAPCD Regulation VIII for the control of fugitive dust emissions. Regulation VIII can be obtained on the SJVAPCD's website at website URL: https://www.valleyair.org/rules/1ruleslist.htm. At a minimum, the following measures shall be implemented:

a. All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
b. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.

c. All land clearing, grubbing, scraping, excavation, land leveling, grading, and cut & fill activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

d. When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.

e. Trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)

f. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

g. On-road vehicle speeds on unpaved surfaces of the project site shall be limited to 15 mph.

h. Sandbags or other erosion control measures shall be installed sufficient to prevent silt runoff to public roadways from sites with a slope greater than one percent.

i. Excavation and grading activities shall be suspended when winds exceed sustained speeds of 20 miles per hour (Regardless of wind speed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation).

AQ-8. The above measures for the control of construction-generated emissions shall be printed on or otherwise included with site grading and construction plans.

d. Would the project create objectionable odors affecting a substantial number of people?

<u>Less than Significant</u>

The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies.

No major sources of odors have been identified as resulting from the project's operation; elementary schools generally do not have odor-creating operational features. However, construction of the proposed project would involve the use of a variety of gasoline or diesel-powered equipment that would emit exhaust fumes. Exhaust fumes, particularly diesel-exhaust, may be considered objectionable by some people. In addition, pavement coatings and architectural coatings used during project construction would also emit temporary odors. However, construction-generated emissions would occur intermittently throughout the workday and would dissipate rapidly within increasing distance from the source. As a result, short-term construction activities would not expose a substantial number of people to frequent odorous emissions.

4. Biological Resources

(Note: A Biological Resources Assessment was prepared for this project and is included as Appendix 2 of this Initial Study.)

a. Would the project 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?

<u>Less than Significant with Mitigation</u>

The project site consists of primarily fallow agricultural land and the remnants of rural residential development. As such, the project site has been disturbed from its natural state for many years. Although loss of agricultural land may result in decreased foraging area for some species, such land is of limited habitat value for sensitive plant and wildlife species, especially due to the amount of disturbance from humans, vehicles, and domestic animals on a regular basis. The direct impacts of the proposed school will be a loss of marginal habitat and possible direct mortality for any animals in the path of construction equipment. Direct mortality could occur to common fossorial or slow-moving mammals and reptiles within the project area. Direct take could also occur for bird eggs and nestlings within the project area if vegetation removal or ground disturbance occur during the nesting season, generally February 1 through August 31. In addition to Migratory Bird Treaty Act (MBTA)-covered bird species, other special status bird species that could occur in the vicinity include Swainson's hawk (*Buteo swainsoni*), Northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), Lawrence's goldfinch (*Spinus lawrencei*), yellow-billed magpie (*Pica nuttalli*), Nuttall's woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), and burrowing owl (*Athene cunicularia*). The project is not expected to result in direct take of any special status plant species. Indirect impacts to species that may still use the area after construction could include decreased dispersal, increased mortality and injury, and increased debris that through ingestion or physical contact can be harmful to wildlife. All of these impacts are caused by the increase in human disturbance (vehicles, people, and pets). However, impacts to special status species can be minimized to a less than significant impact with the incorporation of avoidance and minimization measures.

Special Status Species Impacts and Avoidance Measures

Database queries indicated 53 animals and 19 plant species with special status occur or have historically occurred within the 9-quad search area (Appendices A and B of Initial Study Appendix 2). Many of the species from the generated list either were historic, extirpated occurrences, or were species with very specialized habitat requirements that were not present on the site or within the vicinity. Therefore, the majority of the species were "ruled out". Based on the habitat types present within the study area, nine special status wildlife species have the potential to occur on the site.

<u>Special Status Plants</u>

Of the 19 potentially occurring special status plant species, none were found within the project area or likely to occur within the project area. Although the site survey was not conducted at the peak blooming period for some potentially occurring special status plants, all plants could be ruled out because their elevation range, required habitat, and/or soil type differed from the site conditions. Therefore, the project will not impact any special status plant species.

<u>Special Status Birds</u>

Nine special status avian species (Swainson's hawk, Northern harrier, white-tailed kite, loggerhead shrike, Lawrence's goldfinch, yellow-billed magpie, Nuttall's woodpecker, oak titmouse, and burrowing owl) have the potential to nest and/or forage within the study area. Greater detail regarding life history requirements of these birds is provided in Appendix A of Initial Study Appendix 2. Swainson's hawk, white-tailed kite, Lawrence's goldfinch, yellow-billed magpie, Nuttall's woodpecker, and oak titmouse could nest in the large trees adjacent to the study area. Loggerhead shrike could nest in shrubs or trees within and adjacent to the study area and forage in the open fields. Although none were detected during reconnaissance survey, burrowing owls could move into the area prior to construction, and occupy any large burrows during the nesting and wintering seasons.

<u>Impact</u>

Construction-related disturbance could be considered take under CESA and MBTA. CDFW usually requires various sized "no disturbance" buffers around nesting sites of bird species.

Specific impacts to burrowing owl according to the *Staff Report on Burrowing Owl Mitigation* (CDFG 1995) include any disturbance within 50 meters (approx. 160 feet) [75 meters (250 feet) during breeding season] which may result in harassment of owls or their occupied burrows; destruction of natural and artificial burrows (culverts, concrete slabs and debris piles that provide shelter to burrowing owls); and destruction and/or degradation of foraging habitat adjacent (within 100 meters) of an occupied burrow(s).

In addition, other migratory birds will likely be nesting in the study area and vicinity, most of which are protected by the Migratory Bird Treaty Act (USCA 1918). Both construction-related disturbance and the removal of vegetation within the project area could result in nest abandonment or direct mortality of eggs, chicks, and/or fledglings. This type of impact to migratory birds, including special status bird species, would be considered take under the MBTA and CESA, and therefore, is a potentially significant impact. In order to avoid impacts to avian species, nests and nesting habitat should not be disturbed or destroyed. The following measures will reduce potential impacts to a less than significant level.

Mitigation Measure BR-1 through BR-4: Mitigation for Potential Impacts to Special Status Bird Species

BR-1: <u>Avoidance.</u> If feasible, any vegetation removal will take place between September 1 and February 1 to avoid impacts to nesting birds in compliance with the Migratory Bird Treaty Act. If vegetation removal must occur during the nesting season, project construction may be delayed due to actively nesting birds and their required protective buffers.

BR-2: <u>Pre-construction Surveys</u>

a. If vegetation removal or ground disturbance will commence between February 1 and August 31, a qualified biologist will conduct a pre-construction survey for nesting birds within 14 days of the initiation of disturbance activities. This survey will cover:

    i. Potential nest sites in trees, bushes, or grass within species-specific buffers of the project area (Swainson's hawk – 0.5 mile, other raptor species such as white-tailed kite – 500 ft, non-raptor species (loggerhead shrike, magpie etc. – 250 ft).

    ii. Survey protocol developed by the Swainson's Hawk Technical Advisory Committee (TAC) should be followed (CDFG 2000), which includes survey timing and requirements for repeated visits.

b. Surveys for burrowing owl will occur within 14 days prior to any ground disturbance, no matter the season. This survey will cover potential burrowing owl burrows in the project area and suitable habitat within 150 m (500 ft). Evaluation of use by owls shall be in accordance with California Department of Fish and Wildlife survey guidelines (CBOC 1993, CDFG 1995, CDFG 2012). Surveys will document if burrowing owls are nesting or using habitat in or directly adjacent to the project area. Survey results will be valid only for the season (breeding (Feb 1-Aug 31) or non-breeding (Sept 1-Jan 31) during which the survey is conducted.

c. If no active nests or burrows are detected during the pre-construction survey, then no further action is required. If an active nest or burrow is detected, then the following minimization measures will be implemented.

BR-3: <u>Minimization/Establish Buffers</u>

a. Swainson's hawk, white-tailed kite, loggerhead shrike, Lawrence's goldfinch, yellow-billed magpie, Nuttall's woodpecker, oak titmouse, and MTBA -protected species:

    If any active nests are discovered (and if construction will occur during bird breeding season), the USFWS and/or CDFW will be contacted to determine protective measures required to avoid take. These measures could include fencing off an area where a nest occurs, or shifting construction work temporally or spatially away from the nesting birds. Biologists are required on site to monitor construction while protected migratory birds are nesting in the project area. If an active nest is found after the completion of the pre-construction surveys and after construction begins, all construction activities will stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest.

b. Burrowing owl

    If burrowing owls are detected within the survey area, CDFW should be consulted to determine the suitable buffer. These buffers will take into account the level of disturbance of the project activity, existing disturbance of the site (vehicle traffic, humans, pets, etc.), and time of year (nesting vs. wintering). If avoidance is not feasible, the District will work with CDFW to determine appropriate mitigation, such as passive exclusion or translocation, and associated mitigation land offset (CDFG 2012).

BR-4: **<u>If avoidance is not possible</u>**, a qualified biologist will develop appropriate mitigations that will reduce project impacts to sensitive biological resources to a less than significant level. The type and amount of mitigation will depend on the resources impacted, the extent of the impacts, and the quality of habitats to be impacted. Mitigations may include, but are not limited to: 1) Compensation for lost habitat in the form of preservation or creation of in-kind habitat protected by conservation easement; 2) Purchase of appropriate credits from an approved mitigation bank or land trust servicing the Fresno County Area; 3) Payment of in-lieu fees.

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

<u>No Impact</u>

There are no riparian or sensitive natural communities within the project area.

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

<u>No Impact</u>

There are no federally protected wetlands within the project area. Implementation of typical ground disturbance and erosion control Best Management Practices (BMPs) and compliance with grading permits will insure that there is no impact to storm drainage facilities or nearby canals.

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

<u>Less than Significant</u>

The site does not appear to constitute a “movement corridor” for native wildlife (USFWS 1998) that would attract wildlife to move through the site any more than the surrounding developed and agricultural lands. The project site is bordered by residential and busy streets, which restricts access for wildlife. Smaller wildlife species and birds are not expected to be further inhibited by the project as compared with residential and agricultural uses. Therefore, the project will have a less than significant effect on regional wildlife movements (MO).

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

<u>No Impact</u>

The project appears to be consistent with relevant biological resources policies of the City of Clovis and would not conflict with local policies or ordinances protecting biological resources (City of Clovis 2015).

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

<u>No Impact</u>

Fresno County is not part of any HCP or NCCP, so the project would not conflict any provisions of any local, regional or state habitat conservation plan (MO, USFWS 1998, 2005).

5. Cultural Resources

A Cultural Resources Survey (included as Appendix 3) was prepared for the project by Sierra Valley Cultural Planning. The survey included a records search of information from the Southern San Joaquin Valley Information Center which identifies areas previously investigated and known cultural resources within or in close proximity to the Project Area of Potential Effect (APE).

Would the project:

- **a. Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5?**
- **b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?**
- **c. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?**

<u>Less than Significant with Mitigation</u>

There are no prehistoric or historic-period sites or structures identified within the Project APE. There is one recorded resource adjacent to the project area – the Enterprise Canal; a modern, realigned section of the Enterprise Canal located immediately south of the project APE. The road bridge which carries Minnewawa Avenue across the canal has been previously assessed as not eligible for listing for the National Register of Historic Places. No other resources are documented within the half-mile radius.

The records search indicated that although there had been no previous cultural resource studies within the project area, there have been eight studies conducted within a one-half mile radius. The records search consists of searching the National Register of Historic Places, the Historic Property Directory, the California Register of Historic Places, the California Points of Historical Interest, the California Inventory of Historic Resources, and the California State Historic Landmarks. No cultural resource sites listed on the National Register of Historic Places, the California Register of Historic Resources, California Points of Historical Interest, State Historic Landmarks, or the California Inventory of Historic Resources have been documented within or immediately adjacent to the project APE.

The study identified and evaluated for significance a palm tree-lined driveway, remnants of irrigation features, and a localized refuse deposit located within the south-central portion of the project APE; the features and the refuse deposit appear to be associated with a former ranch/farm home site, which is no longer standing. Per the study, the remnant irrigation features and refuse scatter do not meet the criteria for listing on the California Register of Historic Resources, and they also lack integrity of association. The palm-lined driveway similarly lacks integrity of association and feeling. The study concluded that none of the identified resources appears eligible for listing on the California Register of Historic Resources and recommended no further study.

In the unlikely event that subsurface historical, archaeological or paleontological resources are discovered during construction, the mitigation measures listed below will be incorporated into the project. Impacts pertaining to cultural resources thus will be less than significant with mitigation incorporated.

- **Mitigation Measure CR-1:** If subsurface historic or prehistoric archaeological or paleontological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified cultural resources professional or paleontologist shall be consulted to determine whether the resource requires further study. If the resources are determined to be significant, mitigation measures shall be identified by the cultural resources professional or paleontologist and recommended to the District. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.
- **Mitigation Measure CR-2:** If human remains are unearthed during excavation and/or construction activities, all activity shall cease immediately. No further disturbance shall occur until the County

Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains. Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the District shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the District has discussed and conferred with the most likely descendants regarding their recommendations.

6. Energy Resources

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

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

Less than Significant

The plans for all public school projects in California must be submitted to the Division of the State Architect (DSA) for plan review and must comply with DSA and California Energy Commission (CEC) requirements. These requirements ensure that schools, including the proposed project by Clovis Unified, would not result in the inefficient, wasteful, or unnecessary consumption of energy. Therefore, the impact of the proposed school project on energy resources would be less than significant.

7. Geology and Soils

a. **Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**

- **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**
- **Strong seismic ground shaking?**
- **Seismic-related ground failure, including liquefaction?**
- **Landslides?**
- **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?**
- **Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?**

Less than Significant

A Geologic and Environmental Hazards Review was prepared for the project by Padre Associates (Appendix 4 of this Initial Study). The study was prepared following the requirements of California Education Code section 17212. This Initial Study uses information from the study to evaluate the proposed school project.

The conclusions and recommendations of the study for geologic and soils conditions are as follows:

- The project site is not located within the boundaries of an Alquist-Priolo Earthquake Fault Zone, and no active faults are known to traverse the Project Site;

- Ground shaking caused by events on distant and nearby active faults is considered a possible seismic hazard at the project site; however, this would be true for any potential school site within the school district boundaries;
- Based on the liquefaction analysis, the potential for liquefaction and lateral spreading is low based on the soil types present in Fresno County (which are either too coarse or too high in clay content to be conducive to liquefaction) and depth to groundwater (>50 feet). However, actual conditions should be determined by site-specific subsurface exploration and geotechnical analyses;
- Seismically-induced settlement caused by earthquake shaking is considered a potential seismic hazard at the project site; however, actual conditions should be determined by site-specific subsurface exploration and geotechnical analyses;
- Surface soils at the project site predominantly generally consist of a sandy loam material with a low to moderate shrink-swell potential. However, the presence or absence of expansive soils should be verified by site-specific sampling and testing of on-site earth materials as part of a site-specific geotechnical study;
- Regional ground subsidence in the Clovis area was mapped as less than one foot by the USGS in 1999; however, the potential for subsidence at the project site exists based on the likely future demand for pumping groundwater in the San Joaquin Valley and should be addressed as part of a site-specific geotechnical analyses;
- The project site and surrounding area is generally flat and not a landslide prone area. Based on this, the potential for slope instability is low.

As a standard part of the school project design process, the District would retain a qualified consultant to prepare the design level Geotechnical Investigation Report. The design parameters identified in the analyses would be subject to review and approval by California Division of the State Architect, and the District would incorporate approved standards in the project design.

Based on the above information, impacts related to geology and soils would be less than significant.

b. Would the project result in substantial soil erosion or the loss of topsoil?

<u>Less than Significant</u>

The potential for water-or wind-borne erosion and loss of topsoil would exist during the construction phase of the proposed project, primarily due to clearing, grubbing, and grading activities. Once construction is completed, the potential for erosion would be minimal because the ground would be covered by buildings, hard surfaces, and landscaping.

The potential for the project to result in substantial soil erosion or loss of topsoil during the construction phase would be less than significant because the project would be subject to requirements of the State Water Quality Control Board and the San Joaquin Valley Air Pollution Control District. General Construction Permit, Order No. 2012-0006-DWQ, issued by the State Water Quality Control Board in 2012, regulates construction projects of one acre or more, including the proposed project. Projects obtain coverage under the permit by developing and implementing the Storm Water Pollution Prevention Plans, which must specify best management practices that a project would employ to minimize pollution of storm water. Best management practices include erosion controls, sediment controls, wind erosion controls, non-storm water management controls, and waste management and controls (i.e. good housekeeping practices).

The intent of San Joaquin Valley Air Pollution Control District Regulation VIII (Fugitive PM10 Prohibitions) is to reduce ambient concentrations of fine particulate matter (PM10) by requiring actions to prevent, reduce or mitigate anthropogenic fugitive dust emissions. The regulation includes specific measures for construction projects.

c. Would the project 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?

No Impact

The project would connect to the City of Clovis sewer system. It would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, the project would have no impact.

d. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact

No unique paleontological resources or geologic features have been identified within the vicinity of the project site. Refer to Section 5 (Cultural Resources) for potential impacts to undiscovered resources.

8. Greenhouse Gas Emissions

A technical analysis of greenhouse gas emissions was conducted for the project at the proposed school site (Ambient 2018; Appendix 1 of this Initial Study). This Initial Study uses information from the analysis to evaluate the proposed school project.

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

Less than Significant

Implementation of the proposed project would contribute to increases of GHG emissions that are associated with global climate change. Short-term and long-term GHG emissions associated with the development of the proposed project are discussed in greater detail, as follows:

Short-term Greenhouse Gas Emissions

Based on the modeling conducted, annual emissions of greenhouse gases associated with construction of the proposed elementary school would generate approximately 496.5 metric tons of CO2 equivalent. There would also be a small amount of GHG emissions from waste generated during construction; however, this amount is speculative, as actual emissions would vary depending on factors including construction schedules, equipment required, and activities conducted. Assuming an estimated 30-year project life, amortized emissions would total approximately 16.6 metric tons of CO2 equivalent per year. Amortized construction-generated GHG emissions were included in the operational GHG emissions inventory for the evaluation of project-generated GHG emissions (refer to Table 5 of Appendix 1).

Long-term Greenhouse Gas Emissions

Estimated long-term increases in GHG emissions associated with the proposed project are summarized in Table 6 of Appendix 1. Based on the modeling conducted, operational GHG emissions would total approximately 1,671.7 MTCO2*e*/year in 2020 and approximately 1,652.2 MTCO2*e*/year in 2030. Based on this estimate and assuming a population of 750 students and 50 employees, the calculated GHG efficiency for the proposed project would be 2.1 MTCO2e/SP/yr for years 2020 and 2030.

The GHG efficiency for the proposed project would not exceed the thresholds of 4.9 MTCO2e/SP/yr in 2020 or 2.6 MTCO2e/SP/yr in 2030. It is also important to note that mobile-source emissions were conservatively calculated, based on the default fleet distribution assumptions contained in the model, which includes medium and heavy-duty vehicles. Mobile sources associated with schools typically consist largely to light-duty vehicles and buses. As a result, actual mobile-source emissions would be less.

b. Would the project conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases?

Less than Significant

The Clovis General Plan Final PEIR states: Impact 5.7-2: The proposed Clovis General Plan Update would not conflict with the California Air Resources Board Scoping Plan or the Fresno Council of Government's proposed 2014–2040 Regional Transportation Plan/Sustainable Community Strategy. The Final PEIR concluded that Impact 5.7-2 would be less than significant. (Page 3-27).

The impact of the proposed school project in relation to applicable plans, policies, or regulation adopted to reduce greenhouse gas emissions would be less than significant. This determination reflects the conclusion in the Final PEIR that the Clovis General Plan Update would not significantly conflict with the plans, policies, and regulation and the determination in Section 8(a) that the level of project-generated greenhouse gas emissions would be less than significant.

9. Hazards and Hazardous Materials

a. Would the project:

- **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**
- **Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

Less than Significant

The Clovis General Plan Final PEIR states: Impact 5.8.1: Construction and operation of projects developed pursuant to the proposed Clovis General Plan Update would involve the transport, use, and/or disposal of hazardous materials. (Page 3-27)

The Draft PEIR states:

- Construction of projects pursuant to the Clovis General Plan Update would involve use of fuels, lubricants, greases, solvents, architectural coatings including paints, fertilizers, and pesticides including herbicides. (Page 5.8-24)
- Operation of projects developed pursuant to the Clovis General Plan Update would involve hazardous materials used in industrial and commercial land uses as well as hazardous materials used for cleaning and maintenance purposes in almost all developed land uses: cleansers, solvents, paints, pesticides, and fertilizers. (Page 5.8-24)
- The amounts of hazardous materials used would vary by land us type: amounts would be small for residential, school, institutional, and many office uses, and would be larger for industrial uses. (excerpt) (Page 5.8-24)
- Construction and operation of projects approved under the Clovis General Plan Update would involve some risk of accidental release of hazardous materials used by the projects, as well as accidental disturbance of existing hazardous materials in the environment, such as petroleum products released from leaking underground storage tanks, or ACM or LBP in existing buildings that would be renovated or demolished. (Page 5.8-24)

The Final PEIR concluded that the impacts would be less than significant. (Page 3-27)

The PEIR for the General Plan Update adequately describes the types of hazards-related impacts that could be associated with the construction and operation of the proposed school. The conclusion that the impacts would be less than significant also applies to the proposed school. The school would be subject to state and local regulations governing the routine transport, use, and disposal of hazardous materials and the release of hazardous materials into the environment.

In addition, the California Education Code requires that the proposed school site undergo an environmental review process overseen by the California Department of Toxic Substances Control (DTSC). The purpose of the process is to determine if a release or threatened release of any hazardous materials found on the proposed site or presence of any naturally occurring hazardous materials on the site present a risk to human health or the environment. The District, working with DTSC, must identify and implement measures that would mitigate any hazardous conditions before the California Department of Education would approve the school site and provide funding for the project. (Education Code sections 17213.1, and 17213.2 Therefore, based on compliance with existing requirements, this impact is less than significant.

b. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant

The proposed project involves the construction and operation of a school and athletic facilities; no other existing or proposed schools are within one-quarter mile of the project. The potential for the project to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste is addressed in Section 8(a) and was determined to be less than significant.

c. Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact

A review of the California Department of Toxic Substances Control's EnviroStor web site did not result in the identification of any hazardous materials sites within the project site.

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

No Impact

The project site is not within two nautical miles of a public or private airport and is not within an area subject to an airport land use plan. Because the project site is a considerable distance from the nearest airports and is not subject to an airport land use plan, the project would not result in airport-related safety hazards for students and staff at the project site. Moreover, the project would not result in a change in airport traffic patterns, including an increase in traffic or change that results in substantial safety risks. Therefore, no impact would occur.

e. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact

All schools have emergency response/evacuation plans. Fresno County's Public Health Emergency Preparedness (PHEP) is responsible for developing response plans to be used in the event of a large-scale threat to the health of residents of Fresno County. However, research conducted for this Initial Study did not identify any adopted emergency response plans or emergency evacuation plans the project could impair.

f. Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact

The project site is in an urban area and not within or near an area subject to wildland fires (see discussion in Section 20).

g. CEQA Guidelines section 15186, Public Resources Code section 21151.8, Education Code Section 17213, and California Code of Regulations, Title 5, Section 14011[h], establish requirements for evaluating the safety of potential school sites. The purpose of the requirements is to ensure that potential health hazards resulting from exposure to any hazardous materials, wastes, and substances that may exist on a

site will be carefully examined and disclosed in a negative declaration or EIR, and that the lead agency will consult with other agencies in this regard. The EIR or negative declaration must address the following concerns under the aforementioned sections:

Is the proposed school site:

- **The site of a current or former hazardous waste or solid waste disposal facility and, if so, have the wastes have been removed;**
- **A hazardous substance release site identified by the Department of Toxic Substances Control in a current list adopted pursuant to Section 25356 of the Health and Safety Code for removal or remedial action pursuant to Chapter 6.8 (commencing with Section 25300) of Division 20 of the Health and Safety Code;**
- **The site of one or more buried or above ground pipelines that carry hazardous substances, acutely hazardous materials, or hazardous wastes, as defined in Division 20 of the Health and Safety Code? This does not include a natural gas pipeline used only to supply the school or neighborhood; and**
- **Within 500 feet of the edge of the closest traffic lane of a freeway or other busy traffic corridor.**

Less than Significant with Mitigation

In addition to addressing the preceding questions, Clovis Unified must determine if any permitted or non-permitted facilities, including but not limited to freeways and busy traffic corridors, large agricultural operations, and rail yards, are within one-quarter mile of the proposed school site that might reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste.

Clovis Unified retained Padre Associates to prepare an evaluation of the proposed site titled "Geologic and Environmental Hazards Review (Title V) for a New Elementary School Site, North Minnewawa Avenue and East International Avenue, Clovis, Fresno County, California" (June 2018). The evaluation concluded that the proposed site is not a current or former hazardous waste or solid waste disposal facility, a hazardous substance release site, the site of any natural gas or hazardous liquid pipelines, within any easements for high voltage power lines (100 feet for 50-133 kV line, 150 feet for 220-230 kV line, 350 feet for 500-550 kV line), within 1,500 feet of a railroad track easement, or within 500 feet of a freeway or busy traffic corridor. (Pages 9 - 12)

Padre consulted with the San Joaquin Valley Air Pollution Control District to obtain information on any facilities within one-quarter mile of the proposed school site that might reasonably be anticipated to emit hazardous air emissions. The SJVAPCD records do not identify any such facilities within a one-quarter mile radius of the proposed school site. (Page 11)

Separate from the Padre report, the Fresno County Health Department was contacted to obtain information on any facilities within one-quarter mile of the proposed school site that might reasonably be anticipated to handle hazardous or extremely hazardous materials, substances or waste (CA Education Code Section 17213(b). The Health Department's response, dated March 26, 2018, indicated the following:

- There is no record with this Department regarding whether the proposed project site is currently or formerly a hazardous waste disposal site or solid waste disposal site.
- There is no record with this Department of a hazardous substance release associated with this site.
- There is no record with this Department that this site contains any pipelines, situated underground or above ground, which carries hazardous substances, acutely hazardous materials, or hazardous waste, with the potential exception of a propane or natural gas line to supply propane or natural gas to the existing structures on the sites.
- This Department has no record of facilities within one-fourth mile of the school site which might reasonably be anticipated to handle hazardous or acutely hazardous materials. It should be noted that there may be other sites within one-fourth mile that this Department does not have in its current data base.

Based on the above information, these impacts are considered less than significant.

High-Volume Water Pipelines

High-volume water pipelines are located within 1,500 feet of the project site: two operated by Fresno Irrigation District (FID), two operated by the Garfield Water District (GWD) and one privately owned irrigation pipeline. Therefore, a High-Volume Water Pipeline Risk Analysis (included as Appendix 5) was prepared by J. House Environmental, Inc. to evaluate the risk posed by these pipelines. Based on location and topography, the Pipeline Risk Analysis determined that the two FID pipelines and the private pipeline would not pose a risk to the school site, and therefore were not further analyzed in the report. The two GWD pipelines were analyzed in greater detail and the Pipeline Risk Analysis concluded that these pipelines would not pose a significant risk due to the low likelihood of pipeline failure and the depth of water (not expected to exceed 0.5 to 1.0 feet) in the unlikely event of failure. The analysis recommended that site development plans take into consideration the presence of the east-west trending GWD 12/14-inch diameter irrigation water pipeline that traverses the northern edge of project site, with the goal of minimizing student and staff use of areas within 20 feet of the pipeline alignment (e.g. consider low occupancy uses such as parking lots or landscape buffer areas), and also that any emergency plan documents that are prepared for the new elementary school site identify the presence of the high-volume irrigation water pipelines and include an emergency contact list with phone numbers to be used in the event of an incident. These recommendations have been included as mitigation measures to ensure potential impacts are less than significant.

Mitigation Measures

HZ-1: To help mitigate potential physical impacts in the unlikely event of a catastrophic pipeline rupture, site development plans shall take into consideration the presence of the east-west trending GWD 12/14-inch diameter irrigation water pipeline that traverses the northern edge of project site, with the goal of minimizing student and staff use of areas within 20 feet of the pipeline alignment. Areas in closest proximity to this high-volume pipeline should be considered for low average occupancy level uses, such as parking lots, or designated as landscaped “buffer” areas.

HZ-2: Emergency plan documents that are prepared for the new elementary school site shall identify the presence of the high-volume irrigation water pipelines and include an emergency contact list with phone numbers to be used in the event of an incident.

10. Hydrology and Water Quality

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

<u>Less than Significant</u>

The City of Clovis’ water supply and wastewater treatment systems would serve the project. The water supply system complies with applicable water quality standards and the wastewater discharge system complies with applicable waste discharge requirements. The design and operational characteristics of the project related to water and wastewater would not incrementally or directly cause the City’s systems to violate the applicable requirements. Additional discussion is included in Section 19(a). Therefore, this is a less than significant impact.

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

<u>Less than Significant</u>

The City of Clovis obtains its water supply from a combination of groundwater, surface water entitlements, and water treated at the City’s Surface Water Treatment Plant. From 2005 to 2015, groundwater made up approximately 72 percent of total water domestic production in the City’s system. In the most recent completed year, 2015, groundwater made up 61 percent of total production. The existing municipal well system consists of 42 wells, of which six have wellhead treatment, two are in standby with water quality issues, and five are inactive due to being dry or otherwise unusable. (Draft SFEIR Proposed Updates to City of Clovis Water Master Plan, Wastewater Master Plan, and Recycled Water Master Plan; February 2018) While the City has adopted policies and undertaken measures to obtain water from non-groundwater sources, groundwater is likely to remain a major source of the City's water supply. The City draws groundwater from the Kings Sub-basin, which is substantially overdrafted.

The City of Clovis implementing a host of strategies, including increasing intentional groundwater recharge at a number of locations; increasing the use of existing surface water entitlements and the City's Surface Water Treatment Plant; and recycling of wastewater at the Fresno-Clovis Regional Wastewater Reclamation Facility and the City of Clovis Water Reuse Facility. The project site is within the Heritage Grove Urban Center – which has been planned by the City for considerable time as an area of focused urban development – and water demand has been anticipated in the City's long-term water planning. Furthermore, the project would use substantially less water than the existing General Plan land use designations for the project site (see discussion and tables in Section 19(a)). For these reasons, the project would have a less than significant impact on groundwater supplies.

The proposed project would reduce the amount of land available for groundwater recharge by covering existing vacant land with impermeable road, building, and hardcourt surfaces. However, most of the project site will consist of permeable turfed playground and athletic fields areas that would allow for groundwater recharge. The project site will drain to a storm water retention basin, which will also contribute to groundwater recharge. Therefore, this impact is considered less than significant.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:

- **Result in substantial erosion or siltation on- or off-site;**
- **Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;**
- **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;**
- **Impede or redirect flood flows?**

<u>Less than Significant</u>

The Clovis General Plan Final PEIR states: Impact 5.17-5: The proposed General Plan, in the 2035 and Full Buildout Scenarios, would require construction of additional storm drainage facilities. (Page 3-35)

The Final PEIR concluded that Impact 5.17-5 would be less than significant. (Page 3-35)

Grading required for the proposed project would change the existing drainage pattern within the project site, and the additional covered surfaces would increase the amount of surface runoff and, potentially, the rate of runoff. The runoff would have the potential to degrade surface and groundwater quality if not properly controlled.

The Fresno Metropolitan Flood Control District (FMFCD) is responsible for managing urban stormwater runoff within the Fresno area. The site is within FMFCD Drainage Area "BY2" and is planned to be served by future pipeline facilities located along International Avenue and near the southern portion of the project site. The District will enter into an agreement with FMFCD that will include Items 2(a) through 2(d) in FMFCD's letter, dated March 26, 2018, and incorporated by reference in this Initial Study. The FMFCD letter indicates that "future [FMFCD] storm drainage facilities will have capacity to serve the density of the project."

The volume of storm water runoff from the proposed school site likely would be less than would occur with the urban residential development the Clovis General Plan Update designates for the site. The extent of impermeable surfaces associated with up to 140 single-family residential dwellings (e.g., streets, sidewalks, driveways, building pads) would be greater than associated with the school.

Before beginning construction, Clovis Unified must prepare a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP is a site-specific plan that is designed to control the discharge of pollutants from the construction site to local storm drains and waterways.

(Also see discussion in Sections 7(b) and 19(b)).

For the reasons identified above, impacts of the project pertaining to drainage and water flow would be less than significant.

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

Less than Significant

Based on information in the City of Clovis General Plan Draft PEIR, Page 5.9-31, and in the Geologic and Environmental Hazards Review (Appendix 4, Page 7), the proposed school project would have no impacts related to seiche, tsunami, or mudflow.

According to FEMA National Flood Hazard Layer, the project site lies in Flood Zone X - Areas determined to be outside the 0.2 percent (500-year) annual chance floodplain. (Appendix 4, Pages 6 and 13)

The nearest dam of significant size that could impact the Project Site in the event of failure is the Big Dry Creek Dam (Big Dry Creek Reservoir). The Geologic and Environmental Hazards Review prepared by Padre Associates noted that the proposed school site is within an area subject to inundation in the unlikely event Big Dry Dam should fail. Floodwaters could reach the school site within one hour of the dam failing (note: flood water heights are not provided).

The Clovis General Plan Draft PEIR discusses risks related to dam inundation within the Plan Area (which includes the project site). Regarding the risk of dam inundation at Big Dry Creek Reservoir, the Draft PEIR notes the reservoir has only ever reached half of its full capacity (30,000 acre-feet) due to seepage concerns and lack of inflow. The Draft PEIR determined that potential dam inundation impacts in the Plan Area would be less than significant given compliance with City requirements for flood risk reduction in General Plan Update Environmental Safety Element Policy 1.1. Based on this information, impacts from dam flood inundation for the project would be less than significant.

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

Less than Significant

The Sustainable Groundwater Management Act (SGMA) was signed into law in 2014 to remedy unsustainable groundwater depletion in groundwater basins in California. SGMA requires the development and adoption of Groundwater Sustainability Plans (GSPs) by 2020 and that all high and medium priority groundwater basins (including the Kings Sub-basin) must reach sustainability by 2040.

SGMA gives local agencies the authorities to manage groundwater in a sustainable manner and allows for limited state intervention when necessary to protect groundwater resources. The City of Clovis is participating with other local agencies in the North Kings Groundwater Sustainability Agency (North Kings GSA). The North Kings GSA, consistent with SGMA, is developing a GSP targeted for completion before the legislated deadline of January 31, 2020. This document will be developed in compliance with the California Department of Water Resources' Groundwater Sustainability Plan Emergency Regulations. Developed pursuant to Water Code Section 10733.2, the regulations describe the components of groundwater sustainability plans, intra-basin coordination agreements, and the methods and criteria to be used by DWR to evaluate those plans and coordination agreements.

As the proposed elementary school project would utilize less water than the medium density residential use identified in the General Plan (see discussion in Section 19(a)), the project is not expected to conflict with or obstruct the GSP ultimately adopted by the North Kings GSA. No other potential conflicts pertaining to water quality planning and/or groundwater management have been identified.

11. Land Use and Planning

a. Would the project physically divide an established community?

No Impact

The proposed school project would have no impact related to physically dividing an established community. As shown in aerial images of the project site and immediate vicinity, the site is in an area that currently consists of primarily vacant and agricultural land with limited rural residential development, thus there is essentially no community present which could be divided by the project. No aspects of the design and scale of the proposed school would result in a physical division of the area.

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

Less than Significant

Elementary schools and related improvements and activities are typically considered to be an appropriate and necessary land use component of a well-balanced neighborhood and community. While schools generate vehicular and pedestrian traffic at the beginning and end of the educational day and during events, they also provide educational and open space recreational opportunities for nearby residents.

As discussed in Section 2(b) of Part D, development and operation of the proposed elementary school is consistent with City of Clovis General Plan and Zoning (including the Heritage Grove Design Guidelines). This Initial Study demonstrates that all potential impacts of the project are either less than significant and or can be mitigated to a less than significant level.

12. Mineral Resources

Would the project:

- **Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**
- **Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?**

No Impact

The proposed school project would have no impacts on known mineral resources. The project would not result in the loss of availability of a known mineral resource because no known resources exist on or near the proposed school site. Likewise, the project would not result in the loss of availability of a locally important mineral resource recovery site because none exists on or near the proposed school site. (Fresno County General Plan Background Report [2000] and Clovis General Plan Update PEIR [2014])

13. Noise

a. Would the project:

- **Result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**
- **Result in generation of excessive groundborne vibration or groundborne noise levels?**

<u>Less than Significant with Mitigation</u>

The primary existing source of noise near the proposed school site is traffic on Minnewawa Avenue. Farming and agriculture-related activities on nearby agricultural land are a lesser source of noise.

Existing noise sensitive uses near the proposed school site are limited to a strip of single-family residences along the west side of Minnewawa Avenue northwest of the project site and several rural density single-family residences located approximately three quarter-miles east of the project site.

In the future, assuming the land develops as contemplated in the Clovis General Plan Update, urban residential development would surround the proposed school site and would be directly adjacent to the existing residences.

Construction and operation of the proposed elementary school would result in noise from construction activity, stationary equipment (i.e. HVAC equipment, school bells), playground activities, and vehicular traffic. For the following reasons, the noise-related impacts of the school would be less than significant:

- Construction noise would be limited to the period during which the proposed school is under construction, would vary in intensity during the workday depending on the types of equipment in use, and would only occur during daylight hours. Construction activities would not require the use of equipment that would generate strong groundborne vibrations. To reduce construction-related noise to a less than significant level, Clovis Unified has incorporated in the project the mitigation measures listed below.
- Operational noise associated with the proposed school would be primarily associated with the intermittent sound of children's voices during outdoor recreational activities, school bells signaling the beginning or end of class, and on-site vehicle operations during student drop-off and pick-up periods. Noise generated by such activities would be intermittent, would be predominantly limited to the less noise-sensitive daytime hours, and is common in residential environments.
- The proposed school project would result in increased vehicle traffic on area roadways. Typically, a doubling of vehicle traffic is required before a noticeable increase (3 dBA, or greater) in traffic noise levels would result. Implementation of the proposed project is projected to generate approximately 968 trips per day. Vehicle traffic on the adjacent and nearby roadways average several thousand trips per day. Implementation of the proposed project would not result in a doubling of vehicle traffic on area roadways. As a result, implementation of the proposed project would not result in a substantial increase in traffic noise levels along area roadways.

Mitigation Measures

N-1: Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the hours of 7:00 a.m. and 10:00 p.m. Construction activities shall be prohibited on Sundays and legal holidays.

N-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.

N-3: When not in use, all equipment shall be turned off and shall not be allowed to idle. Provide clear signage that posts this requirement for workers at the entrances to the site.

14. Population and Housing

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

<u>Less than Significant</u>

The proposed elementary school project would not induce substantial unplanned growth. As discussed elsewhere in this report, the project is located in the Heritage Grove Urban Center, which is an area that has been specifically planned by the City of Clovis to accommodate future population growth. Similarly, Clovis Unified is proposing the project in response to the existing and planned residential development in the City of Clovis. No aspects of the project's location, design, or operational features have been identified as having potential to cause a substantial effect on population growth that would differ from the growth planning set forth in the Clovis General Plan and the Heritage Grove Master Plan and Design Guidelines. For these reasons, this impact would be less than significant.

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

No Impact

The proposed school site does not contain any existing housing or population.

15. Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or altered governmental facilities, need for new or 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:

- **Fire protection;**

  Less than Significant

  Development of the proposed school would contribute minimally to an increased demand for fire services provided by the City of Clovis and the Fresno County Fire Protection District. Currently, the proposed school site is in an unincorporated area served by the Fresno County Fire Protection District. The closet Fresno County Fire Protection District station is Station 85 at the southwest corner of Nees and Sunnyside Avenues, about 2.4 miles southeast of the proposed school site.

  The Clovis Fire Department would have primary responsibility for fire protection after the City annexes the proposed school site. The closest existing Clovis Fire Department station is Station 3, on Villa Avenue between Herndon and Alluvial Avenues, about three miles south of the proposed site. According to the City of Clovis' 2012–2017 Five-Year Community Investment Program, Clovis has scheduled funding for the design and construction of a new fire station area within the northwest portion of the City's Sphere of Influence. The City has not finalized locations for the stations (Draft PEIR, Page 5.14-8).

  The impact of the proposed school on fire protection services would be less than significant. The reasons for this conclusion are as follows:

  - Under the Clovis General Plan Update, the land encompassed by the proposed school site could develop with 140 single-family residential dwelling units. The demand for fire protection services resulting from the residential units probably would exceed the demand generated by a new elementary school. Public schools in California are subject to stringent fire prevention standards.
  - Under Section 9.22.060 (Fire Protection) of Clovis' recently adopted Development Code Update, new projects must be built per the currently adopted California Fire Code, related Municipal Code provisions, and current Clovis Fire Code Standards. This includes providing a hydrant system capable of meeting fire flows in compliance with ISO policy and Uniform Fire Code guidelines for fire flow, installing an automatic fire protection sprinkler system, establishing an emergency vehicle access route, etc.
  - The City of Clovis municipal water system would serve the school. It is anticipated that school site will be annexed by the City by the time the school opens.

- **Police protection;**

Less than Significant

Development of the proposed school would contribute minimally to an increased demand for police protection services provided by the City of Clovis and the Fresno County Sheriff's Department. The Sheriff's Department would have primary responsibility for providing police protection services until the City of Clovis annexes the site. The impact of the proposed school on police protection services would be less than significant. The reasons for this conclusion are as follows:

- Clovis Unified has a Police Services Department which serves schools within the District. The Department is comprised of sworn officers, is responsible for the personal safety of students, employees, and the many guests who visit schools or attend any of the events the District sponsors.
- Under the Clovis General Plan Update, the land encompassed by the proposed school site could develop with 140 single-family residential dwelling units[4]. The demand for police protection services resulting from the residential units would very likely exceed the demand generated by a new elementary school.
- The Clovis Police Department and the Clovis Unified Police Services Department would provide police protection for the school when it opens as annexation to the City of Clovis would occur by the time the project is constructed. Clovis Unified would not construct the school until warranted by enrollment growth that results from new nearby urban residential development. The residential development could occur only after the City of Clovis has annexed the land.

- **Schools;**
- **Parks;**
- **Other public facilities?**

No Impact

Development of the proposed school would have a positive impact on the capacity of Clovis Unified to accommodate students generated by development in accordance with the Clovis General Plan Update. Therefore, no adverse impact would occur. Impacts to parks and recreational facilities are addressed in Section 16. This Initial Study has not identified any other public facilities which the proposed school project could impact.

16. Recreation

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact

The proposed school project would have no adverse impact on recreation services and facilities. The project would not increase the demand for or use of existing park and recreation facilities. Instead, the proposed schools would add to the grounds and facilities within the community that Clovis Unified could make available to the community for recreational and other uses.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Less than Significant

The proposed school would include recreational facilities for physical education purposes and for student use during recess and lunch periods. The recreational facilities could also be available for community

[4] The Medium Density Residential designation allows for up to 7.0 DU/acre. On 22.7 acres this amounts to 159 dwelling units, rounded up to the nearest whole number. The number has been conservatively reduced to 140 units to account for factors such as street improvements. Additionally, this number does not include density bonuses potentially available under state housing law.

recreational uses. This Initial Study addresses impacts associated with the development of the facilities as an integral part of the evaluation of impacts in Part E, Sections 1 through 21.

17. Transportation/Traffic

(Note: The discussion of transportation and traffic impacts in this section primarily reflects information in the City of Clovis General Plan Draft PEIR. Clovis Unified School District will prepare a project-specific traffic and transportation impact study prior to construction of the proposed elementary school. The District does not anticipate constructing the school before the year 2023. The study will reflect the site plan the District prepares for the school, traffic and street conditions existing at the time the study is prepared, and the requirements of the City of Clovis or Fresno County for traffic impact studies.)

a. 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 following comments are paraphrased from the Clovis General Plan Draft PEIR: (See Table 17-1 below for definitions of roadway categories, levels of service, AM Peak Hour, and PM Peak Hour.)

- Traffic generated by the proposed Clovis General Plan Update would be caused by future development anticipated to occur by 2035 in the Plan Area. (Page 5.16-17)
- The traffic study for the Draft PEIR analyzed Levels of Service (LOS) for study area roadways based on volume per capacity ratios for morning (AM) and evening (PM) peak hours. The current City of Clovis and City of Fresno General Plans identify LOS D as the lowest acceptable LOS. The County of Fresno allows LOS D conditions within the spheres of influence of Fresno and Clovis and strives to maintain LOS C conditions for all other county roadways. (Page 5.16-17)
- By 2035, based on the LOS requirements, the majority of the roadway segments studied for the PEIR would operate at LOS D or better during the AM and PM peak hours. The roadways closest to the proposed school site that would not operate at an acceptable LOS are as follows:
    - Copper Avenue: Willow Avenue to Auberry Road (LOS E in AM peak hour);
    - Copper Avenue: Auberry Road to Minnewawa Avenue (LOS F in AM and PM peak hours); and
    - Minnewawa Avenue: Copper Avenue to Behymer Avenue (LOS F in AM and PM peak hours). (Pages 5.16-17 & 18).
- The Draft PEIR made the following determinations regarding mitigation of roadways:
    - Copper Avenue: Widen to 4 lanes to Clovis Avenue (to achieve LOS C with mitigation). Because this roadway is currently listed as a funded project in the COG RTP and is consistent with the proposed General Plan Mobility Plan, the necessary improvements would be constructed and impacts would be mitigated. This impact would be less than significant.
    - Minnewawa Avenue: Extend Clovis Avenue north of Behymer Avenue to Copper Avenue (to achieve LOS C with mitigation). Because this roadway is currently listed as a funded project in the COG RTP and is consistent with the proposed General Plan Mobility Plan, the necessary improvements would be constructed and impacts would be mitigated. This impact would be less than significant.

TABLE 17-1
Transportation/Traffic Definitions and Standards

Roadway Categories

- Freeways: Freeways are intended to carry traffic efficiently from one end of the city to the other, serve interregional travel, and provide connections from Clovis to other cities and counties. Freeways are access-controlled with two or more lanes in each direction. SR-168 is a freeway in the City of Clovis.
- Expressways: Similar to freeways, expressways are intended to carry traffic efficiently over long distances. Access to expressways is typically restricted to signalized intersections with arterial and collector streets. Travel lanes for opposing directions of travel are separated by a raised median. Portions of Temperance Avenue and Herndon Avenue within the City of Clovis operate as expressways.
- Arterials: Arterials are designed to move large volumes of traffic and are intended to provide a high level of mobility between freeways, expressways, other arterials, and collector roadways. Arterials also provide nonfreeway/highway connections between major residential, employment, and activity centers. Unlike freeways, they are intended not only for motor vehicles, but also for bicycles and pedestrians. Arterial streets typically have more right-of-way and a higher degree of access control than collector roadways. Most arterials in Clovis have four travel lanes, and opposing traffic may be separated by a median.
- Collectors: Collector streets provide for relatively short distance travel between and within neighborhoods. Collectors are not designed to handle long-distance through-traffic. Driveway access to collectors is less limited than on arterials. Speed limits on these streets are typically lower than those found on arterials.
- Local Streets: Local streets are designed to provide direct roadway access to abutting land uses and serve short distance trips within neighborhoods. Traffic volumes and speed limits on local streets are low, and these roadways have no more than two travel lanes. (Fehr and Peers 2014)

Level of Service

The PEIR uses Level of Service (LOS) as the primary measure of roadway performance. LOS is a qualitative description of traffic flow from the perspective of motorists. The Highway Capacity Manual (HCM) developed by the Transportation Research Board defines the following six levels of service from LOS A to LOS F. These grades represent the perspective of drivers only and are an indication of the comfort and convenience associated with driving, as well as speed, travel time, traffic interruptions, and freedom to maneuver. (Draft PEIR, Page 5-16)

- Level of Service A: Free-flow operations. Drivers are almost completely unimpeded in their ability to maneuver within the traffic stream.
- Level of Service B: Free-flow speeds are maintained. The ability to maneuver within the traffic stream is only slightly restricted.
- Level of Service C: Traffic flow with speeds at or near free-flow speed. The freedom to maneuver within the traffic steam is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.
- Level of Service D: Speeds begin to decline slightly with increasing flows. Freedom to maneuver within the traffic stream is noticeably limited.
- Level of Service E: Operations at or near capacity. There are virtually no useable gaps within the traffic stream, leaving little room to maneuver.
- Level of Service F: Breakdown in vehicular flow. Vehicular demand exceeds capacity. (Fehr and Peers 2014)

AM Peak Hour/PM Peak Hour

For purposes of this Initial Study,

- AM Peak Hour (or morning peak hour) means the average vehicle trip ends versus dwelling units for residential units and students for elementary schools on a weekday, peak hour of adjacent street traffic, one hour between 7 and 9 a.m.
- PM Peak Hour (or evening peak hour) means the average vehicle trip ends versus dwelling units for residential units and students for elementary schools on a weekday, peak hour of adjacent street traffic, one hour between 4 and 6 p.m.

Existing Conditions

Roadway Network and Traffic Conditions

East-west roadways in the project vicinity include Copper, Behymer, Perrin, and Shepherd Avenues and north-south roadways include Willow, Peach, Minnewawa, Clovis, and Sunnyside Avenues.

Table 17-2 describes the existing conditions for the roadways, including the jurisdiction currently responsible for the roadways, the classifications of the roadways, and the number of travel lanes, type of median, and morning and evening peak hour LOS associated with the roadways. As shown on Table 17-2, all of the existing roadways currently operate at Level of Service C or D.

Bicycle and Pedestrian Facilities

Existing bicycle lanes near the proposed school site include Class II on-street bike lanes on Minnewawa Avenue, a Class I multi-purpose trail along the west side of Willow Avenue, and a Class II on-street bike lane along the south side of Shepherd Avenue.

Transit

Public transportation is currently not present near the project site. The closest existing transit is a shuttle service for Clovis Community College operated by Fresno Area Express (FAX) that runs along Willow Avenue between International and Behymer Avenues.

Year 2035 Conditions

Table 17-3 summarizes the traffic conditions the Draft PEIR projects for the streets near the proposed school site by the year 2035. The table assumes the proposed school site develops primarily with residential uses in accordance with the Clovis General Plan Update. As shown, all of the streets would operate at an acceptable Level of Service D or better during the AM and PM peak hours except Minnewawa Avenue if the streets have the number of lanes and the types of median improvements shown in the table. Minnewawa Avenue would operate at LOS F from Copper Avenue to Behymer Avenue.

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TABLE 17-2
Existing Conditions – Peak Hour Roadway Segment Level of Service

Roadway Segment			Jurisdiction	General Plan Classification	Median	# of Lanes	Level of Service	
Roadway	From	To					AM Peak Hour	PM Peak Hour
Copper	Willow	Auberry	Fresno Co.	Rural Arterial	Undivided	2	C	C
Copper	Auberry	Minnewawa	Fresno Co.	Rural Arterial	Undivided	2	C	C
Behymer	Willow	Minnewawa	Fresno Co.	Rural Collector	Undivided	2	D	D
Behymer	Minnewawa	Fowler	Fresno Co.	Rural Collector	Undivided	2	C	C
Shepherd	Willow	Minnewawa	City of Clovis	Arterial	Raised	3	C	C
Shepherd	Minnewawa	Clovis	City of Clovis	Arterial	Raised	3	C	C
Willow	Copper	Behymer	City of Clovis	Arterial	Raised	3	C	C
Willow	Behymer	Shepherd	City of Clovis	Arterial	Raised	3	C	D
Minnewawa	Copper	Behymer	Fresno Co.	Rural Collector	Undivided	2	D	D
Minnewawa	Behymer	Shepherd	Fresno Co.	Rural Collector	Undivided	2	D	C
Sunnyside	North of Shepherd		Fresno Co.	Rural Collector	Undivided	2	C	C

Source: (Fehr and Peers 2014)

TABLE 17-3
Year 2035 Plus Proposed General Plan Conditions – Peak Hour Roadway Segment Level of Service

Roadway Segment			Jurisdiction	General Plan Classification	Median	# of Lanes	Level of Service	
Roadway	From	To					AM Peak Hour	PM Peak Hour
Behymer	Willow	Minnewawa	Clovis	Arterial	Raised	2	C	D
Behymer	Minnewawa	Clovis	Clovis	Arterial	Raised	2	D	D
Behymer	Clovis	Fowler	Fresno Co.	Rural Collector	Undivided	2	C	D
Perrin	Willow	Peach	Clovis	Collector	TWLTL	2	C	C
Perrin	Peach	Minnewawa	Clovis	Collector	TWLTL	2	C	C
Perrin	Minnewawa	Clovis	Clovis	Collector	TWLTL	2	D	D
Shepherd	Willow	Minnewawa	Clovis	Arterial	Raised	4	D	D
Shepherd	Minnewawa	Clovis	Clovis	Arterial	Raised	4	D	D
Shepherd	Clovis	Fowler	Clovis	Expressway	Raised	4	D	D
Willow	Copper	Behymer	Clovis	Arterial	Raised	6	D	D
Willow	Behymer	Shepherd	Clovis	Arterial	Raised	6	D	D
Peach	Behymer	Shepherd	Clovis	Collector	TWLTL	2	C	C
Minnewawa	Copper	Behymer	Fresno Co.	Rural Collector	Undivided	2	**F**	**F**
Minnewawa	Behymer	Shepherd	Clovis	Arterial	Raised	2	C	C
Clovis	Behymer	Perrin	Clovis	Arterial	Raised	4	C	C
Sunnyside	North of Shepherd		Fresno Co.	Rural Collector	Undivided	2	C	C

Source: (Fehr and Peers 2014)

Table 17-4 compares the traffic the proposed elementary school would generate with the traffic residential development would generate if developed on the same site. The table assumes the 20-acre school site would develop with medium density residential uses at seven single-family dwelling units per gross acre, resulting in 140 dwelling units on the site instead of a school. The table shows that proposed school project would generate fewer daily trips and evening peak hour trips than the planned residential development but more trips in the morning peak hour:

- The school would generate 968 daily trips versus 1,333 daily trips by the residential development.
- The school would generate 338 trips during the morning peak hour of the street system (7:00 AM to 9:00 PM) versus 105 trips by the residential development.
- The school would generate 113 trips during the evening peak hour of the street system (4:00 PM to 6:00 PM) versus 140 trips by the residential development.

TABLE 17-4
Trip Generation Comparison

Land Use	Unit		Daily Trips		A.M. Peak Hour Trips (7:00-9:00 AM)					P.M. Peak Hour Trips (4:00-6:00 PM)				
	No.	Unit	Rate	*Tot.*	Rate	In: Out	In	Out	*Tot.*	Rate	In: Out	In	Out	*Tot.*
Elem. School	750	Student	1.29	*968*	0.45	55/45	186	152	*338*	0.15	49/51	55	57	*113*
Residence	140	House	9.52	*1,333*	0.75	25/75	26	79	*105*	1.0	63/37	88	52	*140*

Sources: Institute of Transportation Engineers, 9th edition; Odell Planning & Research, Inc.

Because the school would generate fewer trips than the planned residential development during the evening peak hour, it should not reduce the PM Peak Hour Trip levels of service projected for the street segments shown on Table 17-3 for the year 2035. During the morning peak hour, however, the school would generate considerably more trips than would the planned residential development. The extent to which the increase may decrease the level of service on the nearby street system, if any, would be determined as part of the traffic study required under Mitigation Measure 17-1.

Regarding bicycle and pedestrian facilities and transit, the Clovis General Plan Update Bicycle and Trails System Diagram calls for the development of Class II bike lanes on Minnewawa and International Avenues as well as a Class I Multipurpose Trail along Behymer near the proposed school site (Draft PEIR, Figure C-3). Additionally, the Heritage Grove Design Guidelines includes a transit diagram which shows a transit route near the south portion of the project site. The impact of the proposed school project on the street, bicycle, and pedestrian systems would be less than less than significant with project-level mitigation incorporated.

The project-level mitigation Clovis Unified has incorporated in the project is as follows:

Mitigation Measure TT-1: Clovis Unified shall prepare a project-specific traffic and transportation impact study prior to construction of the proposed elementary school. The study shall reflect the site plan the District prepares for the school, traffic and street conditions existing at the time the study is prepared, and the City of Clovis and/or Fresno County traffic impact study requirements applicable at the time the study is prepared. The District shall prepare the study with the input and review of the City of Clovis, County of Fresno, and Caltrans. The study should identify improvements that development of the school would necessitate to ensure the street, pedestrian, and bicycle transportation systems in the project vicinity operate following applicable standards of the agencies having jurisdiction over them.

b. Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less than Significant

Fresno Council of Governments (FCOG) is the Congestion Management Agency for Fresno County. FCOG has opted out of the California Congestion Management Program and is therefore exempt from the requirement to create a Congestion Management Plan. FCOG's Congestion Management Process (CMP) Update (FCOG 2017) switched focus from regionally significant roads to the urban freeways within the Fresno-Clovis Metropolitan Area. The proposed school site is not located on the revised CMP network.

c. Would the project 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?

Less than Significant

The proposed school site is not within two nautical miles of an existing or proposed public or private airport and is not within an area encompassed by an airport land use plan. The proposed school would have no design or operational characteristics that would result in an increase in air traffic levels or a change in location. (Google Earth; FAA).

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

Less than Significant

The Clovis General Plan Final PEIR states: Impact 5.16-4: Circulation improvements associated with future development that would be accommodated by the General Plan would be designed to adequately address potentially hazardous conditions (sharp curves, etc.), potential conflicting uses, and emergency access. (Page 3-34)

The Draft PEIR states:

> All future roadway system improvements associated with development and redevelopment activities under the proposed General Plan Update would be designed in accordance with the established roadway design standards. These improvements would be subject to review and future consideration by the City of Clovis engineering staff. An evaluation of the roadway alignments, intersection geometrics, and traffic control features would be needed. Roadway improvements would have to be made in accordance with the City's Circulation Plan and roadway design guidelines, and meet design guidelines in the California Manual of Uniform Traffic Control Devices and the Caltrans Roadway Design Manual. In addition, the draft Circulation Element includes policies (1.2, Transportation Decisions; 1.7, Narrow Streets; 3.1, Traffic Calming; 3.7, Conflict Points; 3.8, Access Management; 3.12, Residential Orientation; and 5.1, Complete Street Amenities) to improve the safety of all users of the transportation system in the City of Clovis. Implementation of the General Plan Update would not result in hazardous conditions, create conflicting uses, or cause a detriment to emergency vehicle access. (Page 5.16-27)

The Final PEIR concluded that Impact 5.16-4 would be less than significant.

The standards and policies described for PEIR Impact 5.16-4 would apply to the proposed school project. Therefore, the impact would be less than significant.

e. Would the project result in inadequate emergency access?

Less than Significant

As mentioned in Section 17(d), the roadways associated with the project will be designed according to applicable governmental agency design standards. Emergency access may be hindered during periods of construction, but alternative routes would be available. In addition, Clovis Unified will work with the City to ensure adequate emergency access to the proposed project and follow objectives and policies of the Clovis

General Plan that will support implementation and provide adequate emergency access. This impact would be less than significant.

f. Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Less than Significant

The proposed school project would not present a conflict related to adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, and would not decrease the performance or safety of such facilities. The reasons for this conclusion are as follows:

- Bike lanes currently exists along both sides of Minnewawa Avenue from Shepherd Avenue to Copper Avenue.
- The Circulation Plan in the Heritage Grove Design Guidelines shows the following bicycle and pedestrian facilities near the proposed school site: a designated bike-only trail to the west of the site along Minnewawa Avenue, a shared bike/pedestrian trail to the south of the site along the Enterprise Canal, and street bike lanes to the north and east of the site (see Heritage Grove Design Guidelines, Page 2.1-2.2). Development of the school would not interfere with installation of these facilities.
- The City of Clovis would require construction of sidewalks adjacent to the school. Sidewalks would provide pedestrian access to the school site.
- Clovis Unified would provide bus transportation for students that reside more than one mile from the proposed school. Most of the existing and planned residential development within the school's attendance area is within the no bussing zone. As a result, most of the students will likely need to walk, bike, or be driven to school. Applicable plans include the City of Clovis General Plan and Active Transportation Plan. The project supports the goals of these plans by enhancing the bicycle and pedestrian networks.
- Clovis Unified would prepare a school route plan for the proposed school. The plan would reflect the guidance provided in California MUTCD 2014 Edition, Part 7, Traffic Control for School Areas. Clovis Unified would develop the plan in coordination with law enforcement and traffic officials responsible for school pedestrian safety and would complete the plan before the school opens.

18. Tribal Cultural Resources

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- **Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or**
- **A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

Less than Significant with Mitigation

In accordance with AB 52, potentially affected tribes were formally notified of this project and were given the opportunity to request consultation on the project. No request for consultation was received nor were any other comments provided by the tribes in response to a Request for Preliminary Comment that was mailed to them. Additionally, the Cultural Resources Survey prepared for the project did not identify any tribal cultural resources.

At this time, the District has no information or evidence that Tribal Cultural Resources exist in relation to the site or will be affected by the project. However, it is possible that subsurface resources could exist and be disturbed by project construction activities. Therefore, the following mitigation measure has be incorporated into the project:

Mitigation Measure TC-1: If subsurface tribal cultural resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified tribal cultural resources professional shall be consulted to determine whether the resources require further study. If the resources are determined to be significant, mitigation measures shall be identified by the cultural resources professional and recommended to the District. If human remains are discovered, the procedures of Mitigation Measure CR-2 shall also apply.

19. Utilities and Service Systems

a. Would the project:

- **Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**
- **Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?**
- **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?**

<u>Less than Significant</u>

City of Clovis Policies and Regulations

The Clovis General Plan PEIR states:

- Impact 5.17-1: The Clovis Water Reuse Facility and the Fresno-Clovis Regional Water Reclamation Facility provide water treatment for the City of Clovis. Both facilities operate in accordance with wastewater treatment requirements of the Central Valley Regional Water Control Board. (Draft PEIR, Page 5.17-21)
- Impact 5.17-2: Development pursuant to the Clovis General Plan Update would require the expansion or construction of surface water treatment facilities and water delivery systems. (Final PEIR, Page 3-35)
- Impact 5.17-3: Full Buildout of the proposed General Plan would require construction of additional wastewater treatment capacity beyond the currently planned expansion of the City of Clovis water reuse facility. (Final PEIR, Page 3-35)
- Impact 5.17-4: The proposed General Plan, in the 2035 and Full Buildout Scenarios, would require construction of additional City sewer mains. (Final PEIR, Page 3-35)

The Final PEIR concluded that impacts related to wastewater collection and treatment would be less than significant. (Page 3-34)

Clovis Unified would comply with the City of Clovis Municipal Code and Standard Construction requirements for sewer and water connections, extensions, fees, permits, and related matters.

Water

Table 19-1 below shows the estimated water use from the City of Clovis General Plan designated land use for the site (Residential Medium Density). Table 19-2 shows the actual metered volumes taken from comparable schools within the District. The tables indicate that estimated water use for the proposed project, at approximately 35 acre-feet per year, will be significantly less than the 70 acre-feet per year for development in accordance with the current Clovis General Plan land use designations.

Wastewater

Table 19-3 below compares the estimated wastewater generation of the proposed project with the estimated wastewater generation from the general plan designated land use for the site. This is derived by taking the domestic (indoor) portion of the estimated water use, approximately 1.7 acre-feet per year, converting it to gallons per day (gpd) and reducing it by a factor of 20 percent. Table 19-3 indicates that the proposed project, at an estimated 1,214 gallons per day, will generate significantly less wastewater than the 18,854 gallons per day generated by development in accordance with the current Clovis General Plan land use designation.

The Fresno-Clovis Regional Wastewater Reclamation Facility which would serve the project operates in compliance with applicable requirements of the Regional Water Quality Control Board.

TABLE 19-1
Estimated Water Use – Planned Land Use (Residential Development)

	Acres	Land Use	Use Type	Units	af/du/yr	af/yr
General Plan Land Use	22	Residential Medium Density (7 du/ac)	Domestic	140	0.2	28.0
			Irrigation	140	0.3	42.0
					Total	**70.0**

Source: Odell Planning & Research, Inc. 2018; Tully & Young, *Land Use/Water Supply Guidebook*, 2007.

TABLE 19-2
Estimated Water Use Comparison for Elementary School and Residential Development

	Land Use	Use Type	af/yr
Oraze Elementary (2012-17 Average)	Elementary School	Domestic Use	1.7
		Irrigation Use	32.0
		Total	33.7
Boris Elementary (2017)	Elementary School	Domestic Use	1.1
		Irrigation Use	33.6
		Total	34.7
		Estimated Total for Project	**35.0**

TABLE E-19-3
Estimated Wastewater Generation

Land Use	**Indoor Water Use** (derived from Domestic in Tables 19-1 and 19-2)	**Convert to Gallons Per Day**	**Wastewater Generation** (20% Reduction in Domestic Demand)
Planned Land Use	26.4 af/yr	23,568 gpd	18,854 gpd
Elementary School	1.7 af/yr	1,517 gpd	1,214 gpd

Source: Odell Planning & Research, Inc. 2018; Tully & Young, *Land Use/Water Supply Guidebook*, 2007; Blair, Church & Flynn, 2018.

Stormwater

The Clovis General Plan Final PEIR states: Impact 5.17-5: The proposed General Plan, in the 2035 and Full Buildout Scenarios, would require construction of additional storm drainage facilities. The Final PEIR concluded that Impact 5.17-5 would be less than significant. (Page 3-35)

The Fresno Metropolitan Flood Control District (FMFCD) is responsible for managing urban stormwater runoff within the greater Fresno-Clovis area. As discussed in Section 10(c), the site is within FMFCD Drainage Area "BY2" and is planned to be served by future pipeline facilities located along International Avenue and near the southern portion of the project site. The District will enter into an agreement with FMFCD that will include Items 2(a) through 2(d) in FMFCD's letter, dated March 26, 2018.

Power and Telecommunications

The project site is located approximately one mile from existing urban development in the City of Fresno and 1.3 miles from existing urban development in the City of Clovis. The District's administration and consultants have received no indication that the project would have any potentially significant impacts related to power and communications.

b. Would the project:

- **Generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure?**
- **Negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goals?**
- **Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

<u>Less than Significant</u>

Per the Clovis General Plan EIR, solid waste generated within the City of Clovis is delivered to three landfills: City of Clovis Landfill, American Avenue Disposal Site, and Avenal Regional Landfill. Most of the solid waste goes to the City of Clovis Landfill, with only the waste hauled by City's contractors, self-hauled by homeowners and businesses, or residual waste from recycling operations going to other landfills (Clovis General Plan EIR, Page 5.17-36).

The General Plan EIR determined that development of the 2035 Scenario and the Full Buildout Scenario would have a less than significant impact on solid waste disposal needs. The proposed elementary school project would not change this determination, as its development would not cause an appreciable change in the projected amount of solid waste generated from buildout of the general plan. Therefore, the impact of the project in relation to landfill capacity would be less than significant.

Clovis Unified operates its existing schools and would operate the proposed elementary school in compliance with applicable statutes and regulation related to solid waste.

20. Wildfire

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

- **Impair an adopted emergency response plan or emergency evacuation plan?**
- **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?**
- **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?**

- **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?**

No Impact

The project site is not in or near a moderate, high, or very high fire hazard severity zone within a Local Responsibility Area (LRA) or State Responsibility Area (SRA).

21. Mandatory Findings of Significance

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

Less than Significant with Mitigation

Based on the information in Part E, Sections 4 and 5, the project could have potentially significant effects on biological and cultural resources, but these effects would be less than significant with the incorporation of the mitigation measures provided.

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

Less than Significant

Based on the information in Part E, Sections 1 through 21, the proposed project would not have any impacts that would be individually limited but cumulatively considerable.

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

Less than Significant with Mitigation

Based on the information in Part E, Sections 3 and 13, the proposed school project could potentially have substantial adverse effects on human beings with respect to air quality and noise. However, mitigation measures have been incorporated in the project that would reduce the impacts to less than significant levels.

F. Mitigation Monitoring and Reporting Program

1. Purpose

Clovis Unified School District has prepared this Mitigation Monitoring and Reporting Program to comply with Section 15097 of the State CEQA Guidelines. The purpose for the Mitigation Monitoring and Reporting Program is to ensure implementation of the mitigation measures identified in this Initial Study.

2. Lead Agency

Clovis Unified School District will undertake the project and is the Lead Agency for the project. The District is responsible for the implementation of all mitigation measures identified in this Initial Study.

3. Mitigation Monitoring and Reporting Coordinator

The Assistant Superintendent, Facility Services, or his/her designee shall act as the Project Mitigation Reporting Coordinator ("Coordinator").

4. Monitoring and Reporting Procedures for Design-, Site Clearing-, and Construction Mitigation Measures

a. The Coordinator shall provide a copy of all project design-, site clearing- and construction-related mitigation measures to the project engineer and contractor for incorporation in the project plans, construction specifications, permits, and contracts, as appropriate.

b. Prior to award of bid, the Coordinator shall determine that all project design-, site clearing- and construction-related mitigation measures have been incorporated in the project plans, construction specifications, permits, and contracts, as appropriate.

c. During construction, the Coordinator, through the construction management team, shall inspect the project area regularly to ensure all work complies with the mitigation measures. If a discrepancy is not resolved within a reasonable time, the Coordinator may order work to cease until the discrepancy is resolved.

d. Prior to the District accepting the project improvements, the Coordinator shall certify that the project incorporates all project design and construction-related mitigation measures.

5. Monitoring and Reporting Procedures for Operational- and Maintenance-Related Mitigation Measures

Before the project becomes operational, the Coordinator shall determine that the project operational plans and procedures incorporate all operations-related mitigation measures.

G. Names of Persons Who Prepared or Participated in the Initial Study

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www.jhouseenvironmental.com

H. Sources Consulted

Following are the documents and other sources consulted in preparing this Initial Study:

Ambient Air Quality & Noise Consulting. *Air Quality & Greenhouse Gas Impact Analysis for Minnewawa-International Elementary School Project, Clovis Unified School District, Fresno County, CA*. June 2018.

California Department of Conservation (DOC). Division of Land Resource Protection. *Fresno County Williamson Act FY 2015/2016* (2016) (See ftp://ftp.consrv.ca.gov/pub/dlrp/wa/)

California Department of Conservation (DOC). Division of Land Resource Protection. Farmland Mapping and Monitoring Program. *Fresno County Important Farmland 2014*. (See ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/fre14_w.pdf)

California Department of Toxic Substance Control. *Envirostor* (see http://www.envirostor.dtsc.ca.gov/public/)

Clovis, City of. *Clovis General Plan and Development Code Update Draft Environmental Impact Report.* June 2014.

Clovis, City of. *Clovis General Plan and Development Code Update Final Environmental Impact Report.* August 2014.

Clovis, City of. *Clovis General Plan and Development Code Update.* August 2014.

Clovis, City of. *2015 Urban Water Management Plan*. July 2016.

Fresno, County of. *Fresno County General Plan Update Background Report*. October 3, 2000.

Fresno Council of Governments (FCOG). *Fresno County Congestion Management Process*. October 2009.

Fresno, County of. *Draft Revised Fresno County General Plan Policy Document* (September 2014 version)

Fresno, County of. Environmental Health Division. *RE: Request for Hazardous Materials Facilities Information.* March 26, 2018.

J. House Environmental, Inc. *High-Volume Water Pipeline Risk Analysis, Clovis Unified School District, Minnewawa-International Elementary School Site, Clovis, Fresno County, California*. September 2018.

North Kings Groundwater Sustainability Agency. Webpage: “Groundwater Sustainability Plan” (www.northkingsgsa.org/groundwater-sustainability-plan/). Accessed October 3, 2018.

Odell Planning & Research, Inc. *Biological Resources Assessment, Minnewawa-International Elementary School Project, Clovis Unified School District*. August 11, 2018.

Padre Associates, Inc. *Geological and Environmental Hazards Review (Title V), New Elementary School Site, North Minnewawa Avenue and East International Avenue, Clovis, Fresno County, California*. June 2018.

Tully & Young. *Land Use/Water Supply Guidebook*. Prepared for Northern California Water Association. November 2007.

United States Department of the Interior Geological Survey. Friant Quadrangle, California, 7.5 Series Topographic Map.

Appendix 1

Air Quality & Greenhouse Gas Impact Analysis

Air Quality & Greenhouse Gas Emissions Modeling Report

For

Minnewawa-International Elementary School Project

Clovis Unified School District
Fresno County, CA

June 2018

Prepared For:
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TABLE OF CONTENTS

LIST OF TABLES

APPENDICES

CRITERIA AIR POLLUTANTS

METHODOLOGY

SHORT-TERM CONSTRUCTION EMISSIONS

Short-term construction emissions associated with the proposed project were calculated using the California Emissions Estimator Model (CalEEMod) computer program. Emissions were quantified for demolition, site preparation/grading, asphalt paving, facility construction, and application of architectural coatings. Detailed construction information, including construction schedules and equipment requirements, have not been identified for the proposed project. Default construction phases and equipment assumptions contained in the CalEEMod model were, therefore, relied upon for the calculation of construction-generated emissions. No offsite material transport was included. Emissions were quantified for annual and average-daily conditions. Average-daily emissions were quantified, based on the calculated annual emissions divided by the estimated number of days for each construction phase. Modeling assumptions and output files are included in Appendix A of this report.

LONG-TERM OPERATIONAL EMISSIONS

Long-term operational emissions of criteria air pollutants associated with the proposed project were calculated using the CalEEMod computer program. Parking requirements and vehicle trip-generation rates were derived from a similar sized elementary school project (JLB 2018). Mobile-source emissions were conservatively based on the default fleet distribution assumptions contained in the model. All other modeling assumptions were based on the default parameters contained in the CalEEMod computer model. . Emissions were quantified for annual and average-daily conditions. Average-daily emissions were quantified, based on the calculated annual emissions divided by the estimated number of operational days annually. Modeling assumptions and output files are included in Appendix A of this report.

THRESHOLDS OF SIGNIFICANCE

To assist local jurisdictions in the evaluation of air quality impacts, the SJVAPCD has published the *Guide for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015). This guidance document includes recommended thresholds of significance to be used for the evaluation of short-term construction and long-term operational emissions. The guidelines also include thresholds of significance for odors, toxic air contaminants, and cumulative air quality impacts. The SJVAPCD-recommended thresholds of significance for short-term construction and long-term operational emissions of criteria air pollutants are summarized below.

- Short-term Construction Emissions—Construction impacts associated with the proposed project would be considered significant if project-generated emissions would exceed 100 tons per year (TPY) of CO, 10 TPY of ROG or NO_X, 27 TPY of SO_X, or 15 TPY of PM_{10} or $PM_{2.5}$.
- Long-term Operational Emissions—Operational impacts associated with the proposed project would be considered significant if project generated emissions would exceed 100 tons per year (TPY) of CO, 10 TPY of ROG or NO_X, 27 TPY of SO_X, or 15 TPY of PM_{10} or $PM_{2.5}$.

In addition to the above thresholds, the SJVAPCD also recommends the use of daily emissions thresholds for the evaluation of project impacts on localized ambient air quality. Accordingly, the proposed project would also be considered to result in a significant contribution to localized ambient air quality if onsite emissions or ROG, NO_X, PM_{10}, $PM_{2.5}$, CO, or SO_2 associated with either short-term construction or long-term operational activities would exceed a daily average of 100 pounds per day (lbs/day) for each of the pollutants evaluated (SJVAPCD 2015).

SHORT-TERM CONSTRUCTION EMISSIONS

Estimated construction-generated annual emissions associated with the proposed project alternatives are summarized in Table 1. As noted in Table 1, construction of the proposed project would generate maximum uncontrolled annual emissions of approximately 4.0 tons/year of ROG, 3.2 tons/year of NO_x, 2.4 tons/year of CO, 0.4 tons/year of PM_{10}, and 0.3 tons/year of $PM_{2.5}$. Emissions of SO_2 would be negligible (e.g., less than 0.1

tons/year). Estimated construction-generated emissions would not exceed the SJVAPCD's significance thresholds of 10 tons/year of ROG, 10 tons/year of NO_x, or 15 tons/year PM_{10}.

Table 1
Annual Construction Emissions

Construction Phase	Uncontrolled Maximum Annual Emissions (TPY) [1]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 2019						
Site Preparation	0	0.2	0.1	0	0.1	0.1
Grading	0.1	0.6	0.3	0	0.1	0.1
Building Construction	0.3	2.4	2.0	0	0.2	0.1
Total:	4	3.2	2.4	0	0.4	0.3
Year 2020						
Building Construction	0.1	0.5	0.5	0	<0.1	<0.1
Paving	0	0.1	0.1	0	0	0
Architectural Coating	0.4	0.1	0.1	0	0	0
Total:	0.5	0.7	0.6	0	<0.1	<0.1
Maximum Annual Emissions:	4	3.2	2.4	0	0.4	0.3
Significance Thresholds:	*10*	*10*	*None*	*None*	*15*	*15*
Exceeds Thresholds/Significant Impact?:	*No*	*No*	*No*	*No*	*No*	*No*

1. *Based on CalEEMod computer modeling. Totals may not sum due to rounding. Does not include emission control measures (e.g., compliance with SJVAPCD Regulation VIII).*

Refer to Appendix A for modeling results and assumptions.

Estimated daily on-site construction emissions are summarized in Table 2. As noted in Table 2, construction of the proposed project would generate maximum uncontrolled on-site emissions of approximately 18 lbs/day of ROG, 50 lbs/day of NO_x, 46 lbs/day of CO, 20 lbs/day of PM_{10}, and 12 lbs/day of $PM_{2.5}$. Emissions of SO_2 would be negligible (e.g., less than 0.1 tons/year). Daily on-site construction emissions would not exceed the SJVAPCD's recommended localized ambient air quality significance thresholds of 100 lbs/day for each of the criteria air pollutants evaluated. Furthermore, it is important to note that the proposed project would be required to comply with SJVPACD Regulation VIII (Fugitive PM_{10} Prohibitions). Mandatory compliance with SJVAPCD Regulation VIII would further reduce emissions of fugitive dust from the project site and minimize the project's potential to adversely affect nearby sensitive receptors. With compliance with SJVAPCD Regulation VIII, emissions of PM would be reduced by approximately 50 percent, or more.

LONG-TERM OPERATIONAL EMISSIONS

Estimated annual operational emissions for the proposed project are summarized in Table 3. As depicted, the proposed project would result in operational emissions of approximately 0.7 tons/year of ROG, 4.3 tons/year of NO_X, 3.3 tons/year of CO, 0.8 tons/year of PM_{10}, and 0.3 tons/year of $PM_{2.5}$ during the initial year of operation. Emissions of SO_2 would be negligible (i.e., less than 0.1 tons/year). Operational emissions would be projected to decline in future years, with improvements in fuel-consumption emissions standards. Operational emissions would not exceed SJVAPCD's mass-emissions significance thresholds. It is important to note that estimated operational emissions are conservatively based on the default vehicle fleet distribution assumptions contained in the model, which include contributions from medium and heavy-duty trucks. Mobile sources associated with schools typically consist largely to light-duty vehicles and buses. As a result, actual mobile source emissions would likely be less than estimated.

Estimated average-daily on-site operational emissions are also summarized in Table 3. As noted, average-daily on-site operational emissions would be largely associated with area sources. Emissions would be largely associated with occasional landscape maintenance activities, as well as, evaporative ROG emissions associated with the application of architectural coatings and use of consumer products. Average-daily on-site emissions of ROG would total approximately 7 lbs/day. Average-daily onsite emissions of other pollutants would be negligible (i.e., less than 0.1 lbs/day). Average-daily onsite emissions would not exceed the SJVAPCD's recommended localized ambient air quality significance thresholds of 100 lbs/day for each of the criteria air pollutants evaluated.

Table 2
Daily On-Site Construction Emissions

Construction Phase	Uncontrolled Daily Emissions (lbs/day) [1]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Site Preparation	4	46	22	0	20	12
Grading	5	55	33	0	13	6
Building Construction – Year 2019	2	21	17	0	1	1
Building Construction – Year 2020	4	34	30	0	2	2
Paving	2	14	14	0	0	0
Architectural Coating	12	2	2	0	0	0
Maximum Daily Onsite Emissions:	18	50	46	0	20	12
Significance Thresholds:	*100*	*100*	*100*	*100*	*100*	*100*
Exceeds Thresholds/Significant Impact?:	*No*	*No*	*No*	*No*	*No*	*No*

1. Based on CalEEMod computer modeling. Totals may not sum due to rounding. Does not include emission control measures, including dust control per Regulation VIII.
2. Average daily onsite emissions are based on total onsite emissions divided by the total number of construction days.
3. Maximum daily onsite emissions assumes building construction, paving, and architectural coating application could potentially occur simultaneously.
Refer to Appendix A for modeling results and assumptions.

Table 3
Long-term Operational Emissions (Unmitigated)

Season	Uncontrolled Annual Emissions (tons/year) [1]					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source	0.3	0	0	0	0	0
Energy Use	0	0.1	0.1	0	0	0
Mobile Source[2]	0.4	4.4	3.4	0	0.9	0.3
Total:	0.7	4.5	3.5	0	0.9	0.3
Significance Thresholds (tons):	*10*	*10*	*None*	*None*	*15*	*None*
Exceeds Thresholds/Significant Impact?:	*No*	*No*	--	--	*No*	--
Average Daily Onsite Emissions (lbs)[3]:	*7*	*Negligible*				
Significance Thresholds (lbs):	*100*	*100*	*100*	*100*	*100*	*100*
Exceeds Thresholds/Significant Impact?:	*No*	*No*	*No*	*No*	*No*	*No*

1. Emissions were calculated using the CalEEMod computer program. Does not include implementation of emissions control measures.
2. Fleet distribution data for the project is not available. Mobile source emissions are conservatively based on default vehicle fleet distribution for Fresno County, which includes all vehicle types/classifications, including medium and heavy-duty vehicles. Actual emissions would likely be lower.
3. Based on calculated annual operational emissions for area sources and an average of 200 operational days annually.
Totals may not sum due to rounding.
Refer to Appendix A for modeling assumptions and results.

GREENHOUSE GASES

METHODOLOGY

SHORT-TERM CONSTRUCTION EMISSIONS

Short-term construction emissions associated with the proposed project were calculated using the CalEEMod computer program. Modeling includes emissions generated during site preparation/grading, asphalt paving, facility construction, and application of architectural coatings. Detailed construction information, including construction schedules and equipment requirements, has not been identified for the proposed project. Default construction phases and equipment assumptions contained in the CalEEMod model were, therefore, relied upon for the calculation of construction-generated emissions. Modeling assumptions and output files are included in Appendix A of this report.

LONG-TERM OPERATIONAL EMISSIONS

Long-term operational GHG emissions associated with the proposed project were calculated using the CalEEMod computer program. Modeling was conducted based on traffic data derived, in part, from the traffic analysis prepared for the proposed project (JLB 2018). Mobile-source emissions were conservatively based on the default fleet distribution assumptions contained in the model. All other modeling assumptions were based on the default parameters contained in the CalEEMod computer model. Modeling assumptions and output files are included in Appendix A of this report.

THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the CEQA Guidelines Initial Study Checklist, a project would be considered to have a significant impact to climate change if it would:

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

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

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

In accordance with the SJVAPCD's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA* (SJVAPCD 2009), a project would be considered to have a less than significant impact on climate change if it would comply with at least one of the following criteria:

- Comply with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency, or
- Implement approved best performance standards, or
- Quantify project GHG emissions and reduce those emissions by at least 29 percent compared to "business as usual" (BAU).

The SJVAPCD has not yet adopted best performance standards for development projects. In addition, although the City of Fresno has adopted a GHG-reduction plan for emissions generated by activities under the control or influence of the City, the City's GHG-reduction plan does not specifically address the development of schools for which the FUSD is the lead agency. The quantification of project-generated GHG emissions in comparison to BAU conditions to determine consistency with AB 32's reduction goals is considered appropriate in some instances. However, based on a recent California Supreme Court's decision in *Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farming (2015) 224 Cal.App.4th 1105 (CBD vs. CDFW;* also known as the *"Newhall Ranch case")*, substantial evidence would need to be provided to document that project-level reductions in comparison to a BAU approach would be consistent with achieving AB 32's overall statewide reduction goal. Given that AB 32's statewide goal includes reductions that are not necessarily related to an individual development project, the use of this approach may be difficult to support given the lack of substantial evidence to adequately demonstrate a link between the data contained in the AB 32 Scoping Plan and individual development projects. Alternatively, the Court identified potential options for evaluating GHG impacts for individual development projects, which included the use of GHG efficiency metrics. In general, GHG efficiency metrics can be used to assess the GHG efficiency of an individual project based on a per capita basis or on a service population basis.

A GHG efficiency threshold based on service population can be calculated by dividing the GHG emissions inventory goal (allowable emissions), by the estimated service population of the individual project. For most development projects, service population is traditionally defined as the sum of the number of jobs and the number of residents provided by a project. However, this traditional definition of service population may not be applicable to all projects, depending on the end use. For instance, with regard to schools, the student and employee population is the primary generator of GHG emissions with a majority of the school's emissions being associated with student vehicle trips. Therefore, the calculated GHG efficiency of the proposed project was expanded to include the proposed student and employee population. GHG efficiency for the proposed project was calculated for years 2020 and 2030 to be consistent with state GHG-reduction target years. The methodology used for quantification of the target efficiency threshold applied to the proposed project is summarized in Table 4. Project-generated GHG emissions that would exceed the efficiency threshold of 4.9 $MTCO_2e$ per service population ($MTCO_2e$/SP/year) in year 2020 or 2.6 $MTCO_2e$/SP/year in 2030 would be considered to have a potentially significant impact on the environment that could conflict with GHG-reduction planning efforts. To be conservative, construction-generated GHG emissions were amortized based on an estimated 30-year project life and included in annual operational GHG emissions estimates.

Table 4
Project-Level GHG Efficiency Threshold Calculation

	2020	2030
Land Use Sectors GHG Emissions Target[1]	287,000,000	168,000,000
Population[2]	40,619,346	44,085,600
Employment[3]	18,195,720	20,908,816
Service Population	58,815,066	64,994,416
GHG Efficiency Threshold ($MTCO_2e$/SP/yr)	4.9	2.6

Based on AB 32 Scoping Plan's land use inventory sectors for years 2020 and 2030; Includes transportation sources.

1. *California Air Resources Board. California 1990 Greenhouse Gas Emissions Level and 2020 Limit — by Sector and Activity (Land Use-driven sectors only) MMT CO2e - (based upon IPCC Fourth Assessment Report Global Warming Potentials)*
2. *California Department of Finance Demographic Research Unit Report P-2 "State and County Population Projections by Race/Ethnicity and Age (5-year groups)" 2010 through 2060 (as of July 1). Published 12/15/2014*
3. *California Department of Finance Employment Development Department. Industry Employment Projections Labor Market Information Division 2010-2020 (Published 5/23/2012) and 2012-2022 (Published 9/19/2014)*

SHORT-TERM CONSTRUCTION EMISSIONS

Short-term annual GHG emissions are summarized in Table 10. Based on the modeling conducted, annual emissions of GHGs associated with construction of the proposed project would total approximately 496.5 $MTCO_2e$. There would also be a small amount of GHG emissions from waste generated during construction; however, this amount is speculative. Actual emissions would vary, depending on various factors including construction schedules, equipment required, and activities conducted. Assuming an average project life of 30 years, amortized construction-generated GHG emissions would total approximately 16.6 $MTCO_2e$/yr. Amortized construction-generated GHG emissions were included in the operational GHG emissions inventory for the evaluation of project-generated GHG emissions (refer to Table 5).

Table 5
Short-Term Construction GHG Emissions

Construction Year	Total GHG Emissions ($MTCO_2e$)
Year 1	400.8
Year 2	95.7
Total:	496.5
Amortized Construction Emissions:	16.6

Based on CalEEMod computer modeling. Assumes a 30-year project life. Refer to Appendix A for modeling results and assumptions.

LONG-TERM OPERATIONAL EMISSIONS

Estimated long-term increases in GHG emissions associated with the proposed project are summarized in Table 6. Based on the modeling conducted, operational GHG emissions would total approximately 1,671.7 $MTCO_2e$/year in 2020 and approximately 1,652.2 $MTCO_2e$/year in 2030. Based on this estimate and assuming a population of 750 students and 50 employees, the calculated GHG efficiency for the proposed project would be 2.1 $MTCO_2e$/SP/yr for years 2020 and 2030. The GHG efficiency for the proposed project would not exceed the thresholds of 4.9 $MTCO_2e$/SP/yr in 2020 or 2.6 $MTCO_2e$/SP/yr in 2030. It is also important to note that mobile-source emissions were conservatively calculated, based on the default fleet distribution assumptions contained in the model, which includes medium and heavy-duty vehicles. Mobile sources associated with schools typically consist largely to light-duty vehicles and buses. As a result, actual mobile-source emissions would be less.

Table 6
Long-term Operational GHG Emissions

Emissions Source	GHG Emissions ($MTCO_2e$ per year) [1]	
	Year 2020	Year 2030
Energy Use	170.0	152.4
Mobile Sources[2]	1,460.2	1,460.2
Waste Generation[3]	17.2	17.2
Water Use[4]	7.1	5.8
Total Project Operational Emissions:	1,654.5	1,635.6
Amortized Construction Emissions:	16.6	16.6
Net Increase:	1,671.1	1,652.2
Project GHG Efficiency ($MTCO_2e$/SP/yr)[5]:	2.1	2.1
GHG Efficiency Threshold ($MTCO_2e$/SP/yr):	4.9	2.6
Exceeds Threshold/Significant Impact?	No	No

1. Project-generated emissions were quantified using the CalEEMod computer program.
2. Fleet distribution data for the project is not available. Mobile-source emissions are conservatively based on default vehicle fleet distribution for Fresno County, which includes all vehicle types/classificaations, including medium and heavy-duty vehicles. Actual emissions would likely be lower.
3. Assumes compliance with state-wide waste diversion target of 75 percent by 2020, per AB 341.
4. Includes installation of low-flow water fixtures and water-efficient irrigation systems, per California's 2015 water-efficiency standards.
5. Based on a combined student and employee population of 800 individuals.
Refer to Appendix A for modeling results and assumptions.

REFERENCES

JBL Traffic Engineering, Inc. 2018. *Draft Traffic Impact Analysis: Clovis Unified School District 's Shields-Locan Elementary School Project.*

Odell Planning & Research (OPR). 2018. Email Correspondence.

San Joaquin Valley Air Pollution Control District (SJVAPCD). March 19, 2015. *Guidance for Assessing and Mitigating Air Quality Impacts.*

APPENDIX A

EMISSIONS MODELING & DOCUMENTATION

Construction Phase	Uncontrolled Maximum Annual Emissions (TPY) [1]						Days	Uncontrolled Maximum Average Daily Emissions (lbs/day) [1]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$		ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 2019													
Site Preparation	0.02	0.23	0.11	0	0.1	0.06	10	4.0	46.0	22.0	0.0	20.0	12.0
Grading	0.1	0.6	0.3	0	0.1	0.06	20	10.0	60.0	30.0	0.0	10.0	6.0
Building Construction	0.3	2.4	2	0	0.2	0.14	231	2.6	20.8	17.3	0.0	1.7	1.2
Total:	4	3.2	2.4	0	0.4	0.3							
Year 2020													
Building Construction	0.1	0.5	0.5	0	0.03	0.03	54	3.7	18.5	18.5	0.0	1.1	1.1
Paving	0.01	0.1	0.1	0	0	0	10	2.0	20.0	20.0	0.0	0.0	0.0
Architectural Coating	0.4	0.1	0.1	0	0	0	70	11.4	2.9	2.9	0.0	0.0	0.0

CUSD - Minnewawa-International Elem. School

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	750.00	Student	23.00	59,500.00	0
Parking Lot	122.00	Space	1.10	48,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	488.3	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Includes RPS adjustment.

Land Use - 750 students, 59,500 building sq.ft. and 122 space parking lot per similar school use, 23 acres total; pop: 800

Construction Phase - Assumes an approximate 18-month construction period. Site prep: 10 days. Grading: 20 days. Const.:285 days. Paving: 10 days. Arch Coating: 70 days (last quarter of bldg const.). Based on info provided by the applicant.

Off-road Equipment - Equipment not yet identified. Based on model defaults for all const. phases.

Trips and VMT - Based on model defaults.

On-road Fugitive Dust - Based on model defaults.

Demolition - No demo required.

Grading - Based on model defaults. Material balanced on site.

Architectural Coating - Based on model defaults.

Vehicle Trips - Trip gen: 1.89/student per similar school

Road Dust - Based on model defaults.

Consumer Products - Based on model defaults.

Area Coating - Based on model defaults.

Landscape Equipment - Based on model defaults.

Energy Use - Includes RPS adjustment.

Water And Wastewater - Based on model defaults.

Solid Waste - Based on model defaults.

Construction Off-road Equipment Mitigation - Onsite speed limited to 15 mph. Includes 50% CE for watering paved travel surfaces, 61% CE for watering graded/disturbed areas. Includes use of T3 equipment

Mobile Land Use Mitigation - Includes improvements to pedestrian network and connecting offsite, per traffic analysis. SRTS program calculated separately.

Energy Mitigation - Includes installation of energy-efficient lighting.

Water Mitigation - Includes installation of low-flow water fixtures and water-efficient irrigation systems.

Waste Mitigation - Assumes minimum waste diversion of 75% by 2020. http://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/resources-and-parks-division/recycling-and-solid-waste-disposal/residential-r

Fleet Mix - Based on model defaults.

Table Name	Column Name	Default Value	New Value
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tblAreaCoating	Area_Parking	2928	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
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tblConstructionPhase	NumDays	20.00	10.00
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tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	9.7000e-003	0.02
tblFleetMix	LHD1	9.7000e-003	0.00
tblFleetMix	LHD2	3.4040e-003	4.9970e-003
tblFleetMix	LHD2	3.4040e-003	0.00
tblFleetMix	MCY	4.5630e-003	5.2610e-003
tblFleetMix	MCY	4.5630e-003	0.00
tblFleetMix	MDV	0.09	0.13
tblFleetMix	MDV	0.09	0.00
tblFleetMix	MH	4.3600e-004	6.6700e-004
tblFleetMix	MH	4.3600e-004	0.00
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.00
tblFleetMix	OBUS	2.3060e-003	2.3690e-003

tblFleetMix	OBUS	2.3060e-003	0.00
tblFleetMix	SBUS	9.9800e-004	1.1150e-003
tblFleetMix	SBUS	9.9800e-004	0.00
tblFleetMix	UBUS	1.1850e-003	1.6750e-003
tblFleetMix	UBUS	1.1850e-003	0.00
tblGrading	AcresOfGrading	50.00	87.50
tblLandUse	LandUseSquareFeet	62,702.53	59,500.00
tblLandUse	LotAcreage	1.44	23.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	488.3
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	VendorTripNumber	18.00	10.00
tblTripsAndVMT	WorkerTripNumber	45.00	25.00
tblTripsAndVMT	WorkerTripNumber	9.00	5.00
tblVehicleEF	HHD	1.89	2.96
tblVehicleEF	HHD	8.2550e-003	0.01
tblVehicleEF	HHD	0.06	0.11
tblVehicleEF	HHD	1.73	3.27
tblVehicleEF	HHD	0.51	0.66
tblVehicleEF	HHD	0.51	0.71
tblVehicleEF	HHD	5,107.42	5,898.79
tblVehicleEF	HHD	1,465.23	1,601.10
tblVehicleEF	HHD	1.58	2.13
tblVehicleEF	HHD	14.43	25.61
tblVehicleEF	HHD	1.47	4.06
tblVehicleEF	HHD	20.67	20.63
tblVehicleEF	HHD	2.4110e-003	0.03

tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.4990e-003	0.02
tblVehicleEF	HHD	1.6000e-005	2.0000e-005
tblVehicleEF	HHD	2.3070e-003	0.03
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9170e-003	8.9030e-003
tblVehicleEF	HHD	5.2610e-003	0.02
tblVehicleEF	HHD	1.4000e-005	1.8000e-005
tblVehicleEF	HHD	2.1000e-005	3.3000e-005
tblVehicleEF	HHD	6.7900e-004	1.2650e-003
tblVehicleEF	HHD	0.46	0.87
tblVehicleEF	HHD	1.1000e-005	1.7000e-005
tblVehicleEF	HHD	0.08	0.14
tblVehicleEF	HHD	5.5000e-005	9.6000e-005
tblVehicleEF	HHD	9.2740e-003	0.02
tblVehicleEF	HHD	0.05	0.06
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	2.4000e-005	3.3000e-005
tblVehicleEF	HHD	2.1000e-005	3.3000e-005
tblVehicleEF	HHD	6.7900e-004	1.2650e-003
tblVehicleEF	HHD	0.53	0.99
tblVehicleEF	HHD	1.1000e-005	1.7000e-005
tblVehicleEF	HHD	0.09	0.16
tblVehicleEF	HHD	5.5000e-005	9.6000e-005
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	1.78	2.79

tblVehicleEF	HHD	8.2600e-003	0.01
tblVehicleEF	HHD	0.05	0.11
tblVehicleEF	HHD	1.26	2.39
tblVehicleEF	HHD	0.51	0.66
tblVehicleEF	HHD	0.47	0.66
tblVehicleEF	HHD	5,410.86	6,245.05
tblVehicleEF	HHD	1,465.23	1,601.10
tblVehicleEF	HHD	1.58	2.13
tblVehicleEF	HHD	14.89	26.42
tblVehicleEF	HHD	1.40	3.86
tblVehicleEF	HHD	20.66	20.63
tblVehicleEF	HHD	2.0330e-003	0.02
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.4990e-003	0.02
tblVehicleEF	HHD	1.6000e-005	2.0000e-005
tblVehicleEF	HHD	1.9450e-003	0.02
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9170e-003	8.9030e-003
tblVehicleEF	HHD	5.2610e-003	0.02
tblVehicleEF	HHD	1.4000e-005	1.8000e-005
tblVehicleEF	HHD	4.7000e-005	7.6000e-005
tblVehicleEF	HHD	7.6400e-004	1.4520e-003
tblVehicleEF	HHD	0.44	0.82
tblVehicleEF	HHD	2.2000e-005	3.8000e-005
tblVehicleEF	HHD	0.08	0.14
tblVehicleEF	HHD	5.4000e-005	9.7000e-005

tblVehicleEF	HHD	8.7610e-003	0.02
tblVehicleEF	HHD	0.05	0.06
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	2.3000e-005	3.2000e-005
tblVehicleEF	HHD	4.7000e-005	7.6000e-005
tblVehicleEF	HHD	7.6400e-004	1.4520e-003
tblVehicleEF	HHD	0.50	0.94
tblVehicleEF	HHD	2.2000e-005	3.8000e-005
tblVehicleEF	HHD	0.09	0.16
tblVehicleEF	HHD	5.4000e-005	9.7000e-005
tblVehicleEF	HHD	9.5920e-003	0.02
tblVehicleEF	HHD	2.04	3.19
tblVehicleEF	HHD	8.2490e-003	0.01
tblVehicleEF	HHD	0.06	0.12
tblVehicleEF	HHD	2.38	4.50
tblVehicleEF	HHD	0.51	0.65
tblVehicleEF	HHD	0.55	0.77
tblVehicleEF	HHD	4,688.39	5,420.63
tblVehicleEF	HHD	1,465.23	1,601.10
tblVehicleEF	HHD	1.58	2.13
tblVehicleEF	HHD	13.79	24.49
tblVehicleEF	HHD	1.50	4.13
tblVehicleEF	HHD	20.67	20.64
tblVehicleEF	HHD	2.9340e-003	0.03
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.4990e-003	0.02

tblVehicleEF	HHD	1.6000e-005	2.0000e-005
tblVehicleEF	HHD	2.8070e-003	0.03
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9170e-003	8.9030e-003
tblVehicleEF	HHD	5.2610e-003	0.02
tblVehicleEF	HHD	1.4000e-005	1.8000e-005
tblVehicleEF	HHD	7.0000e-006	1.0000e-005
tblVehicleEF	HHD	6.7100e-004	1.3050e-003
tblVehicleEF	HHD	0.50	0.94
tblVehicleEF	HHD	5.0000e-006	7.0000e-006
tblVehicleEF	HHD	0.08	0.14
tblVehicleEF	HHD	6.1000e-005	1.0500e-004
tblVehicleEF	HHD	9.8710e-003	0.02
tblVehicleEF	HHD	0.04	0.05
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	2.5000e-005	3.4000e-005
tblVehicleEF	HHD	7.0000e-006	1.0000e-005
tblVehicleEF	HHD	6.7100e-004	1.3050e-003
tblVehicleEF	HHD	0.57	1.07
tblVehicleEF	HHD	5.0000e-006	7.0000e-006
tblVehicleEF	HHD	0.09	0.16
tblVehicleEF	HHD	6.1000e-005	1.0500e-004
tblVehicleEF	HHD	0.01	0.03
tblVehicleEF	LDA	1.8140e-003	4.3510e-003
tblVehicleEF	LDA	2.0960e-003	7.5130e-003
tblVehicleEF	LDA	0.33	0.59
tblVehicleEF	LDA	0.63	1.51

tblVehicleEF	LDA	184.63	268.73
tblVehicleEF	LDA	42.76	61.89
tblVehicleEF	LDA	0.02	0.06
tblVehicleEF	LDA	0.03	0.10
tblVehicleEF	LDA	1.0970e-003	1.5800e-003
tblVehicleEF	LDA	1.8750e-003	2.3410e-003
tblVehicleEF	LDA	1.0090e-003	1.4560e-003
tblVehicleEF	LDA	1.7240e-003	2.1520e-003
tblVehicleEF	LDA	0.03	0.06
tblVehicleEF	LDA	0.06	0.13
tblVehicleEF	LDA	0.02	0.04
tblVehicleEF	LDA	4.5380e-003	0.01
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.03	0.10
tblVehicleEF	LDA	1.8470e-003	2.6910e-003
tblVehicleEF	LDA	4.3800e-004	6.4500e-004
tblVehicleEF	LDA	0.03	0.06
tblVehicleEF	LDA	0.06	0.13
tblVehicleEF	LDA	0.02	0.04
tblVehicleEF	LDA	6.6040e-003	0.02
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.03	0.11
tblVehicleEF	LDA	2.0950e-003	5.0340e-003
tblVehicleEF	LDA	1.7300e-003	6.2060e-003
tblVehicleEF	LDA	0.41	0.74
tblVehicleEF	LDA	0.52	1.26
tblVehicleEF	LDA	203.16	295.91

tblVehicleEF	LDA	42.76	61.89
tblVehicleEF	LDA	0.02	0.05
tblVehicleEF	LDA	0.03	0.09
tblVehicleEF	LDA	1.0970e-003	1.5800e-003
tblVehicleEF	LDA	1.8750e-003	2.3410e-003
tblVehicleEF	LDA	1.0090e-003	1.4560e-003
tblVehicleEF	LDA	1.7240e-003	2.1520e-003
tblVehicleEF	LDA	0.06	0.14
tblVehicleEF	LDA	0.07	0.16
tblVehicleEF	LDA	0.05	0.10
tblVehicleEF	LDA	5.2310e-003	0.01
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.02	0.08
tblVehicleEF	LDA	2.0340e-003	2.9650e-003
tblVehicleEF	LDA	4.3600e-004	6.4000e-004
tblVehicleEF	LDA	0.06	0.14
tblVehicleEF	LDA	0.07	0.16
tblVehicleEF	LDA	0.05	0.10
tblVehicleEF	LDA	7.6160e-003	0.02
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.03	0.09
tblVehicleEF	LDA	1.6920e-003	4.0730e-003
tblVehicleEF	LDA	2.4740e-003	8.9090e-003
tblVehicleEF	LDA	0.30	0.54
tblVehicleEF	LDA	0.77	1.85
tblVehicleEF	LDA	177.19	257.81
tblVehicleEF	LDA	42.76	61.89

tblVehicleEF	LDA	0.03	0.06
tblVehicleEF	LDA	0.03	0.11
tblVehicleEF	LDA	1.0970e-003	1.5800e-003
tblVehicleEF	LDA	1.8750e-003	2.3410e-003
tblVehicleEF	LDA	1.0090e-003	1.4560e-003
tblVehicleEF	LDA	1.7240e-003	2.1520e-003
tblVehicleEF	LDA	8.1230e-003	0.02
tblVehicleEF	LDA	0.06	0.13
tblVehicleEF	LDA	7.5990e-003	0.02
tblVehicleEF	LDA	4.2350e-003	0.01
tblVehicleEF	LDA	0.03	0.05
tblVehicleEF	LDA	0.03	0.12
tblVehicleEF	LDA	1.7730e-003	2.5810e-003
tblVehicleEF	LDA	4.4000e-004	6.5100e-004
tblVehicleEF	LDA	8.1230e-003	0.02
tblVehicleEF	LDA	0.06	0.13
tblVehicleEF	LDA	7.5990e-003	0.02
tblVehicleEF	LDA	6.1630e-003	0.01
tblVehicleEF	LDA	0.03	0.05
tblVehicleEF	LDA	0.04	0.13
tblVehicleEF	LDT1	4.1560e-003	0.01
tblVehicleEF	LDT1	7.0020e-003	0.02
tblVehicleEF	LDT1	0.60	1.66
tblVehicleEF	LDT1	1.54	4.56
tblVehicleEF	LDT1	239.93	330.29
tblVehicleEF	LDT1	56.61	75.49
tblVehicleEF	LDT1	0.06	0.18

tblVehicleEF	LDT1	0.08	0.26
tblVehicleEF	LDT1	1.4480e-003	2.7610e-003
tblVehicleEF	LDT1	2.4690e-003	4.2630e-003
tblVehicleEF	LDT1	1.3310e-003	2.5440e-003
tblVehicleEF	LDT1	2.2700e-003	3.9210e-003
tblVehicleEF	LDT1	0.11	0.24
tblVehicleEF	LDT1	0.19	0.43
tblVehicleEF	LDT1	0.08	0.16
tblVehicleEF	LDT1	0.01	0.03
tblVehicleEF	LDT1	0.13	0.26
tblVehicleEF	LDT1	0.09	0.32
tblVehicleEF	LDT1	2.4050e-003	3.3240e-003
tblVehicleEF	LDT1	5.9200e-004	8.3600e-004
tblVehicleEF	LDT1	0.11	0.24
tblVehicleEF	LDT1	0.19	0.43
tblVehicleEF	LDT1	0.08	0.16
tblVehicleEF	LDT1	0.02	0.05
tblVehicleEF	LDT1	0.13	0.26
tblVehicleEF	LDT1	0.10	0.35
tblVehicleEF	LDT1	4.7610e-003	0.02
tblVehicleEF	LDT1	5.7770e-003	0.02
tblVehicleEF	LDT1	0.74	2.02
tblVehicleEF	LDT1	1.27	3.78
tblVehicleEF	LDT1	263.32	361.85
tblVehicleEF	LDT1	56.61	75.49
tblVehicleEF	LDT1	0.05	0.16
tblVehicleEF	LDT1	0.08	0.24

tblVehicleEF	LDT1	1.4480e-003	2.7610e-003
tblVehicleEF	LDT1	2.4690e-003	4.2630e-003
tblVehicleEF	LDT1	1.3310e-003	2.5440e-003
tblVehicleEF	LDT1	2.2700e-003	3.9210e-003
tblVehicleEF	LDT1	0.26	0.57
tblVehicleEF	LDT1	0.24	0.55
tblVehicleEF	LDT1	0.16	0.35
tblVehicleEF	LDT1	0.01	0.04
tblVehicleEF	LDT1	0.12	0.26
tblVehicleEF	LDT1	0.08	0.27
tblVehicleEF	LDT1	2.6400e-003	3.6450e-003
tblVehicleEF	LDT1	5.8800e-004	8.2200e-004
tblVehicleEF	LDT1	0.26	0.57
tblVehicleEF	LDT1	0.24	0.55
tblVehicleEF	LDT1	0.16	0.35
tblVehicleEF	LDT1	0.02	0.06
tblVehicleEF	LDT1	0.12	0.26
tblVehicleEF	LDT1	0.09	0.29
tblVehicleEF	LDT1	3.8930e-003	0.01
tblVehicleEF	LDT1	8.2830e-003	0.03
tblVehicleEF	LDT1	0.55	1.55
tblVehicleEF	LDT1	1.88	5.62
tblVehicleEF	LDT1	230.53	317.61
tblVehicleEF	LDT1	56.61	75.49
tblVehicleEF	LDT1	0.06	0.20
tblVehicleEF	LDT1	0.09	0.29
tblVehicleEF	LDT1	1.4480e-003	2.7610e-003

tblVehicleEF	LDT1	2.4690e-003	4.2630e-003
tblVehicleEF	LDT1	1.3310e-003	2.5440e-003
tblVehicleEF	LDT1	2.2700e-003	3.9210e-003
tblVehicleEF	LDT1	0.03	0.07
tblVehicleEF	LDT1	0.19	0.43
tblVehicleEF	LDT1	0.03	0.05
tblVehicleEF	LDT1	9.6440e-003	0.03
tblVehicleEF	LDT1	0.15	0.32
tblVehicleEF	LDT1	0.11	0.39
tblVehicleEF	LDT1	2.3100e-003	3.1960e-003
tblVehicleEF	LDT1	5.9800e-004	8.5500e-004
tblVehicleEF	LDT1	0.03	0.07
tblVehicleEF	LDT1	0.19	0.43
tblVehicleEF	LDT1	0.03	0.05
tblVehicleEF	LDT1	0.01	0.05
tblVehicleEF	LDT1	0.15	0.32
tblVehicleEF	LDT1	0.12	0.42
tblVehicleEF	LDT2	3.1170e-003	6.9890e-003
tblVehicleEF	LDT2	3.7840e-003	0.01
tblVehicleEF	LDT2	0.51	0.89
tblVehicleEF	LDT2	0.99	2.27
tblVehicleEF	LDT2	272.29	375.67
tblVehicleEF	LDT2	63.09	86.28
tblVehicleEF	LDT2	0.04	0.11
tblVehicleEF	LDT2	0.06	0.20
tblVehicleEF	LDT2	1.2780e-003	1.5950e-003
tblVehicleEF	LDT2	2.1240e-003	2.4140e-003

tblVehicleEF	LDT2	1.1760e-003	1.4670e-003
tblVehicleEF	LDT2	1.9530e-003	2.2190e-003
tblVehicleEF	LDT2	0.05	0.09
tblVehicleEF	LDT2	0.09	0.17
tblVehicleEF	LDT2	0.04	0.07
tblVehicleEF	LDT2	7.7350e-003	0.02
tblVehicleEF	LDT2	0.06	0.09
tblVehicleEF	LDT2	0.05	0.15
tblVehicleEF	LDT2	2.7260e-003	3.7640e-003
tblVehicleEF	LDT2	6.4700e-004	9.0200e-004
tblVehicleEF	LDT2	0.05	0.09
tblVehicleEF	LDT2	0.09	0.17
tblVehicleEF	LDT2	0.04	0.07
tblVehicleEF	LDT2	0.01	0.03
tblVehicleEF	LDT2	0.06	0.09
tblVehicleEF	LDT2	0.06	0.17
tblVehicleEF	LDT2	3.5870e-003	8.0510e-003
tblVehicleEF	LDT2	3.1440e-003	9.4610e-003
tblVehicleEF	LDT2	0.63	1.10
tblVehicleEF	LDT2	0.83	1.89
tblVehicleEF	LDT2	298.95	412.53
tblVehicleEF	LDT2	63.09	86.28
tblVehicleEF	LDT2	0.04	0.10
tblVehicleEF	LDT2	0.06	0.18
tblVehicleEF	LDT2	1.2780e-003	1.5950e-003
tblVehicleEF	LDT2	2.1240e-003	2.4140e-003
tblVehicleEF	LDT2	1.1760e-003	1.4670e-003

tblVehicleEF	LDT2	1.9530e-003	2.2190e-003
tblVehicleEF	LDT2	0.12	0.21
tblVehicleEF	LDT2	0.11	0.21
tblVehicleEF	LDT2	0.09	0.15
tblVehicleEF	LDT2	8.8980e-003	0.02
tblVehicleEF	LDT2	0.06	0.09
tblVehicleEF	LDT2	0.04	0.13
tblVehicleEF	LDT2	2.9940e-003	4.1360e-003
tblVehicleEF	LDT2	6.4400e-004	8.9500e-004
tblVehicleEF	LDT2	0.12	0.21
tblVehicleEF	LDT2	0.11	0.21
tblVehicleEF	LDT2	0.09	0.15
tblVehicleEF	LDT2	0.01	0.03
tblVehicleEF	LDT2	0.06	0.09
tblVehicleEF	LDT2	0.05	0.14
tblVehicleEF	LDT2	2.9120e-003	6.5610e-003
tblVehicleEF	LDT2	4.4460e-003	0.01
tblVehicleEF	LDT2	0.46	0.82
tblVehicleEF	LDT2	1.19	2.78
tblVehicleEF	LDT2	261.58	360.87
tblVehicleEF	LDT2	63.09	86.28
tblVehicleEF	LDT2	0.05	0.12
tblVehicleEF	LDT2	0.07	0.22
tblVehicleEF	LDT2	1.2780e-003	1.5950e-003
tblVehicleEF	LDT2	2.1240e-003	2.4140e-003
tblVehicleEF	LDT2	1.1760e-003	1.4670e-003
tblVehicleEF	LDT2	1.9530e-003	2.2190e-003

tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.09	0.17
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	7.2260e-003	0.02
tblVehicleEF	LDT2	0.07	0.11
tblVehicleEF	LDT2	0.06	0.18
tblVehicleEF	LDT2	2.6180e-003	3.6150e-003
tblVehicleEF	LDT2	6.5000e-004	9.1100e-004
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.09	0.17
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.01	0.02
tblVehicleEF	LDT2	0.07	0.11
tblVehicleEF	LDT2	0.07	0.20
tblVehicleEF	LHD1	4.0010e-003	5.4410e-003
tblVehicleEF	LHD1	0.01	0.03
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.13	0.14
tblVehicleEF	LHD1	0.74	1.48
tblVehicleEF	LHD1	1.64	2.81
tblVehicleEF	LHD1	9.18	9.35
tblVehicleEF	LHD1	654.24	705.59
tblVehicleEF	LHD1	26.41	30.27
tblVehicleEF	LHD1	0.08	0.09
tblVehicleEF	LHD1	1.09	2.24
tblVehicleEF	LHD1	0.72	1.02
tblVehicleEF	LHD1	9.2800e-004	1.0490e-003

tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	6.1500e-004	9.8100e-004
tblVehicleEF	LHD1	8.8800e-004	1.0040e-003
tblVehicleEF	LHD1	2.5950e-003	2.5340e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	5.6600e-004	9.0300e-004
tblVehicleEF	LHD1	2.8860e-003	3.9680e-003
tblVehicleEF	LHD1	0.09	0.10
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	1.3090e-003	1.6320e-003
tblVehicleEF	LHD1	0.11	0.16
tblVehicleEF	LHD1	0.29	0.31
tblVehicleEF	LHD1	0.15	0.28
tblVehicleEF	LHD1	9.1000e-005	9.3000e-005
tblVehicleEF	LHD1	6.3940e-003	6.9250e-003
tblVehicleEF	LHD1	2.9400e-004	3.5600e-004
tblVehicleEF	LHD1	2.8860e-003	3.9680e-003
tblVehicleEF	LHD1	0.09	0.10
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.3090e-003	1.6320e-003
tblVehicleEF	LHD1	0.13	0.20
tblVehicleEF	LHD1	0.29	0.31
tblVehicleEF	LHD1	0.16	0.31
tblVehicleEF	LHD1	4.0010e-003	5.4410e-003
tblVehicleEF	LHD1	0.01	0.03
tblVehicleEF	LHD1	0.01	0.02

tblVehicleEF	LHD1	0.13	0.14
tblVehicleEF	LHD1	0.75	1.52
tblVehicleEF	LHD1	1.52	2.61
tblVehicleEF	LHD1	9.18	9.35
tblVehicleEF	LHD1	654.24	705.59
tblVehicleEF	LHD1	26.41	30.27
tblVehicleEF	LHD1	0.08	0.09
tblVehicleEF	LHD1	1.03	2.12
tblVehicleEF	LHD1	0.68	0.96
tblVehicleEF	LHD1	9.2800e-004	1.0490e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	6.1500e-004	9.8100e-004
tblVehicleEF	LHD1	8.8800e-004	1.0040e-003
tblVehicleEF	LHD1	2.5950e-003	2.5340e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	5.6600e-004	9.0300e-004
tblVehicleEF	LHD1	6.5410e-003	9.1960e-003
tblVehicleEF	LHD1	0.10	0.13
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	2.7190e-003	3.5890e-003
tblVehicleEF	LHD1	0.11	0.17
tblVehicleEF	LHD1	0.29	0.31
tblVehicleEF	LHD1	0.14	0.27
tblVehicleEF	LHD1	9.1000e-005	9.3000e-005
tblVehicleEF	LHD1	6.3940e-003	6.9250e-003
tblVehicleEF	LHD1	2.9200e-004	3.5200e-004

tblVehicleEF	LHD1	6.5410e-003	9.1960e-003
tblVehicleEF	LHD1	0.10	0.13
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.7190e-003	3.5890e-003
tblVehicleEF	LHD1	0.13	0.21
tblVehicleEF	LHD1	0.29	0.31
tblVehicleEF	LHD1	0.16	0.29
tblVehicleEF	LHD1	4.0010e-003	5.4410e-003
tblVehicleEF	LHD1	9.8380e-003	0.02
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.13	0.14
tblVehicleEF	LHD1	0.73	1.45
tblVehicleEF	LHD1	1.78	3.07
tblVehicleEF	LHD1	9.18	9.35
tblVehicleEF	LHD1	654.24	705.59
tblVehicleEF	LHD1	26.41	30.27
tblVehicleEF	LHD1	0.08	0.09
tblVehicleEF	LHD1	1.11	2.29
tblVehicleEF	LHD1	0.77	1.09
tblVehicleEF	LHD1	9.2800e-004	1.0490e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	6.1500e-004	9.8100e-004
tblVehicleEF	LHD1	8.8800e-004	1.0040e-003
tblVehicleEF	LHD1	2.5950e-003	2.5340e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	5.6600e-004	9.0300e-004

tblVehicleEF	LHD1	9.0700e-004	1.1450e-003
tblVehicleEF	LHD1	0.09	0.11
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	5.6800e-004	6.5800e-004
tblVehicleEF	LHD1	0.11	0.16
tblVehicleEF	LHD1	0.32	0.34
tblVehicleEF	LHD1	0.16	0.30
tblVehicleEF	LHD1	9.1000e-005	9.3000e-005
tblVehicleEF	LHD1	6.3940e-003	6.9240e-003
tblVehicleEF	LHD1	2.9700e-004	3.6000e-004
tblVehicleEF	LHD1	9.0700e-004	1.1450e-003
tblVehicleEF	LHD1	0.09	0.11
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	5.6800e-004	6.5800e-004
tblVehicleEF	LHD1	0.13	0.20
tblVehicleEF	LHD1	0.32	0.34
tblVehicleEF	LHD1	0.18	0.33
tblVehicleEF	LHD2	2.7040e-003	4.0850e-003
tblVehicleEF	LHD2	5.7490e-003	0.01
tblVehicleEF	LHD2	4.1190e-003	0.01
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.49	0.84
tblVehicleEF	LHD2	0.91	1.49
tblVehicleEF	LHD2	13.79	14.33
tblVehicleEF	LHD2	681.69	742.00
tblVehicleEF	LHD2	22.30	25.95
tblVehicleEF	LHD2	0.08	0.12

tblVehicleEF	LHD2	0.42	1.84
tblVehicleEF	LHD2	0.33	0.65
tblVehicleEF	LHD2	1.0840e-003	1.3140e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.5600e-004	4.7300e-004
tblVehicleEF	LHD2	1.0370e-003	1.2570e-003
tblVehicleEF	LHD2	2.7050e-003	2.6680e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.2800e-004	4.3500e-004
tblVehicleEF	LHD2	9.9300e-004	1.8440e-003
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.9200e-004	7.9800e-004
tblVehicleEF	LHD2	0.10	0.14
tblVehicleEF	LHD2	0.06	0.12
tblVehicleEF	LHD2	0.06	0.15
tblVehicleEF	LHD2	1.3400e-004	1.4000e-004
tblVehicleEF	LHD2	6.6240e-003	7.2250e-003
tblVehicleEF	LHD2	2.3900e-004	2.8700e-004
tblVehicleEF	LHD2	9.9300e-004	1.8440e-003
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.9200e-004	7.9800e-004
tblVehicleEF	LHD2	0.11	0.16
tblVehicleEF	LHD2	0.06	0.12
tblVehicleEF	LHD2	0.06	0.16

tblVehicleEF	LHD2	2.7040e-003	4.0850e-003
tblVehicleEF	LHD2	5.7910e-003	0.01
tblVehicleEF	LHD2	3.9480e-003	0.01
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.50	0.85
tblVehicleEF	LHD2	0.85	1.39
tblVehicleEF	LHD2	13.79	14.33
tblVehicleEF	LHD2	681.69	742.00
tblVehicleEF	LHD2	22.30	25.95
tblVehicleEF	LHD2	0.08	0.12
tblVehicleEF	LHD2	0.39	1.75
tblVehicleEF	LHD2	0.32	0.62
tblVehicleEF	LHD2	1.0840e-003	1.3140e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.5600e-004	4.7300e-004
tblVehicleEF	LHD2	1.0370e-003	1.2570e-003
tblVehicleEF	LHD2	2.7050e-003	2.6680e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.2800e-004	4.3500e-004
tblVehicleEF	LHD2	2.2340e-003	4.2480e-003
tblVehicleEF	LHD2	0.03	0.06
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	1.0090e-003	1.7360e-003
tblVehicleEF	LHD2	0.10	0.14
tblVehicleEF	LHD2	0.06	0.12
tblVehicleEF	LHD2	0.05	0.14

tblVehicleEF	LHD2	1.3400e-004	1.4000e-004
tblVehicleEF	LHD2	6.6240e-003	7.2250e-003
tblVehicleEF	LHD2	2.3800e-004	2.8500e-004
tblVehicleEF	LHD2	2.2340e-003	4.2480e-003
tblVehicleEF	LHD2	0.03	0.06
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.0090e-003	1.7360e-003
tblVehicleEF	LHD2	0.11	0.16
tblVehicleEF	LHD2	0.06	0.12
tblVehicleEF	LHD2	0.06	0.16
tblVehicleEF	LHD2	2.7040e-003	4.0850e-003
tblVehicleEF	LHD2	5.7040e-003	0.01
tblVehicleEF	LHD2	4.3110e-003	0.01
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.49	0.84
tblVehicleEF	LHD2	0.99	1.62
tblVehicleEF	LHD2	13.79	14.33
tblVehicleEF	LHD2	681.69	742.00
tblVehicleEF	LHD2	22.30	25.95
tblVehicleEF	LHD2	0.08	0.12
tblVehicleEF	LHD2	0.42	1.88
tblVehicleEF	LHD2	0.35	0.70
tblVehicleEF	LHD2	1.0840e-003	1.3140e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.5600e-004	4.7300e-004
tblVehicleEF	LHD2	1.0370e-003	1.2570e-003

tblVehicleEF	LHD2	2.7050e-003	2.6680e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.2800e-004	4.3500e-004
tblVehicleEF	LHD2	3.2200e-004	5.5000e-004
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	2.1500e-004	3.2700e-004
tblVehicleEF	LHD2	0.10	0.14
tblVehicleEF	LHD2	0.06	0.13
tblVehicleEF	LHD2	0.06	0.16
tblVehicleEF	LHD2	1.3400e-004	1.4000e-004
tblVehicleEF	LHD2	6.6240e-003	7.2250e-003
tblVehicleEF	LHD2	2.4000e-004	2.9000e-004
tblVehicleEF	LHD2	3.2200e-004	5.5000e-004
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	2.1500e-004	3.2700e-004
tblVehicleEF	LHD2	0.11	0.16
tblVehicleEF	LHD2	0.06	0.13
tblVehicleEF	LHD2	0.06	0.17
tblVehicleEF	MCY	0.43	0.40
tblVehicleEF	MCY	0.15	0.17
tblVehicleEF	MCY	18.83	22.73
tblVehicleEF	MCY	10.19	9.98
tblVehicleEF	MCY	168.95	163.41
tblVehicleEF	MCY	44.41	48.59
tblVehicleEF	MCY	1.15	1.19

tblVehicleEF	MCY	0.31	0.32
tblVehicleEF	MCY	1.9730e-003	1.7080e-003
tblVehicleEF	MCY	3.0090e-003	4.0620e-003
tblVehicleEF	MCY	1.8410e-003	1.6040e-003
tblVehicleEF	MCY	2.8180e-003	3.8470e-003
tblVehicleEF	MCY	1.61	1.65
tblVehicleEF	MCY	0.88	1.02
tblVehicleEF	MCY	0.84	0.91
tblVehicleEF	MCY	2.09	2.29
tblVehicleEF	MCY	0.44	0.64
tblVehicleEF	MCY	2.11	2.26
tblVehicleEF	MCY	2.0580e-003	2.0690e-003
tblVehicleEF	MCY	6.7300e-004	7.1600e-004
tblVehicleEF	MCY	1.61	1.65
tblVehicleEF	MCY	0.88	1.02
tblVehicleEF	MCY	0.84	0.91
tblVehicleEF	MCY	2.60	2.77
tblVehicleEF	MCY	0.44	0.64
tblVehicleEF	MCY	2.30	2.46
tblVehicleEF	MCY	0.43	0.39
tblVehicleEF	MCY	0.13	0.14
tblVehicleEF	MCY	19.15	23.07
tblVehicleEF	MCY	9.11	9.18
tblVehicleEF	MCY	168.95	163.41
tblVehicleEF	MCY	44.41	48.59
tblVehicleEF	MCY	1.00	1.03
tblVehicleEF	MCY	0.29	0.29

tblVehicleEF	MCY	1.9730e-003	1.7080e-003
tblVehicleEF	MCY	3.0090e-003	4.0620e-003
tblVehicleEF	MCY	1.8410e-003	1.6040e-003
tblVehicleEF	MCY	2.8180e-003	3.8470e-003
tblVehicleEF	MCY	3.91	4.06
tblVehicleEF	MCY	1.42	1.54
tblVehicleEF	MCY	2.17	2.35
tblVehicleEF	MCY	2.05	2.22
tblVehicleEF	MCY	0.43	0.62
tblVehicleEF	MCY	1.81	1.91
tblVehicleEF	MCY	2.0620e-003	2.0720e-003
tblVehicleEF	MCY	6.4600e-004	6.9200e-004
tblVehicleEF	MCY	3.91	4.06
tblVehicleEF	MCY	1.42	1.54
tblVehicleEF	MCY	2.17	2.35
tblVehicleEF	MCY	2.55	2.68
tblVehicleEF	MCY	0.43	0.62
tblVehicleEF	MCY	1.97	2.08
tblVehicleEF	MCY	0.45	0.42
tblVehicleEF	MCY	0.18	0.20
tblVehicleEF	MCY	20.13	24.56
tblVehicleEF	MCY	11.91	11.53
tblVehicleEF	MCY	168.95	163.41
tblVehicleEF	MCY	44.41	48.59
tblVehicleEF	MCY	1.25	1.30
tblVehicleEF	MCY	0.34	0.34
tblVehicleEF	MCY	1.9730e-003	1.7080e-003

tblVehicleEF	MCY	3.0090e-003	4.0620e-003
tblVehicleEF	MCY	1.8410e-003	1.6040e-003
tblVehicleEF	MCY	2.8180e-003	3.8470e-003
tblVehicleEF	MCY	0.38	0.38
tblVehicleEF	MCY	0.85	1.05
tblVehicleEF	MCY	0.21	0.23
tblVehicleEF	MCY	2.17	2.43
tblVehicleEF	MCY	0.52	0.74
tblVehicleEF	MCY	2.51	2.73
tblVehicleEF	MCY	2.0820e-003	2.1020e-003
tblVehicleEF	MCY	7.1300e-004	7.5500e-004
tblVehicleEF	MCY	0.38	0.38
tblVehicleEF	MCY	0.85	1.05
tblVehicleEF	MCY	0.21	0.23
tblVehicleEF	MCY	2.70	2.93
tblVehicleEF	MCY	0.52	0.74
tblVehicleEF	MCY	2.73	2.97
tblVehicleEF	MDV	5.3630e-003	0.01
tblVehicleEF	MDV	9.0350e-003	0.02
tblVehicleEF	MDV	0.70	1.62
tblVehicleEF	MDV	1.79	4.21
tblVehicleEF	MDV	376.25	515.99
tblVehicleEF	MDV	87.78	116.39
tblVehicleEF	MDV	0.08	0.21
tblVehicleEF	MDV	0.14	0.39
tblVehicleEF	MDV	1.3010e-003	1.6840e-003
tblVehicleEF	MDV	2.1180e-003	2.5830e-003

tblVehicleEF	MDV	1.1980e-003	1.5550e-003
tblVehicleEF	MDV	1.9480e-003	2.3790e-003
tblVehicleEF	MDV	0.10	0.12
tblVehicleEF	MDV	0.17	0.24
tblVehicleEF	MDV	0.08	0.10
tblVehicleEF	MDV	0.01	0.04
tblVehicleEF	MDV	0.11	0.14
tblVehicleEF	MDV	0.12	0.34
tblVehicleEF	MDV	3.7640e-003	5.1750e-003
tblVehicleEF	MDV	9.0800e-004	1.2390e-003
tblVehicleEF	MDV	0.10	0.12
tblVehicleEF	MDV	0.17	0.24
tblVehicleEF	MDV	0.08	0.10
tblVehicleEF	MDV	0.02	0.06
tblVehicleEF	MDV	0.11	0.14
tblVehicleEF	MDV	0.13	0.37
tblVehicleEF	MDV	6.1650e-003	0.02
tblVehicleEF	MDV	7.4720e-003	0.02
tblVehicleEF	MDV	0.87	1.98
tblVehicleEF	MDV	1.50	3.53
tblVehicleEF	MDV	412.07	565.23
tblVehicleEF	MDV	87.78	116.39
tblVehicleEF	MDV	0.07	0.20
tblVehicleEF	MDV	0.13	0.37
tblVehicleEF	MDV	1.3010e-003	1.6840e-003
tblVehicleEF	MDV	2.1180e-003	2.5830e-003
tblVehicleEF	MDV	1.1980e-003	1.5550e-003

tblVehicleEF	MDV	1.9480e-003	2.3790e-003
tblVehicleEF	MDV	0.23	0.28
tblVehicleEF	MDV	0.20	0.28
tblVehicleEF	MDV	0.17	0.20
tblVehicleEF	MDV	0.02	0.05
tblVehicleEF	MDV	0.11	0.13
tblVehicleEF	MDV	0.10	0.28
tblVehicleEF	MDV	4.1240e-003	5.6720e-003
tblVehicleEF	MDV	9.0300e-004	1.2260e-003
tblVehicleEF	MDV	0.23	0.28
tblVehicleEF	MDV	0.20	0.28
tblVehicleEF	MDV	0.17	0.20
tblVehicleEF	MDV	0.02	0.06
tblVehicleEF	MDV	0.11	0.13
tblVehicleEF	MDV	0.11	0.30
tblVehicleEF	MDV	5.0120e-003	0.01
tblVehicleEF	MDV	0.01	0.03
tblVehicleEF	MDV	0.64	1.52
tblVehicleEF	MDV	2.17	5.12
tblVehicleEF	MDV	361.86	496.21
tblVehicleEF	MDV	87.78	116.39
tblVehicleEF	MDV	0.08	0.23
tblVehicleEF	MDV	0.15	0.44
tblVehicleEF	MDV	1.3010e-003	1.6840e-003
tblVehicleEF	MDV	2.1180e-003	2.5830e-003
tblVehicleEF	MDV	1.1980e-003	1.5550e-003
tblVehicleEF	MDV	1.9480e-003	2.3790e-003

tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.17	0.24
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.01	0.04
tblVehicleEF	MDV	0.13	0.16
tblVehicleEF	MDV	0.14	0.40
tblVehicleEF	MDV	3.6190e-003	4.9760e-003
tblVehicleEF	MDV	9.1500e-004	1.2550e-003
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.17	0.24
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.02	0.05
tblVehicleEF	MDV	0.13	0.16
tblVehicleEF	MDV	0.16	0.44
tblVehicleEF	MH	0.01	0.05
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.61	3.83
tblVehicleEF	MH	3.93	7.32
tblVehicleEF	MH	1,190.86	1,232.21
tblVehicleEF	MH	55.97	59.12
tblVehicleEF	MH	1.07	2.10
tblVehicleEF	MH	0.67	0.99
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	8.7200e-004	1.4730e-003
tblVehicleEF	MH	3.2330e-003	3.2450e-003
tblVehicleEF	MH	0.02	0.04

tblVehicleEF	MH	8.0200e-004	1.3610e-003
tblVehicleEF	MH	0.87	1.78
tblVehicleEF	MH	0.05	0.10
tblVehicleEF	MH	0.25	0.45
tblVehicleEF	MH	0.05	0.17
tblVehicleEF	MH	0.01	0.03
tblVehicleEF	MH	0.23	0.44
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.2800e-004	7.1900e-004
tblVehicleEF	MH	0.87	1.78
tblVehicleEF	MH	0.05	0.10
tblVehicleEF	MH	0.25	0.45
tblVehicleEF	MH	0.06	0.23
tblVehicleEF	MH	0.01	0.03
tblVehicleEF	MH	0.26	0.48
tblVehicleEF	MH	0.01	0.05
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.63	3.98
tblVehicleEF	MH	3.57	6.63
tblVehicleEF	MH	1,190.86	1,232.21
tblVehicleEF	MH	55.97	59.12
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tblVehicleEF	MH	0.63	0.93
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	8.7200e-004	1.4730e-003
tblVehicleEF	MH	3.2330e-003	3.2450e-003

tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	8.0200e-004	1.3610e-003
tblVehicleEF	MH	1.99	4.16
tblVehicleEF	MH	0.06	0.12
tblVehicleEF	MH	0.52	1.02
tblVehicleEF	MH	0.05	0.17
tblVehicleEF	MH	0.01	0.03
tblVehicleEF	MH	0.22	0.41
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.2200e-004	7.0800e-004
tblVehicleEF	MH	1.99	4.16
tblVehicleEF	MH	0.06	0.12
tblVehicleEF	MH	0.52	1.02
tblVehicleEF	MH	0.06	0.24
tblVehicleEF	MH	0.01	0.03
tblVehicleEF	MH	0.24	0.44
tblVehicleEF	MH	0.01	0.05
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	0.60	3.72
tblVehicleEF	MH	4.36	8.22
tblVehicleEF	MH	1,190.86	1,232.21
tblVehicleEF	MH	55.97	59.12
tblVehicleEF	MH	1.11	2.17
tblVehicleEF	MH	0.72	1.06
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	8.7200e-004	1.4730e-003

tblVehicleEF	MH	3.2330e-003	3.2450e-003
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	8.0200e-004	1.3610e-003
tblVehicleEF	MH	0.26	0.48
tblVehicleEF	MH	0.05	0.12
tblVehicleEF	MH	0.13	0.22
tblVehicleEF	MH	0.05	0.16
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.25	0.47
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.3500e-004	7.3500e-004
tblVehicleEF	MH	0.26	0.48
tblVehicleEF	MH	0.05	0.12
tblVehicleEF	MH	0.13	0.22
tblVehicleEF	MH	0.06	0.22
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.27	0.52
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	2.3520e-003	8.8450e-003
tblVehicleEF	MHD	0.03	0.07
tblVehicleEF	MHD	0.17	0.42
tblVehicleEF	MHD	0.25	0.58
tblVehicleEF	MHD	1.51	4.42
tblVehicleEF	MHD	211.82	212.61
tblVehicleEF	MHD	1,169.08	1,213.16
tblVehicleEF	MHD	22.87	29.48
tblVehicleEF	MHD	0.58	1.49

tblVehicleEF	MHD	1.17	2.52
tblVehicleEF	MHD	16.73	16.04
tblVehicleEF	MHD	7.5000e-005	0.01
tblVehicleEF	MHD	3.1600e-003	0.05
tblVehicleEF	MHD	3.1800e-004	6.4700e-004
tblVehicleEF	MHD	7.2000e-005	0.01
tblVehicleEF	MHD	3.0210e-003	0.05
tblVehicleEF	MHD	2.9200e-004	5.9500e-004
tblVehicleEF	MHD	4.4200e-004	1.4030e-003
tblVehicleEF	MHD	0.01	0.04
tblVehicleEF	MHD	0.01	0.05
tblVehicleEF	MHD	2.1100e-004	5.6100e-004
tblVehicleEF	MHD	0.04	0.14
tblVehicleEF	MHD	5.0660e-003	0.01
tblVehicleEF	MHD	0.09	0.26
tblVehicleEF	MHD	2.0260e-003	2.0340e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	2.5500e-004	3.7200e-004
tblVehicleEF	MHD	4.4200e-004	1.4030e-003
tblVehicleEF	MHD	0.01	0.04
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	2.1100e-004	5.6100e-004
tblVehicleEF	MHD	0.05	0.16
tblVehicleEF	MHD	5.0660e-003	0.01
tblVehicleEF	MHD	0.10	0.28
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	2.3610e-003	8.9450e-003

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tblVehicleEF	MHD	0.12	0.30
tblVehicleEF	MHD	0.25	0.58
tblVehicleEF	MHD	1.40	4.09
tblVehicleEF	MHD	224.45	225.31
tblVehicleEF	MHD	1,169.08	1,213.16
tblVehicleEF	MHD	22.87	29.48
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tblVehicleEF	MHD	1.11	2.39
tblVehicleEF	MHD	16.71	16.01
tblVehicleEF	MHD	6.3000e-005	9.0550e-003
tblVehicleEF	MHD	3.1600e-003	0.05
tblVehicleEF	MHD	3.1800e-004	6.4700e-004
tblVehicleEF	MHD	6.0000e-005	8.6630e-003
tblVehicleEF	MHD	3.0210e-003	0.05
tblVehicleEF	MHD	2.9200e-004	5.9500e-004
tblVehicleEF	MHD	1.0060e-003	3.3430e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.01	0.05
tblVehicleEF	MHD	4.4600e-004	1.3130e-003
tblVehicleEF	MHD	0.04	0.14
tblVehicleEF	MHD	5.0490e-003	0.01
tblVehicleEF	MHD	0.09	0.25
tblVehicleEF	MHD	2.1460e-003	2.1550e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	2.5300e-004	3.6700e-004
tblVehicleEF	MHD	1.0060e-003	3.3430e-003

tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	4.4600e-004	1.3130e-003
tblVehicleEF	MHD	0.05	0.16
tblVehicleEF	MHD	5.0490e-003	0.01
tblVehicleEF	MHD	0.10	0.27
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	2.3410e-003	8.7400e-003
tblVehicleEF	MHD	0.04	0.08
tblVehicleEF	MHD	0.23	0.57
tblVehicleEF	MHD	0.25	0.57
tblVehicleEF	MHD	1.65	4.84
tblVehicleEF	MHD	194.51	195.25
tblVehicleEF	MHD	1,169.08	1,213.16
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tblVehicleEF	MHD	0.55	1.42
tblVehicleEF	MHD	1.19	2.56
tblVehicleEF	MHD	16.74	16.09
tblVehicleEF	MHD	9.1000e-005	0.01
tblVehicleEF	MHD	3.1600e-003	0.05
tblVehicleEF	MHD	3.1800e-004	6.4700e-004
tblVehicleEF	MHD	8.7000e-005	0.01
tblVehicleEF	MHD	3.0210e-003	0.05
tblVehicleEF	MHD	2.9200e-004	5.9500e-004
tblVehicleEF	MHD	1.3700e-004	3.6800e-004
tblVehicleEF	MHD	0.01	0.04
tblVehicleEF	MHD	0.01	0.05

tblVehicleEF	MHD	8.9000e-005	2.0400e-004
tblVehicleEF	MHD	0.04	0.14
tblVehicleEF	MHD	5.6390e-003	0.01
tblVehicleEF	MHD	0.10	0.28
tblVehicleEF	MHD	1.8610e-003	1.8690e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	2.5700e-004	3.7900e-004
tblVehicleEF	MHD	1.3700e-004	3.6800e-004
tblVehicleEF	MHD	0.01	0.04
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	8.9000e-005	2.0400e-004
tblVehicleEF	MHD	0.05	0.16
tblVehicleEF	MHD	5.6390e-003	0.01
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tblVehicleEF	OBUS	4.5930e-003	0.02
tblVehicleEF	OBUS	0.02	0.04
tblVehicleEF	OBUS	0.25	0.32
tblVehicleEF	OBUS	0.37	1.04
tblVehicleEF	OBUS	4.33	7.73
tblVehicleEF	OBUS	210.41	174.61
tblVehicleEF	OBUS	1,308.07	1,363.34
tblVehicleEF	OBUS	59.87	65.25
tblVehicleEF	OBUS	0.50	1.12
tblVehicleEF	OBUS	1.09	2.79
tblVehicleEF	OBUS	4.38	4.04
tblVehicleEF	OBUS	4.6000e-005	5.2900e-004

tblVehicleEF	OBUS	3.2550e-003	0.01
tblVehicleEF	OBUS	8.5500e-004	8.5200e-004
tblVehicleEF	OBUS	4.4000e-005	5.0600e-004
tblVehicleEF	OBUS	3.0980e-003	0.01
tblVehicleEF	OBUS	7.8600e-004	7.8300e-004
tblVehicleEF	OBUS	1.9970e-003	2.9240e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.04	0.05
tblVehicleEF	OBUS	6.7700e-004	9.1600e-004
tblVehicleEF	OBUS	0.05	0.11
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.27	0.47
tblVehicleEF	OBUS	2.0180e-003	1.6770e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	6.7500e-004	7.8800e-004
tblVehicleEF	OBUS	1.9970e-003	2.9240e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	6.7700e-004	9.1600e-004
tblVehicleEF	OBUS	0.06	0.14
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.30	0.52
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	4.6710e-003	0.02
tblVehicleEF	OBUS	0.02	0.04
tblVehicleEF	OBUS	0.24	0.29
tblVehicleEF	OBUS	0.38	1.07

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tblVehicleEF	OBUS	1,308.07	1,363.34
tblVehicleEF	OBUS	59.87	65.25
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tblVehicleEF	OBUS	4.34	3.96
tblVehicleEF	OBUS	3.9000e-005	4.4600e-004
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tblVehicleEF	OBUS	8.5500e-004	8.5200e-004
tblVehicleEF	OBUS	3.7000e-005	4.2700e-004
tblVehicleEF	OBUS	3.0980e-003	0.01
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tblVehicleEF	OBUS	4.4950e-003	6.7570e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.04	0.05
tblVehicleEF	OBUS	1.3960e-003	1.9960e-003
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tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.25	0.44
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tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	6.6800e-004	7.7600e-004
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tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	1.3960e-003	1.9960e-003

tblVehicleEF	OBUS	0.06	0.14
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tblVehicleEF	OBUS	0.03	0.04
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tblVehicleEF	OBUS	0.37	1.02
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tblVehicleEF	OBUS	3.2550e-003	0.01
tblVehicleEF	OBUS	8.5500e-004	8.5200e-004
tblVehicleEF	OBUS	5.4000e-005	6.1600e-004
tblVehicleEF	OBUS	3.0980e-003	0.01
tblVehicleEF	OBUS	7.8600e-004	7.8300e-004
tblVehicleEF	OBUS	6.5600e-004	8.7100e-004
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.04	0.05
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tblVehicleEF	OBUS	0.03	0.04

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tblVehicleEF	OBUS	0.02	0.03
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tblVehicleEF	SBUS	1,265.58	1,369.86
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tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	4.7200e-004	4.1100e-004

tblVehicleEF	SBUS	3.4250e-003	0.02
tblVehicleEF	SBUS	2.7940e-003	2.8270e-003
tblVehicleEF	SBUS	0.01	0.03
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tblVehicleEF	SBUS	2.7520e-003	3.2380e-003
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tblVehicleEF	SBUS	0.08	0.14
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tblVehicleEF	SBUS	5.4290e-003	0.01
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tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	4.7200e-004	4.1100e-004
tblVehicleEF	SBUS	4.1670e-003	0.02
tblVehicleEF	SBUS	2.7940e-003	2.8270e-003
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tblVehicleEF	SBUS	4.3400e-004	3.7800e-004
tblVehicleEF	SBUS	9.4100e-004	9.3700e-004
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.52	0.48

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tblVehicleEF	SBUS	9.5180e-003	0.02
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tblVehicleEF	SBUS	9.4100e-004	9.3700e-004
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.74	0.67
tblVehicleEF	SBUS	5.2100e-004	4.5400e-004
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tblVehicleEF	SBUS	0.23	0.30
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tblVehicleEF	UBUS	0.06	0.07
tblVehicleEF	UBUS	5.41	8.78
tblVehicleEF	UBUS	8.96	10.27
tblVehicleEF	UBUS	1,825.34	1,981.19
tblVehicleEF	UBUS	139.10	125.24
tblVehicleEF	UBUS	3.46	8.97
tblVehicleEF	UBUS	12.59	14.01
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tblVehicleEF	UBUS	0.05	0.14
tblVehicleEF	UBUS	1.3470e-003	8.4600e-004
tblVehicleEF	UBUS	0.22	0.24
tblVehicleEF	UBUS	0.05	0.14

tblVehicleEF	UBUS	1.2380e-003	7.7800e-004
tblVehicleEF	UBUS	5.9980e-003	6.5800e-003
tblVehicleEF	UBUS	0.07	0.08
tblVehicleEF	UBUS	2.7120e-003	2.8920e-003
tblVehicleEF	UBUS	0.27	0.71
tblVehicleEF	UBUS	0.01	0.01
tblVehicleEF	UBUS	0.82	0.89
tblVehicleEF	UBUS	0.01	0.01
tblVehicleEF	UBUS	1.5560e-003	1.4410e-003
tblVehicleEF	UBUS	5.9980e-003	6.5800e-003
tblVehicleEF	UBUS	0.07	0.08
tblVehicleEF	UBUS	2.7120e-003	2.8920e-003
tblVehicleEF	UBUS	1.49	2.85
tblVehicleEF	UBUS	0.01	0.01
tblVehicleEF	UBUS	0.90	0.97
tblVehicleEF	UBUS	1.19	2.05
tblVehicleEF	UBUS	0.05	0.06
tblVehicleEF	UBUS	5.43	8.83
tblVehicleEF	UBUS	7.28	8.29
tblVehicleEF	UBUS	1,825.34	1,981.19
tblVehicleEF	UBUS	139.10	125.24
tblVehicleEF	UBUS	3.27	8.51
tblVehicleEF	UBUS	12.50	13.91
tblVehicleEF	UBUS	0.51	0.55
tblVehicleEF	UBUS	0.05	0.14
tblVehicleEF	UBUS	1.3470e-003	8.4600e-004
tblVehicleEF	UBUS	0.22	0.24

tblVehicleEF	UBUS	0.05	0.14
tblVehicleEF	UBUS	1.2380e-003	7.7800e-004
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.09	0.11
tblVehicleEF	UBUS	5.6790e-003	6.2720e-003
tblVehicleEF	UBUS	0.27	0.72
tblVehicleEF	UBUS	0.01	0.01
tblVehicleEF	UBUS	0.73	0.78
tblVehicleEF	UBUS	0.01	0.01
tblVehicleEF	UBUS	1.5270e-003	1.4060e-003
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.09	0.11
tblVehicleEF	UBUS	5.6790e-003	6.2720e-003
tblVehicleEF	UBUS	1.49	2.86
tblVehicleEF	UBUS	0.01	0.01
tblVehicleEF	UBUS	0.80	0.86
tblVehicleEF	UBUS	1.19	2.05
tblVehicleEF	UBUS	0.07	0.07
tblVehicleEF	UBUS	5.39	8.73
tblVehicleEF	UBUS	10.94	12.62
tblVehicleEF	UBUS	1,825.34	1,981.19
tblVehicleEF	UBUS	139.10	125.24
tblVehicleEF	UBUS	3.53	9.15
tblVehicleEF	UBUS	12.70	14.13
tblVehicleEF	UBUS	0.51	0.55
tblVehicleEF	UBUS	0.05	0.14
tblVehicleEF	UBUS	1.3470e-003	8.4600e-004

tblVehicleEF	UBUS	0.22	0.24
tblVehicleEF	UBUS	0.05	0.14
tblVehicleEF	UBUS	1.2380e-003	7.7800e-004
tblVehicleEF	UBUS	2.0250e-003	2.1400e-003
tblVehicleEF	UBUS	0.06	0.08
tblVehicleEF	UBUS	1.3940e-003	1.4110e-003
tblVehicleEF	UBUS	0.26	0.71
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	0.93	1.00
tblVehicleEF	UBUS	0.01	0.01
tblVehicleEF	UBUS	1.5910e-003	1.4810e-003
tblVehicleEF	UBUS	2.0250e-003	2.1400e-003
tblVehicleEF	UBUS	0.06	0.08
tblVehicleEF	UBUS	1.3940e-003	1.4110e-003
tblVehicleEF	UBUS	1.49	2.84
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	1.01	1.10
tblVehicleTrips	WD_TR	1.29	1.89

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3621	3.3737	2.5521	4.5000e-003	0.2300	0.1861	0.4161	0.0967	0.1742	0.2710						400.7873
2020	0.4926	0.6833	0.6233	1.0900e-003	9.1800e-003	0.0380	0.0472	2.4800e-003	0.0359	0.0384						95.6736
Maximum	**0.4926**	**3.3737**	**2.5521**	**4.5000e-003**	**0.2300**	**0.1861**	**0.4161**	**0.0967**	**0.1742**	**0.2710**						**400.7873**

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	0.1181	2.2042	2.6721	4.5000e-003	0.1099	0.1234	0.2333	0.0432	0.1233	0.1665						400.7869
2020	0.4432	0.5241	0.6643	1.0900e-003	9.1800e-003	0.0310	0.0402	2.4800e-003	0.0310	0.0335						95.6735
Maximum	**0.4432**	**2.2042**	**2.6721**	**4.5000e-003**	**0.1099**	**0.1234**	**0.2333**	**0.0432**	**0.1233**	**0.1665**						**400.7869**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**34.34**	**32.75**	**-5.07**	**0.00**	**50.23**	**31.10**	**40.98**	**53.97**	**26.57**	**35.35**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2019**	**3-31-2019**	1.2739	0.7004
2	**4-1-2019**	**6-30-2019**	0.8133	0.5357
3	**7-1-2019**	**9-30-2019**	0.8222	0.5416
4	**10-1-2019**	**12-31-2019**	0.8230	0.5424
5	**1-1-2020**	**3-31-2020**	0.6971	0.5054
6	**4-1-2020**	**6-30-2020**	0.4479	0.4314
7	**7-1-2020**	**9-30-2020**	0.0345	0.0332
		Highest	1.2739	0.7004

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	0.2777	7.0000e-005	8.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005						0.0166
Energy	8.0600e-003	0.0732	0.0615	4.4000e-004		5.5700e-003	5.5700e-003		5.5700e-003	5.5700e-003						176.9009
Mobile	0.3821	4.4630	3.4293	0.0159	0.8559	0.0184	0.8743	0.2308	0.0175	0.2482						1,483.889 3
Waste						0.0000	0.0000		0.0000	0.0000						68.8372
Water						0.0000	0.0000		0.0000	0.0000						8.3025
Total	**0.6679**	**4.5364**	**3.4989**	**0.0163**	**0.8559**	**0.0240**	**0.8799**	**0.2308**	**0.0231**	**0.2538**						**1,737.946 5**

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	0.2777	7.0000e-005	8.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005						0.0166
Energy	8.0600e-003	0.0732	0.0615	4.4000e-004		5.5700e-003	5.5700e-003		5.5700e-003	5.5700e-003						169.9621
Mobile	0.3795	4.4265	3.3819	0.0156	0.8387	0.0181	0.8569	0.2261	0.0172	0.2433						1,460.1602
Waste						0.0000	0.0000		0.0000	0.0000						17.2093
Water						0.0000	0.0000		0.0000	0.0000						7.1479
Total	**0.6652**	**4.4998**	**3.4515**	**0.0161**	**0.8387**	**0.0237**	**0.8625**	**0.2261**	**0.0228**	**0.2489**						**1,654.4961**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.39**	**0.81**	**1.36**	**1.53**	**2.00**	**1.33**	**1.98**	**2.00**	**1.34**	**1.94**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.80**

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	1/1/2019	1/14/2019	5	10	
2	Grading	Grading	1/15/2019	2/11/2019	5	20	
3	Building Construction	Building Construction	2/12/2019	3/16/2020	5	285	
4	Paving	Paving	3/17/2020	3/30/2020	5	10	
5	Architectural Coating	Architectural Coating	4/1/2020	7/7/2020	5	70	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 1.1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 89,250; Non-Residential Outdoor: 29,750; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	25.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497						0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110						17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**						**17.2195**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	4.3000e-004	2.8000e-004	2.8000e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	2.0000e-004						0.6432
Total	**4.3000e-004**	**2.8000e-004**	**2.8000e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**						**0.6432**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0352	0.0000	0.0352	0.0194	0.0000	0.0194						0.0000
Off-Road	4.6600e-003	0.0953	0.1148	1.9000e-004		4.7300e-003	4.7300e-003		4.7300e-003	4.7300e-003						17.2195
Total	**4.6600e-003**	**0.0953**	**0.1148**	**1.9000e-004**	**0.0352**	**4.7300e-003**	**0.0400**	**0.0194**	**4.7300e-003**	**0.0241**						**17.2195**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	4.3000e-004	2.8000e-004	2.8000e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	2.0000e-004						0.6432
Total	**4.3000e-004**	**2.8000e-004**	**2.8000e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**						**0.6432**

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					0.1066	0.0000	0.1066	0.0381	0.0000	0.0381						0.0000
Off-Road	0.0474	0.5452	0.3338	6.2000e-004		0.0238	0.0238		0.0219	0.0219						56.1419
Total	**0.0474**	**0.5452**	**0.3338**	**6.2000e-004**	**0.1066**	**0.0238**	**0.1305**	**0.0381**	**0.0219**	**0.0600**						**56.1419**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	9.4000e-004	6.2000e-004	6.2300e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.2000e-004	1.0000e-005	4.3000e-004						1.4293
Total	**9.4000e-004**	**6.2000e-004**	**6.2300e-003**	**2.0000e-005**	**1.6000e-003**	**1.0000e-005**	**1.6100e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**						**1.4293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0416	0.0000	0.0416	0.0149	0.0000	0.0149						0.0000
Off-Road	0.0152	0.2998	0.3672	6.2000e-004		0.0130	0.0130		0.0130	0.0130						56.1418
Total	**0.0152**	**0.2998**	**0.3672**	**6.2000e-004**	**0.0416**	**0.0130**	**0.0546**	**0.0149**	**0.0130**	**0.0279**						**56.1418**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	9.4000e-004	6.2000e-004	6.2300e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.2000e-004	1.0000e-005	4.3000e-004						1.4293
Total	**9.4000e-004**	**6.2000e-004**	**6.2300e-003**	**2.0000e-005**	**1.6000e-003**	**1.0000e-005**	**1.6100e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**						**1.4293**

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	0.2727	2.4346	1.9824	3.1100e-003		0.1490	0.1490		0.1401	0.1401						273.1991
Total	**0.2727**	**2.4346**	**1.9824**	**3.1100e-003**		**0.1490**	**0.1490**		**0.1401**	**0.1401**						**273.1991**

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
Vendor	5.3200e-003	0.1562	0.0266	3.3000e-004	7.6500e-003	1.1300e-003	8.7900e-003	2.2100e-003	1.0800e-003	3.2900e-003						31.5184
Worker	0.0136	8.9800e-003	0.0900	2.3000e-004	0.0231	1.5000e-004	0.0232	6.1400e-003	1.4000e-004	6.2800e-003						20.6359
Total	**0.0190**	**0.1651**	**0.1166**	**5.6000e-004**	**0.0307**	**1.2800e-003**	**0.0320**	**8.3500e-003**	**1.2200e-003**	**9.5700e-003**						**52.1542**

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	0.0778	1.6431	2.0644	3.1100e-003		0.1044	0.1044		0.1044	0.1044						273.1988
Total	**0.0778**	**1.6431**	**2.0644**	**3.1100e-003**		**0.1044**	**0.1044**		**0.1044**	**0.1044**						**273.1988**

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
Vendor	5.3200e-003	0.1562	0.0266	3.3000e-004	7.6500e-003	1.1300e-003	8.7900e-003	2.2100e-003	1.0800e-003	3.2900e-003						31.5184
Worker	0.0136	8.9800e-003	0.0900	2.3000e-004	0.0231	1.5000e-004	0.0232	6.1400e-003	1.4000e-004	6.2800e-003						20.6359
Total	**0.0190**	**0.1651**	**0.1166**	**5.6000e-004**	**0.0307**	**1.2800e-003**	**0.0320**	**8.3500e-003**	**1.2200e-003**	**9.5700e-003**						**52.1542**

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	0.0572	0.5180	0.4549	7.3000e-004		0.0302	0.0302		0.0284	0.0284						62.9161
Total	**0.0572**	**0.5180**	**0.4549**	**7.3000e-004**		**0.0302**	**0.0302**		**0.0284**	**0.0284**						**62.9161**

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
Vendor	1.0100e-003	0.0335	5.3400e-003	8.0000e-005	1.7900e-003	1.8000e-004	1.9700e-003	5.2000e-004	1.7000e-004	6.9000e-004						7.3040
Worker	2.9100e-003	1.8500e-003	0.0188	5.0000e-005	5.4000e-003	3.0000e-005	5.4300e-003	1.4300e-003	3.0000e-005	1.4700e-003						4.6737
Total	**3.9200e-003**	**0.0353**	**0.0241**	**1.3000e-004**	**7.1900e-003**	**2.1000e-004**	**7.4000e-003**	**1.9500e-003**	**2.0000e-004**	**2.1600e-003**						**11.9777**

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	0.0182	0.3841	0.4826	7.3000e-004		0.0244	0.0244		0.0244	0.0244						62.9160
Total	**0.0182**	**0.3841**	**0.4826**	**7.3000e-004**		**0.0244**	**0.0244**		**0.0244**	**0.0244**						**62.9160**

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
Vendor	1.0100e-003	0.0335	5.3400e-003	8.0000e-005	1.7900e-003	1.8000e-004	1.9700e-003	5.2000e-004	1.7000e-004	6.9000e-004						7.3040
Worker	2.9100e-003	1.8500e-003	0.0188	5.0000e-005	5.4000e-003	3.0000e-005	5.4300e-003	1.4300e-003	3.0000e-005	1.4700e-003						4.6737
Total	**3.9200e-003**	**0.0353**	**0.0241**	**1.3000e-004**	**7.1900e-003**	**2.1000e-004**	**7.4000e-003**	**1.9500e-003**	**2.0000e-004**	**2.1600e-003**						**11.9777**

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	6.7800e-003	0.0703	0.0733	1.1000e-004		3.7600e-003	3.7600e-003		3.4600e-003	3.4600e-003						10.0951
Paving	1.4400e-003					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**8.2200e-003**	**0.0703**	**0.0733**	**1.1000e-004**		**3.7600e-003**	**3.7600e-003**		**3.4600e-003**	**3.4600e-003**						**10.0951**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	3.2000e-004	2.1000e-004	2.0800e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004						0.5193
Total	**3.2000e-004**	**2.1000e-004**	**2.0800e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**						**0.5193**

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	2.8000e-003	0.0565	0.0865	1.1000e-004		3.0500e-003	3.0500e-003		3.0500e-003	3.0500e-003						10.0951
Paving	1.4400e-003					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**4.2400e-003**	**0.0565**	**0.0865**	**1.1000e-004**		**3.0500e-003**	**3.0500e-003**		**3.0500e-003**	**3.0500e-003**						**10.0951**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	3.2000e-004	2.1000e-004	2.0800e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004						0.5193
Total	**3.2000e-004**	**2.1000e-004**	**2.0800e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**						**0.5193**

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	0.4137					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	8.4800e-003	0.0589	0.0641	1.0000e-004		3.8800e-003	3.8800e-003		3.8800e-003	3.8800e-003						8.9537
Total	**0.4222**	**0.0589**	**0.0641**	**1.0000e-004**		**3.8800e-003**	**3.8800e-003**		**3.8800e-003**	**3.8800e-003**						**8.9537**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	7.6000e-004	4.8000e-004	4.8600e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4100e-003	3.7000e-004	1.0000e-005	3.8000e-004						1.2117
Total	**7.6000e-004**	**4.8000e-004**	**4.8600e-003**	**1.0000e-005**	**1.4000e-003**	**1.0000e-005**	**1.4100e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**						**1.2117**

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	0.4137					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	2.0800e-003	0.0475	0.0641	1.0000e-004		3.3300e-003	3.3300e-003		3.3300e-003	3.3300e-003						8.9537
Total	**0.4158**	**0.0475**	**0.0641**	**1.0000e-004**		**3.3300e-003**	**3.3300e-003**		**3.3300e-003**	**3.3300e-003**						**8.9537**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	7.6000e-004	4.8000e-004	4.8600e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4100e-003	3.7000e-004	1.0000e-005	3.8000e-004						1.2117
Total	**7.6000e-004**	**4.8000e-004**	**4.8600e-003**	**1.0000e-005**	**1.4000e-003**	**1.0000e-005**	**1.4100e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**						**1.2117**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	0.3795	4.4265	3.3819	0.0156	0.8387	0.0181	0.8569	0.2261	0.0172	0.2433						1,460.160 2
Unmitigated	0.3821	4.4630	3.4293	0.0159	0.8559	0.0184	0.8743	0.2308	0.0175	0.2482						1,483.889 3

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	1,417.50	0.00	0.00	2,232,501	2,187,851
Parking Lot	0.00	0.00	0.00		
Total	1,417.50	0.00	0.00	2,232,501	2,187,851

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Elementary School	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667
Parking Lot	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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						89.7604
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000						96.6991
NaturalGas Mitigated	8.0600e-003	0.0732	0.0615	4.4000e-004		5.5700e-003	5.5700e-003		5.5700e-003	5.5700e-003						80.2017
NaturalGas Unmitigated	8.0600e-003	0.0732	0.0615	4.4000e-004		5.5700e-003	5.5700e-003		5.5700e-003	5.5700e-003						80.2017

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	1.49405e+006	8.0600e-003	0.0732	0.0615	4.4000e-004		5.5700e-003	5.5700e-003		5.5700e-003	5.5700e-003						80.2017
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Total		**8.0600e-003**	**0.0732**	**0.0615**	**4.4000e-004**		**5.5700e-003**	**5.5700e-003**		**5.5700e-003**	**5.5700e-003**						**80.2017**

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	1.49405e+006	8.0600e-003	0.0732	0.0615	4.4000e-004		5.5700e-003	5.5700e-003		5.5700e-003	5.5700e-003						80.2017
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Total		**8.0600e-003**	**0.0732**	**0.0615**	**4.4000e-004**		**5.5700e-003**	**5.5700e-003**		**5.5700e-003**	**5.5700e-003**						**80.2017**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Elementary School	417690				92.9003
Parking Lot	17080				3.7988
Total					**96.6992**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Elementary School	389225				86.5693
Parking Lot	14347.2				3.1910
Total					**89.7604**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2777	7.0000e-005	8.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005						0.0166
Unmitigated	0.2777	7.0000e-005	8.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005						0.0166

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	0.0414					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	0.2355					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	7.6000e-004	7.0000e-005	8.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005						0.0166
Total	**0.2777**	**7.0000e-005**	**8.0600e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**						**0.0166**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0414					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	0.2355					0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	7.6000e-004	7.0000e-005	8.0600e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005						0.0166
Total	**0.2777**	**7.0000e-005**	**8.0600e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**						**0.0166**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				7.1479
Unmitigated				8.3025

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Elementary School	1.81818 / 4.67532				8.3025
Parking Lot	0 / 0				0.0000
Total					**8.3025**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Elementary School	1.45454 / 4.39013				7.1479
Parking Lot	0 / 0				0.0000
Total					**7.1479**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				17.2093
Unmitigated				68.8372

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Elementary School	136.88				68.8372
Parking Lot	0				0.0000
Total					**68.8372**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Elementary School	34.22				17.2093
Parking Lot	0				0.0000
Total					**17.2093**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CUSD - Minnewawa-International Elem. School

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	750.00	Student	23.00	59,500.00	0
Parking Lot	122.00	Space	1.10	48,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	364.4	**CH4 Intensity (lb/MWhr)**	0.016	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Includes RPS adjustment.

Land Use - 750 students, 59,500 building sq.ft. and 122 space parking lot per similar school use, 23 acres total; pop: 800

Construction Phase - .

Off-road Equipment - .

Trips and VMT - .

On-road Fugitive Dust - .

Demolition - .

Grading - .

Architectural Coating - .

Vehicle Trips - Trip gen: 1.89/student per similar school

Road Dust - Based on model defaults.

Consumer Products - Based on model defaults.

Area Coating - Based on model defaults.

Landscape Equipment - Based on model defaults.

Energy Use - Includes RPS adjustment.

Water And Wastewater - Based on model defaults.

Solid Waste - Based on model defaults.

Construction Off-road Equipment Mitigation - .

Mobile Land Use Mitigation - Includes improvements to pedestrian network and connecting offsite.

Energy Mitigation - Includes installation of energy-efficient lighting.

Water Mitigation - Includes installation of low-flow water fixtures and water-efficient irrigation systems.

Waste Mitigation - Assumes minimum waste diversion of 75% by 2020. http://www.co.fresno.ca.us/departments/public-works-planning/divisions-of-public-works-and-planning/resources-and-parks-division/recycling-and-solid-waste-disposal/residential-r

Fleet Mix - Based on model defaults.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	2928	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	10.00	1.00
tblFleetMix	HHD	0.13	0.12
tblFleetMix	HHD	0.13	0.12
tblFleetMix	LDA	0.52	0.48
tblFleetMix	LDA	0.52	0.48
tblFleetMix	LDT1	0.03	0.03
tblFleetMix	LDT1	0.03	0.03
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	9.7000e-003	0.02
tblFleetMix	LHD1	9.7000e-003	0.02
tblFleetMix	LHD2	3.4040e-003	4.9970e-003
tblFleetMix	LHD2	3.4040e-003	4.9970e-003
tblFleetMix	MCY	4.5630e-003	5.2610e-003
tblFleetMix	MCY	4.5630e-003	5.2610e-003
tblFleetMix	MDV	0.09	0.13
tblFleetMix	MDV	0.09	0.13
tblFleetMix	MH	4.3600e-004	6.6700e-004
tblFleetMix	MH	4.3600e-004	6.6700e-004
tblFleetMix	MHD	0.03	0.03
tblFleetMix	MHD	0.03	0.03
tblFleetMix	OBUS	2.3060e-003	2.3690e-003
tblFleetMix	OBUS	2.3060e-003	2.3690e-003

tblFleetMix	SBUS	9.9800e-004	1.1150e-003
tblFleetMix	SBUS	9.9800e-004	1.1150e-003
tblFleetMix	UBUS	1.1850e-003	1.6750e-003
tblFleetMix	UBUS	1.1850e-003	1.6750e-003
tblLandUse	LandUseSquareFeet	62,702.53	59,500.00
tblLandUse	LotAcreage	1.44	23.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.016
tblProjectCharacteristics	CO2IntensityFactor	641.35	364.4
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblVehicleEF	HHD	1.89	2.96
tblVehicleEF	HHD	8.2550e-003	0.01
tblVehicleEF	HHD	0.06	0.11
tblVehicleEF	HHD	1.73	3.27
tblVehicleEF	HHD	0.51	0.66
tblVehicleEF	HHD	0.51	0.71
tblVehicleEF	HHD	5,107.42	5,898.79
tblVehicleEF	HHD	1,465.23	1,601.10
tblVehicleEF	HHD	1.58	2.13
tblVehicleEF	HHD	14.43	25.61
tblVehicleEF	HHD	1.47	4.06
tblVehicleEF	HHD	20.67	20.63
tblVehicleEF	HHD	2.4110e-003	0.03
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.4990e-003	0.02
tblVehicleEF	HHD	1.6000e-005	2.0000e-005
tblVehicleEF	HHD	2.3070e-003	0.03

tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9170e-003	8.9030e-003
tblVehicleEF	HHD	5.2610e-003	0.02
tblVehicleEF	HHD	1.4000e-005	1.8000e-005
tblVehicleEF	HHD	2.1000e-005	3.3000e-005
tblVehicleEF	HHD	6.7900e-004	1.2650e-003
tblVehicleEF	HHD	0.46	0.87
tblVehicleEF	HHD	1.1000e-005	1.7000e-005
tblVehicleEF	HHD	0.08	0.14
tblVehicleEF	HHD	5.5000e-005	9.6000e-005
tblVehicleEF	HHD	9.2740e-003	0.02
tblVehicleEF	HHD	0.05	0.06
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	2.4000e-005	3.3000e-005
tblVehicleEF	HHD	2.1000e-005	3.3000e-005
tblVehicleEF	HHD	6.7900e-004	1.2650e-003
tblVehicleEF	HHD	0.53	0.99
tblVehicleEF	HHD	1.1000e-005	1.7000e-005
tblVehicleEF	HHD	0.09	0.16
tblVehicleEF	HHD	5.5000e-005	9.6000e-005
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	1.78	2.79
tblVehicleEF	HHD	8.2600e-003	0.01
tblVehicleEF	HHD	0.05	0.11
tblVehicleEF	HHD	1.26	2.39
tblVehicleEF	HHD	0.51	0.66
tblVehicleEF	HHD	0.47	0.66

tblVehicleEF	HHD	5,410.86	6,245.05
tblVehicleEF	HHD	1,465.23	1,601.10
tblVehicleEF	HHD	1.58	2.13
tblVehicleEF	HHD	14.89	26.42
tblVehicleEF	HHD	1.40	3.86
tblVehicleEF	HHD	20.66	20.63
tblVehicleEF	HHD	2.0330e-003	0.02
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.4990e-003	0.02
tblVehicleEF	HHD	1.6000e-005	2.0000e-005
tblVehicleEF	HHD	1.9450e-003	0.02
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9170e-003	8.9030e-003
tblVehicleEF	HHD	5.2610e-003	0.02
tblVehicleEF	HHD	1.4000e-005	1.8000e-005
tblVehicleEF	HHD	4.7000e-005	7.6000e-005
tblVehicleEF	HHD	7.6400e-004	1.4520e-003
tblVehicleEF	HHD	0.44	0.82
tblVehicleEF	HHD	2.2000e-005	3.8000e-005
tblVehicleEF	HHD	0.08	0.14
tblVehicleEF	HHD	5.4000e-005	9.7000e-005
tblVehicleEF	HHD	8.7610e-003	0.02
tblVehicleEF	HHD	0.05	0.06
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	2.3000e-005	3.2000e-005
tblVehicleEF	HHD	4.7000e-005	7.6000e-005

tblVehicleEF	HHD	7.6400e-004	1.4520e-003
tblVehicleEF	HHD	0.50	0.94
tblVehicleEF	HHD	2.2000e-005	3.8000e-005
tblVehicleEF	HHD	0.09	0.16
tblVehicleEF	HHD	5.4000e-005	9.7000e-005
tblVehicleEF	HHD	9.5920e-003	0.02
tblVehicleEF	HHD	2.04	3.19
tblVehicleEF	HHD	8.2490e-003	0.01
tblVehicleEF	HHD	0.06	0.12
tblVehicleEF	HHD	2.38	4.50
tblVehicleEF	HHD	0.51	0.65
tblVehicleEF	HHD	0.55	0.77
tblVehicleEF	HHD	4,688.39	5,420.63
tblVehicleEF	HHD	1,465.23	1,601.10
tblVehicleEF	HHD	1.58	2.13
tblVehicleEF	HHD	13.79	24.49
tblVehicleEF	HHD	1.50	4.13
tblVehicleEF	HHD	20.67	20.64
tblVehicleEF	HHD	2.9340e-003	0.03
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	5.4990e-003	0.02
tblVehicleEF	HHD	1.6000e-005	2.0000e-005
tblVehicleEF	HHD	2.8070e-003	0.03
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9170e-003	8.9030e-003
tblVehicleEF	HHD	5.2610e-003	0.02

tblVehicleEF	HHD	1.4000e-005	1.8000e-005
tblVehicleEF	HHD	7.0000e-006	1.0000e-005
tblVehicleEF	HHD	6.7100e-004	1.3050e-003
tblVehicleEF	HHD	0.50	0.94
tblVehicleEF	HHD	5.0000e-006	7.0000e-006
tblVehicleEF	HHD	0.08	0.14
tblVehicleEF	HHD	6.1000e-005	1.0500e-004
tblVehicleEF	HHD	9.8710e-003	0.02
tblVehicleEF	HHD	0.04	0.05
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	2.5000e-005	3.4000e-005
tblVehicleEF	HHD	7.0000e-006	1.0000e-005
tblVehicleEF	HHD	6.7100e-004	1.3050e-003
tblVehicleEF	HHD	0.57	1.07
tblVehicleEF	HHD	5.0000e-006	7.0000e-006
tblVehicleEF	HHD	0.09	0.16
tblVehicleEF	HHD	6.1000e-005	1.0500e-004
tblVehicleEF	HHD	0.01	0.03
tblVehicleEF	LDA	1.8140e-003	4.3510e-003
tblVehicleEF	LDA	2.0960e-003	7.5130e-003
tblVehicleEF	LDA	0.33	0.59
tblVehicleEF	LDA	0.63	1.51
tblVehicleEF	LDA	184.63	268.73
tblVehicleEF	LDA	42.76	61.89
tblVehicleEF	LDA	0.02	0.06
tblVehicleEF	LDA	0.03	0.10
tblVehicleEF	LDA	1.0970e-003	1.5800e-003

tblVehicleEF	LDA	1.8750e-003	2.3410e-003
tblVehicleEF	LDA	1.0090e-003	1.4560e-003
tblVehicleEF	LDA	1.7240e-003	2.1520e-003
tblVehicleEF	LDA	0.03	0.06
tblVehicleEF	LDA	0.06	0.13
tblVehicleEF	LDA	0.02	0.04
tblVehicleEF	LDA	4.5380e-003	0.01
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.03	0.10
tblVehicleEF	LDA	1.8470e-003	2.6910e-003
tblVehicleEF	LDA	4.3800e-004	6.4500e-004
tblVehicleEF	LDA	0.03	0.06
tblVehicleEF	LDA	0.06	0.13
tblVehicleEF	LDA	0.02	0.04
tblVehicleEF	LDA	6.6040e-003	0.02
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.03	0.11
tblVehicleEF	LDA	2.0950e-003	5.0340e-003
tblVehicleEF	LDA	1.7300e-003	6.2060e-003
tblVehicleEF	LDA	0.41	0.74
tblVehicleEF	LDA	0.52	1.26
tblVehicleEF	LDA	203.16	295.91
tblVehicleEF	LDA	42.76	61.89
tblVehicleEF	LDA	0.02	0.05
tblVehicleEF	LDA	0.03	0.09
tblVehicleEF	LDA	1.0970e-003	1.5800e-003
tblVehicleEF	LDA	1.8750e-003	2.3410e-003

tblVehicleEF	LDA	1.0090e-003	1.4560e-003
tblVehicleEF	LDA	1.7240e-003	2.1520e-003
tblVehicleEF	LDA	0.06	0.14
tblVehicleEF	LDA	0.07	0.16
tblVehicleEF	LDA	0.05	0.10
tblVehicleEF	LDA	5.2310e-003	0.01
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.02	0.08
tblVehicleEF	LDA	2.0340e-003	2.9650e-003
tblVehicleEF	LDA	4.3600e-004	6.4000e-004
tblVehicleEF	LDA	0.06	0.14
tblVehicleEF	LDA	0.07	0.16
tblVehicleEF	LDA	0.05	0.10
tblVehicleEF	LDA	7.6160e-003	0.02
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.03	0.09
tblVehicleEF	LDA	1.6920e-003	4.0730e-003
tblVehicleEF	LDA	2.4740e-003	8.9090e-003
tblVehicleEF	LDA	0.30	0.54
tblVehicleEF	LDA	0.77	1.85
tblVehicleEF	LDA	177.19	257.81
tblVehicleEF	LDA	42.76	61.89
tblVehicleEF	LDA	0.03	0.06
tblVehicleEF	LDA	0.03	0.11
tblVehicleEF	LDA	1.0970e-003	1.5800e-003
tblVehicleEF	LDA	1.8750e-003	2.3410e-003
tblVehicleEF	LDA	1.0090e-003	1.4560e-003

tblVehicleEF	LDA	1.7240e-003	2.1520e-003
tblVehicleEF	LDA	8.1230e-003	0.02
tblVehicleEF	LDA	0.06	0.13
tblVehicleEF	LDA	7.5990e-003	0.02
tblVehicleEF	LDA	4.2350e-003	0.01
tblVehicleEF	LDA	0.03	0.05
tblVehicleEF	LDA	0.03	0.12
tblVehicleEF	LDA	1.7730e-003	2.5810e-003
tblVehicleEF	LDA	4.4000e-004	6.5100e-004
tblVehicleEF	LDA	8.1230e-003	0.02
tblVehicleEF	LDA	0.06	0.13
tblVehicleEF	LDA	7.5990e-003	0.02
tblVehicleEF	LDA	6.1630e-003	0.01
tblVehicleEF	LDA	0.03	0.05
tblVehicleEF	LDA	0.04	0.13
tblVehicleEF	LDT1	4.1560e-003	0.01
tblVehicleEF	LDT1	7.0020e-003	0.02
tblVehicleEF	LDT1	0.60	1.66
tblVehicleEF	LDT1	1.54	4.56
tblVehicleEF	LDT1	239.93	330.29
tblVehicleEF	LDT1	56.61	75.49
tblVehicleEF	LDT1	0.06	0.18
tblVehicleEF	LDT1	0.08	0.26
tblVehicleEF	LDT1	1.4480e-003	2.7610e-003
tblVehicleEF	LDT1	2.4690e-003	4.2630e-003
tblVehicleEF	LDT1	1.3310e-003	2.5440e-003
tblVehicleEF	LDT1	2.2700e-003	3.9210e-003

tblVehicleEF	LDT1	0.11	0.24
tblVehicleEF	LDT1	0.19	0.43
tblVehicleEF	LDT1	0.08	0.16
tblVehicleEF	LDT1	0.01	0.03
tblVehicleEF	LDT1	0.13	0.26
tblVehicleEF	LDT1	0.09	0.32
tblVehicleEF	LDT1	2.4050e-003	3.3240e-003
tblVehicleEF	LDT1	5.9200e-004	8.3600e-004
tblVehicleEF	LDT1	0.11	0.24
tblVehicleEF	LDT1	0.19	0.43
tblVehicleEF	LDT1	0.08	0.16
tblVehicleEF	LDT1	0.02	0.05
tblVehicleEF	LDT1	0.13	0.26
tblVehicleEF	LDT1	0.10	0.35
tblVehicleEF	LDT1	4.7610e-003	0.02
tblVehicleEF	LDT1	5.7770e-003	0.02
tblVehicleEF	LDT1	0.74	2.02
tblVehicleEF	LDT1	1.27	3.78
tblVehicleEF	LDT1	263.32	361.85
tblVehicleEF	LDT1	56.61	75.49
tblVehicleEF	LDT1	0.05	0.16
tblVehicleEF	LDT1	0.08	0.24
tblVehicleEF	LDT1	1.4480e-003	2.7610e-003
tblVehicleEF	LDT1	2.4690e-003	4.2630e-003
tblVehicleEF	LDT1	1.3310e-003	2.5440e-003
tblVehicleEF	LDT1	2.2700e-003	3.9210e-003
tblVehicleEF	LDT1	0.26	0.57

tblVehicleEF	LDT1	0.24	0.55
tblVehicleEF	LDT1	0.16	0.35
tblVehicleEF	LDT1	0.01	0.04
tblVehicleEF	LDT1	0.12	0.26
tblVehicleEF	LDT1	0.08	0.27
tblVehicleEF	LDT1	2.6400e-003	3.6450e-003
tblVehicleEF	LDT1	5.8800e-004	8.2200e-004
tblVehicleEF	LDT1	0.26	0.57
tblVehicleEF	LDT1	0.24	0.55
tblVehicleEF	LDT1	0.16	0.35
tblVehicleEF	LDT1	0.02	0.06
tblVehicleEF	LDT1	0.12	0.26
tblVehicleEF	LDT1	0.09	0.29
tblVehicleEF	LDT1	3.8930e-003	0.01
tblVehicleEF	LDT1	8.2830e-003	0.03
tblVehicleEF	LDT1	0.55	1.55
tblVehicleEF	LDT1	1.88	5.62
tblVehicleEF	LDT1	230.53	317.61
tblVehicleEF	LDT1	56.61	75.49
tblVehicleEF	LDT1	0.06	0.20
tblVehicleEF	LDT1	0.09	0.29
tblVehicleEF	LDT1	1.4480e-003	2.7610e-003
tblVehicleEF	LDT1	2.4690e-003	4.2630e-003
tblVehicleEF	LDT1	1.3310e-003	2.5440e-003
tblVehicleEF	LDT1	2.2700e-003	3.9210e-003
tblVehicleEF	LDT1	0.03	0.07
tblVehicleEF	LDT1	0.19	0.43

tblVehicleEF	LDT1	0.03	0.05
tblVehicleEF	LDT1	9.6440e-003	0.03
tblVehicleEF	LDT1	0.15	0.32
tblVehicleEF	LDT1	0.11	0.39
tblVehicleEF	LDT1	2.3100e-003	3.1960e-003
tblVehicleEF	LDT1	5.9800e-004	8.5500e-004
tblVehicleEF	LDT1	0.03	0.07
tblVehicleEF	LDT1	0.19	0.43
tblVehicleEF	LDT1	0.03	0.05
tblVehicleEF	LDT1	0.01	0.05
tblVehicleEF	LDT1	0.15	0.32
tblVehicleEF	LDT1	0.12	0.42
tblVehicleEF	LDT2	3.1170e-003	6.9890e-003
tblVehicleEF	LDT2	3.7840e-003	0.01
tblVehicleEF	LDT2	0.51	0.89
tblVehicleEF	LDT2	0.99	2.27
tblVehicleEF	LDT2	272.29	375.67
tblVehicleEF	LDT2	63.09	86.28
tblVehicleEF	LDT2	0.04	0.11
tblVehicleEF	LDT2	0.06	0.20
tblVehicleEF	LDT2	1.2780e-003	1.5950e-003
tblVehicleEF	LDT2	2.1240e-003	2.4140e-003
tblVehicleEF	LDT2	1.1760e-003	1.4670e-003
tblVehicleEF	LDT2	1.9530e-003	2.2190e-003
tblVehicleEF	LDT2	0.05	0.09
tblVehicleEF	LDT2	0.09	0.17
tblVehicleEF	LDT2	0.04	0.07

tblVehicleEF	LDT2	7.7350e-003	0.02
tblVehicleEF	LDT2	0.06	0.09
tblVehicleEF	LDT2	0.05	0.15
tblVehicleEF	LDT2	2.7260e-003	3.7640e-003
tblVehicleEF	LDT2	6.4700e-004	9.0200e-004
tblVehicleEF	LDT2	0.05	0.09
tblVehicleEF	LDT2	0.09	0.17
tblVehicleEF	LDT2	0.04	0.07
tblVehicleEF	LDT2	0.01	0.03
tblVehicleEF	LDT2	0.06	0.09
tblVehicleEF	LDT2	0.06	0.17
tblVehicleEF	LDT2	3.5870e-003	8.0510e-003
tblVehicleEF	LDT2	3.1440e-003	9.4610e-003
tblVehicleEF	LDT2	0.63	1.10
tblVehicleEF	LDT2	0.83	1.89
tblVehicleEF	LDT2	298.95	412.53
tblVehicleEF	LDT2	63.09	86.28
tblVehicleEF	LDT2	0.04	0.10
tblVehicleEF	LDT2	0.06	0.18
tblVehicleEF	LDT2	1.2780e-003	1.5950e-003
tblVehicleEF	LDT2	2.1240e-003	2.4140e-003
tblVehicleEF	LDT2	1.1760e-003	1.4670e-003
tblVehicleEF	LDT2	1.9530e-003	2.2190e-003
tblVehicleEF	LDT2	0.12	0.21
tblVehicleEF	LDT2	0.11	0.21
tblVehicleEF	LDT2	0.09	0.15
tblVehicleEF	LDT2	8.8980e-003	0.02

tblVehicleEF	LDT2	0.06	0.09
tblVehicleEF	LDT2	0.04	0.13
tblVehicleEF	LDT2	2.9940e-003	4.1360e-003
tblVehicleEF	LDT2	6.4400e-004	8.9500e-004
tblVehicleEF	LDT2	0.12	0.21
tblVehicleEF	LDT2	0.11	0.21
tblVehicleEF	LDT2	0.09	0.15
tblVehicleEF	LDT2	0.01	0.03
tblVehicleEF	LDT2	0.06	0.09
tblVehicleEF	LDT2	0.05	0.14
tblVehicleEF	LDT2	2.9120e-003	6.5610e-003
tblVehicleEF	LDT2	4.4460e-003	0.01
tblVehicleEF	LDT2	0.46	0.82
tblVehicleEF	LDT2	1.19	2.78
tblVehicleEF	LDT2	261.58	360.87
tblVehicleEF	LDT2	63.09	86.28
tblVehicleEF	LDT2	0.05	0.12
tblVehicleEF	LDT2	0.07	0.22
tblVehicleEF	LDT2	1.2780e-003	1.5950e-003
tblVehicleEF	LDT2	2.1240e-003	2.4140e-003
tblVehicleEF	LDT2	1.1760e-003	1.4670e-003
tblVehicleEF	LDT2	1.9530e-003	2.2190e-003
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.09	0.17
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	7.2260e-003	0.02
tblVehicleEF	LDT2	0.07	0.11

tblVehicleEF	LDT2	0.06	0.18
tblVehicleEF	LDT2	2.6180e-003	3.6150e-003
tblVehicleEF	LDT2	6.5000e-004	9.1100e-004
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.09	0.17
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.01	0.02
tblVehicleEF	LDT2	0.07	0.11
tblVehicleEF	LDT2	0.07	0.20
tblVehicleEF	LHD1	4.0010e-003	5.4410e-003
tblVehicleEF	LHD1	0.01	0.03
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.13	0.14
tblVehicleEF	LHD1	0.74	1.48
tblVehicleEF	LHD1	1.64	2.81
tblVehicleEF	LHD1	9.18	9.35
tblVehicleEF	LHD1	654.24	705.59
tblVehicleEF	LHD1	26.41	30.27
tblVehicleEF	LHD1	0.08	0.09
tblVehicleEF	LHD1	1.09	2.24
tblVehicleEF	LHD1	0.72	1.02
tblVehicleEF	LHD1	9.2800e-004	1.0490e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	6.1500e-004	9.8100e-004
tblVehicleEF	LHD1	8.8800e-004	1.0040e-003
tblVehicleEF	LHD1	2.5950e-003	2.5340e-003

tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	5.6600e-004	9.0300e-004
tblVehicleEF	LHD1	2.8860e-003	3.9680e-003
tblVehicleEF	LHD1	0.09	0.10
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	1.3090e-003	1.6320e-003
tblVehicleEF	LHD1	0.11	0.16
tblVehicleEF	LHD1	0.29	0.31
tblVehicleEF	LHD1	0.15	0.28
tblVehicleEF	LHD1	9.1000e-005	9.3000e-005
tblVehicleEF	LHD1	6.3940e-003	6.9250e-003
tblVehicleEF	LHD1	2.9400e-004	3.5600e-004
tblVehicleEF	LHD1	2.8860e-003	3.9680e-003
tblVehicleEF	LHD1	0.09	0.10
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.3090e-003	1.6320e-003
tblVehicleEF	LHD1	0.13	0.20
tblVehicleEF	LHD1	0.29	0.31
tblVehicleEF	LHD1	0.16	0.31
tblVehicleEF	LHD1	4.0010e-003	5.4410e-003
tblVehicleEF	LHD1	0.01	0.03
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.13	0.14
tblVehicleEF	LHD1	0.75	1.52
tblVehicleEF	LHD1	1.52	2.61
tblVehicleEF	LHD1	9.18	9.35
tblVehicleEF	LHD1	654.24	705.59

tblVehicleEF	LHD1	26.41	30.27
tblVehicleEF	LHD1	0.08	0.09
tblVehicleEF	LHD1	1.03	2.12
tblVehicleEF	LHD1	0.68	0.96
tblVehicleEF	LHD1	9.2800e-004	1.0490e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	6.1500e-004	9.8100e-004
tblVehicleEF	LHD1	8.8800e-004	1.0040e-003
tblVehicleEF	LHD1	2.5950e-003	2.5340e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	5.6600e-004	9.0300e-004
tblVehicleEF	LHD1	6.5410e-003	9.1960e-003
tblVehicleEF	LHD1	0.10	0.13
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	2.7190e-003	3.5890e-003
tblVehicleEF	LHD1	0.11	0.17
tblVehicleEF	LHD1	0.29	0.31
tblVehicleEF	LHD1	0.14	0.27
tblVehicleEF	LHD1	9.1000e-005	9.3000e-005
tblVehicleEF	LHD1	6.3940e-003	6.9250e-003
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tblVehicleEF	LHD1	6.5410e-003	9.1960e-003
tblVehicleEF	LHD1	0.10	0.13
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.7190e-003	3.5890e-003
tblVehicleEF	LHD1	0.13	0.21

tblVehicleEF	LHD1	0.29	0.31
tblVehicleEF	LHD1	0.16	0.29
tblVehicleEF	LHD1	4.0010e-003	5.4410e-003
tblVehicleEF	LHD1	9.8380e-003	0.02
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.13	0.14
tblVehicleEF	LHD1	0.73	1.45
tblVehicleEF	LHD1	1.78	3.07
tblVehicleEF	LHD1	9.18	9.35
tblVehicleEF	LHD1	654.24	705.59
tblVehicleEF	LHD1	26.41	30.27
tblVehicleEF	LHD1	0.08	0.09
tblVehicleEF	LHD1	1.11	2.29
tblVehicleEF	LHD1	0.77	1.09
tblVehicleEF	LHD1	9.2800e-004	1.0490e-003
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	6.1500e-004	9.8100e-004
tblVehicleEF	LHD1	8.8800e-004	1.0040e-003
tblVehicleEF	LHD1	2.5950e-003	2.5340e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	5.6600e-004	9.0300e-004
tblVehicleEF	LHD1	9.0700e-004	1.1450e-003
tblVehicleEF	LHD1	0.09	0.11
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	5.6800e-004	6.5800e-004
tblVehicleEF	LHD1	0.11	0.16

tblVehicleEF	LHD1	0.32	0.34
tblVehicleEF	LHD1	0.16	0.30
tblVehicleEF	LHD1	9.1000e-005	9.3000e-005
tblVehicleEF	LHD1	6.3940e-003	6.9240e-003
tblVehicleEF	LHD1	2.9700e-004	3.6000e-004
tblVehicleEF	LHD1	9.0700e-004	1.1450e-003
tblVehicleEF	LHD1	0.09	0.11
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	5.6800e-004	6.5800e-004
tblVehicleEF	LHD1	0.13	0.20
tblVehicleEF	LHD1	0.32	0.34
tblVehicleEF	LHD1	0.18	0.33
tblVehicleEF	LHD2	2.7040e-003	4.0850e-003
tblVehicleEF	LHD2	5.7490e-003	0.01
tblVehicleEF	LHD2	4.1190e-003	0.01
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.49	0.84
tblVehicleEF	LHD2	0.91	1.49
tblVehicleEF	LHD2	13.79	14.33
tblVehicleEF	LHD2	681.69	742.00
tblVehicleEF	LHD2	22.30	25.95
tblVehicleEF	LHD2	0.08	0.12
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tblVehicleEF	LHD2	1.0840e-003	1.3140e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02

tblVehicleEF	LHD2	3.5600e-004	4.7300e-004
tblVehicleEF	LHD2	1.0370e-003	1.2570e-003
tblVehicleEF	LHD2	2.7050e-003	2.6680e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.2800e-004	4.3500e-004
tblVehicleEF	LHD2	9.9300e-004	1.8440e-003
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	4.9200e-004	7.9800e-004
tblVehicleEF	LHD2	0.10	0.14
tblVehicleEF	LHD2	0.06	0.12
tblVehicleEF	LHD2	0.06	0.15
tblVehicleEF	LHD2	1.3400e-004	1.4000e-004
tblVehicleEF	LHD2	6.6240e-003	7.2250e-003
tblVehicleEF	LHD2	2.3900e-004	2.8700e-004
tblVehicleEF	LHD2	9.9300e-004	1.8440e-003
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.9200e-004	7.9800e-004
tblVehicleEF	LHD2	0.11	0.16
tblVehicleEF	LHD2	0.06	0.12
tblVehicleEF	LHD2	0.06	0.16
tblVehicleEF	LHD2	2.7040e-003	4.0850e-003
tblVehicleEF	LHD2	5.7910e-003	0.01
tblVehicleEF	LHD2	3.9480e-003	0.01
tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.50	0.85

tblVehicleEF	LHD2	0.85	1.39
tblVehicleEF	LHD2	13.79	14.33
tblVehicleEF	LHD2	681.69	742.00
tblVehicleEF	LHD2	22.30	25.95
tblVehicleEF	LHD2	0.08	0.12
tblVehicleEF	LHD2	0.39	1.75
tblVehicleEF	LHD2	0.32	0.62
tblVehicleEF	LHD2	1.0840e-003	1.3140e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.5600e-004	4.7300e-004
tblVehicleEF	LHD2	1.0370e-003	1.2570e-003
tblVehicleEF	LHD2	2.7050e-003	2.6680e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.2800e-004	4.3500e-004
tblVehicleEF	LHD2	2.2340e-003	4.2480e-003
tblVehicleEF	LHD2	0.03	0.06
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	1.0090e-003	1.7360e-003
tblVehicleEF	LHD2	0.10	0.14
tblVehicleEF	LHD2	0.06	0.12
tblVehicleEF	LHD2	0.05	0.14
tblVehicleEF	LHD2	1.3400e-004	1.4000e-004
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tblVehicleEF	LHD2	2.2340e-003	4.2480e-003
tblVehicleEF	LHD2	0.03	0.06

tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.0090e-003	1.7360e-003
tblVehicleEF	LHD2	0.11	0.16
tblVehicleEF	LHD2	0.06	0.12
tblVehicleEF	LHD2	0.06	0.16
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tblVehicleEF	LHD2	0.12	0.13
tblVehicleEF	LHD2	0.49	0.84
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tblVehicleEF	LHD2	13.79	14.33
tblVehicleEF	LHD2	681.69	742.00
tblVehicleEF	LHD2	22.30	25.95
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tblVehicleEF	LHD2	1.0840e-003	1.3140e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.5600e-004	4.7300e-004
tblVehicleEF	LHD2	1.0370e-003	1.2570e-003
tblVehicleEF	LHD2	2.7050e-003	2.6680e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	3.2800e-004	4.3500e-004
tblVehicleEF	LHD2	3.2200e-004	5.5000e-004
tblVehicleEF	LHD2	0.03	0.05

tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	2.1500e-004	3.2700e-004
tblVehicleEF	LHD2	0.10	0.14
tblVehicleEF	LHD2	0.06	0.13
tblVehicleEF	LHD2	0.06	0.16
tblVehicleEF	LHD2	1.3400e-004	1.4000e-004
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tblVehicleEF	LHD2	3.2200e-004	5.5000e-004
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	2.1500e-004	3.2700e-004
tblVehicleEF	LHD2	0.11	0.16
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tblVehicleEF	LHD2	0.06	0.17
tblVehicleEF	MCY	0.43	0.40
tblVehicleEF	MCY	0.15	0.17
tblVehicleEF	MCY	18.83	22.73
tblVehicleEF	MCY	10.19	9.98
tblVehicleEF	MCY	168.95	163.41
tblVehicleEF	MCY	44.41	48.59
tblVehicleEF	MCY	1.15	1.19
tblVehicleEF	MCY	0.31	0.32
tblVehicleEF	MCY	1.9730e-003	1.7080e-003
tblVehicleEF	MCY	3.0090e-003	4.0620e-003
tblVehicleEF	MCY	1.8410e-003	1.6040e-003
tblVehicleEF	MCY	2.8180e-003	3.8470e-003

tblVehicleEF	MCY	1.61	1.65
tblVehicleEF	MCY	0.88	1.02
tblVehicleEF	MCY	0.84	0.91
tblVehicleEF	MCY	2.09	2.29
tblVehicleEF	MCY	0.44	0.64
tblVehicleEF	MCY	2.11	2.26
tblVehicleEF	MCY	2.0580e-003	2.0690e-003
tblVehicleEF	MCY	6.7300e-004	7.1600e-004
tblVehicleEF	MCY	1.61	1.65
tblVehicleEF	MCY	0.88	1.02
tblVehicleEF	MCY	0.84	0.91
tblVehicleEF	MCY	2.60	2.77
tblVehicleEF	MCY	0.44	0.64
tblVehicleEF	MCY	2.30	2.46
tblVehicleEF	MCY	0.43	0.39
tblVehicleEF	MCY	0.13	0.14
tblVehicleEF	MCY	19.15	23.07
tblVehicleEF	MCY	9.11	9.18
tblVehicleEF	MCY	168.95	163.41
tblVehicleEF	MCY	44.41	48.59
tblVehicleEF	MCY	1.00	1.03
tblVehicleEF	MCY	0.29	0.29
tblVehicleEF	MCY	1.9730e-003	1.7080e-003
tblVehicleEF	MCY	3.0090e-003	4.0620e-003
tblVehicleEF	MCY	1.8410e-003	1.6040e-003
tblVehicleEF	MCY	2.8180e-003	3.8470e-003
tblVehicleEF	MCY	3.91	4.06

tblVehicleEF	MCY	1.42	1.54
tblVehicleEF	MCY	2.17	2.35
tblVehicleEF	MCY	2.05	2.22
tblVehicleEF	MCY	0.43	0.62
tblVehicleEF	MCY	1.81	1.91
tblVehicleEF	MCY	2.0620e-003	2.0720e-003
tblVehicleEF	MCY	6.4600e-004	6.9200e-004
tblVehicleEF	MCY	3.91	4.06
tblVehicleEF	MCY	1.42	1.54
tblVehicleEF	MCY	2.17	2.35
tblVehicleEF	MCY	2.55	2.68
tblVehicleEF	MCY	0.43	0.62
tblVehicleEF	MCY	1.97	2.08
tblVehicleEF	MCY	0.45	0.42
tblVehicleEF	MCY	0.18	0.20
tblVehicleEF	MCY	20.13	24.56
tblVehicleEF	MCY	11.91	11.53
tblVehicleEF	MCY	168.95	163.41
tblVehicleEF	MCY	44.41	48.59
tblVehicleEF	MCY	1.25	1.30
tblVehicleEF	MCY	0.34	0.34
tblVehicleEF	MCY	1.9730e-003	1.7080e-003
tblVehicleEF	MCY	3.0090e-003	4.0620e-003
tblVehicleEF	MCY	1.8410e-003	1.6040e-003
tblVehicleEF	MCY	2.8180e-003	3.8470e-003
tblVehicleEF	MCY	0.38	0.38
tblVehicleEF	MCY	0.85	1.05

tblVehicleEF	MCY	0.21	0.23
tblVehicleEF	MCY	2.17	2.43
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tblVehicleEF	MCY	2.51	2.73
tblVehicleEF	MCY	2.0820e-003	2.1020e-003
tblVehicleEF	MCY	7.1300e-004	7.5500e-004
tblVehicleEF	MCY	0.38	0.38
tblVehicleEF	MCY	0.85	1.05
tblVehicleEF	MCY	0.21	0.23
tblVehicleEF	MCY	2.70	2.93
tblVehicleEF	MCY	0.52	0.74
tblVehicleEF	MCY	2.73	2.97
tblVehicleEF	MDV	5.3630e-003	0.01
tblVehicleEF	MDV	9.0350e-003	0.02
tblVehicleEF	MDV	0.70	1.62
tblVehicleEF	MDV	1.79	4.21
tblVehicleEF	MDV	376.25	515.99
tblVehicleEF	MDV	87.78	116.39
tblVehicleEF	MDV	0.08	0.21
tblVehicleEF	MDV	0.14	0.39
tblVehicleEF	MDV	1.3010e-003	1.6840e-003
tblVehicleEF	MDV	2.1180e-003	2.5830e-003
tblVehicleEF	MDV	1.1980e-003	1.5550e-003
tblVehicleEF	MDV	1.9480e-003	2.3790e-003
tblVehicleEF	MDV	0.10	0.12
tblVehicleEF	MDV	0.17	0.24
tblVehicleEF	MDV	0.08	0.10

tblVehicleEF	MDV	0.01	0.04
tblVehicleEF	MDV	0.11	0.14
tblVehicleEF	MDV	0.12	0.34
tblVehicleEF	MDV	3.7640e-003	5.1750e-003
tblVehicleEF	MDV	9.0800e-004	1.2390e-003
tblVehicleEF	MDV	0.10	0.12
tblVehicleEF	MDV	0.17	0.24
tblVehicleEF	MDV	0.08	0.10
tblVehicleEF	MDV	0.02	0.06
tblVehicleEF	MDV	0.11	0.14
tblVehicleEF	MDV	0.13	0.37
tblVehicleEF	MDV	6.1650e-003	0.02
tblVehicleEF	MDV	7.4720e-003	0.02
tblVehicleEF	MDV	0.87	1.98
tblVehicleEF	MDV	1.50	3.53
tblVehicleEF	MDV	412.07	565.23
tblVehicleEF	MDV	87.78	116.39
tblVehicleEF	MDV	0.07	0.20
tblVehicleEF	MDV	0.13	0.37
tblVehicleEF	MDV	1.3010e-003	1.6840e-003
tblVehicleEF	MDV	2.1180e-003	2.5830e-003
tblVehicleEF	MDV	1.1980e-003	1.5550e-003
tblVehicleEF	MDV	1.9480e-003	2.3790e-003
tblVehicleEF	MDV	0.23	0.28
tblVehicleEF	MDV	0.20	0.28
tblVehicleEF	MDV	0.17	0.20
tblVehicleEF	MDV	0.02	0.05

tblVehicleEF	MDV	0.11	0.13
tblVehicleEF	MDV	0.10	0.28
tblVehicleEF	MDV	4.1240e-003	5.6720e-003
tblVehicleEF	MDV	9.0300e-004	1.2260e-003
tblVehicleEF	MDV	0.23	0.28
tblVehicleEF	MDV	0.20	0.28
tblVehicleEF	MDV	0.17	0.20
tblVehicleEF	MDV	0.02	0.06
tblVehicleEF	MDV	0.11	0.13
tblVehicleEF	MDV	0.11	0.30
tblVehicleEF	MDV	5.0120e-003	0.01
tblVehicleEF	MDV	0.01	0.03
tblVehicleEF	MDV	0.64	1.52
tblVehicleEF	MDV	2.17	5.12
tblVehicleEF	MDV	361.86	496.21
tblVehicleEF	MDV	87.78	116.39
tblVehicleEF	MDV	0.08	0.23
tblVehicleEF	MDV	0.15	0.44
tblVehicleEF	MDV	1.3010e-003	1.6840e-003
tblVehicleEF	MDV	2.1180e-003	2.5830e-003
tblVehicleEF	MDV	1.1980e-003	1.5550e-003
tblVehicleEF	MDV	1.9480e-003	2.3790e-003
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.17	0.24
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.01	0.04
tblVehicleEF	MDV	0.13	0.16

tblVehicleEF	MDV	0.14	0.40
tblVehicleEF	MDV	3.6190e-003	4.9760e-003
tblVehicleEF	MDV	9.1500e-004	1.2550e-003
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.17	0.24
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.02	0.05
tblVehicleEF	MDV	0.13	0.16
tblVehicleEF	MDV	0.16	0.44
tblVehicleEF	MH	0.01	0.05
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.61	3.83
tblVehicleEF	MH	3.93	7.32
tblVehicleEF	MH	1,190.86	1,232.21
tblVehicleEF	MH	55.97	59.12
tblVehicleEF	MH	1.07	2.10
tblVehicleEF	MH	0.67	0.99
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	8.7200e-004	1.4730e-003
tblVehicleEF	MH	3.2330e-003	3.2450e-003
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	8.0200e-004	1.3610e-003
tblVehicleEF	MH	0.87	1.78
tblVehicleEF	MH	0.05	0.10
tblVehicleEF	MH	0.25	0.45
tblVehicleEF	MH	0.05	0.17

tblVehicleEF	MH	0.01	0.03
tblVehicleEF	MH	0.23	0.44
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.2800e-004	7.1900e-004
tblVehicleEF	MH	0.87	1.78
tblVehicleEF	MH	0.05	0.10
tblVehicleEF	MH	0.25	0.45
tblVehicleEF	MH	0.06	0.23
tblVehicleEF	MH	0.01	0.03
tblVehicleEF	MH	0.26	0.48
tblVehicleEF	MH	0.01	0.05
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.63	3.98
tblVehicleEF	MH	3.57	6.63
tblVehicleEF	MH	1,190.86	1,232.21
tblVehicleEF	MH	55.97	59.12
tblVehicleEF	MH	1.01	1.95
tblVehicleEF	MH	0.63	0.93
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	8.7200e-004	1.4730e-003
tblVehicleEF	MH	3.2330e-003	3.2450e-003
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	8.0200e-004	1.3610e-003
tblVehicleEF	MH	1.99	4.16
tblVehicleEF	MH	0.06	0.12
tblVehicleEF	MH	0.52	1.02

tblVehicleEF	MH	0.05	0.17
tblVehicleEF	MH	0.01	0.03
tblVehicleEF	MH	0.22	0.41
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.2200e-004	7.0800e-004
tblVehicleEF	MH	1.99	4.16
tblVehicleEF	MH	0.06	0.12
tblVehicleEF	MH	0.52	1.02
tblVehicleEF	MH	0.06	0.24
tblVehicleEF	MH	0.01	0.03
tblVehicleEF	MH	0.24	0.44
tblVehicleEF	MH	0.01	0.05
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	0.60	3.72
tblVehicleEF	MH	4.36	8.22
tblVehicleEF	MH	1,190.86	1,232.21
tblVehicleEF	MH	55.97	59.12
tblVehicleEF	MH	1.11	2.17
tblVehicleEF	MH	0.72	1.06
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	8.7200e-004	1.4730e-003
tblVehicleEF	MH	3.2330e-003	3.2450e-003
tblVehicleEF	MH	0.02	0.04
tblVehicleEF	MH	8.0200e-004	1.3610e-003
tblVehicleEF	MH	0.26	0.48
tblVehicleEF	MH	0.05	0.12

tblVehicleEF	MH	0.13	0.22
tblVehicleEF	MH	0.05	0.16
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.25	0.47
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.3500e-004	7.3500e-004
tblVehicleEF	MH	0.26	0.48
tblVehicleEF	MH	0.05	0.12
tblVehicleEF	MH	0.13	0.22
tblVehicleEF	MH	0.06	0.22
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.27	0.52
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	2.3520e-003	8.8450e-003
tblVehicleEF	MHD	0.03	0.07
tblVehicleEF	MHD	0.17	0.42
tblVehicleEF	MHD	0.25	0.58
tblVehicleEF	MHD	1.51	4.42
tblVehicleEF	MHD	211.82	212.61
tblVehicleEF	MHD	1,169.08	1,213.16
tblVehicleEF	MHD	22.87	29.48
tblVehicleEF	MHD	0.58	1.49
tblVehicleEF	MHD	1.17	2.52
tblVehicleEF	MHD	16.73	16.04
tblVehicleEF	MHD	7.5000e-005	0.01
tblVehicleEF	MHD	3.1600e-003	0.05
tblVehicleEF	MHD	3.1800e-004	6.4700e-004

tblVehicleEF	MHD	7.2000e-005	0.01
tblVehicleEF	MHD	3.0210e-003	0.05
tblVehicleEF	MHD	2.9200e-004	5.9500e-004
tblVehicleEF	MHD	4.4200e-004	1.4030e-003
tblVehicleEF	MHD	0.01	0.04
tblVehicleEF	MHD	0.01	0.05
tblVehicleEF	MHD	2.1100e-004	5.6100e-004
tblVehicleEF	MHD	0.04	0.14
tblVehicleEF	MHD	5.0660e-003	0.01
tblVehicleEF	MHD	0.09	0.26
tblVehicleEF	MHD	2.0260e-003	2.0340e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	2.5500e-004	3.7200e-004
tblVehicleEF	MHD	4.4200e-004	1.4030e-003
tblVehicleEF	MHD	0.01	0.04
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	2.1100e-004	5.6100e-004
tblVehicleEF	MHD	0.05	0.16
tblVehicleEF	MHD	5.0660e-003	0.01
tblVehicleEF	MHD	0.10	0.28
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	2.3610e-003	8.9450e-003
tblVehicleEF	MHD	0.03	0.07
tblVehicleEF	MHD	0.12	0.30
tblVehicleEF	MHD	0.25	0.58
tblVehicleEF	MHD	1.40	4.09
tblVehicleEF	MHD	224.45	225.31

tblVehicleEF	MHD	1,169.08	1,213.16
tblVehicleEF	MHD	22.87	29.48
tblVehicleEF	MHD	0.60	1.53
tblVehicleEF	MHD	1.11	2.39
tblVehicleEF	MHD	16.71	16.01
tblVehicleEF	MHD	6.3000e-005	9.0550e-003
tblVehicleEF	MHD	3.1600e-003	0.05
tblVehicleEF	MHD	3.1800e-004	6.4700e-004
tblVehicleEF	MHD	6.0000e-005	8.6630e-003
tblVehicleEF	MHD	3.0210e-003	0.05
tblVehicleEF	MHD	2.9200e-004	5.9500e-004
tblVehicleEF	MHD	1.0060e-003	3.3430e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.01	0.05
tblVehicleEF	MHD	4.4600e-004	1.3130e-003
tblVehicleEF	MHD	0.04	0.14
tblVehicleEF	MHD	5.0490e-003	0.01
tblVehicleEF	MHD	0.09	0.25
tblVehicleEF	MHD	2.1460e-003	2.1550e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	2.5300e-004	3.6700e-004
tblVehicleEF	MHD	1.0060e-003	3.3430e-003
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	4.4600e-004	1.3130e-003
tblVehicleEF	MHD	0.05	0.16
tblVehicleEF	MHD	5.0490e-003	0.01

tblVehicleEF	MHD	0.10	0.27
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	2.3410e-003	8.7400e-003
tblVehicleEF	MHD	0.04	0.08
tblVehicleEF	MHD	0.23	0.57
tblVehicleEF	MHD	0.25	0.57
tblVehicleEF	MHD	1.65	4.84
tblVehicleEF	MHD	194.51	195.25
tblVehicleEF	MHD	1,169.08	1,213.16
tblVehicleEF	MHD	22.87	29.48
tblVehicleEF	MHD	0.55	1.42
tblVehicleEF	MHD	1.19	2.56
tblVehicleEF	MHD	16.74	16.09
tblVehicleEF	MHD	9.1000e-005	0.01
tblVehicleEF	MHD	3.1600e-003	0.05
tblVehicleEF	MHD	3.1800e-004	6.4700e-004
tblVehicleEF	MHD	8.7000e-005	0.01
tblVehicleEF	MHD	3.0210e-003	0.05
tblVehicleEF	MHD	2.9200e-004	5.9500e-004
tblVehicleEF	MHD	1.3700e-004	3.6800e-004
tblVehicleEF	MHD	0.01	0.04
tblVehicleEF	MHD	0.01	0.05
tblVehicleEF	MHD	8.9000e-005	2.0400e-004
tblVehicleEF	MHD	0.04	0.14
tblVehicleEF	MHD	5.6390e-003	0.01
tblVehicleEF	MHD	0.10	0.28
tblVehicleEF	MHD	1.8610e-003	1.8690e-003

tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	2.5700e-004	3.7900e-004
tblVehicleEF	MHD	1.3700e-004	3.6800e-004
tblVehicleEF	MHD	0.01	0.04
tblVehicleEF	MHD	0.02	0.06
tblVehicleEF	MHD	8.9000e-005	2.0400e-004
tblVehicleEF	MHD	0.05	0.16
tblVehicleEF	MHD	5.6390e-003	0.01
tblVehicleEF	MHD	0.11	0.30
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	4.5930e-003	0.02
tblVehicleEF	OBUS	0.02	0.04
tblVehicleEF	OBUS	0.25	0.32
tblVehicleEF	OBUS	0.37	1.04
tblVehicleEF	OBUS	4.33	7.73
tblVehicleEF	OBUS	210.41	174.61
tblVehicleEF	OBUS	1,308.07	1,363.34
tblVehicleEF	OBUS	59.87	65.25
tblVehicleEF	OBUS	0.50	1.12
tblVehicleEF	OBUS	1.09	2.79
tblVehicleEF	OBUS	4.38	4.04
tblVehicleEF	OBUS	4.6000e-005	5.2900e-004
tblVehicleEF	OBUS	3.2550e-003	0.01
tblVehicleEF	OBUS	8.5500e-004	8.5200e-004
tblVehicleEF	OBUS	4.4000e-005	5.0600e-004
tblVehicleEF	OBUS	3.0980e-003	0.01
tblVehicleEF	OBUS	7.8600e-004	7.8300e-004

tblVehicleEF	OBUS	1.9970e-003	2.9240e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.04	0.05
tblVehicleEF	OBUS	6.7700e-004	9.1600e-004
tblVehicleEF	OBUS	0.05	0.11
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.27	0.47
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tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	6.7500e-004	7.8800e-004
tblVehicleEF	OBUS	1.9970e-003	2.9240e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	6.7700e-004	9.1600e-004
tblVehicleEF	OBUS	0.06	0.14
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.30	0.52
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	4.6710e-003	0.02
tblVehicleEF	OBUS	0.02	0.04
tblVehicleEF	OBUS	0.24	0.29
tblVehicleEF	OBUS	0.38	1.07
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tblVehicleEF	OBUS	222.03	184.04
tblVehicleEF	OBUS	1,308.07	1,363.34
tblVehicleEF	OBUS	59.87	65.25
tblVehicleEF	OBUS	0.52	1.15

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tblVehicleEF	OBUS	4.34	3.96
tblVehicleEF	OBUS	3.9000e-005	4.4600e-004
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tblVehicleEF	OBUS	8.5500e-004	8.5200e-004
tblVehicleEF	OBUS	3.7000e-005	4.2700e-004
tblVehicleEF	OBUS	3.0980e-003	0.01
tblVehicleEF	OBUS	7.8600e-004	7.8300e-004
tblVehicleEF	OBUS	4.4950e-003	6.7570e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.04	0.05
tblVehicleEF	OBUS	1.3960e-003	1.9960e-003
tblVehicleEF	OBUS	0.05	0.11
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.25	0.44
tblVehicleEF	OBUS	2.1290e-003	1.7670e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	6.6800e-004	7.7600e-004
tblVehicleEF	OBUS	4.4950e-003	6.7570e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	1.3960e-003	1.9960e-003
tblVehicleEF	OBUS	0.06	0.14
tblVehicleEF	OBUS	0.03	0.04
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tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	4.5060e-003	0.02

tblVehicleEF	OBUS	0.03	0.04
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tblVehicleEF	OBUS	1,308.07	1,363.34
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tblVehicleEF	OBUS	5.6000e-005	6.4400e-004
tblVehicleEF	OBUS	3.2550e-003	0.01
tblVehicleEF	OBUS	8.5500e-004	8.5200e-004
tblVehicleEF	OBUS	5.4000e-005	6.1600e-004
tblVehicleEF	OBUS	3.0980e-003	0.01
tblVehicleEF	OBUS	7.8600e-004	7.8300e-004
tblVehicleEF	OBUS	6.5600e-004	8.7100e-004
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.04	0.05
tblVehicleEF	OBUS	3.5400e-004	4.4800e-004
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tblVehicleEF	OBUS	1.8650e-003	1.5530e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	6.8300e-004	8.0300e-004
tblVehicleEF	OBUS	6.5600e-004	8.7100e-004

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tblVehicleEF	OBUS	0.05	0.07
tblVehicleEF	OBUS	3.5400e-004	4.4800e-004
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tblVehicleEF	OBUS	0.03	0.04
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tblVehicleEF	SBUS	0.06	0.09
tblVehicleEF	SBUS	4.35	3.94
tblVehicleEF	SBUS	0.39	0.85
tblVehicleEF	SBUS	3.29	4.53
tblVehicleEF	SBUS	1,265.58	1,369.86
tblVehicleEF	SBUS	1,137.86	1,188.59
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tblVehicleEF	SBUS	16.20	17.31
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tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	4.7200e-004	4.1100e-004
tblVehicleEF	SBUS	3.4250e-003	0.02
tblVehicleEF	SBUS	2.7940e-003	2.8270e-003
tblVehicleEF	SBUS	0.01	0.03
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tblVehicleEF	SBUS	2.7520e-003	3.2380e-003

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tblVehicleEF	SBUS	2.19	5.69

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tblVehicleEF	SBUS	2.7940e-003	2.8270e-003
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tblVehicleEF	SBUS	4.3400e-004	3.7800e-004
tblVehicleEF	SBUS	6.1260e-003	7.4420e-003
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.51	0.47
tblVehicleEF	SBUS	1.9510e-003	2.0250e-003
tblVehicleEF	SBUS	0.08	0.14
tblVehicleEF	SBUS	6.5940e-003	0.01
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tblVehicleEF	SBUS	0.01	0.01
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tblVehicleEF	SBUS	6.1260e-003	7.4420e-003
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tblVehicleEF	SBUS	0.09	0.16
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tblVehicleEF	SBUS	0.15	0.20
tblVehicleEF	SBUS	0.82	0.87

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tblVehicleEF	SBUS	0.07	0.11
tblVehicleEF	SBUS	4.48	4.20
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tblVehicleEF	SBUS	1,173.34	1,266.97
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tblVehicleEF	SBUS	16.21	17.34
tblVehicleEF	SBUS	4.3560e-003	0.02
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.01	0.03
tblVehicleEF	SBUS	4.7200e-004	4.1100e-004
tblVehicleEF	SBUS	4.1670e-003	0.02
tblVehicleEF	SBUS	2.7940e-003	2.8270e-003
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tblVehicleEF	SBUS	4.3400e-004	3.7800e-004
tblVehicleEF	SBUS	9.4100e-004	9.3700e-004
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tblVehicleEF	SBUS	0.08	0.13
tblVehicleEF	SBUS	9.5180e-003	0.02
tblVehicleEF	SBUS	0.21	0.28
tblVehicleEF	SBUS	0.01	0.01

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tblVehicleEF	SBUS	3.6300e-004	3.4000e-004
tblVehicleEF	SBUS	9.4100e-004	9.3700e-004
tblVehicleEF	SBUS	0.02	0.02
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tblVehicleEF	UBUS	1.19	2.05
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tblVehicleEF	UBUS	5.41	8.78
tblVehicleEF	UBUS	8.96	10.27
tblVehicleEF	UBUS	1,825.34	1,981.19
tblVehicleEF	UBUS	139.10	125.24
tblVehicleEF	UBUS	3.46	8.97
tblVehicleEF	UBUS	12.59	14.01
tblVehicleEF	UBUS	0.51	0.55
tblVehicleEF	UBUS	0.05	0.14
tblVehicleEF	UBUS	1.3470e-003	8.4600e-004
tblVehicleEF	UBUS	0.22	0.24
tblVehicleEF	UBUS	0.05	0.14
tblVehicleEF	UBUS	1.2380e-003	7.7800e-004
tblVehicleEF	UBUS	5.9980e-003	6.5800e-003
tblVehicleEF	UBUS	0.07	0.08
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tblVehicleEF	UBUS	0.27	0.71

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tblVehicleEF	UBUS	0.07	0.08
tblVehicleEF	UBUS	2.7120e-003	2.8920e-003
tblVehicleEF	UBUS	1.49	2.85
tblVehicleEF	UBUS	0.01	0.01
tblVehicleEF	UBUS	0.90	0.97
tblVehicleEF	UBUS	1.19	2.05
tblVehicleEF	UBUS	0.05	0.06
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tblVehicleEF	UBUS	7.28	8.29
tblVehicleEF	UBUS	1,825.34	1,981.19
tblVehicleEF	UBUS	139.10	125.24
tblVehicleEF	UBUS	3.27	8.51
tblVehicleEF	UBUS	12.50	13.91
tblVehicleEF	UBUS	0.51	0.55
tblVehicleEF	UBUS	0.05	0.14
tblVehicleEF	UBUS	1.3470e-003	8.4600e-004
tblVehicleEF	UBUS	0.22	0.24
tblVehicleEF	UBUS	0.05	0.14
tblVehicleEF	UBUS	1.2380e-003	7.7800e-004
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tblVehicleEF	UBUS	0.09	0.11
tblVehicleEF	UBUS	5.6790e-003	6.2720e-003

tblVehicleEF	UBUS	0.27	0.72
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tblVehicleEF	UBUS	0.01	0.01
tblVehicleEF	UBUS	1.5270e-003	1.4060e-003
tblVehicleEF	UBUS	0.01	0.02
tblVehicleEF	UBUS	0.09	0.11
tblVehicleEF	UBUS	5.6790e-003	6.2720e-003
tblVehicleEF	UBUS	1.49	2.86
tblVehicleEF	UBUS	0.01	0.01
tblVehicleEF	UBUS	0.80	0.86
tblVehicleEF	UBUS	1.19	2.05
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tblVehicleEF	UBUS	5.39	8.73
tblVehicleEF	UBUS	10.94	12.62
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tblVehicleEF	UBUS	12.70	14.13
tblVehicleEF	UBUS	0.51	0.55
tblVehicleEF	UBUS	0.05	0.14
tblVehicleEF	UBUS	1.3470e-003	8.4600e-004
tblVehicleEF	UBUS	0.22	0.24
tblVehicleEF	UBUS	0.05	0.14
tblVehicleEF	UBUS	1.2380e-003	7.7800e-004
tblVehicleEF	UBUS	2.0250e-003	2.1400e-003
tblVehicleEF	UBUS	0.06	0.08

tblVehicleEF	UBUS	1.3940e-003	1.4110e-003
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tblVehicleTrips	WD_TR	1.29	1.89

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019																1.7863
Maximum																**1.7863**

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																1.7863
Maximum																**1.7863**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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																0.0166
Energy																152.3784
Mobile																1,483.889 3
Waste																68.8372
Water																6.8246
Total																**1,711.946 1**

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																0.0166
Energy																147.1992
Mobile																1,460.160 2
Waste																17.2093
Water																5.8373
Total																**1,630.422 7**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.76**

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	1/1/2019	1/1/2019	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.1

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

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																0.0000
Off-Road																1.7220
Total																**1.7220**

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
Vendor																0.0000
Worker																0.0643
Total																**0.0643**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust																0.0000
Off-Road																1.7220
Total																**1.7220**

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
Vendor																0.0000
Worker																0.0643
Total																**0.0643**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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																1,460.160 2
Unmitigated																1,483.889 3

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	1,417.50	0.00	0.00	2,232,501	2,187,851
Parking Lot	0.00	0.00	0.00		
Total	1,417.50	0.00	0.00	2,232,501	2,187,851

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667
Elementary School	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667

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																66.9975
Electricity Unmitigated																72.1767
NaturalGas Mitigated																80.2017
NaturalGas Unmitigated																80.2017

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	1.49405e +006																80.2017
Parking Lot	0																0.0000
Total																	**80.2017**

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	1.49405e +006																80.2017
Parking Lot	0																0.0000
Total																	**80.2017**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Elementary School	417690				69.3412
Parking Lot	17080				2.8355
Total					**72.1767**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Elementary School	389225				64.6157
Parking Lot	14347.2				2.3818
Total					**66.9975**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated																0.0166
Unmitigated																0.0166

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																0.0000
Consumer Products																0.0000
Landscaping																0.0166
Total																**0.0166**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating																0.0000
Consumer Products																0.0000
Landscaping																0.0166
Total																**0.0166**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				5.8373
Unmitigated				6.8246

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Elementary School	1.81818 / 4.67532				6.8246
Parking Lot	0 / 0				0.0000
Total					**6.8246**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Elementary School	1.45454 / 4.39013				5.8373
Parking Lot	0 / 0				0.0000
Total					**5.8373**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				17.2093
Unmitigated				68.8372

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Elementary School	136.88				68.8372
Parking Lot	0				0.0000
Total					**68.8372**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Elementary School	34.22				17.2093
Parking Lot	0				0.0000
Total					**17.2093**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix 2

Biological Resources Assessment

Biological Resources Assessment

Minnewawa-International Elementary School Project
Clovis Unified School District

Prepared by

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August 11, 2018

Purpose of the Study

The purpose of this assessment is to determine if the project may have a significant impact on the biological resources in the vicinity and to identify design, operational, or other measures that may be available to reduce or avoid the impacts. The following biological resources report consists of a description of the results of the assessment, including habitat types present, species descriptions for special status species that have the potential to occur, potential significant impacts the project could have on these species and their habitats, recommendations for further focused species surveys, if necessary, and avoidance or minimization measures that would reduce or eliminate any project impacts on these species.

Project Description and Background

The proposed Minnewawa-International Elementary School Project (project) includes the acquisition of a 22.7-acre school site and the construction and operation of an elementary school on the site. The site is located at the southeast corner of Minnewawa and International Avenues, approximately 1.25 miles north of the City of Clovis in Fresno County, within the City of Clovis' Sphere of Influence (Figures 1 & 2). The area is planned for urban development in the City of Clovis General Plan as part of the Heritage Grove planning area. The project is approximately 390 feet above mean sea level and is located in a portion of Section 17, Township 12 South, Range 21 East, M.D.B. & M., as shown on the Friant, California Quadrangle 7.5 Minute Series USGS Map (Topographic). The existing land uses adjacent to the project area consist of rural residences, orchard, row crops, vacant land, and the Enterprise Canal.

The proposed elementary school would serve up to 750 students in grades TK-6. The campus would have approximately 28 classrooms, administrative offices, a multi-purpose building, hardcourt areas and athletic fields that could potentially be lighted. The school would have approximately fifty employees, including administrators, faculty, and support staff. The school would be in regular session on weekdays from late August to early June, but may host special events and classes during evenings, on weekends and during summer recess.

The project site is planned to be annexed to the City of Clovis and served by City of Clovis public facilities once planned urban development occurs near the project site. The timing for construction of the school would depend on enrollment growth and funding availability. The District estimates that the school could be constructed in approximately five years.

Assessment Methods

A background search and literature review of all existing data pertaining to biological resources within the area was conducted. This included searching *California Natural Diversity Data Base* (CDFW 2018), the *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2018), the U.S. Fish and Wildlife Service *IPac Trust Resource List* (see Appendices), other available CEQA/NEPA documents, herbaria records, maps, and photographs. To ensure completeness of the search, a nine-quad radius was used for database queries, centered on the Friant 7.5" USGS Quadrangle (Figure 4). From this review, a list of potentially occurring special status species was compiled for the project (see Appendices). Special status biological resources include special-status plant and wildlife species (including State or Federally designated, rare, threatened, endangered, Migratory Bird Treaty Act species, species of concern, or unique species); potential wetland/riparian habitats; sensitive plant communities; and other environmentally sensitive habitat areas.

On May 25, 2018, a reconnaissance-level site visit was conducted within the project footprint and a 100-foot radius buffer (study area), where accessible, to assess potential special status biological resources. The project site was surveyed on foot and evaluated to determine its ability to support the special status species under consideration. Wildlife observations, plant species, and habitat types encountered were documented. Focus was placed on searching for large burrows or burrow complexes and any potential wetland features, as well as potential wildlife corridors.

Environmental Setting

Existing Conditions

The project site is within San Joaquin Valley subregion of the California Floristic Province (Baldwin et al. 2012). Topography of the vicinity is relatively flat, without large elevation changes. There are two soil types within the project area, Ramona sandy loam and Exeter sandy loam (Figure 5) (NRCS 2018). These soil types are typically found on alluvial fans and stream terraces on valleys. The alluvium is derived from granite and is well drained and not hydric. An unnamed component (1%) of the Exeter sandy loam can be hydric when depressions on stream terraces are present. However, due to human land alteration within the project area and vicinity (road construction, intensive agriculture), the native soils have been altered resulting in the absence of some of the typical characteristics, or possibility of hydric components. These soils are slightly acidic to slightly alkaline.

Located between the Coast Range and the Sierra Nevada, the San Joaquin Valley has dry, hot summers and cool winters. The Fresno/Clovis area has a mean annual rainfall of 11 inches and average temperatures of 63 ºF (Average range: 50-76 ºF) (Western Regional Climate Center 2015).

In general, this area of Fresno County is rapidly developing to urban and residential uses, however residual agricultural and rural residential uses remain in the vicinity. With the development of the area, more urban influences also are prevalent, including frequent human disturbance, feral animals, rodent poisoning, and debris. Adjacent land uses include agriculture (row crops, barley) and rural residential to the north and east, fallow agricultural land and rural residential to the west, and agricultural land (orchards), rural residential and the Enterprise Canal to the south.

The approximately 22.7-acre project site consisted of primarily fallow agricultural land. At the time of the survey, the site was mostly overgrown with non-native grasses and forbs but also included an old homesite which burned in 2003, with ornamental trees (conifer) and fruit trees such as pomegranate, stone fruit, and walnut. The site was not disked at the time of survey; however, it is usually disked every year for fire safety. An overgrown residential driveway was lined with palm trees and oleander. The remains of agricultural infrastructure was present, such as concreate standpipes and wooden sheds and fences, perhaps previously used for livestock. The adjacent Enterprise Canal is bordered by gravel access roads and the banks of the canal contained large numbers of ground squirrel burrows. The Minnewawa bridge crossing over the canal contained an active cliff swallow colony; birds were foraging over the project site and the canal. There were many groves of large trees suitable for nesting birds and raptors in the vicinity of the project, mostly associated with neighboring rural residences or farming operations. The site is also bordered by Minnewawa

Avenue, which was very busy with traffic. International Avenue borders the project to the north and is much smaller and less busy, as it does not currently connect through on the east. Dirt access roads were also present in the project area. No aquatic features were present. Habitat present within the project footprint was classified as fallow agricultural land.

Plant species observed within the study area were those typical of disturbed land and landscaped/developed land, such as non-native grasses (*Avena* sp., *Bromus* spp., *Cynodon dactylon*, *Festuca perennis*, *Hordeum* sp. *Vulpia myuros,* in part), and weedy forbs (*Amsinckia* sp., *Brassica nigra*, *Centaurea solstitialis*, *Convolvulus* sp., *Croton setiger*, *Datura* sp., *Erodium* spp., *Heliotropium* sp., *Malva* sp., *Marrubium vulgare*, *Matricaria discoidea*, *Plantago* sp., *Raphanus* sp., *Rumex* sp., *Salsola tragus,* in part). There were several ornamental and non-native trees and shrubs onsite and associated with adjacent residences present such as eucalyptus, conifers, oleander, stone fruit trees, pomegranate, citrus trees and adjacent orchards. There were wetland type plants along the canal adjacent to the project area such as *Polypogon* sp., *Equisetum* sp., *Salix* sp., and sedges and rushes, in part. This area is not expected to be impacted by the project. Adjacent to the project area (northeast) was a grove of large mature eucalyptus trees.

The immediate site vicinity is visited frequently by humans (vehicles, residents, farmers). Therefore, wildlife species that are sensitive to human disturbance are less likely to use the project site. Gopher plugs and ground squirrel burrows were present within the study area, especially along the canal. No active rodent poisoning was evident. Rodent burrows provide habitat for several secondary inhabitant wildlife species, including snakes, lizards, and burrowing owls.

Busy roadways, landscaped areas, residential areas, and agricultural fields ordinarily provide low to marginal habitat for some terrestrial wildlife, primarily due to the amount of regular ground disturbance, pesticide/herbicide use, heavy foot and vehicle traffic, and feral or domestic animal presence. Wildlife species and sign (tracks and scat) observed on or near the project site during the visit included species from various taxa (Table 1).

Table 1. Wildlife species observed during surveys conducted on May 25, 2018.

SPECIES NAME	COMMON NAME
BIRDS (ALL PROTECTED BY THE MIGRATORY BIRD TREATY ACT*)	
Agelaius phoeniceus	Red-winged blackbird
Aphelocoma californica	California scrub-jay
Falco sparverius	American kestrel
Haemorhous mexicanus	House finch
Mimus polyglottos	Northern mockingbird
Molothrus ater	Brown-headed cowbird
Passer domesticus	House sparrow*
Petrochelidon pyrrhonota	Cliff swallow
Sturnus vulgaris	European starling*
Sturnella neglecta	Western meadowlark
Turdus migratorius	American robin
Tyrannus verticalis	Western kingbird

SPECIES NAME	COMMON NAME
Zenaida macroura	Mourning dove
MAMMALS	
Canis familiaris	Domestic dog (scat)*
Canis latrans	Coyote (scat)
Sylvilagus audubonii	Cottontail
Otospermophilus beecheyi	California ground squirrel
Thomomys sp.	Gopher (mounds/holes)

*denotes a non-native species, not protected by MBTA

Wildlife species which may occur or use the project site for foraging or breeding include:

- bird species such as European starlings (*Sturnus vulgaris*), American crow (*Corvus brachyrhyncos*), black phoebe (*Sayornis nigricans*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), killdeer (*Charadrius vociferus*), great blue heron (*Ardea herodias*), great horned owl (*Bubo virginianus*), and various passerine species;
- small mammals such as California ground squirrel (*Spermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*), fox squirrel (*Sciurus niger*), Botta's pocket gopher (*Thomomys bottae*), broad-handed mole (*Scapanus latimanus*), deer mouse (*Peromyscus maniculatus*), California vole (*Microtus californicus*), old-world rats (*Rattus* sp.), and house mouse (*Mus musculus*).
- various bat species may forage on insects above the adjacent canal and landscaped areas, near street lights, and possibly roost in large trees onsite or at neighboring residences;
- medium-sized mammals accustomed to human disturbance which seek rodent prey such as raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), feral and domestic cats (*Felis domesticus*);
- and reptile and amphibian species such as pacific gophersnake (*Pituophis catenifer catenifer*), western fence lizard (*Sceloporus occidentalis*) and Sierran treefrog (*Pseudacris sierra*).

Potential Direct and Indirect Project Impacts

Would the project:

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 Wildlife or U. S. Fish and Wildlife Service?* **(Less than significant with Mitigation incorporation)**

The project site consisted of fallow agricultural land, and the remnants of rural residential development. As such, the project site has been disturbed from its natural state for many years. Although loss of agricultural land may result in decreased foraging area for some species, such land is of limited habitat value for sensitive plant and wildlife species, especially due to the amount of disturbance from humans, vehicles, and domestic animals on a regular basis. The direct impacts of the proposed school will be a loss of marginal habitat and possible direct mortality for any animals in the path of construction equipment. Direct mortality could occur to common fossorial or slow-moving mammals and reptiles within the project area. Direct take could also occur for bird eggs and nestlings within the project area if vegetation removal or ground disturbance occur during the nesting season, generally February 1 through August 31. In addition to Migratory Bird Treaty Act (MBTA)-covered bird species, other special status bird species that could occur in the vicinity include Swainson's hawk (*Buteo swainsoni*), Northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), Lawrence's goldfinch (*Spinus lawrencei*), yellow-billed magpie (*Pica nuttalli*), Nuttall's woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), and burrowing owl (*Athene cunicularia*) (Appendix A). The project is not expected to result in direct take of any special status plant species (Appendix B). Indirect impacts to species that may still use the area after construction could include decreased dispersal, increased mortality and injury, and increased debris that through ingestion or physical contact can be harmful to wildlife. All these impacts are caused by the increase in human disturbance (vehicles, people, and pets). However, impacts to special status species can be minimized to a less than significant impact with the incorporation of avoidance and minimization measures.

Special Status Species Impacts and Avoidance Measures

Database queries indicated 53 animals and 19 plant species with special status occur or have historically occurred within the 9-quad search area (Appendices A and B). Many of the species from the generated list either were historic, extirpated occurrences, or were species with very specialized habitat requirements that were not present on the site or within the vicinity. Therefore, the majority of the species were "ruled out". Based on the habitat types present within the study area, 9 special status wildlife species have the potential to occur on the site.

Special Status Birds

Nine special status avian species (Swainson's hawk, Northern harrier, white-tailed kite, loggerhead shrike, Lawrence's goldfinch, yellow-billed magpie, Nuttall's woodpecker, oak titmouse, and burrowing owl) have the potential to nest and/or forage within the study area. Greater detail regarding life history requirements of these birds is provided in Appendix A. Swainson's hawk, white-tailed kite, Lawrence's goldfinch, yellow-billed magpie, Nuttall's woodpecker, and oak titmouse could nest in the large trees within and adjacent to the study area. Northern harrier could nest on the ground in tall grass within the study area and forage in the open fields. Loggerhead shrike could nest in shrubs or trees within and adjacent to the study area and forage in the open fields. Although none were detected during reconnaissance survey, burrowing owls could move into the area prior to construction, and occupy any large burrows along the canal and in the project area during the nesting and wintering seasons.

Impact

Since CDFW usually requires a various sized "no disturbance" buffers around nesting sites for these species, construction-related disturbance could be considered take under CESA and MBTA. Specific impacts to burrowing owl according to the *Staff Report on Burrowing Owl Mitigation* (CDFG 1995) include any "disturbance within 50 meters (approx. 160 ft) [75 m (250 ft) during breeding season] which may result in harassment of owls at occupied burrows; destruction of natural and artificial burrows (culverts, concrete slabs and debris piles that provide shelter to burrowing owls); and destruction and/or degradation of foraging habitat adjacent (within 100 m) of an occupied burrow(s)".

In addition, other migratory birds will likely be nesting in the study area and vicinity, most of which are protected by the Migratory Bird Treaty Act (USCA 1918). Both construction related disturbance and the removal of vegetation within the project area could result in nest abandonment or direct mortality of eggs, chicks, and/or fledglings. This type of impact to migratory birds, including special status bird species, would be considered take under the MBTA and CESA, and therefore, is a potentially significant impact. In order to avoid impacts to avian species, nests and nesting habitat should not be disturbed or destroyed. The following measures will reduce potential impacts to a less than significant level.

Avoidance and Minimization Measures

1. <u>Avoidance</u>. If feasible, any vegetation removal will take place between September 1 and February 1 to avoid impacts to nesting birds in compliance with the Migratory Bird Treaty Act. If vegetation removal must occur during the nesting season, project construction may be delayed due to actively nesting birds and their required protective buffers.

2. Pre-construction Surveys.

   a. If vegetation removal or ground disturbance will commence between February 1 and August 31, a qualified biologist will conduct a pre-construction survey for nesting birds within 14 days of the initiation of disturbance activities. This survey will cover:

      i. Potential nest sites in trees, bushes, or grass within species-specific buffers of the project area (Swainson's hawk – 0.5-mile, other raptor species such as white-tailed kite – 500 ft, non-raptor species (loggerhead shrike, magpie etc. – 250 ft).

      ii. Survey protocol developed by the Swainson's Hawk Technical Advisory Committee (TAC) should be followed (CDFG 2000), which includes survey timing and requirements for repeated visits.

   b. Surveys for burrowing owl will occur within 14 days prior to any ground disturbance, no matter the season. This survey will cover potential burrowing owl burrows in the project area and suitable habitat within 150 m (500 ft). Evaluation of use by owls shall be in accordance with California Department of Fish and Wildlife survey guidelines (CBOC 1993, CDFG 1995, CDFG 2012). Surveys will document if burrowing owls are nesting or using habitat in or directly adjacent to the project area. Survey results will be valid only for the season (breeding (Feb 1-Aug 31) or non-breeding (Sept 1-Jan 31) during which the survey is conducted.

   c. If no active nests or burrows are detected during the pre-construction survey, then no further action is required. If an active nest or burrow is detected, then the following minimization measures will be implemented.

3. Minimization/Establish Buffers.

   a. Swainson's hawk, white-tailed kite, loggerhead shrike, Lawrence's goldfinch, yellow-billed magpie, Nuttall's woodpecker, oak titmouse, and MBTA-protected species: If any active nests are discovered (and if construction will occur during bird breeding season), the USFWS and/or CDFW will be contacted to determine protective measures required to avoid take. These measures could include fencing off an area where a nest occurs, or shifting construction work temporally or spatially away from the nesting birds. Biologists are required on site to monitor construction while protected migratory birds are nesting in the project area. If an active nest is found after the completion of the pre-construction surveys and after construction begins, all construction activities will stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest.

   b. Burrowing owl:

      If burrowing owls are detected within the survey area, CDFW should be consulted to determine the suitable buffer. These buffers will consider the level of disturbance of the project activity, existing disturbance of the site (vehicle traffic, humans, pets, etc.), and time of year (nesting vs. wintering). If avoidance is not feasible, the City will work with CDFW to determine appropriate mitigation, such as passive exclusion or translocation, and associated mitigation land offset (CDFG 2012).

4. If avoidance is not feasible, a qualified biologist will develop appropriate mitigations that will reduce project impacts to sensitive biological resources to a less than significant level. The type and amount of mitigation will depend on the resources impacted, the extent of the impacts, and the quality of habitats to be impacted. Mitigations may include but are not limited to: 1) Compensation for lost habitat in the form of preservation or creation of in-kind habitat protected by conservation easement; 2) Purchase of appropriate credits from an approved mitigation bank or land trust servicing the Fresno County Area; 3) Payment of in-lieu fees.

Special Status Plants

Impact

Of the 19 potentially occurring special status plant species, none were found within the project area. Although the site survey was not conducted at the peak blooming period for some potentially occurring special status plants, all plants could be ruled out because their elevation range, required habitat, and/or soil type differed from the site conditions. Therefore, the project will not impact any special status plant species.

b. *Have a substantially adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U. S. Wildlife Service?* **(No impact)**

There are no riparian or sensitive natural communities within the project area.

c. *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?* **(No impact)**

There are no federally protected wetlands within the project area. Implementation of typical ground disturbance and erosion control Best Management Practices (BMPs) and compliance with grading permits will insure that there is no impact to storm drainage facilities or nearby canals.

d. *Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?* **(Less than Significant)**

The site does not appear to constitute a "movement corridor" for native wildlife (USFWS 1998) that would attract wildlife to move through the site any more than the surrounding developed and agricultural lands. The project site is bordered by busy streets as well as a large canal, residential areas, and agricultural development, which restricts access for wildlife. Smaller wildlife species and birds are not expected to be further inhibited by the project as compared with residential and agricultural uses. Therefore, the project will have a less than significant effect on regional wildlife movements (MO).

e. *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?* **(No Impact)**

The project appears to be consistent with relevant biological resources policies of the City of Clovis and would not conflict with local policies or ordinances protecting biological resources (City of Clovis 2015).

f. *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional or state habitat conservation plan?* **(No Impact)**

Fresno County is not part of any HCP or NCCP, so the project would not conflict any provisions of any local, regional or state habitat conservation plan (MO, USFWS 1998, 2005).

Cumulative Impact

The small loss of agricultural land and remnants of rural residential development will not substantially contribute to the cumulative loss of habitat or the decline of special-status species. Therefore, implementation of the proposed project would not result in significant cumulative impacts to biological resources.

SOURCES CONSULTED

Baldwin, B.G., D.H. Goldman, D. J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson manual: vascular plants of California, second edition. University of California Press, Berkeley.

California Burrowing Owl Consortium (CBOC). 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Technical Report. Alviso, California, USA.

California Department of Fish and Game (CDFG). 1995. Staff report on Burrowing Owl Mitigation. The Resources Agency, Sacramento, CA.

California Department of Fish and Game. 2000. Recommended timing and methodology for Swainson's hawk nesting surveys in California's Central Valley. Swainson's Hawk Technical Advisory Committee, Sacramento, California, USA.

California Department of Fish and Game. 2012. Staff report on burrowing owl mitigation. State of California Natural Resources Agency. March 7, 2012.

California Department of Fish and Wildlife (CDFW). 2018. California Natural Diversity Database. The Resources Agency, Sacramento, CA Accessed February 2018.

California Native Plant Society (CNPS). 2018. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Accessed February 2018 from http://www.cnps.org/inventory

City of Clovis. 2015. Final Program Environmental Impact Report. City of Clovis General Plan and Development Code Update. Prepared by PlaceWorks.

City of Fresno. 2014. Draft Master Environmental Impact Report, General Plan and Development Code Update, City of Fresno, Fresno County, California. Prepared by FirstCarbon Solutions.

H.T. Harvey & Associates. 2004. California bat mitigation, techniques, solutions, and effectiveness. Prepared for California Department of Transportation (Caltrans), Office of Biological Studies and Technical Assistance, Sacramento, CA. Project Number 2394-01. 163 pgs.

Moyle, P.B. 2002. Inland Fishes of California. University of California Press. Berkeley, CA

Odell, Melissa (MO), Senior Biologist/Planner. Odell Planning and Research, Inc. Project Site Biological Reconnaissance Survey. May 25, 2018.

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

USDA Natural Resources Conservation Service (NRCS). 2018. Web Soil Survey. Accessed July 2018 from http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

U. S. Code Annotated (USCA). 1918. Migratory bird treaty act of 1918. U.S. Code, Section Title 16, Parts 703-712.

U.S. Fish and Wildlife Service (USFWS). 1998. Recovery plan for upland species of the San Joaquin Valley, California. Region 1, Portland, OR. 319 pp.

U.S. Fish and Wildlife Service. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Portland, Oregon. xxvi + 606 pp.

U.S. Fish and Wildlife Service. 2018. Information for Planning and Conservation (IPac) Trust Resource List. Accessed February 2018. https://ecos.fws.gov/ipac/

Western Regional Climate Center. Historical Climate Center. www.wrcc.dri.edu. Accessed October 8, 2015.

Zeiner, D. C., W. F. Laudenslayer, Jr., and K. E. Mayer, editors. 1988. California's Wildlife. Volume I: Amphibians and Reptiles. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento, USA.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White, editors. 1990a. California's Wildlife. Volume II: Birds. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento, USA.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White, editors. 1990b. California's Wildlife. Volume III: Mammals. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento, USA

Site Photos – May 25, 2018

Project area along Minnewawa Avenue, showing fallow agricultural land and palms along old driveway in the project. Looking south.

Project area along Minnewawa Avenue, showing typical habitat in the project area. Rural residential and mature trees (potential bird nesting habitat) in background. Fallow agricultural land across Minnewawa adjacent to the project. Looking north from western edge of project area.

Palms and oleander along old residence access road within the project area looking east.

Agricultural infrastructure and previous residence location with ornamental and fruit trees. Looking east from project area.

Residual agricultural support buildings near southeast corner of the project site with associated ornamental/fruit trees (nesting bird habitat). Looking south.

Enterprise Canal and Minnewawa bridge with cliff swallow nesting colony on adjacent land to south of project area. Looking west.

Small mammal burrows along the bank of the Enterprise Canal (burrowing owl habitat) and adjacent orchards, both on adjacent land to the project area. Looking south.

Large grove of mature eucalyptus on adjacent land to northeast of project area. Looking south from International Avenue, project area in background.

Appendices and Maps

Appendix A. Special status animal species known from the vicinity of the Minnewawa-International Elementary School Project.

Name	Status* State	Status* Federal	Description of Habitat Required [c, e, f]	Historic 9 Quad Presence[a]	Potential to Occur in Study Area [a,b,d]
MAMMALS					
Pallid bat (*Antrozous pallidus*)	SSC	FSC	Deserts, grasslands, scrublands, woodlands and open forests. Most common in open, dry habitats with rocky areas for roosting. Bridges, buildings, and exfoliating tree bark or hollows are frequently used for roost sites (H.T. Harvey 2004).	Millerton Lake West	Unlikely. Adjacent residences and associated large trees may provide roosting habitat. Canal nearby may provide water and foraging habitat. However, no suitable roosting habitat is within the study area.
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	SE	FE	Alkali sink plant community to bare alkaline soils. Chenopod scrub and alkali grasslands in western Fresno County. Inhabits seasonally inundated bare alkaline soils. Associated with friable soil mounds.	Fresno North	None. No habitat present.
Spotted bat (*Euderma maculatum*)	SSC	None	Occupies arid deserts, grasslands and mixed conifer forests. Feeds over water and along washes. May move from forests to lowlands in autumn. Roost in crevices and cliffs primarily, often solitary. Rarely found in buildings or caves, and they are not known to use bridges or trees for roosts (H.T. Harvey 2004).	Friant, Millerton Lake West	Unlikely. There are no cliff faces or rock areas in the project vicinity; therefore, suitable roosting habitat is not present. Species could forage over project area and adjacent canal. However, no suitable roosting habitat is within the study area.
Western mastiff bat (*Eumops perotis californicus*)	SSC	None	Many open, semi-arid to arid habitats, including annual and perennial grasslands, among others. Usually present only where there are significant rock features offering suitable roosting habitat. Frequently roosts in crevices in cliff faces and rocks; high buildings are used rarely, and they are not known to use bridges or trees for roosts (H.T. Harvey 2004).	Fresno North, Millerton Lake East, Little Table Mountain	Unlikely. There are no cliff faces or rock areas in the project vicinity; therefore, suitable roosting habitat is not present. Species could forage over project area and adjacent canal. However, no suitable roosting habitat is within the project area.
American badger (*Taxidea taxus*)	SSC	None	Herbaceous, shrub, and open stages of most habitats with dry, friable soils.	Lanes Bridge, Clovis, Millerton Lake West	Unlikely. Potential habitat present is frequently disturbed by plows (which destroy potential burrow sites), people and domestic animals. Also, access is restricted due to frequently travelled streets and development.

Name	Status* State	Federal	Description of Habitat Required [c, e, f]	Historic 9 Quad Presence[a]	Potential to Occur in Study Area [a,b,d]
San Joaquin kit fox (*Vulpes macrotis mutica*)	ST	FE	Large tracts of open, level, sandy ground preferred. Often associated with annual grasslands and small mammal burrow complexes.	Friant	Unlikely. Potential habitat present is frequently disturbed by plows (which destroy potential burrow sites and prey base), people and domestic animals. Also, access is restricted due to frequently travelled streets, canal, and residential development. Nearest location is 6 miles away and was last detected in the 1990s. According to the City of Clovis EIR, the species appears to be absent from the City of Clovis Plan Area (City of Clovis 2014).
Sierra Nevada red fox (*Vulpes vulpes necator*)	ST	FC	Historically ranges from the Cascades south to the Sierra Nevada, in wet meadows, forested areas and alpine fell-fields. Uses dense vegetation and rocky areas for cover and den sites.	Millerton Lake East	None. Not within current or historic range. No suitable habitat present. The observation was near Prather and is suspect of not being the Sierra Nevada red fox but rather the introduced red fox. There are currently only 2 known populations of Sierra Nevada red fox; one in Lassen County and one near Sonora Pass.
BIRDS					
Tricolored blackbird (*Agelaius tricolor*)	SSC SCE	FSC	Open grasslands and pasturelands associated with nesting cover (e.g., blackberry shrubs, wetland emergent vegetation, etc.). Breeds Mar 15 to Aug 10.	Fresno North, Round Mountain, Academy, Little Table Mountain	Unlikely. Possible foraging habitat in open fields. Suitable aquatic nesting habitat is absent.
Clark's grebe (*Aechmophorus clarkii*)	None	FSC	Breed on freshwater lakes and marshes with extensive open water bordered by emergent vegetation. During winter they move to saltwater or brackish bays, estuaries, or sheltered sea coasts and are less frequently found on freshwater lakes or rivers.	None	None, no habitat present.
Burrowing owl (*Athene cunicularia*)	SSC	FSC	Ground dweller of open country, golf courses, airports, etc. Often associated with California ground squirrel burrow complexes.	Round Mountain, Clovis, Lanes Bridge,	Possible. Suitable breeding and foraging habitat present. Nesting possible along canal edges, and other burrows could easily be built between the time of survey and the time of school construction.

Name	Status* State	Federal	Description of Habitat Required [c, e, f]	Historic 9 Quad Presence[a]	Potential to Occur in Study Area [a,b,d]
				Little Table Mountain	
Golden eagle (*Aquila chrysaetos*)	None	BGEPA	Inhabits mountainous or hilly terrain, hunting over open country. Also found in valleys and western plains, especially in migration and winter. Nests on cliffs or in trees. Breeds Jan 1 to Aug 31	Millerton Lake East	Unlikely. Project area and developed vicinity are not suitable nesting habitat. Very unlikely foraging habitat due to developed nature and human presence.
Oak titmouse (*Baeolophus inornatus*)	None	FSC	Usually found in warm, open, dry oak or oak-pine woodlands. Will also use scrub oaks or other brush as long as woodlands are nearby. They live in a restricted range, from southwest Oregon to northwest Baja California, with another population in the Cape District of south Baja California. Breeds Mar 15 to Jul 15.	Not followed in CNDDB	Possible. Project area and adjacent trees are suitable habitat for this species year-round.
Swainson's hawk (*Buteo swainsoni*)	ST	FSC	Open agricultural fields, grasslands, and low hills, with sparse trees. Nesting often associated with riparian areas.	Fresno North, Clovis, Lanes Bridge, Little Table Mountain	Possible. Foraging habitat in open fields and nesting habitat in adjacent large trees.
Costa's Hummingbird (*Calypte costae*)	None	FSC	Desert riparian, desert and arid scrub foothill habitats. Breeds Jan 15 to Jun 10.	Not followed in CNDDB	Unlikely. No desert habitat present, but open field may provide suitable foraging habitat.
Lawrence's goldfinch (*Carduelis lawrencei*)	None	FSC	Open woodlands, chaparral, and weedy fields. Nests mid-height in trees with a cup nest made of leaves, grass stems and lichen. Breeds Mar 20 to Sep 20.	Not followed in CNDDB	Possible. Foraging habitat in open fields and nesting habitat in adjacent large trees.
Wrentit (*Chamaea fasciata*)	None	FSC	Year-round resident in coastal scrub, chaparral, oak woodland, evergreen forests, and dense shrublands with coyotebush, manzanita, California lilac, and blackberry thickets in foothills, coastal, and desert regions of California and Oregon. Tend to avoid areas	Not followed in CNDDB	Unlikely. No chaparral/shrub habitat present.

Name	Status* State	Federal	Description of Habitat Required [c, e, f]	Historic 9 Quad Presence[a]	Potential to Occur in Study Area [a,b,d]
			with non-native plants such as eucalyptus and broom. Breeds Mar 15 to Aug 10, in shrubs and trees; creates a cup nest 1 – 9 feet high.		
Mountain Plover (*Charadrius montanus*)	SSC	FSC	Short grasslands, freshly plowed fields, sprouting grain fields, and sod farms. Seen in areas of short vegetation or bare ground in flat topography, often where grazing and mammal burrows are present. This species does not breed in California.	None	Unlikely. Winter foraging habitat adjacent in the open fields. Species only known from west side of San Joaquin Valley. Outside of current known range.
Northern harrier (*Circus cyaneus*)	SSC	None	Grasslands, open agricultural fields, and edges of wetlands. Typically nests on the ground among dense cover.	None	Possible. Nesting habitat is marginal due to frequent ground disturbance. Could forage over project area and vacant lots/fields in project vicinity.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	SE	FT	Occupies open woodlands and with shrubby vegetation. Nests in willow and cottonwood riparian forests with dense understory of shrubs and vines.	Lanes Bridge, Clovis, Round Mountain	None. No riparian habitat present.
Black swift (Cypseloides niger)	SSC	FSC	Open sky over mountains, coastal cliffs. Forages widely over any kind of terrain but is still very local in its occurrence, probably limited to regions with suitable nesting sites. Nests on ledges or in crevices in steep cliffs, either along coast or near streams or waterfalls in mountains. Breeds Jun 15 to Sep 10	None	None. No suitable nesting habitat in the vicinity.
White-tailed kite (nesting) (*Elanus leucurus*)	FP	None	Fairly common in grasslands, open agricultural fields and fallow highway median strips. Substantial groves of dense, broad-leafed deciduous trees used for nesting and roosting.	None	Possible. Could forage over vacant lots and open fields. Could nest in trees adjacent to or in the project area.
Prairie falcon (*Falco mexicanus*)	WL	None	Inhabits dry, open terrain, both level and hilly. Nests on cliffs and forages over open marshes and fields	Millerton Lake East	Unlikely. No suitable nesting habitat in the vicinity. Nearest location is in San Joaquin River canyon area (Squaw Leap).

Name	Status* State	Federal	Description of Habitat Required [c, e, f]	Historic 9 Quad Presence[a]	Potential to Occur in Study Area [a,b,d]
Bald eagle (*Haliaeetus leucocephalus*)	SE; FP	BGEPA; delisted	Inhabits lower montane coniferous forests and areas with oldgrowth trees. Prefers ocean shore, lake margins, & rivers for both nesting & wintering. Most nests are found within 1 mi of water. Nests in large, old-growth, or dominant live tree w/open branches, especially ponderosa pine. Roosts communally in winter. Breeds Jan 1 to Aug 31.	None	Unlikely. Could forage in the open fields, however, habitat type, frequent human disturbance and urban surrounding make nesting highly unlikely. Known to nest near Shaver Lake in Fresno County.
Loggerhead shrike (*Lanius ludovicianus*)	SSC	FSC	Hunts in open or brushy areas, diving from low perch. Nests in dense shrubs or trees associated with foraging areas.	None	Possible. Could nest in trees and shrubs within the study area and forage over open areas.
Marbled godwit (*Limosa fedoa*) (wintering)	None	FSC	Occurs from mid-August to early May in estuarine habitats along coastal CA, and in the Grasslands Ecological Area in Merced County year-round. Foraging and roosting habitat include estuarine mudflats, sandy beaches, open shores, saline emergent wetlands, and adjacent wet upland fields. Nests in Canadian and extreme northern US, prairies.	Not followed in CNDDB	Unlikely. Not within known range, and no wetland habitat present. Could forage in fallow fields during migration.
Short-billed dowitcher (*Limnodromus griseus*)	None	FSC	Mudflats, tidal marshes, pond edges. Migrants and wintering birds favor coastal habitats, especially tidal flats on protected estuaries and bays, also lagoons, salt marshes, sometimes sandy beaches. Migrants also stop inland on freshwater ponds with muddy margins. Breeds in far north, mostly in open bogs, marshes, and edges of lakes within coniferous forest zone. Breeds elsewhere.	Not followed in CNDDB	Unlikely. Winter foraging/migration habitat is marginal due to frequent disturbance. No nesting habitat present – out of range.
Lewis' woodpecker (*Melanerpes lewis*) (wintering)	None	FSC	Breeds in open forest and woodland with an open canopy and brushy understory. Requires dead trees for nest cavities. Winters and migrates through Sierra Nevada foothills and central valley. Breeds Apr 20 to Sep 30.	Not followed in CNDDB	Unlikely. Winter foraging/migration habitat is marginal due to frequent disturbance. No nesting habitat present.

Name	Status* State	Federal	Description of Habitat Required [c, e, f]	Historic 9 Quad Presence[a]	Potential to Occur in Study Area [a,b,d]
Long-billed curlew (*Numenius americanus)* (wintering)	None	FSC	Breeds in sparse, short grasses, including shortgrass and mixed-grass prairies as well as agricultural fields of western North America. In winter they migrate to the coasts and to interior Mexico, and use wetlands, tidal estuaries, mudflats, flooded fields, and occasionally beaches. Breeds elsewhere.	Not followed in CNDDB	Unlikely. No wetland habitat present. Could forage in fallow fields during migration.
Whimbrel (*Numenius phaeopus*)	None	FSC	Shores, mudflats, marshes, tundra. Found on a wide variety of habitats on migration. Most common on mudflats, but also found on rocky shores, sandy beaches, salt marshes, flooded agricultural fields, grassy fields near coast. In summer, breeds on Arctic tundra.	Not followed in CNDDB	Unlikely. No wetland habitat present. Could forage in fallow fields during migration.
Double-crested cormorant (*Phalacrocorax auritus*)	WL	None	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state, within riparian type habitats. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Clovis	None. No habitat present.
Yellow-bill magpie (*Pica nuttalli*)	None	FSC	California endemic species that occurs in the Central Valley and coastal mountain ranges from south of San Francisco to Santa Barbara County. Requires open oak & riparian woodland, farm & ranchland or urban areas with tall trees near grassland, pasture or cropland. Breeds Apr 1 to Jul 31.	Not followed in CNDDB	Possible. Could nest in trees within the study area and forage in open fields, agricultural land, or landscaped areas.
White headed woodpecker (*Picoides albolarvatus*)	None	FSC	Occurs in lower and upper montane coniferous forest. Nests in open montane conifer forests with large trees and snags and tree/shrub and tree/herbaceous ecotones. Prefers semi-open areas. Excavates cavity in large snag or stump at least 2 ft in diameter at nest height. Breeds May 1 to Aug 15.	Not followed in CNDDB	None. No habitat present.
Nuttall’s woodpecker (*Picoides nuttallii*)	None	FSC	Oak forest and woodlands, including riparian zones. Requires standing snag or hollow tree for nest cavity. Breeds Apr 1 to Jul 20.	Not followed in CNDDB	Possible. Project area and adjacent trees are suitable habitat for this species year-round.

Name	Status* State	Federal	Description of Habitat Required [c, e, f]	Historic 9 Quad Presence[a]	Potential to Occur in Study Area [a,b,d]
Rufous hummingbird (*Selasphorus rufus*)	None	FSC	Forest edges, streamsides, mountain meadows. Breeding habitat includes forest edges and clearings, and brushy second growth within the region of northern coast and mountains. Winters mostly in pine-oak woods in Mexico. Migrants occur at all elevations but more commonly in lowlands during spring, in mountain meadows during late summer and fall. Breeds elsewhere.	Not followed in CNDDB	Unlikely. May use residential landscaped areas adjacent and forage during spring migration. Otherwise, outside of known breeding range.
Black-chinned Sparrow (*Spizella atrogularis*)	None	FSC	Brushy mountain slopes, open chaparral, sagebrush. Found mostly in arid scrub on hillsides, from low foothills up to almost 7,000' in mountains, in chaparral and open thickets of manzanita, scrub oak, sagebrush, chamise, and other low shrubs. In winter also found locally in desert areas, mesquite thickets. Breeds Apr 15 to Jul 31.	Not followed in CNDDB	None. No suitable habitat present.
California thrasher (*Toxostoma redivivum*)	None	FSC	Chaparral, foothills, valley thickets, parks, gardens. Within its range, found in practically any lowland habitat with dense low brush. Most common in chaparral, also occurs in streamside thickets and in suburban neighborhoods that have enough vegetation. Extends into edges of desert regions, and in chaparral in mountains up to about 6,000'. Breeds Jan 1 to Jul 31	Not followed in CNDDB	Unlikely. Residential landscaping adjacent to the project area may provide marginal habitat, but very unlikely to occur in the area.
Willet (*Tringa semipalmata*)	None	FSC	Marshes, wet meadows, mudflats, beaches. Nests inland, around fresh marshes in open country, especially native grassland. In migration and winter, both forms occur on mudflats, tidal estuaries, sandy beaches. Breeds elsewhere.	Not followed in CNDDB	Unlikely. No wetland habitat present. Could forage in fallow fields during migration.
Least Bell's vireo (*Vireo bellii pusillus*)	SE	FE	Occurs in riparian forest, scrub, and woodlands. Summer resident of Southern	Clovis	None. No riparian habitat present.

Name	Status* State	Federal	Description of Habitat Required [c, e, f]	Historic 9 Quad Presence[a]	Potential to Occur in Study Area [a,b,d]
			California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis* sp., and mesquite.		
REPTILES					
Northern California legless lizard (*Anniella pulchra*)	SSC	None	Sandy or loose loamy soils under sparse vegetation in chaparral, coastal dunes or coastal scrub. Soil moisture is essential. They prefer soils with a high moisture content.	Fresno North, Clovis	Unlikely. Only known from a historic collection in general Fresno area. Last seen in 1880s. Suitable habitat not present.
California glossy snake (*Arizona elegans occidentalis*)	SSC	None	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	Fresno North, Clovis	Unlikely. Exact location of the CNDDB occurrence is unknown and therefore mapped to the center of Fresno. The collection was one male recorded in 1893. Known current range is only in western Fresno County in grassland hills. Any potential habitat present is frequently disturbed by plows (which destroy potential burrow sites and prey base), people and domestic animals.
Blunt-nosed leopard lizard (*Gambelia (=Crotaphytus) sila)*	SE, FP	FE	Occurs in semi-arid grasslands, washes and alkali flats, with sandy/gravelly/loamy soils. Occurs with plants such as annual and bunch grasses and *Atriplex* sp. Small mammal burrows provide cover for this species.	None	None. No habitat present.
Western pond turtle (*Emys marmorata* aka *Actinemys marmorata*)	SSC	None	Aquatic turtle of ponds, lakes, marshes, rivers, streams, and irrigation ditches that typically have rocky or muddy bottom, with aquatic vegetation. Nests in uplands associated with wetland habitat.	Clovis, Academy, Friant, Millerton Lake West, Little Table Mountain	None. No habitat present.
Giant garter snake (*Thamnophis gigas*)	ST	FT	Marshes, sloughs, mud-bottom canals of rice farming areas, but occasionally slow streams. Bulrush and cattails typically present. Extremely aquatic. Found in areas with aquatic connectivity to San Joaquin River and Delta.	None	None. No habitat present.

Name	Status* State	Federal	Description of Habitat Required [c, e, f]	Historic 9 Quad Presence[a]	Potential to Occur in Study Area [a,b,d]
Coast horned lizard (*Phrynosoma blainvillii*)	SSC	None	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Fresno North, Clovis	Unlikely. Project area is extremely marginal habitat due to frequent disturbance and lack of preferred habitat elements. This occurrence in CNDDB is listed as possibly extirpated and collection localities are very general, given only as "Fresno" from 1893.
AMPHIBIANS					
California tiger salamander (*Ambystoma californiense*)	ST, SSC	FT	Quiet water of ponds, reservoirs, lakes, vernal pools, streams, and stock ponds within annual grasslands, oak savannah, oak woodland and open chaparral.	All	None. No habitat present in the project area due to frequent human disturbance and agricultural operation.
California red-legged frog (*Rana draytonii*)	SSC	FT	Chiefly lakes, ponds, and streams in coastal forest, inland woodlands, and valley grasslands where cattails, bulrush, or other plants provide dense cover. Aquatic sites need not be permanent.	None	None. No habitat present in the project area due to frequent human disturbance and agricultural operation.
Western spadefoot (*Spea hammondii*)	SSC	None	Primarily a species of the lowlands, frequenting washes, river floodplains, alluvial fans, playas, alkali flats, but also foothills and mountains. Open vegetation and short grasses preferred, with sandy or gravelly soil. Valley and foothill grasslands, open chaparral, pine-oak woodlands. Often associated with vernal pools.	Friant, Fresno North, Lanes Bridge, Round Mountain, Millerton Lake West, Little Table Mountain	None. No habitat present in the project area due to frequent human disturbance and agricultural operation.
FISH					
Delta smelt (*Hypomesus tranpacificus*)	SE	FT	Found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties. Typically found in estuarine waters-along the freshwater edge of the mixing zone (saltwater-freshwater interface), and upstream into river channels and tidally-influenced backwater sloughs. Most spawning happens in tidally-	None	None. No habitat present.

Name	Status* State	Status* Federal	Description of Habitat Required [c, e, f]	Historic 9 Quad Presence[a]	Potential to Occur in Study Area [a,b,d]
			influenced backwater sloughs and channel edgewaters.		
Hardhead (*Mylopharodon conocephalus*)	SSC	None	Clear, deep pools with sand-gravel-boulder bottoms & slow water velocity. Not found where exotic centrarchids predominate.	Lanes Bridge	None. No habitat present.
INVERTEBRATES					
Conservancy fairy shrimp (*Branchinecta conservatio*)	None	FE	Rather large, cool-water vernal pools with moderately turbid water; the pools generally last until June.	None	None. Outside of known current range of species. No large vernal pools present.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	None	FT	Vernal pool habitats from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. Tends to occur in smaller pools, most frequently pools measuring less than 0.05 acre often associated with mud bottomed swales, or basalt flow depression pools in unplowed grasslands.	Friant, Lanes Bridge, Clovis Round Mountain, Academy, Millerton Lake East, Little Table Mountain	None. No habitat present in the project area due to frequent human disturbance and agricultural operation.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	None	FT	Nearly always found on or close to its host plant, elderberry (*Sambucus* sp.). Inhabited shrubs typically have stems that are 1.0 inch or greater in diameter at ground level. Distribution is patchy throughout the remaining riparian forests of the Central Valley from Redding to Madera County.	Lanes Bridge, Millerton Lake East	None. Outside of updated species range. No habitat present or elderberry shrubs present.

Name	Status* State	Federal	Description of Habitat Required [c, e, f]	Historic 9 Quad Presence[a]	Potential to Occur in Study Area [a,b,d]
Vernal pool tadpole shrimp (*Lepidurus packardi*)	None	FE	Inhabits vernal pools containing clear to highly turbid water, ranging in size from 50 square feet in the former Mather Air Force Base area of Sacramento County, to the 89-acre Olcott Lake at Jepson Prairie.	Millerton Lake East	None. No habitat present in the project area due to frequent human disturbance and agricultural operation.

* None = no special status granted or recognized by named party
BGEPA = Bald and Golden Eagle Protection Act; USFWS prohibits the taking, possession and commerce of such birds.
FC = Federal Candidate; USFWS/NOAA FISHERIES has enough information on biological vulnerability and threats to support a proposal to list as endangered or threatened.
FE = Federally Endangered; listed by USFWS as in danger of extinction throughout all or a significant portion of its range.
FT = Federally Threatened; listed by USFWS as likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
FSC = Federal Species of Concern, including Birds of Conservation Concern; provides no protection, but allows for awareness and research efforts that may keep species from being listed.
SCE = California Candidate for Endangered Status under the CESA.
SCT = California Candidate for Threatened Status under the CESA.
SE = California Endangered under the CESA.
ST = California Threatened under the CESA.
FP = Fully Protected under California Fish and Game Code (Sections 3511, 4700, 5050, and 5515)
SSC = California Species of Special Concern.
a = Based upon quad lists from query of California Natural Diversity Database (CNDDB) search, accessed July 2018.
b = Based upon planning survey conducted by Odell P&R on project site during May 2018.
c = USFWS Sacramento Fish and Wildlife Office's Endangered Species Program; http://www.fws.gov/sacramento/es/
d= Moyle, P.B. 2002. Inland fishes of California. University of California Press. Berkeley, CA
e= Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Department of Fish and Game, Sacramento, California.
f = Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Appendix B. Special status plant species known from the vicinity of the Minnewawa-International Elementary School Project.

Name	Status[a] State	Status[a] Federal	Description of Habitat Required[b]	Blooming Period	Historic 9 Quad Presence[c]	Potential to Occur in Study Area[d]
Hoover's calycadenia (*Calycadenia hooveri*)	1B.3	None	Occurs on exposed, rocky, barren soil in Cismontane woodland, valley and foothill grassland, between 60-260 meters elevation.	July-Sep	Lanes Bridge	Not Present. No habitat present. Site highly disturbed.
tree-anemone (*Carpenteria californica*)	ST, 1B.2	None	Occurs in cismontane woodland and chaparral. Usually very localized and found on well-drained granitic soils, mostly in north-facing ravines and drainages. Occurs between 335-1345 meters in elevation.	May-Jul	Millerton Lake East	Not Present. No suitable habitat present and outside of typical elevational range.
Succulent owl's-clover (*Castilleja campestris* ssp. *succulenta*)	SE, 1B.2	FT	Occurs in vernal pools and valley and foothill grassland, often in acidic soils, between 50-750 meters of elevation.	Apr-May	Lanes Bridge, Round Mountain, Friant, Fresno North*, Millerton Lake East, Millerton Lake West	Not Expected. Site disturbed, and no vernal pool habitat on site.
California jewel-flower (*Caulanthus californicus*)	SE, 1B.1	FE	Occurs in chenopod scrub, pinyon and juniper woodland, valley and foothill grassland often with sandy soil. 61-1000 meters elevation.	Feb-May	Fresno North*, Clovis*	Not Expected. No grassland habitat present. Site highly disturbed. Thought to be extirpated from Fresno area. (Closest CNDDB occurrence does not have date- no habitat left within vicinity of Fresno- Extirpated from Fresno Area).
Hoover's cryptantha (*Cryptantha hooveri*)	1A	None	Occurs in valley and foothill grassland and inland dunes in course sand between 50-365 meters in elevation.	Apr-May	Millerton Lake West	Not Expected. Species is presumed extinct. Last known location is at the San Joaquin Experimental Range in 1935 on a dry slope in woodland habitat. No habitat present in the project area.
Dwarf downingia (*Downingia pusilla*)	2B.2	None	Valley and foothill grassland (mesic sites), vernal pools. Vernal lake and pool margins with a variety of associates. In several types of vernal pools. 1-445 m.	Mar-May	Friant	Not Expected. No vernal pool or grassland habitat present.

Name	Status[a]		Description of Habitat Required[b]	Blooming Period	Historic 9 Quad Presence[c]	Potential to Occur in Study Area[d]
	State	Federal				
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	1B.2	None	Vernal pools, valley and foothill grassland. Some sites on clay soil of granitic origin; vernal pools, within grassland. 100-420 meters.	Apr-May	Round Mountain*, Friant, Lanes Bridge, Millerton Lake East, Millerton Lake West, Little Table Mountain	Not Expected. No vernal pool habitat present.
Boggs Lake hedge-hyssop (*Gratiola heterosepala*)	SE, 1B.2	None	Occurs in freshwater marshes and swamps, vernal pools. Usually in clay soils, sometimes on lake margins, between 4-2410 meters in elevation.	Apr-Aug	Millerton Lake East	Not Present. No habitat present. Site highly disturbed.
California satintail (*Imperata brevifolia*)	2B.1	None	Occurs on mesic sites, alkali seeps, and riparian areas in chaparral, coastal scrub, Mojavean desert scrub, and meadows and seeps between 0-500 meters in elevation.	Sep-May	Fresno North, Clovis	Not Present. No habitat present. Site highly disturbed.
Forked hare-leaf (*Lagophylla dichotoma*)	1B.1	None	Occurs in cismontane woodland, and valley and foothill grassland, sometimes in clay soils, between 45-335 meters in elevation.	Apr-May	Round Mountain	Not Expected. No grassland or woodland habitat present. Site highly disturbed.
Madera leptosiphon (*Leptosiphon serrulatus*)	1B.2	None	Often occurs on dry slopes and decomposed granite in cismontane woodland and lower montane coniferous forest between 300-1300 meters of elevation.	Apr-May	Friant, Fresno North, Clovis, Millerton Lake East, Millerton Lake West	Not Present. No habitat present. Site highly disturbed and outside of normal elevational range.
orange lupine (*Lupinus citrinus* var. *citrinus*)	1B.2	None	Occurs in rocky, decomposed granite outcrops in open areas within chaparral, cismontane woodland, lower montane coniferous forest. Usually on flat to rolling terrain between 380-1170 meters in elevation	Apr-Jul	Little Table Mountain	Not present. Outside of elevational range and suitable soils not present.
San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)	SE, 1B.1	FT	Occurs in vernal pools, between 10-755 meters in elevation.	Apr-Sep	Lanes Bridge, Friant, Fresno North*, Millerton Lake East	Not Present. No vernal pool habitat present.
Hairy Orcutt grass (*Orcuttia pilosa*)	SE, 1B.1	FE	Occurs in vernal pools, between 45-200 meters in elevation.	May-Sep	Lanes Bridge	Not Present. No vernal pool habitat present.

Name	Status[a]		Description of Habitat Required[b]	Blooming Period	Historic 9 Quad Presence[c]	Potential to Occur in Study Area[d]
	State	Federal				
Hartweg's golden sunburst (*Pseudobahia bahiifolia*)	SE, 1B.1	FE	Valley and foothill grassland, cismontane woodland. Clay soils, often acidic. Predominantly on the northern slopes of knolls, but also along shady creeks or near vernal pools. 15-150 m.	Mar - Apr	Friant, Millerton Lake West	Not present. None observed. No suitable habitat.
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	SE, 1B.1	FT	Valley and foothill grassland, cismontane woodland. Grassy valley floors and rolling foothills in heavy clay soil. 90-800 m.	Mar-Apr	Round Mountain	Not Expected. Habitat extremely marginal and highly disturbed. No heavy clay soils present. None observed during any of the site visits.
Sanford's arrowhead (*Sagittaria sanfordii*)	1B.2	None	Occurs in standing or slow-moving freshwater ponds, marshes, swamps, ditches between 0-650 meters in elevation.	May-Oct	Friant, Clovis, Fresno North	Not Present. Suitable habitat not present.
Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)	1B.1	None	Occurs in valley and foothill grassland, often alkaline hills, between 1-455 meters of elevation.	Mar-Apr	Fresno North, Clovis	Not Expected. No grassland habitat or alkaline soils present. The only source of information for the one nearby CNDDB occurrence is from a 1930 collection. This plant is presumed extant in the area, but exact location of collection unknown (assumed centered on City of Fresno). Also, no plants have been documented in the vicinity since 1930.
Greene's tuctoria (*Tuctoria greenei*)	Rare, 1B.1	FE	Occurs in dry bottoms of vernal pools in valley and foothill grasslands between 30-1070 meters in elevation.	May-Jul	Round Mountain*, Clovis*	Not Expected. No vernal pool habitat present. All known occurrences have been extirpated.

a Status codes are as follows:
FC = Federal Candidate; USFWS/NOAA FISHERIES has enough information on biological vulnerability and threats to support a proposal to list as endangered or threatened.
FE = Federally Endangered; listed by USFWS as in danger of extinction throughout all or a significant portion of its range.
FT = Federally Threatened; listed by USFWS as likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
FSC = Federal Species of Concern; provides no protection, but allows for awareness and research efforts that may keep species from being listed.
SCE = California Candidate for Endangered Status under the CESA.
SCT = California Candidate for Threatened Status under the CESA.
ST = California Threatened under the CESA.
FP = Fully Protected under California Fish and Game Code (Sections 3511, 4700, 5050, and 5515)
SSC = California Species of Special Concern.
Rare = State listed as Rare

California Rare Plant Rank:

1A	Presumed extinct in California
1B	Rare or Endangered in California and elsewhere
2	Rare or Endangered in California, more common elsewhere
3	Plants for which we need more information - Review list
4	Plants of limited distribution - Watch list

California Native Plant Society Threat Codes:

.1	Seriously Endangered in California (over 80% of occurrences Threatened / high degree and immediacy of threat)
.2	Fairly Endangered in California (20-80% occurrences Threatened)
.3	Not very Endangered in California (<20% of occurrences Threatened or no current threats known)

b Habitat information sources and blooming times - CNPS Inventory of Rare & Endangered Plants website (http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi) used for all plant species.
c Quad lists for plant species from July 2018 query of California Natural Diversity Database (CNDDB), supplemented for plants by the CNPS Inventory of Rare & Endangered Plants website, which notes quads species have been extirpated from (noted with an * in this table).
d Site survey from work conducted by Odell P& R on project site during May 2018.

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Fresno County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Fresno Kangaroo Rat *Dipodomys nitratoides exilis* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5150	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Fleshy Owl's-clover Castilleja campestris ssp. succulenta There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8095	Threatened
Hartweg's Golden Sunburst Pseudobahia bahiifolia No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1704	Endangered
San Joaquin Orcutt Grass Orcuttia inaequalis There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5506	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the E-bird data mapping tool (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the E-bird Explore Data Tool (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Black Swift Cypseloides niger This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Black-chinned Sparrow Spizella atrogularis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9447	Breeds Apr 15 to Jul 31
Burrowing Owl Athene cunicularia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31
Costa's Hummingbird Calypte costae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9470	Breeds Jan 15 to Jun 10
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lawrence's Goldfinch Carduelis lawrencei This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Lewis's Woodpecker Melanerpes lewis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Long-billed Curlew Numenius americanus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Mountain Plover Charadrius montanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3638

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Whimbrel Numenius phaeopus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9483

White Headed Woodpecker Picoides albolarvatus — Breeds May 1 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9411

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20

for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

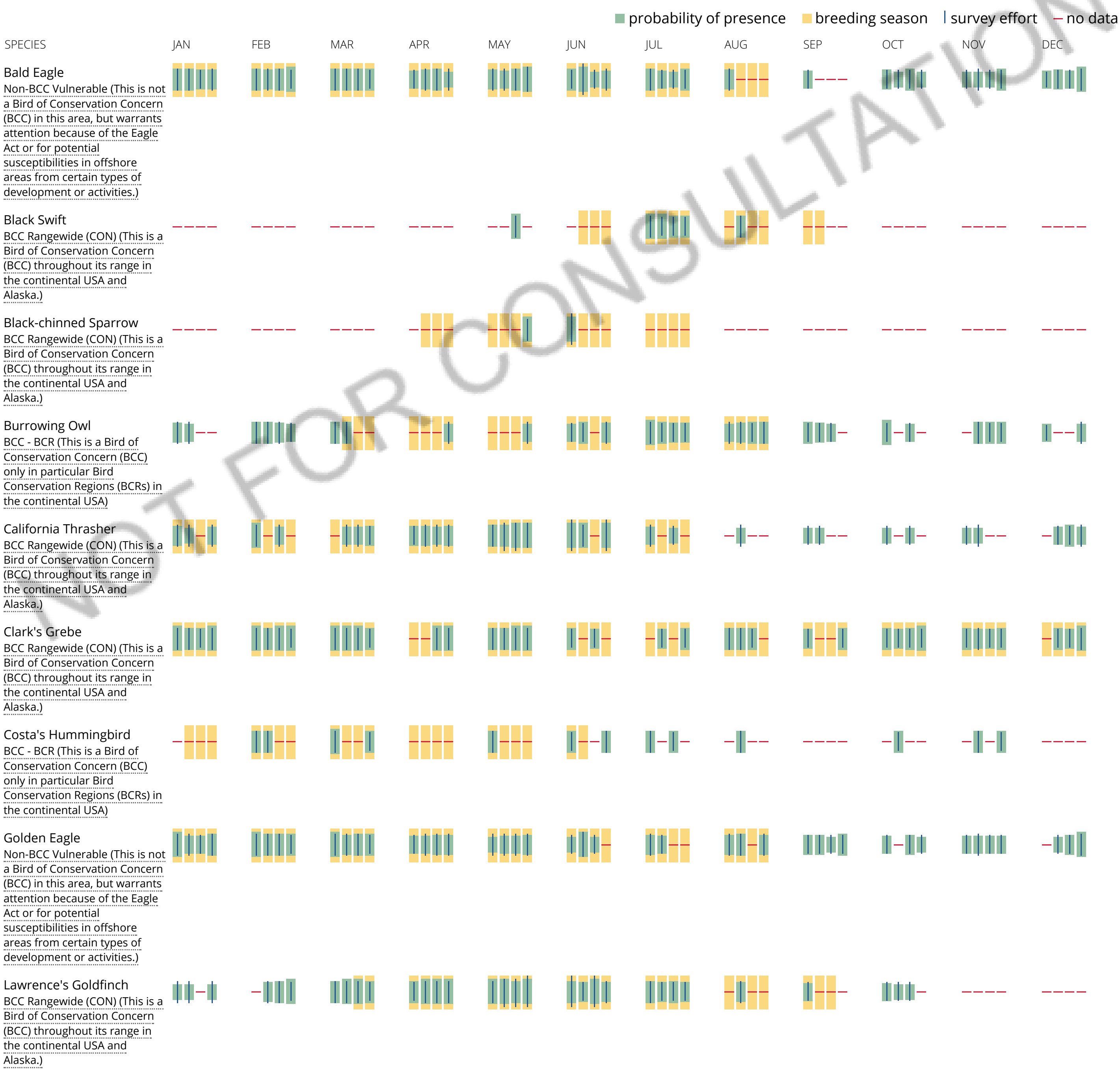
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.



Lewis's Woodpecker
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Long-billed Curlew
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Marbled Godwit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

SPECIES

Mountain Plover
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Rufous Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Short-billed Dowitcher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Tricolored Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

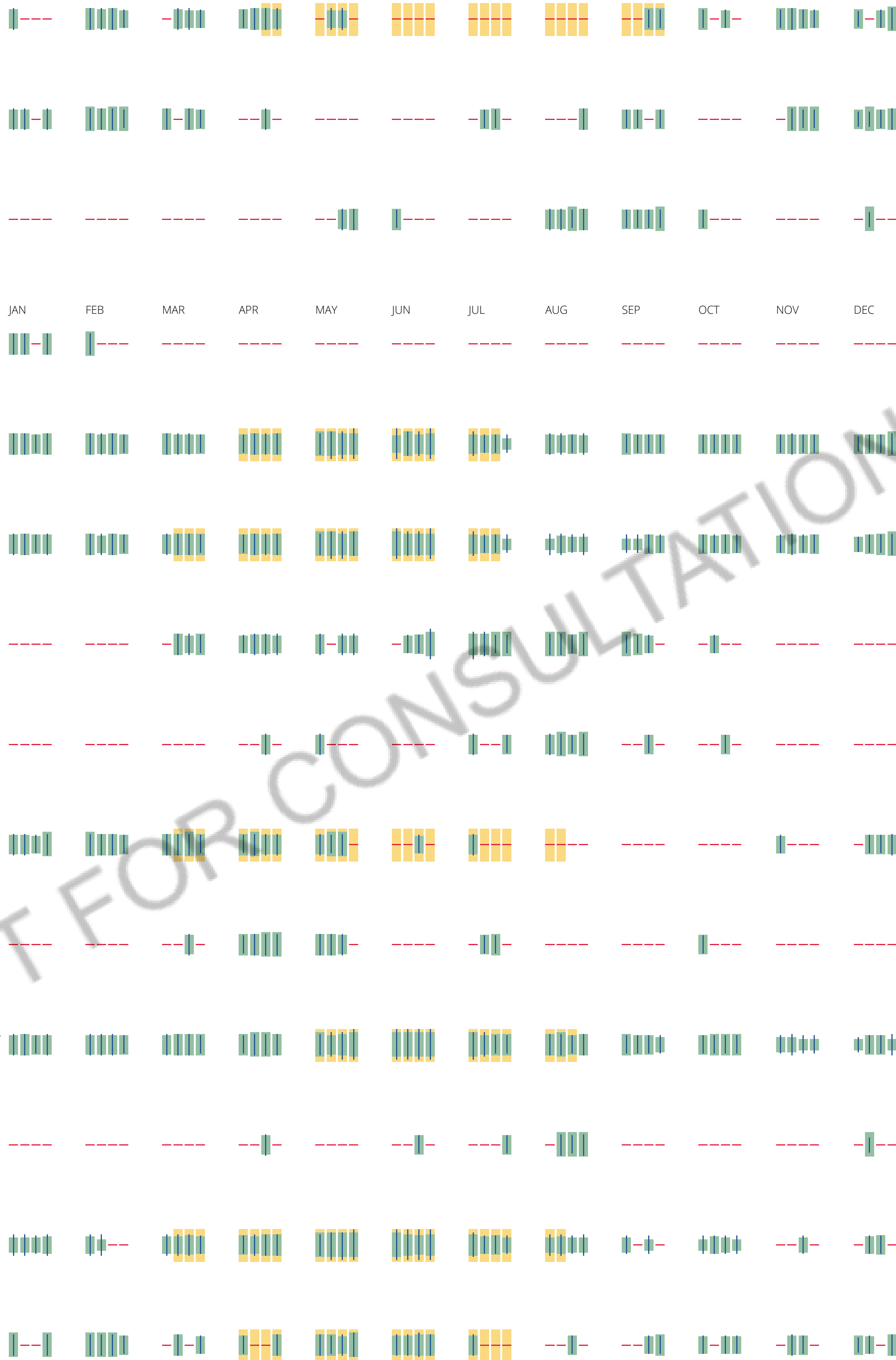
Whimbrel
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

White Headed Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Willet
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wrentit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Yellow-billed Magpie
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the BGEPA should such impacts occur.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

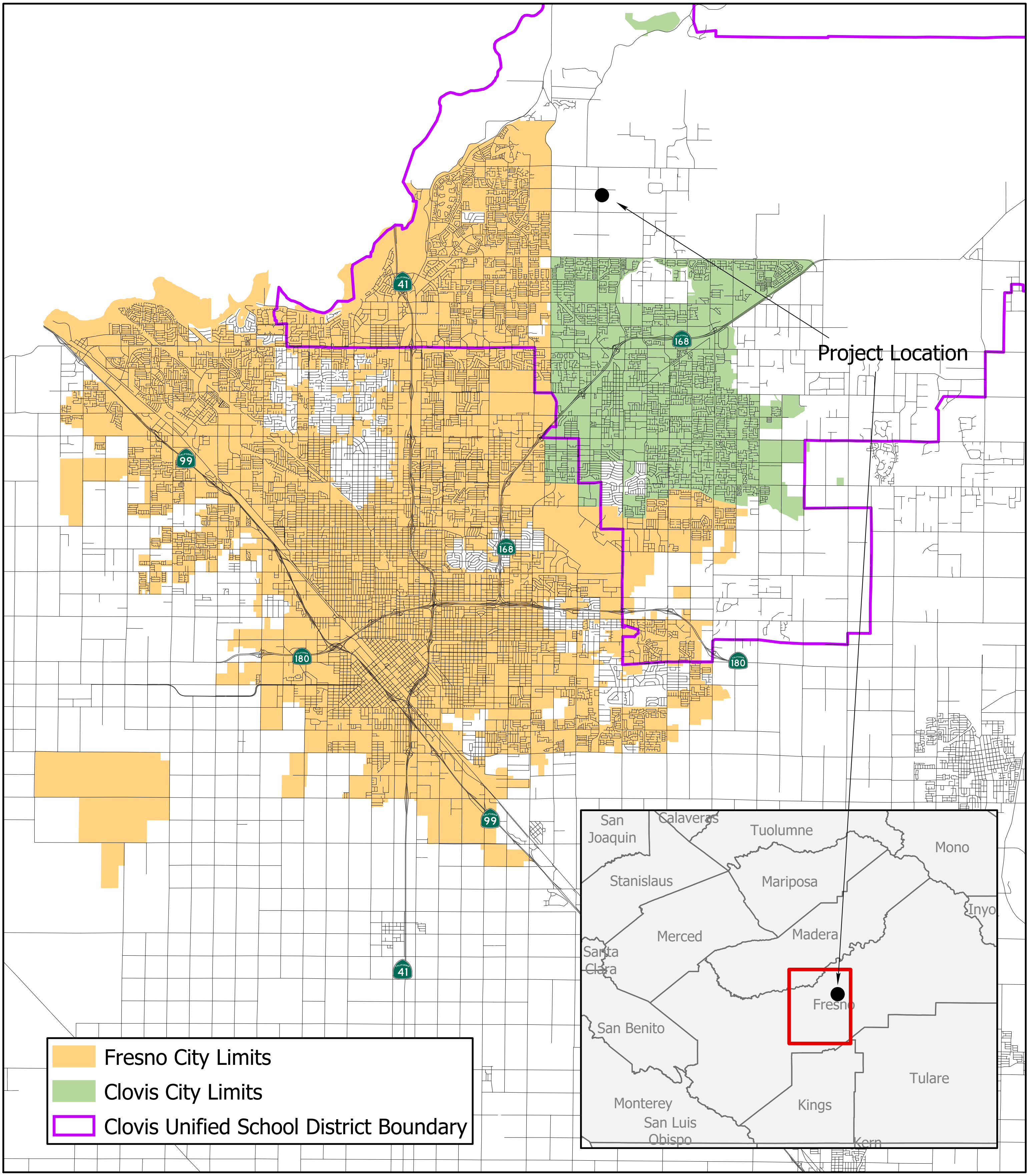
Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



Regional Location

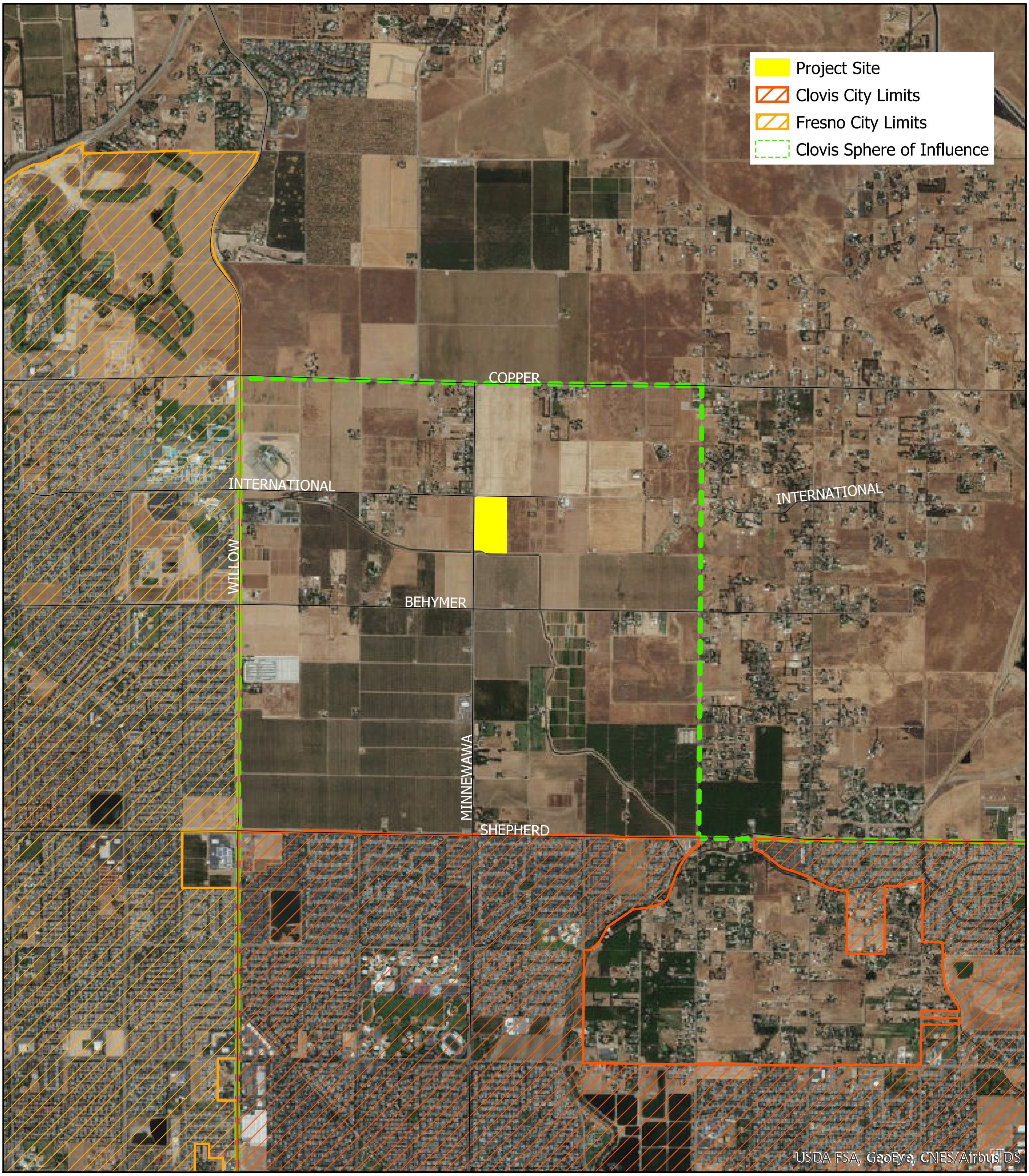
Figure 1

Minnewawa-International Elementary School Project
Clovis Unified School District

ODELL Planning & Research, Inc.
Environmental Planning • School Facility Planning • Demographics

0 2 4 8 Miles

N



Project Location

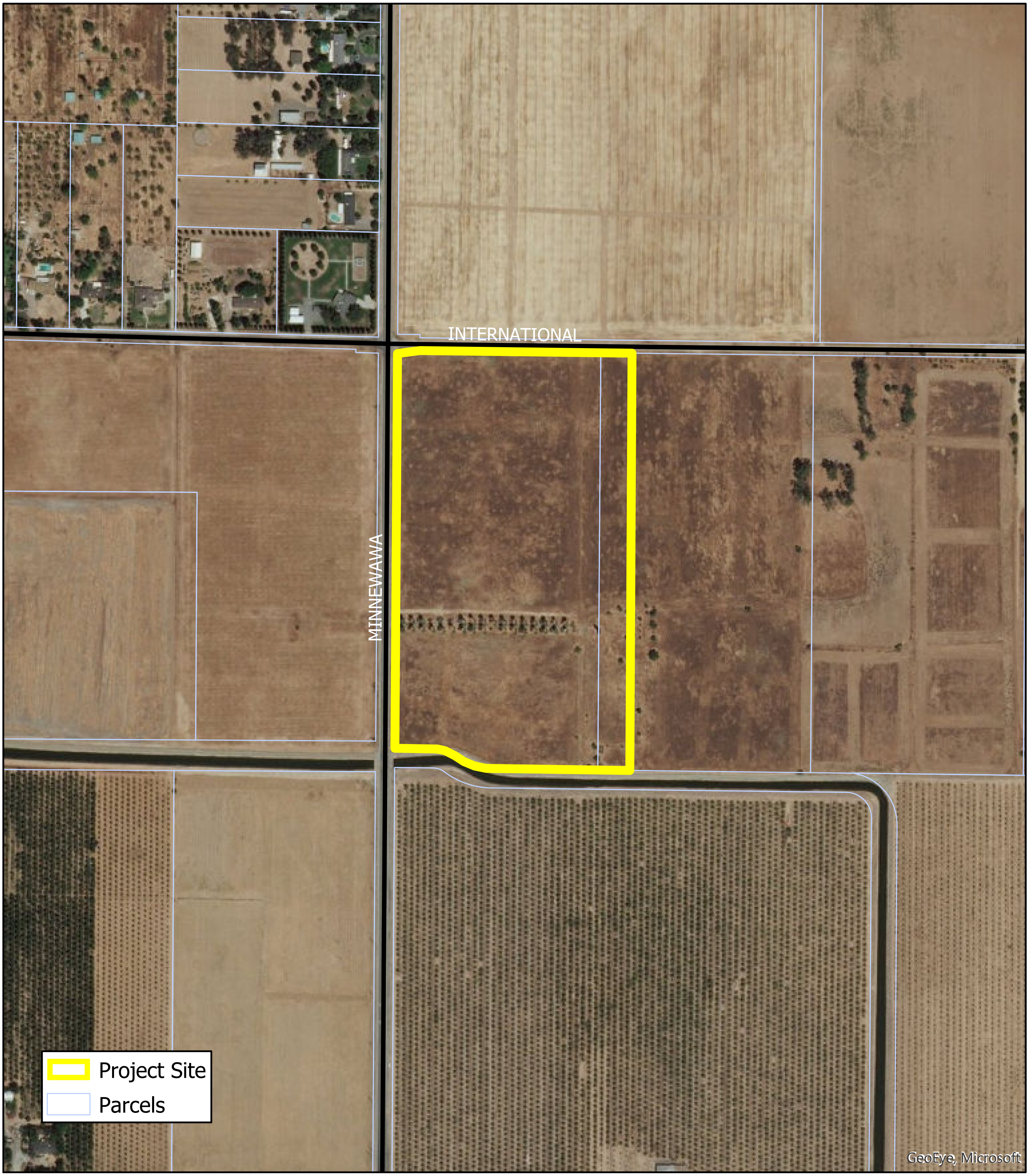
Figure 2

Minnewawa-International Elementary School Project
Clovis Unified School District

ODELL Planning & Research, Inc.
Environmental Planning • School Facility Planning • Demographics

0 0.4 0.8 1.6 Miles

N



Project Site

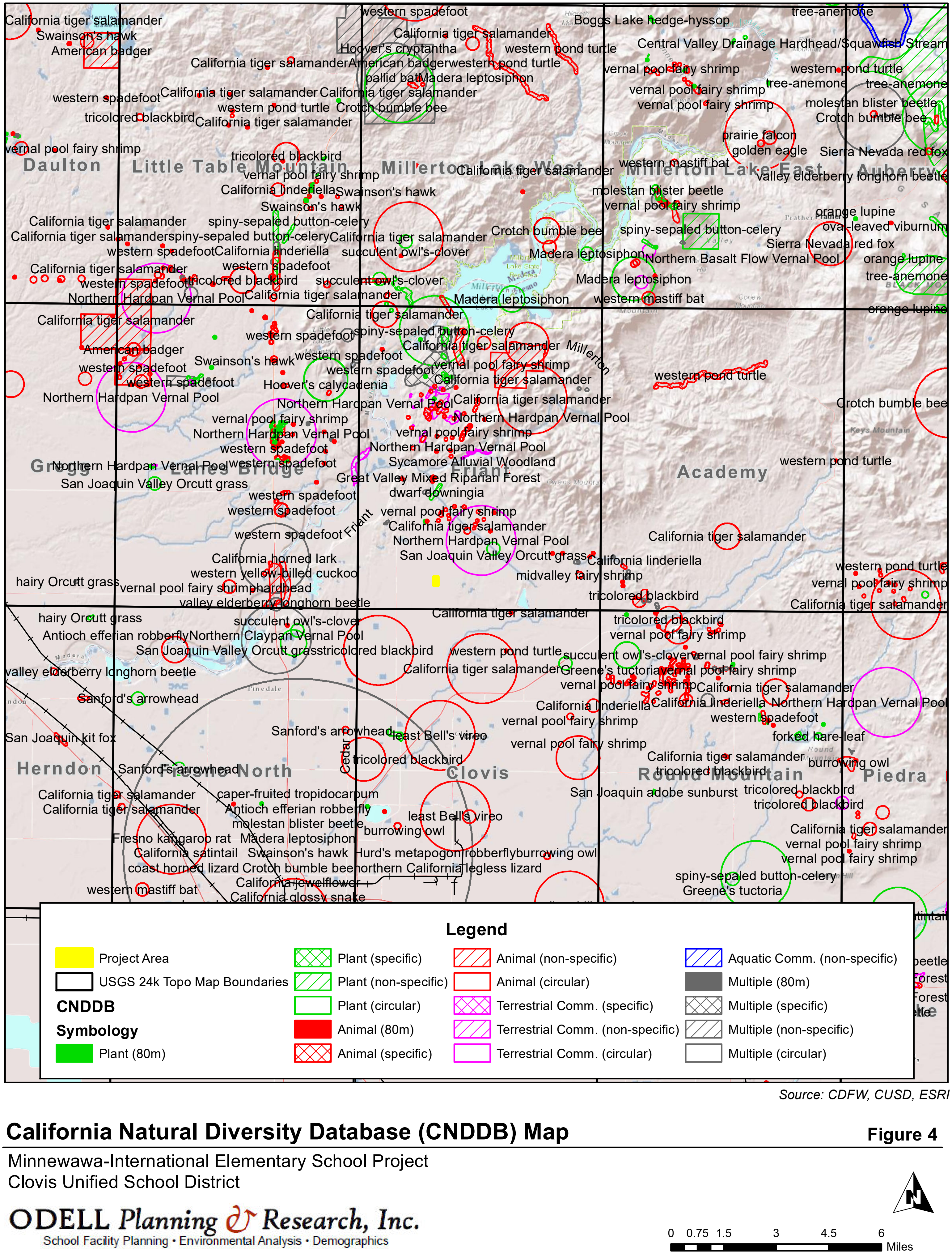
Figure 3

Minnewawa-International Elementary School Project
Clovis Unified School District

ODELL Planning & Research, Inc.
Environmental Planning • School Facility Planning • Demographics

0 0.05 0.1 0.2 Miles

N



Source: CDFW, CUSD, ESRI

California Natural Diversity Database (CNDDB) Map

Figure 4

Minnewawa-International Elementary School Project
Clovis Unified School District

ODELL Planning & Research, Inc.
School Facility Planning • Environmental Analysis • Demographics

Source: USDA Web Soil Survey, County of Fresno, ESRI

Soils Map **Figure 5**

Minnewawa-International Elementary School Project
Clovis Unified School District

ODELL Planning & Research, Inc.

Appendix 3

Cultural Resources Survey

A CULTURAL RESOURCES SURVEY OF A 22.7-ACRE PARCEL LOCATED AT THE SOUTHEAST CORNER OF N. MINNEWAWA AND E. INTERNATIONAL AVENUES, FRESNO COUNTY, CALIFORNIA

Prepared for:

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Prepared by:

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19 September 2018

USGS Topographic Quadrangle: Friants, Calif., 7.5'

Area: 22.7 acres
(Keywords*: Pitkachi/Gashowu Yokuts, Enterprise Canal, Township 12S, Range 21E)*

TABLE OF CONTENTS

SUMMARY OF FINDINGS

On March 23, 2018, a cultural resources survey was performed of a 22.7-acre parcel located at the southeast corner of N. Minnewawa and E. International avenues in unincorporated land in Fresno County, California. The surveyed area, which is depicted on the USGS Friant, Calif., 7.5’ topographic quadrangle map, includes a portion of Section 17, Township 12S, Range 21E, MDB&M (see Maps 1-2).

The Clovis Unified School District is proposing to undertake the Minnewawa-International Elementary School Project. The proposed project includes the acquisition of a 22.7-acre school site and the construction and operation of an elementary school on the site.

ODELL Planning & Research, Inc., is preparing environmental documents necessary under the California Environmental Quality Act (CEQA). Provisions and implementing guidelines of the CEQA, as amended March 18, 2010, state that identification and evaluation of historical resources is required for any action that may result in a potential adverse effect on the significance of such resources, which include archaeological resources.

Four historic-era features and a localized refuse deposit are located within the south-central portion of the 22.7-acre Area of Potential Effect (APE). These features and the refuse deposit appear to be associated with a former ranch/farm home site, which is no longer standing. Features include a palm tree-lined driveway, a concrete well-pad, a cast steel well head and associated concrete irrigation stand pipe, and two concrete irrigation stand pipes. While the palm-lined driveway may have contributing value as part of an historic rural landscape, none of the identified resources appears eligible for listing on the National Register of Historic Places nor the California Register of Historic Resources; therefore no further study is recommended.

No significant or important archaeological or other cultural resources were identified as a result of this study. Therefore, it is unlikely that the proposed action will have an effect on important archaeological, historical, or other cultural resources. No further cultural resources investigation is therefore recommended. In the unlikely event that buried archaeological deposits are encountered within the project area, the finds must be evaluated by a qualified archaeologist. Should human remains be encountered, the County Coroner must be contacted immediately; if the remains are determined to be Native American, then the Native American Heritage Commission must be contacted as well.

INTRODUCTION

This report presents the findings of a pedestrian archaeological survey of a 22.7-acre parcel of land at the southeast corner of N. Minnewawa and E. International avenues in unincorporated land in Fresno County, California. The surveyed area, which is depicted on the USGS Friant, Calif., 7.5' topographic quadrangle map, includes a portion of Section 17, Township 12S, Range 21E, MDB&M (see Maps 1-2).

The Clovis Unified School District is proposing to undertake an elementary school construction project on the parcel. The cultural resources survey was performed at the request of Mr. Scott Odell of ODELL Planning & Research, Inc. ODELL Planning & Research, Inc., is preparing environmental documents necessary under the California Environmental Quality Act (CEQA). Provisions and implementing guidelines of the CEQA, as amended March 18, 2010, state that identification and evaluation of historical resources is required for any action that may result in a potential adverse effect on the significance of such resources, which include archaeological resources.

Sierra Valley Cultural Planning (SVCP) archaeologist Douglas S. McIntosh completed a systematic archaeological survey of the project Area of Potential Effect (APE). This report was completed by SVCP Principal Investigator C. Kristina Roper.

PROJECT LOCATION AND DESCRIPTION

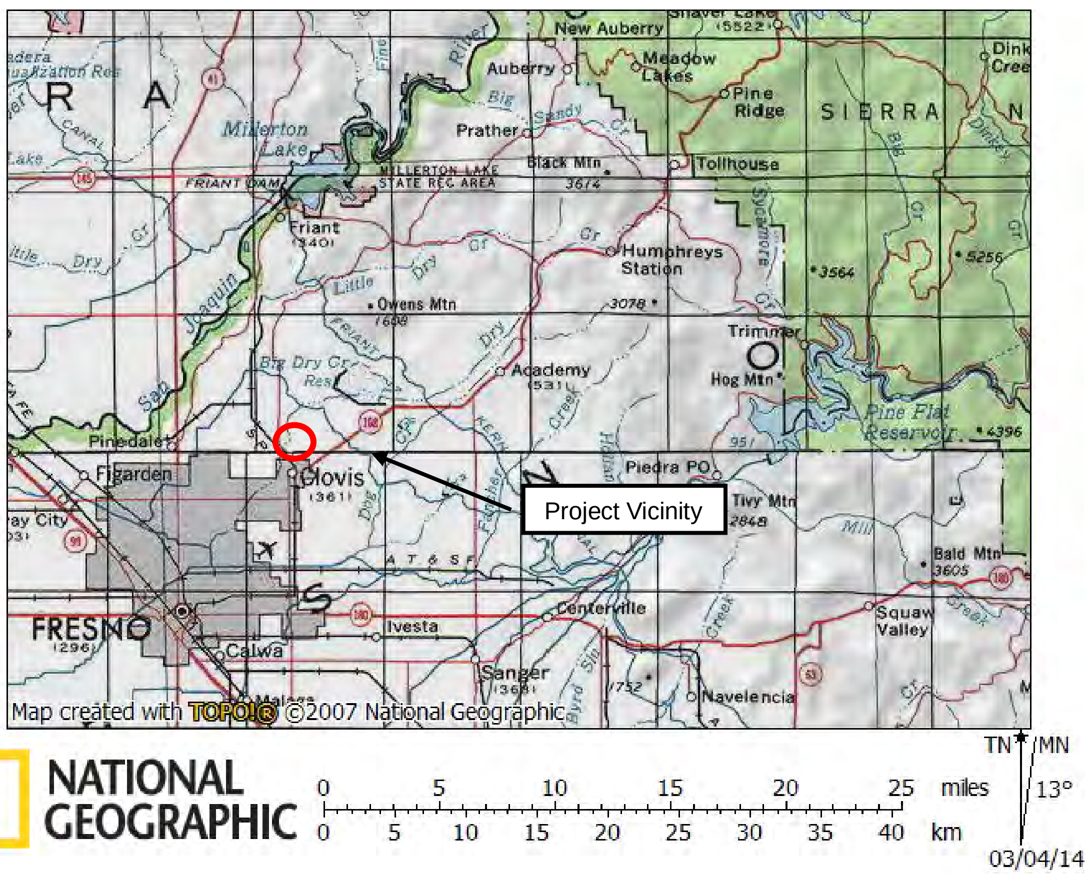
The proposed 22.7-acre elementary school campus is located at the southeast N. Minnewawa and E. International avenues in unincorporated land in Fresno County, California. The surveyed area, which is depicted on the USGS Friant, Calif., 7.5' topographic quadrangle map, includes a portion of Section 17, Township 12S, Range 21E, MDB&M (see Maps 1-2). The elementary school would serve up to 750 students in grades TK-6. The campus would have approximately 28 classrooms, administrative offices, a multi-purpose building, hardcourt areas and athletic fields. The project Area of Potential Effect (APE) includes the entire footprint for the proposed project and is depicted on Map 3.

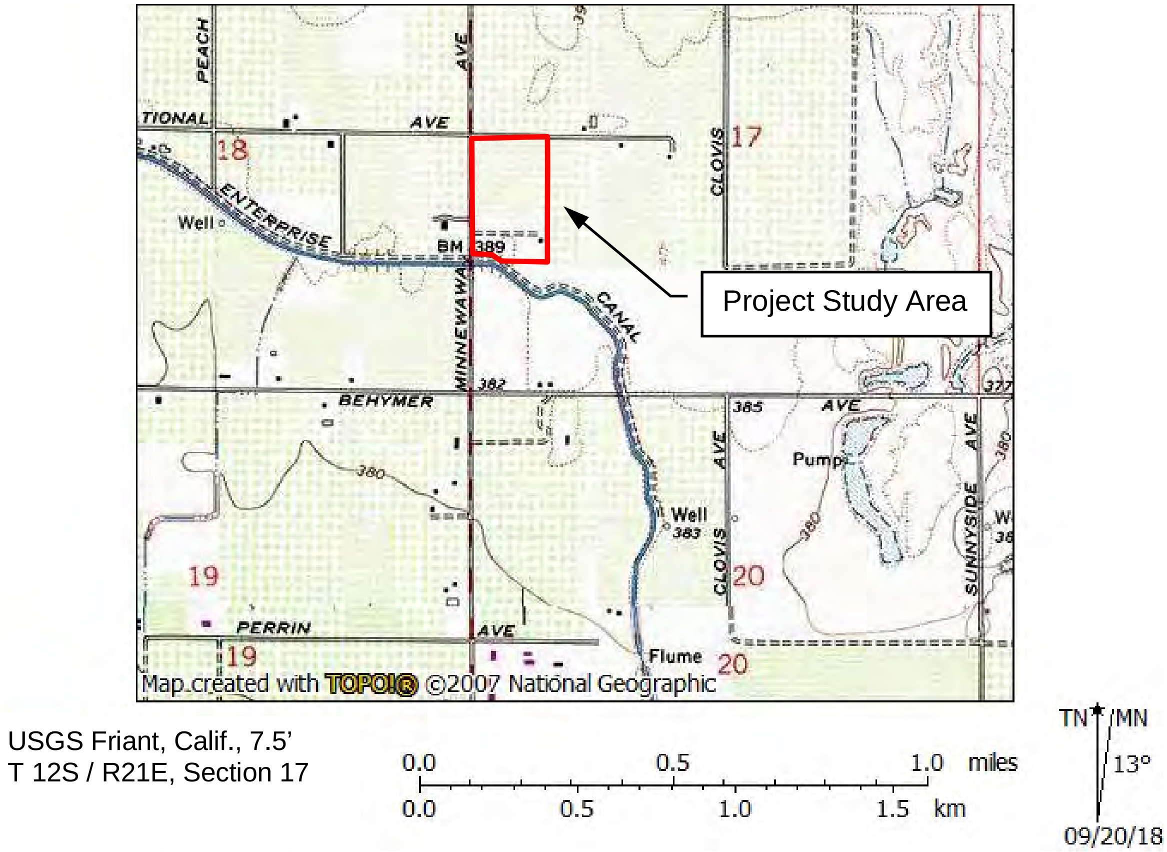
The Project APE is located 1.25 miles north of the Clovis city limits, in unincorporated Fresno County. The general setting is rural residential with large expanses of open agricultural fields surrounding the parcel. Immediately to the south is the Enterprise Canal. Photos 1-6 provide a pictorial overview of the project APE.

N

MAP 1. PROJECT VICINITY

Minnewawa-International Elementary School Project, Fresno County, CA





Map 2. Project Study Area, Minnewawa-International Elementary School Project, Fresno County, California.

REGULATORY FRAMEWORK

California Environmental Quality Act

CEQA requires consideration of project impacts on archaeological or historical sites deemed to be "historical resources." Under CEQA, a substantial adverse change in the significant qualities of a historical resource is considered a significant effect on the environment. For the purposes of CEQA, a "historical resource" is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CR) (Title 14 CCR §15064.5(a)(1)-(3)). Historical resources may include, but are not limited to, "any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC §5020.1(j)).

The eligibility criteria for the CR are the definitive criteria for assessing the significance of historical resources for the purposes of CEQA (Office of Historic Preservation n.d.). Generally, a resource is considered "historically significant" if it meets one or more of the following criteria for listing on the CR:

Map 3. Project Area of Potential Effect (APE).

1) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or
2) is associated with the lives of persons important in our past; or
3) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4) has yielded, or may be likely to yield, information important in prehistory or history (PRC §5024.1[c]).

SOURCES CONSULTED

On 28 March 2018, SVCP archaeologist Douglas S. McIntosh completed an in-house records search at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System to identify areas previously investigated and to identify known cultural resources present within or in close proximity to the Project APE. According to the

Photo 1. View NE from the SW corner of the project area.

Photo 2. View W from the NE corner of the project area.

Photo 3. View N from the center of the project area.

Photo 4. View W along the Enterprise Canal at the southern edge of the project area.

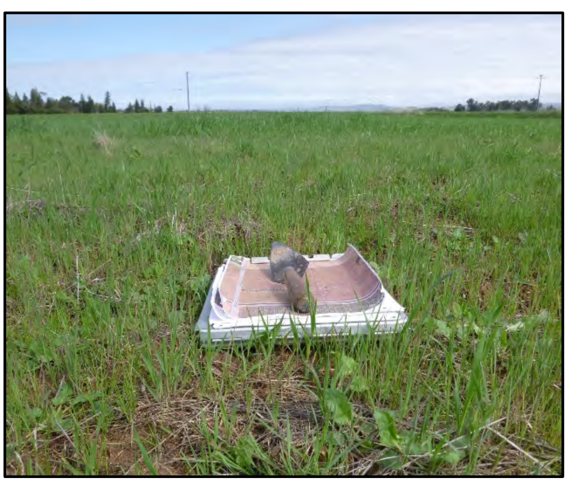


Photo 5. Example of ground visibility within the oat hay field.

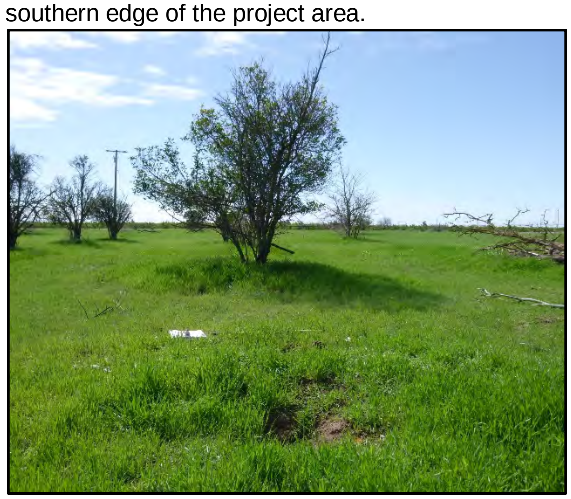


Photo 6. View S of remnant orchard at east end of the project area.

Information Center records, there are no prehistoric or historic-period sites or structures identified within the project APE. There is one recorded resource adjacent to the project area (the Enterprise Canal [P-10-005934]). No other resources are documented within the ½-mile radius.

There have been no previous investigations within the APE; eight (8) investigations have been completed within ½-mile of the APE. No cultural resource sites listed on the National Register of Historic Places, the California Register of Historic Resources, California Points of Historical Interest, State Historic Landmarks, or the California Inventory of Historic Resources have been documented within or immediately adjacent to the project APE. The records search is included as Attachment A

BACKGROUND

The project area is located 1.25 miles north of the Clovis city limits in unincorporated north-central Fresno County, California. The APE is situated on a flat, fairly level parcel immediately north of the Enterprise Canal at an elevation of 389 feet above sea level.

Prior to EuroAmerican exploration and settlement in the region, the central San Joaquin Valley was extensive grassland covered with spring-flowering herbs. Stands of trees -- sycamore, cottonwoods, box elders and willows -- lined the stream and river courses with groves of valley oaks in well-watered localities with rich soil. Rivers yielded fish, mussels, and pond turtles; migratory waterfowl nested in the dense tules along the river sloughs downstream. When the Spanish first set foot in the area, they found the deer and tule elk trails to be so broad and extensive that they first supposed that the area was occupied by cattle. Grizzly bears occupied the open grassland and riparian corridors on the valley floor and adjacent foothills. Smaller mammals and birds, including jackrabbits, ground squirrels, and quail were abundant. Native Americans occupants of the region describe abundant sedge beds, along with rich areas of deer grass, plants that figure prominently in the construction of Native American basketry items.

Prehistoric Period Summary

The San Joaquin Valley and adjacent Sierran foothills and Coast Range have a long and complex cultural history with distinct regional patterns that extend back more than 11,000 years (McGuire 1995). The first generally agreed-upon evidence for the presence of prehistoric peoples in the region is represented by the distinctive basally-thinned and fluted projectile points, found on the margins of extinct lakes in the San Joaquin Valley. These projectiles, often compared to Clovis points, have been found at three localities in the San Joaquin Valley including along the Pleistocene shorelines of former Tulare Lake. Based on evidence from these sites and other well-dated contexts elsewhere, these Paleo-Indian hunters who used these spear points existed during a narrow time range of 11550 cal B.C. to 8550 cal B.C. (Rosenthal et al. 2007).

As a result of climate change at the end of the Pleistocene, a period of extensive deposition occurred throughout the lowlands of central California, burying many older landforms and providing a distinct break between Pleistocene and subsequent occupations during the Holocene. Another period of deposition, also a product of climate change, had similar results around 7550 cal B.C., burying some of the oldest archaeological deposits discovered in California (Rosenthal and Meyer 2004).

The Lower Archaic (8550-5550 cal B.C.) is characterized by an apparent contrast in economies, although it is possible they may be seasonal expressions of the same economy. Archaeological deposits which date to this period on the valley floor frequently include only large stemmed spear points, suggesting an emphasis on large game such as artiodactyls (Wallace 1991). Recent discoveries in the adjacent Sierra Nevada have yielded distinct milling assemblages which clearly indicate a reliance on plant foods. Investigations at Copperopolis (LaJeunesse and Pryor 1996) argue that nut crops were the primary target of seasonal plant exploitation. Assemblages at these foothill sites include dense accumulations of handstones, millingslabs, and various cobble-core tools, representing “frequently visited camps in a seasonally structured settlement system” (Rosenthal et al. 2007:152). During the Lower Archaic, regional interaction spheres were well established. Marine shell from the central California coast has been found in early Holocene contexts in the Great Basin east of the Sierra Nevada, and eastern Sierra obsidian comprises a large percentage of flaked stone debitage and tools recovered from sites on both sides of the Sierra (Rosenthal et al. 2007:152).

About 8,000 years ago, many California cultures shifted the main focus of their subsistence strategies from hunting to nut and seed gathering, as evidenced by the increase in food-grinding implements found in archeological sites dating to this period. This cultural pattern is best known for southern California, where it has been termed the Milling Stone Horizon (Wallace 1954, 1978a), but recent studies suggest that the horizon may be more widespread than originally described and is found throughout the central region during the Middle Archaic Period. Dates associated with this period vary between 9,000 and 2,000 cal BP, although most cluster in the 6,800 to 4,500 cal BP range (Basgall and True 1985).

On the valley floor, early Middle Archaic sites are relatively rare; this changes significantly toward the end of the Middle Archaic. In central California late Middle Archaic settlement focused on river courses on the valley floor. “Extended residential settlement at these sites is indicated by refined and specialized tool assemblages and features, a wide range of nonutilitarian artifacts, abundant trade objects, and plant and animal remains indicative of year-round occupation” (Rosenthal et al. 2007:154). Again, climate change apparently influence this shift, with warmer, drier conditions prevailing throughout California. The shorelines of many lakes, including Tulare Lake, contracted substantially, while at the same time rising sea levels favored the expansion of the San Joaquin/Sacramento Delta region, with newly formed wetlands extending eastward from the San Francisco Bay.

In contrast with rare early Middle Archaic sites on the valley floor, early Middle Archaic sites are relatively common in the Sierran foothills, and their recovered, mainly utilitarian assemblages show relatively little change from the preceding period with a continued emphasis on acorns and pine nuts. Few bone or shell artifacts, beads, or ornaments have been recovered from these localities. Projectile points from this period reflect a high degree of regional morphological variability, with an emphasis on local toolstone material supplemented with a small amount of obsidian from eastern sources. In contrast with the more elaborate mortuary assemblages and extended burial mode documented at Valley sites, burials sites documented at some foothill sites such as CA-FRE-61 on Wahtoke Creek are reminiscent of “re-burial” features reported from Milling Stone Horizon sites in southern California. These re-burials are characterized by re-interment of incomplete skeletons often capped with inverted millingstones (McGuire 1995:57).

A return to colder and wetter conditions marked the Upper Archaic in Central California (550 cal B.C. to cal A.D. 1100). Previously desiccated lakes returned to spill levels and increased freshwater flowed in the San Joaquin and Sacramento watershed. Cultural patterns as reflected in the archeological record, particularly specialized subsistence practices, emerged during this period. The archeological record becomes more complex, as specialized adaptations to locally available resources were developed and valley populations expanded into the lower Sierran foothills. New and specialized technologies expanded and distinct shell bead types occurred across the region. The range of subsistence resources utilized and exchange systems expanded significantly from the previous period. In the Central Valley, archaeological evidence of social stratification and craft specialization is indicated by well-made artifacts such as charmstones and beads, often found as mortuary items.

The period between approximately cal A.D. 1000 and Euro-American contact is referred to as the Emergent Period. The Emergent Period is marked by the introduction of bow and arrow technology which replaced the dart and atlatl at about cal A.D. 1000 and 1300. In the San Joaquin region, villages and small residential sites developed along the many stream courses in the lower foothills and along the river channels and sloughs of the valley floor. A local form of pottery was developed in the southern Sierran foothills along the Kaweah River. Archaeological excavations at habitation sites in Merced and Fresno counties have revealed an artifact assemblage belonging to the Yokuts groups who inhabited the valley floor and adjacent foothills into historic times (Olsen and Payen 1968, 1969; Pritchard 1970).

Ethnographic Summary

Prior to EuroAmerican settlement, most of the San Joaquin Valley and the bordering foothills of the Sierra Nevada and Coastal Range were inhabited by speakers of Yokutsan languages. The southern San Joaquin Valley was home of speakers of Yokutsan languages. The bulk of the Valley Yokuts people lived on the eastern side of the San Joaquin Valley. The project APE falls within the territory of the *Gashowu* Yokuts (Figure 1). The *Gashowu* occupied the area centering on Big Dry Creek. The *Pitkachi*, a Northern Valley Yokuts tribelet, occupied the southern side of the San Joaquin River extending up and down river from the town of Herndon (Latta 1999:161). Population densities were highest in the eastern valley and adjacent Sierra Nevada foothills, with as many as 10+ people per square mile living along a narrow strip bordering the San Joaquin and its tributaries (Baumhoff 1963: map 7). No village or other named sites are identified within one mile radius of the Project APE.

Numerous accounts of Valley Yokuts lifeways offer details of pre-European land use in the San Joaquin Valley. The reader is referred to Gayton (1948), Kroeber (1925), Latta (1999), and Wallace (1978b) for additional information on pre-contact Yokuts subsistence and culture.

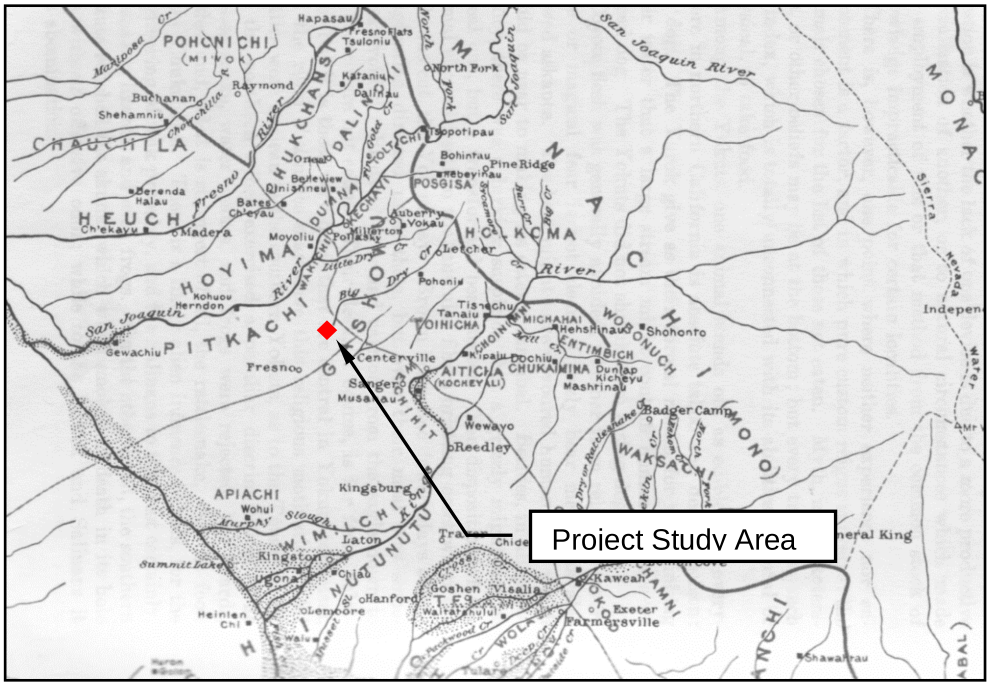


Figure 1. Northern Valley Yokuts Village Locations (from Kroeber 1925: Plate 47).

Historic Period Summary

The San Joaquin Valley was visited in the early 1800s by Spanish expeditions exploring the interior in search of potential mission sites. The Moraga (1806) expedition may have passed through *Pitkachi* territory (Cook 1960). In 1832-33 Colonel Jose J. Warner, a member of the Ewing-Young trapping expedition, passed through the San Joaquin Valley. Warner described Native villages densely packed along the valley waterways, from the foothills down into the slough area. The next year he revisited the area following a devastating malaria epidemic. Whereas the previous year the region had been densely occupied by Native peoples, during this trip not more than five Indians were observed between the head of the Sacramento Valley and the Kings River (Cook 1955).

EuroAmerican settlement of the region began in 1851 with the establishment of Fort Miller on the San Joaquin River. Hostilities between Native inhabitants and American settlers initially prevented widespread settlement of the region; however, by 1860 such threats had been reduced and settlers began taking up large tracts in the region.

The earliest economic development of the area focused on cattle. Miller and Lux, the cattle kings, claimed ownership to extensive holdings in Fresno and adjacent counties. Early settlers of the local region grazed sheep in pastures in the Big Dry Creek area. Agriculture, particularly dry-land winter wheat cultivation, gained importance following passage of the “No Fence” law of 1874 (Clough 1996:29). Expansion of agriculture as an economic focus did not occur until after introduction of irrigation into the region.

As more settlers arrived in the Big Dry Creek area, school districts were established around related clusters of farms. Gordon Station was a stop on the Southern Pacific Railroad located approximately three miles northwest of the study area. In 1894, a post office was chartered at the station as Garfield. Most of the original settlers in the study area raised grain and livestock. With the expansion of irrigation in the area, larger farms were subdivided into smaller farms for irrigated crops. Vineyards and fig and peach orchards were planted (Nettles and Baloian 2006).

The success of irrigation projects along the Kings River to the south spurred development of irrigation projects to the north and northeast of Fresno.

> *The Kings River and Fresno Canal system was begun in 1872, shortly after the first leg of the Fresno Canal was completed. Investors in this system sought to irrigate land north of the Fresno Canal system, diverting through the Gould and Enterprise Canals. During the mid-1870s, this company fell under the ownership of Dr. E. B. Perrin, a major figure in land development in nineteenth century Fresno County. By the late 1870s, however, the company lost access to much of its water in an adverse court battle with the Fresno Canal and Irrigation Company (the Fresno Canal) which then bought Perrin's company. These canals are now part of the Fresno Irrigation District and Consolidated Irrigation District. Conveyance systems like these were incredibly costly, and only a few early investor-speculators had the capital to fund them* [JRP Historical Consulting Services and California Department of Transportation 2000:20].

An 1896 report of the State Mineralogist describes the Enterprise Canal as 30 miles in length, with a width of 25 ft at the top elevation and 15 ft at the bottom, with a depth of 2.5 ft. It diverts water from the Kings River with a capacity of 100 cubic ft per second (Crawford 1896).

The area continued to develop and agricultural entities became commercialized with the advent of corporations, although small independent farmers still controlled many parcels. Japanese farmers purchased land in the region. A 1913 parcel map of the area shows the study area under the ownership of Awaya Bros. & Co., Inc. (Progressive Map Service 1913)

METHODS AND FINDINGS

On 23 March 2018, SVCP archaeologist Douglas S. McIntosh, under the direction of C. Kristina Roper, conducted a systematic archaeological pedestrian survey of the 22.7-acre project APE. The project APE is located at the southeast corner of N. Minnewawa and E. International avenues in Fresno County, California. The property is bounded to the north, east and west by open agricultural fields. To the south of the APE is the Enterprise Canal, followed by a stone fruit orchard. An east-west trending palm tree-lined driveway bisects the southern third of the parcel. A remnant orchard and cluster of uncared for trees are located just east of the eastern end of the palm lined driveway. A majority of the 22.7 acre is planted in an oat hay crop. The project area is open and relatively level, with an average elevation of 371 feet above sea level.

The survey sought to identify any archaeological sites, features, and artifacts which might be present on the ground surface. Items such as chipped stone tools, grinding implements, hearths, and midden deposits are indicators of prehistoric activities. In addition, the survey also sought to identify any historic structures, features, and artifacts over fifty years old. The pedestrian survey entailed walking systematic east to west transects across the entire site. These transects were spaced 10 to 12 meters apart. A Panasonic DMC-TS20 digital camera was used to photo-document the project setting and any cultural resources. All photo information was recorded in the field on a photo-log. A hand held Magellan GPS unit was used to collect and record UTM points.

Ground surface visibility across the 22.7-acre parcel ranged from fair to good, 30 to 60 percent. A majority of the surface area of the parcel is planted in an oat hay crop, which was 4 to 8 inches tall at the time of this pedestrian survey. It was evident that nearly all of the parcel had been repeatedly mechanically disked. A localized area within the southeastern portion of the site contains imported gravels, chunks of asphalt, and fragments of concrete and demolition debris.

Native soils within the APE include soil types included within the Ramona sandy loam component. These soils are well-drained loams formed on stream terraces during the older Pleistocene (>25,000 BP). Soil structures is well-developed with strong A-C horizons. Project soils are a fine grain silty sandy clay loam. Inspected soils have a general Munsell color value of 10yr 4/4, dark yellowish brown (wet).

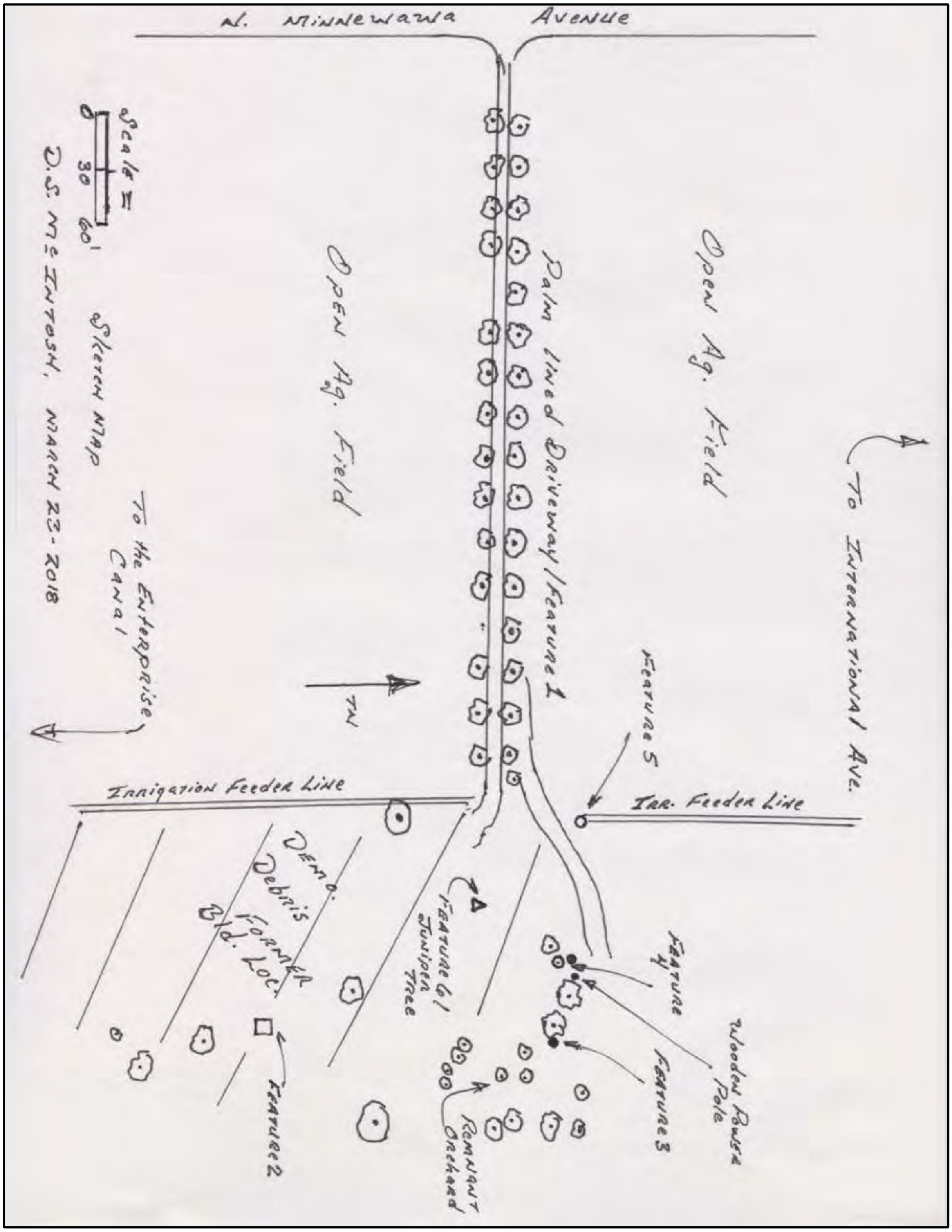
Summary of Findings

The cultural resources survey documented several historic-era features and a localized refuse deposit (see Map 4 and Photos 7-12). These features and the artifact deposit appear to be associated with a former ranch/farm home site, which is no longer standing. A review of the USGS "Friant" Quad map, 1919 edition (updated 1922), revealed a driveway extending east from N. Minnewawa Avenue with a structure at the east end of the drive. An inspection of the 1942 Fresno County aerial survey image clearly shows a tree-lined driveway, with structures, planted trees and an orchard at the eastern end of the drive. Also noted on both of these sources is the Enterprise Canal, which bounds the project area to the south. Planted trees, a remnant of a fruit orchard, a concrete well pad, and irrigation feature remain from this ranch/farm home site.

<u>Feature 1, Driveway</u>. The drive extends east from N. Minnewawa Avenue approximately 0.10 mile, toward the former ranch/farm home site. The driveway has a weathered asphalt surface, which is partially overgrown. The north and south edges of the driveway are lined by tall 30+/- stately "Washingtonia" species palm trees. In addition there is evidence of modern dumping episodes along the driveway. A tall, stately Juniper tree (site datum) is located approximately 20 meters east of the east end of the palm lined driveway. This juniper tree is visible on a 1942 aerial photo.

<u>Feature 2, Well Pad</u>. Southeast of the eastern end of the driveway is an irregularly shaped concrete pad. The pad measures 9 ½' north/south by 6' 4"wide at the north end, 8' 3" wide at the south end and 7" thick. At the northern end of the pad there appears to be a capped well casing, inscribed initials and a date: "L C U 8/1955".

<u>Feature 3, Refuse Depos</u>it. At the northern end of the former ranch/farm home site is a small historic refuse deposit. This localized deposit measures 2 meters north/south by 3 meters east/west. Noted items include bottle glass (aqua, uncolored-clear, sun colored amethyst, milk glass), glass canning jar seals, crockery, whiteware and porcelain shards, Japanese porcelain and stoneware shards, rusted meat can fragments, and butchered animal bones. It is estimated that there are at least 50+ items visible on the surface at this location. It appears that there are



Map 4. Sketch map of the project area showing historic-era feature locations.

Photo 1. Well pad (Features 2)

Photo 2. Palm-lined driveway (Feature 1), facing W.

Photo 3. Well head and stand pipe (Feature 4), facing NW.

Photo 4. Concrete irrigation stand pipes (Feature 5), facing N.

Photo 5. Sample of artifacts from refuse scatter (Feature 3).

Photo 6. Large Juniper tree at east end of driveway, facing W.

some artifacts located just below the surface and within soils that have been churned by rodent borrowing activities. Artifacts from this deposit appear to have a date range of circa 1915 to the late 1920s/early1930s.

Feature 4, Wellhead and Concrete Standpipe. Located 20 meters east of the refuse deposit, along the northern edge of the former ranch/farm home site is a cast steel well head and associated concrete irrigation stand pipe. The south side of the steel well head has raised lettering “V. PISTACCHIO/SALES & SERVICE/SANGER CAL”. The electric motor at the top of the well head has been removed. The concrete well pad measures 34” north/south by 36” east/west by 10” thick. The associated concrete irrigation stand pipe has an above ground height of 8’. An above-ground steel pipe supplied ground water from the well to the top of the standpipe.

Feature 5, Two Irrigations Stand Pipes. Located approximately 13 meters north of the east end of the driveway, along the edge of cultivated agricultural field are two concrete irrigation stand pipes. These two stand pipes are part of an irrigation delivery system that supplied water to lateral feeder lines that extended north to International Avenue and south the northern edge of the Enterprise Canal. The stand pipes stand 5 ½’ and 6’ above ground surface.

A modern, realigned section of the Enterprise Canal located immediately south of the APE, was photographed. Bridge # 42 C0246, constructed in 1976, carries Minnewawa Avenue across the canal. The bridge has been previously assessed as not eligible for listing for the National Register of Historic Places.

Conclusion

Four historic-era features and a localized refuse deposit are located within the south-central portion of the 22.7-acre APE. These features and the refuse deposit appear to be associated with a former ranch/farm home site, which is no longer standing. The remnant irrigation features and refuse scatter do not meet the criteria for listing on the California Register of Historic Resources; they also lack integrity of association. The palm-lined driveway similarly lacks integrity of association and feeling. None of the identified resources appears eligible for listing on the California Register of Historic Resources; therefore no further study is recommended.

Soils within the project area show a well-developed structure and date to the older Pleistocene epoch (>25,000 B.P.), thus there is a low sensitivity for buried cultural deposits (Meyer et al. 2010).

No significant or important archaeological or other cultural resources were identified as a result of this study. Therefore, it is unlikely that the proposed action will have an effect on important archaeological, historical, or other cultural resources. No further cultural resources investigation is therefore recommended. In the unlikely event that buried archaeological deposits are encountered within the project area, the finds must be evaluated by a qualified archaeologist. Should human remains be encountered, the County Coroner must be contacted immediately; if the remains are determined to be Native American, then the Native American Heritage Commission must be contacted as well.

REFERENCES CITED

Basgall, M. E. and D. L. True.
1985 Archaeological Investigations in Crowder Canyon, 1973-1984: Excavations at Sites SBR-421B, SBR-421C, SBR-421D, and SBR-713. Report on file, Caltrans, Sacramento, CA.

Baumhoff, M. A.
1963 *Ecological Determinants of Aboriginal California Populations*. University of California Publications in American Archaeology and Ethnology 49(2). Berkeley, CA.

Clough, Charles W.
1996 Madera. Madera County Historical Society, Panama West Books, Fresno, CA. On file, Fresno County History Room, Fresno County Library, Fresno, CA.

Cook, Sherburne F.
1955 *The* Aboriginal Population of the San Joaquin Valley, California*. University of California Anthropological Records 16(2):31-80.* Berkeley, CA.

1960 Colonial Expeditions to the Interior of California: Central Valley, 1800-1820. *University of California Anthropological Records 16(6):239-292*. Berkeley, CA.

Crawford, J. J.
1896 Thirteenth Report (Third Biennial) of the State Mineralogist for the Two Years Ending September 15, 1896. California State Mining Bureau, Sacramento, CA.

Gayton, A. H.
1948 *Yokuts and Western Mono Ethnography I: Tulare Lake, Southern Valley, and Central Foothill Yokuts.* University of California Anthropological Records 10(1). Berkeley, CA.

JRP Historical Consulting Services and the California Department of Transportation
2000 *Water Conveyance Systems in California*. California Department of Transportation, Environmental Program/Cultural Studies Office, Sacramento, CA.

Kroeber, A. L.
1925 *Handbook of the Indians of California* (1976 Dover Edition). Bureau of American Ethnology Bulletin 76, Smithsonian Institution, Washington D.C.

LaJeunesse, Roger M., and John M. Pryor
1996 *Skyrocket Appendices*. Report on file, Department of Anthropology, California State University, Fresno, CA..

Latta, Frank F.
1999 *Handbook of Yokuts Indians*. Brewer's Historical Press, Exeter, CA / Coyote Press, Salinas, CA.

McGuire, Kelly R.
1995 Test Excavations at CA-FRE-61, Fresno County, California. Occasional Papers in Anthropology 5. Museum of Anthropology, California State University Bakersfield, CA.

Meyer, Jack, D, Craig Young, and Jeffrey S. Rosenthal

2010 A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9, Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways (Volumes I and 2). Far Western Anthropological Research Group, Inc. Davis, CA.

Nettles, Wendy M., and Randy Baloian

2006 Cultural Resources Reconnaissance Survey of the City of Clovis Northwest Urban Center Specific Plan Area, Fresno County, California. Applied EarthWorks, Inc., Fresno, CA. Prepared for the City of Clovis Planning Division, Clovis, CA. Report on file, SSJVIC No. FR-2289.

Olsen, William H., and Louis A. Payen

1968 *Archaeology of the Little Panoche Reservoir, Fresno County, Californi*a. California State Department of Parks and Recreation, Archaeological Resources Section Report 11. Sacramento, CA..

1969 *Archaeology of the Grayson Site, Merced County, California.* California State Department of Parks and Recreation, Archaeological Resources Section Report 12. Sacramento, CA.

Phillips, G. H.

1993 *Indians and Intruders in Central California, 1769-1849*. University of Oklahoma Press, Norman, OK..

Pritchard, William E.

1970 *Archeology of the Menjoulet Site, Merced County, California*. California State Department of Parks and Recreation, Archaeological Resources Section Report 13. Sacramento, CA.

Progressive Map Service

1913 *Progressive Atlas of Fresno County*. Progressive Map Service, Fresno, California.

Rehart, Katherine Morrison

1997 *The Valley's Legends and Legacies II.* Word Dancer Press, Clovis, CA.

Rosenthal, Jeffrey S., and Jack Meyer

2004 *Landscape Evolution and the Archaeological Record: A Geoarchaeological Study of the Southern Santa Clara Valley and Surrounding Region*. Center for Archaeological Research at Davis, Publication No. 14, University of California, Davis, CA.

Rosenthal, Jeffrey S., Gregory G. White and Mark Q. Sutton

2007 The Central Valley: A View from the Catbird's Seat. In *California Prehistory: Colonization, Culture, and Complexity*, pp. 147-164, edited by Terry L. Jones and Kathryn A. Klar. Alta Mira Press, New York, NY.

Wallace, William J.

1954 The Little Sycamore Site and the Early Milling Stone Cultures of Southern California. *American Antiquity* 20(2):112-123.

1978a Post-Pleistocene Archeology, 9000 to 2000 B.C. In Handbook of North American Indians, vol. 8, *California*, edited by R. F. Heizer, pp. 25-36. Smithsonian Institution, Washington, D.C.

1978b Northern Valley Yokuts. In Handbook of North American Indians, vol. 8, *California*, edited by R. F. Heizer, pp. 448-461. Smithsonian Institution, Washington, D.C.

1991 Tulare Lake's Archaeological Past. In *Background to a Study of Tulare Lake's Archaeological Past*, pp. 23-33. Contributions to Tulare Lake Archaeology 1.

PREPARER'S QUALIFICATIONS

Douglas S. McIntosh completed the archaeological survey of the Project APE. Mr. McIntosh has over 25 years of experience in California archaeology and has served as field crew chief and lead field assistant for both historical and prehistoric resource investigations, including tasks of surveying, field mapping, excavation, field graphics, soils descriptions, photography, and general site documentation. He has served as an archaeological monitor for various aspects of earthmoving and grading activities for cultural resources, and as Laboratory assistant for both historical and prehistoric resources which includes processing soil samples, cleaning and cataloging historical and prehistoric artifacts and collections, and artifact illustration. Mr. McIntosh has conducted historical research which involves records, maps and archival searches, oral interviews, and documentation of historical photographic collections.

C. Kristina Roper meets the Secretary of the Interior's Guidelines for archaeology. Ms. Roper has a B.A. in Anthropology from the University of California, Berkeley, and a M.A. in Cultural Resources Management from Sonoma State University. She has over 34 years of archaeological survey and excavation experience, including both prehistoric and historic sites, in California, Nevada, Oregon, and Idaho, and has produced over 250 professional reports. For the past 16 years Ms. Roper has served as a Lecturer in Anthropology at California State University, Fresno. Courses taught include World Prehistory, Introduction to Archaeology, Bio-Behavioral Evolution of the Human Species, Historical Archaeology, Critical Thinking, Food and Culture, Applied Anthropology, and Cultural Resources Management. Ms. Roper is a Registered Professional Archaeologist in good standing. As sole proprietor of a cultural resources management firm established in 1995, her responsibilities include all aspects of project management, from marketing and development, to project completion, and include NEPA, CEQA, and NHPA (Section 106) compliance.

Attachment A

Records Search # 18-144

In-House Records Search #18-144

March 28, 2018

Resources within APE: 0

Resources adjacent / within ½-mile radius of APE: 1

- P-10-005934 (Enterprise Canal)

Reports within APE: 0

Reports adjacent / within ½-mile radius of APE: 8

- FR-74
- FR-492
- FR-493
- FR-2203 (eight separate parcels)
- FR-2251
- FR-2289
- FR-2295
- FR-2698

Report List

Baker, Suzanne

1978 Archaeological Reconnaissance of the Shepherd 230 kV Substation and Transmission Line. Archaeological Consultants, San Francisco, CA. Submitted to Pacific Gas & Electric Co., San Francisco, CA. Report on file, SSJVIC No. FR-74.

Kus, James S.

1992 Negative Archaeological Survey Report. Fresno Metropolitan Flood Control District Basin "DM." Report on file, SSJVIC No. FR-492.

Varner, Dudley M.

2006 A Cultural Resource Study of the Battlin Brooks Property, Fresno County, California. Varner Associates, Fresno, CA. Submitted to Battlin Brooks, L.P., Fresno, CA. Report on file, SSJVIC No. FR-2203.

Bonner, Wayne

2005 Cultural Resource Records Search and Site Visit Results for Cingular Telecommunications Facility Candidate FS-511-04 (Copper/Minnewawa), 3497 East International, Clovis, Fresno County, California. Michael Brandman Associates, Sacramento, CA. Submitted to the Alaris Group, San Francisco, CA. Report on file, SSJVIC No. FR-2251.

Nettles, Wendy M., and Randy Baloian

2006 Cultural Resources Reconnaissance Survey of the City of Clovis Northwest Urban Center Specific Plan Area, Fresno County, California. Applied EarthWorks, Inc., Fresno, CA. Prepared for the City of Clovis Planning Division, Clovis, CA. Report on file, SSJVIC No. FR-2289.

Billat, Lorna

2007 New Tower ("NT") Submission Packet, FCC Form 620, Project Name: Clovis, Project Number CA-006. EarthTouch, Inc., Layton, UT. Report on file, SSJVIC No. FR-2295.

Tibbett, Josh

2015 Archaeological Survey for Auberry Road and Copper Avenue Traffic Signal Project, Fresno County, California. Applied EarthWorks, Inc., Fresno, CA. Prepared for the Fresno County Department of Public Works and Planning, Fresno, CA. Report on file, SSJVIC No. FR-2698.

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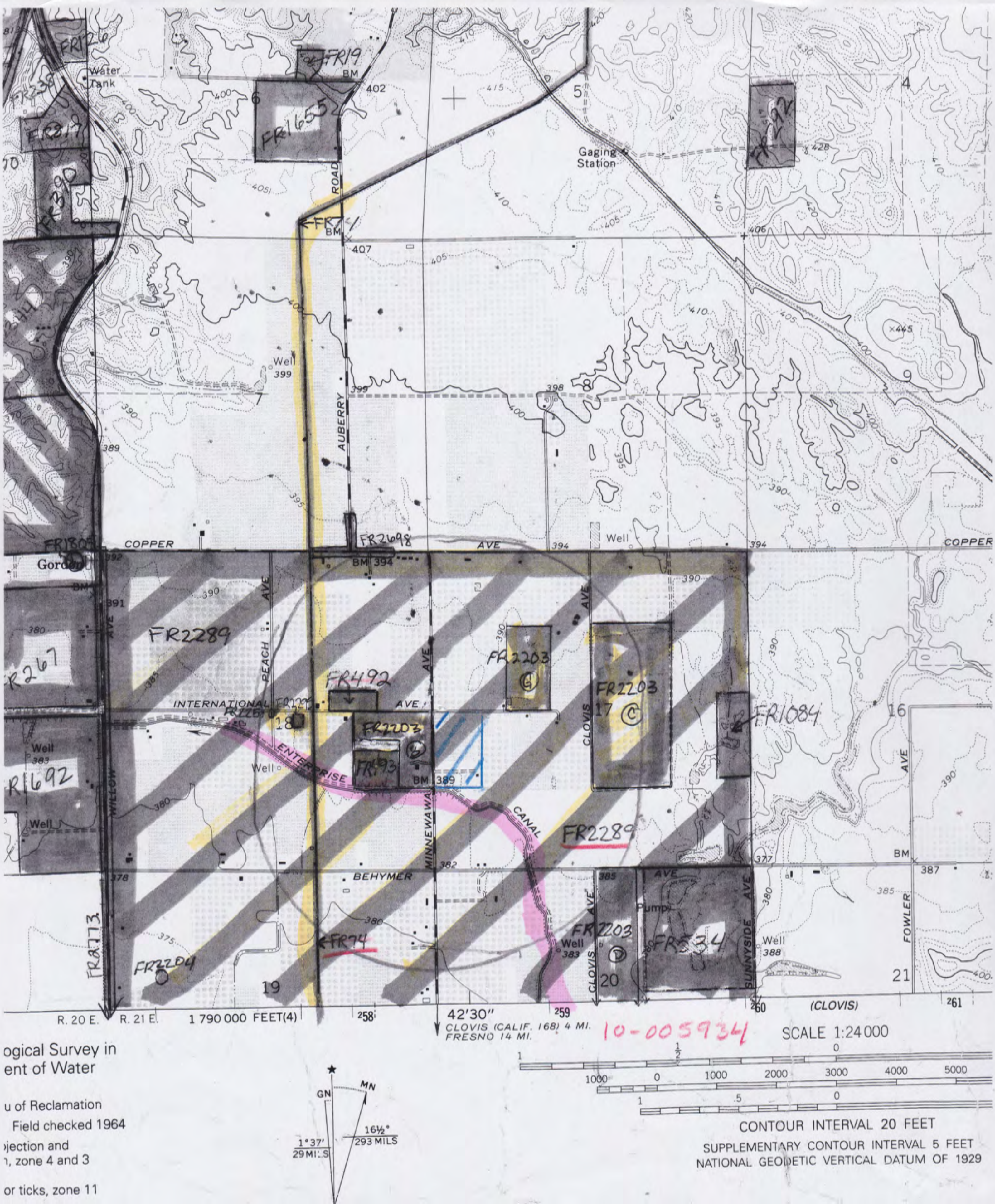
USGS Friant, CA 7.5', Township 12S / Range 21E, Section 17



Appendix 4

Geologic and Environmental Hazards Report

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

GEOLOGIC AND ENVIRONMENTAL HAZARDS REVIEW (TITLE V)
NEW ELEMENTARY SCHOOL SITE
NORTH MINNEWAWA AVENUE AND EAST INTERNATIONAL AVENUE
CLOVIS, FRESNO COUNTY, CALIFORNIA

Prepared for:

CLOVIS UNIFIED SCHOOL DISTRICT

JUNE 2018

padre
associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

June 8, 2018
Project No. 1801-1671

Mr. Kevin Peterson
Assistant Superintendent, Facilities Services
Clovis Unified School District
1450 Herndon Avenue
Clovis, California 93611

Subject: Geologic and Environmental Hazards Review (Title V) for a New Elementary School Site, North Minnewawa Avenue and East International Avenue, Clovis, Fresno County, California

Dear Mr. Peterson:

Padre Associates, Inc. (Padre), on behalf of Clovis Unified School District, has prepared this geologic and environmental hazards (Title V) review for a proposed new elementary school site located at the southeast intersection of North Minnewawa Avenue and East International Avenue in Clovis, Fresno County, California (Project Site).

This document has been prepared in general accordance with California Education Code §17212, California Geological Survey Note 48 and Special Publication 117, and California Code of Regulations, Title V, §14010 et seq.

The report summarizes the data that was collected and reviewed for the subject study at the Project Site. Please contact the undersigned at (916) 333-5920 if you have any questions or require additional information.

Sincerely,
PADRE ASSOCIATES, INC.

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TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLES

PLATES

APPENDICES

INTRODUCTION

This geologic and environmental hazards report has been prepared by Padre Associates, Inc. (Padre), on behalf of the Clovis Unified School District (District), for a new elementary school site located at the southeast intersection of North Minnewawa Avenue and East International Avenue in Clovis, Fresno County, California (Project Site). Refer to **Plate 1 - Site Location** and **Plate 2 - Site Map**.

This document has been prepared in general accordance with California Education Code §17212, California Geological Survey Note 48 and Special Publication 117, and California Code of Regulations, Title V, §14010 et seq.

PROJECT LOCATION

The Project Site is located in Section 17, Township 12 South, Range 21 East, of the Friant, California USGS 7½-Minute topographic series, Quadrangle Map (1964). Approximate latitude and longitude of the central area of the Project Site are identified to be:

- Latitude (North) 36° 53’ 12.04” (36.8867)
- Longitude (West) -119° 42’ 36.10” (-119.7100)

The Project Site is rectangular-shaped and consists of approximately 22.7 acres of agricultural land. The County of Fresno Assessor’s Office identifies the Project Site to include Assessor’s Parcel Number (APN) 580-080-16S (19.68 acres) and a portion (approx. 3 acres) of APN 580-080-02S (19.7 acres). Additionally, APN 580-080-02S is identified by the physical address of 10292 North Minnewawa Avenue. A copy of the assessor’s parcel map is presented in **Appendix A**

SITE CONDITIONS

Site Usage

The Project Site consists of approximately 22.7 acres that has historically been utilized as agricultural land. At the time of Padre’s site reconnaissance, the agricultural fields appeared to consist of wheat and were not actively being farmed. Several concrete irrigation pipes were observed throughout the Project Site. A former palm tree-lined driveway was observed running west-east from Minnewawa Avenue and leading to a former residence (removed) that was located east and adjacent to the Project Site. Additionally, the remnants of two water wells were observed east and adjacent to the Project Site. Photographs of the Project Site are presented in **Appendix B**.

The Project Site is bordered to the north by East International Avenue, beyond which is agricultural land; to the east by agricultural land and rural residences; to the south by the

Enterprise Canal, beyond which are orchards; and to the west by North Minnewawa Drive, beyond which is agricultural land.

Topography

Based on a review of the USGS 7.5-minute series topographic map, Friant Quadrangle, California (1964), the Project Site lies at an approximate elevation of 390 feet above mean sea level (msl). The Project Site is relatively level, and the general topographic gradient and drainage of the Project Site area is towards the west-southwest. The Enterprise Canal, an open, unlined waterway, is located immediately south of the Project Site, and the San Joaquin River is located approximately 4 miles west of the Project Site.

GEOLOGIC CONDITIONS

Regional Geology

The Project Site is located in the southern portion of the Great Valley Geomorphic Province. The Great Valley Geomorphic Province, a north-south trending valley, is approximately 400 miles long by 50 miles wide, and the southern portion of which is known as the San Joaquin Valley. The Project Site is located on the eastern flank of the San Joaquin Valley, west of the southern Sierra Nevada. The surface of the San Joaquin Valley is composed primarily of unconsolidated Pleistocene (1.6 million to 11,000 years ago) and Recent (11,000 years ago to the present) alluvial sediments. These lie unconformably on Mio-Pliocene, marine sediments, which extend to a crystalline basement at a depth of approximately 20,000 feet (Norris and Webb, 1990). At the area of Project Site, surface deposits consist of unconsolidated alluvial deposits.

Stratigraphically, the subsurface of the Great Valley is complex, and is comprised of tens of thousands of feet of marine and non-marine sediments ranging in age from Jurassic to Recent. The sediments are important sources of groundwater and petroleum hydrocarbon resources (oil and gas).

Geologic Structure

The relatively flat surface of the San Joaquin Valley is underlain by alluvial, lacustrine, and marine sedimentary deposits that accumulated as the structural trough formed as the adjacent mountain ranges were elevated through tectonic processes. The thickness of the sediments varies from a thin veneer along the valley margins to thousands of feet thick at the axis of the trough. The main axis of the trough is oriented north-south along the valley's main drainage axis.

Site Geology

According to the California Geological Survey Division of Mines and Geology *Geologic Map of California – Fresno Sheet (1966, fourth printing 1991)*, the Project Site is underlain

Pleistocene nonmarine sedimentary deposits. These deposits generally consist of older alluvium and dissected fan deposits in the San Joaquin Valley. The surficial geology of the Project Site and surrounding areas is presented on **Plate 3 - Geologic Map**.

Soils

The Soil Survey of Eastern Fresno Area, California (1971) identifies surficial soils at the Project Site to consist primarily of Ramona sandy loam (Ra) with a smaller amount of Exeter sandy loam (Es) along the eastern Project Site boundary.

The Ramona series consists of well drained soils that formed in moderately coarse textured old granitic alluvium. In a typical profile, the surface layer is brown, neutral to slightly acid sandy loam about 12 inches thick. The subsoil is brown sandy loam and light brown and light reddish-brown sandy clay loam about 26 inches thick. The subsoil grades into a thick layer of light yellowish-brown coarse sandy loam parent alluvium. The soil is well drained, has moderately slow permeability, and the runoff is slow. Additionally, there is no hazard of erosion and the shrink-swell potential is low to moderate.

The Exeter series consists of well drained soils that formed in granitic alluvium of intermediate aged terraces of the Kings River and San Joaquin River. In a typical profile, the surface layer is a brown or light yellowish brown sandy loam about 15 inches thick. This is underlain by a brown or yellowish brown sandy loam subsoil that is mildly alkaline and finer textured extending to a depth of about 30 inches. Below the subsoil is a dense strongly cemented silica hardpan of sandy material that is reddish or brownish with iron oxides. The soil is well drained, and has very slow permeability with medium runoff. Additionally, there is a slight potential for hazard erosion and the shrink-swell potential is water holding capacity is low.

Groundwater

The Project Site is located within the Kings Subbasin of the San Joaquin Valley Groundwater Basin. The San Joaquin and Kings Rivers are the two principal rivers within or bordering the King's Subbasin. The San Joaquin River drains toward the Sacramento River Delta, whereas the Kings River drains internally into the Tulare drainage basin (California DWR, 2006).

According to the Department of Water Resources, Division of Planning and Local Assistance (http://wdl.water.ca.gov), a state identified water well (12S21E18J001M) is located approximately 600 feet west of the Project Site. Groundwater levels have reportedly ranged from depths of 94 to 133 feet below ground surface (bgs) since February 1999. The last measurement of 133 feet bgs was recorded in March 2018. Based on groundwater contours (Spring 2017), shallow groundwater flows in a west-northwesterly direction. However, regional groundwater pumping may influence flow direction in the vicinity of the Project Site.

GEOLOGIC HAZARDS ANALYSIS

FAULT RUPTURE HAZARD

In 1972 the State of California passed the Alquist-Priolo Earthquake Fault Zoning Act (AP Act) to mitigate the hazard of surface faulting to structures utilized for human occupancy. The AP Act's primary purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The AP Act defines three categories of fault activity; active (demonstrated movement within the last 11,000 years), potentially active (movement within the past 11,000 to 2,000,000 years), and inactive (no movement within the past 2,000,000 years).

Since 1972 the California Geological Survey (CGS) has issued a series of 1"=2,000' scale maps delineating Earthquake Fault Zones (EFZs). Structures proposed within mapped EFZs require geologic investigations to demonstrate that the structures will not be constructed across active faults. If an active fault is identified within the boundaries of the Project Site, then the proposed structures must be set back from the EFZ, generally a distance of 50 feet on either side of the identified fault location. The CGS mapping program is ongoing, and areas not currently identified as being located within an EFZ may be included at some later time.

The Project Site is not located within an identified EFZ at this time, and no known active faults traverse or trend towards the Project Site. Therefore, it is Padre's opinion that the potential for damage to the Project Site due to fault rupture is considered low.

GROUND SHAKING

The Project Site is located within a relatively low seismically active region as compared to other areas within California. However, the proposed structures would likely be subjected to seismic shaking during the life of the project. Major faults in the region with the greatest potential to affect the Project Site include the Foothills Fault System located approximately 60 to 70 miles to the north, the Ortigalita Fault Zone located approximately 60 to 70 to the west, and the San Andreas Fault Zone located approximately 90 miles to the west of the Project Site (refer to **Plate 4 – Fault Activity Map**).

LIQUEFACTION

Liquefaction is defined as the sudden loss of soil shear strength due to a rapid increase of soil pore water pressures caused by cyclic loading from a seismic event. In simple terms, it means that a liquefied soil acts more like a fluid than a solid when shaken during an earthquake. For liquefaction to occur, the following conditions are necessary:

- Granular soils (sand, silty sand, sandy silt, and some gravels);
- A high groundwater table; and
- A low density of the granular soils.

Areas of the San Joaquin Valley in Fresno County are not considered conducive to liquefaction due to soil types, which are either too coarse or too high in clay content (City of Clovis General Plan, 2014). Additionally, based on estimated depths to first encountered groundwater (>50 feet), the potential for liquefaction to occur at the Project Site is considered low. However, actual conditions should be determined by site-specific subsurface exploration and geotechnical analyses.

SEISMICALLY-INDUCED SETTLEMENT

Seismically-induced settlement refers to settlement of unsaturated granular material as a result of densification and particle rearrangement due to earthquake shaking. Seismically induced settlement differs from settlement resulting from liquefaction because there is not a buildup of excess pore water pressure during the seismic shaking.

It is Padre's opinion that there is a potential for seismically induced settlement to adversely affect the Project Site. However, without additional subsurface exploration and laboratory analyses, it is not possible to estimate the magnitude of that potential settlement. Padre recommends that site-specific geotechnical studies be completed to provide these data for design of the planned improvements.

EXPANSIVE SOILS

Depending on moisture content expansive soils can change dramatically in volume. When wet these soils can expand, and conversely contract or shrink when dry. This shrink-swell phenomenon can damage concrete slabs, foundations and pavement. Special building design and construction is typically needed in areas with expansive soils.

Surface soils at the Project Site predominantly generally consist of a sandy loam material with a low to moderate shrink-swell potential. However, the presence or absence of expansive soils should be verified by site-specific sampling and testing of on-site earth materials as part of a site-specific geotechnical study.

SUBSIDENCE

Land subsidence can occur in valleys containing aquifer systems that are, in part, made up of fine-grained sediments and that have undergone extensive ground-water development. The pore structure of a sedimentary aquifer system is supported by a combination of the granular skeleton of the aquifer system and the fluid pressure of the ground water that fills the intergranular pore space. When groundwater is withdrawn in quantities that result in reduced pore-fluid pressures and water-levels declines, more of the weight of the overlying sedimentary material must be supported by the skeleton, which can result in the compaction of the aquifer and land subsidence (USGS-MWA, 2006).

Regional ground subsidence in the Clovis area was mapped as less than one foot by the USGS in 1999. However, depth to groundwater in the San Joaquin Valley was forecast to be at record lows during 2014 (City of Clovis General Plan, 2014). Groundwater levels in the Kings

Groundwater Subbasin of the San Joaquin Valley are managed by nine public agencies and one private company within the Fresno Regional Groundwater Management Plan (FRGMP) area, which is the northern part of the Kings River Subbasin. Reportedly, land levels are observed for land subsidence, and if land subsidence is observed to be occurring, the FRGMP will be amended to include preventive and mitigation measures.

Based on the likely future demand of groundwater, the potential for subsidence to occur at the Project Site exists and should be addressed as part of a site-specific geotechnical study.

LANDSLIDES AND SLOPE STABILITY

The Project Site is relatively flat, with average slope gradients across the site area of less than 1%. Therefore, the potential for landslides or the failure of natural slopes to affect the Project Site is very low. Additionally, the Project Site is not located within a landslide hazards area.

FLOOD HAZARD

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, *Community Panel Number: 06019C1040H, Effective Date February 18, 2009*, the Project Site is mapped as being located within Flood Zone X (areas determined to be outside the 0.2% annual chance floodplain). A copy of the flood insurance rate map is presented in **Appendix A**.

DAM INUNDATION

Catastrophic failure of dams is rare, and is most likely to occur following significant seismic events. For planning purposes, the California State Office of Emergency Services (Cal OES), with information from the U.S. Army Corps of Engineers (USACE), U.S. Bureau of Reclamation (USBR), and the Department of Water Resources (DWR) has the responsibility to provide local governments with critical hazard response information, including flooding from dam inundation.

The nearest dams of significant size are Big Dry Creek Dam (Big Dry Creek Reservoir), Friant Dam (Millerton Lake), and Pine Flat Dam (Pine Flat Lake). The Big Dry Creek Dam is located approximately 2.3 miles southeast of the Project Site; Friant Dam is located approximately 7.6 miles north of the Project Site on the San Joaquin River; and Pine Flat Dam is located approximately 21.5 miles southeast of the Project Site on the Kings River.

Big Dry Creek Dam is an earthfill-type dam that was constructed in 1948 by the USACE, was turned over to the California State Reclamation Board, and was finally transferred to Fresno County. The dam is currently owned by the Fresno Metropolitan Flood Control District (FMFCD). Based on the dam inundation map obtained from Cal OES for Big Dry Creek Dam (March 1977), the Project Site is located within the estimated boundary of inundation with flood waters reaching the Project Site in less than one hour. However, flood water heights are not provided.

During a 2006 storm event seepage issues were identified at the Big Dry Creek Dam. Therefore from November 2013 to February 2014 a new toe drain was designed and constructed to mitigate the seepage that was occurring and maintain the integrity of the dam. The improvements included the installation of a perforated pipe along the dam's toe (approximately 7,000 feet) and the construction of a pump station to discharge the seepage water intercepted by the pipe into the downstream Big Dry Creek (Padre, 2014). Additionally, the dam is consistently monitored by FMFCD staff, and if dam integrity issues are identified, then mitigation steps will be taken. Along with FMFCD, DWR - Department of Safety of Dams and the USACE perform occasional inspections to ensure dam integrity.

Friant Dam was constructed between 1937 and 1942 as part of a USBR water project to provide irrigation water to the southern San Joaquin Valley. Based on the dam inundation map obtained from Cal OES for Friant Dam (*December 1976)*, the Project Site is not located within the estimated boundary of inundation.

Pine Flat Dam was constructed in 1954 by the USACE to provide flood control and irrigation water. Based on the dam inundation map obtained from Cal OES for Pine Flat Dam (*May 1975, revised January 1976*), the Project Site is not located within the estimated boundary of inundation.

TSUNAMI/SEICHE

Tsunamis are long-period sea waves generated by earthquakes or submarine landslides, while seiches are oscillations in large bodies of water such as lakes or reservoirs caused by earthquakes or landslides. The Project Site is located about 115 miles inland from the Pacific Ocean. Additionally, Big Dry Creek Reservoir is located approximately 2.3 miles east of the Project Site, Millerton Lake is located approximately 7.6 miles north of the Project Site and Pine Flat Lake is located approximately 21.5 miles southeast of the Project Site. Based on the distance of the Project Site from these bodies of water, the potential for a tsunami or seiche to affect the Project Site is low.

VOLCANIC ACTIVITY

Volcanic eruptions have occurred in the western United States in historic times, most notably the Mt. Lassen, California eruptions of 1914 to 1917 and Mt. St. Helens, Washington, in 1980. According to the USGS Major West Coast Volcanoes Map (1998), the nearest major volcanic fields are the Clear Lake, Mammoth Lakes/Long Valley, and Lassen Peak fields. The Mammoth Lakes/Long Valley field is located approximately 73 miles northeast of the Project Site. This volcanic field was last active during the past 2,000 years ago. The Clear Lake field is located approximately 219 miles northwest of the Project Site. This volcanic field last erupted approximately 10,000 years ago. The Lassen Peak field is located approximately 265 miles northwest of the Project Site. This volcanic field was last active during the past 2,000 years ago.

The most significant potential hazard from volcanic eruption is that from falling volcanic ash, which can damage crops, electronics, and machinery and in severe cases, collapse buildings. The Project Site is located outside the USGS mapped areas subject to potential hazards from future eruptions in California (1997), therefore the potential for a volcanic eruption to affect the Project Site is considered low.

NATURALLY OCCURRING ASBESTOS (NOA)

Asbestos is a naturally occurring silicate mineral of the amphibole group that has historically been utilized for a variety of purposes including fireproofing, due to its fibrous nature, which allowed it to be woven into cloth and formed into various types of construction material. Asbestos is a known carcinogen.

According to the California Department of Conservation, Division of Mines and Geology, Open-File Report 2000-19, dated August 2000, natural occurrences of asbestos are more likely to be encountered in, and immediately adjacent to, areas of ultramafic outcrops (igneous and metamorphic rocks with high iron and magnesium contents). For school sites located within 10 miles of potentially asbestos-bearing ultramafic outcrops, the Department of Toxic Substances Control (DTSC) typically recommends an assessment of onsite soils.

According to the California Geological Survey Division of Mines and Geology *Geologic Map of California – Fresno Sheet (1966, fourth printing 1991)*, the nearest exposure of potentially asbestos-bearing ultramafic outcrops is located approximately 15 miles east of the Project Site. Therefore, the potential for NOA to be present in Project Site soils at elevated concentrations is considered low.

RADON

Radon is a colorless, odorless, tasteless, and radioactive gas that is produced as a natural decay product of uranium. Because of its radioactivity, studies have shown that at elevated concentrations there is a link between radon and lung cancer. Persons living in a building with elevated radon concentrations may have an increased risk of contracting lung cancer over a period of years.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed the United States Environmental Protection Agency (U.S. EPA) to list and identify areas of the United States with the potential for elevated indoor radon levels. The U.S. EPA's Map of Radon Zones assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 (red zones: highest potential) – counties have a predicted average indoor radon screening level greater than 4 pico curies per liter (pCi/L);
- Zone 2 (orange zones: moderate potential) – counties have a predicted average indoor radon screening level between 2 and 4 pCi/L; and
- Zone 3 (yellow zones: lowest potential) – counties have a predicted average indoor radon screening level less than 2 pCi/L.

According to the U.S. EPA map of California radon zones, Fresno County is identified as a Zone 2 (orange) county. Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L. According to the California database of indoor radon levels sorted by Zip Code, twenty-seven (27) site tests were conducted in Fresno County (Zip Code 93619) with four (4) sites identified at concentrations above 4 pCi/L. Therefore, the potential for radon hazard at the Project Site is considered low to moderate and is dependent on building construction specifications.

OIL AND GAS WELLS

The California Division of Oil, Gas, and Geothermal Resources (DOGGR) oversees the drilling, operation, maintenance, and plugging and abandonment of oil wells, natural gas wells, and geothermal wells. The DOGGR regulatory program emphasizes the wise development of oil, natural gas, and geothermal resources in the state of California through sound engineering practices that protect the environment, prevent pollution, and ensure public safety. Padre reviewed the available DOGGR online mapping system for the Project Site at the California Department of Conservation webpage (http://www.conservation.ca.gov/dog).

According to the DOGGR online database and interactive map, there are no active oil-gas wells located within a one-mile radius of the Project Site. There is a plugged and abandoned (1960) oil-gas well located approximately 0.7 miles northwest of the Project Site. Additionally, there is a plugged and abandoned (1934) oil-gas well located approximately 0.8 miles northwest of the Project Site.

ENVIRONMENTAL HAZARDS REVIEW

POTENTIAL PRESENCE OF TOXIC AND HAZARDOUS SUBSTANCES

The Project Site consists of vacant land historically utilized for agricultural production. Based on past agricultural use, there exists the potential for the presence of residual agricultural chemicals (pesticides, metals) in soil at the Project Site. It is Padre's understanding that the school district will enter into an Environmental Oversight Agreement (EOA) with the California Department of Toxic Substance Control (DTSC) and perform a Preliminary Environmental Assessment (PEA) at the Project Site to address this potential environmental concern.

Padre reviewed online files using the California Environmental Protection Agency's (CalEPA) website portal (https://siteportal.calepa.ca.gov/nsite/) that combines data about environmentally regulated sites and facilities in California. The portal provides an overview of environmentally regulated activities that include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials. The Project Site was not identified in the CalEPA's website.

SOLID WASTE OR HAZARDOUS WASTE TRANSPORTATION, STORAGE, OR DISPOSAL FACILITIES

According to the California Department of Resources Recycling and Recovery (CalRecycle) website, the California State Water Resources Control Board (SWRCB) GeoTracker website, and California DTSC EnviroStor website, there are no solid waste facilities/landfill facilities (SWF/LF) and/or hazardous waste transportation, storage, or disposal facilities located within a one-mile radius of the Project Site.

HIGH-PRESSURE NATURAL GAS OR FUEL TRANSMISSION PIPELINES

Padre contacted Pacific Gas & Electric (PG&E) to inquire about the presence of high pressure natural gas pipelines (NGPs) located within 1,500 feet of the Project Site. High pressure NGPs are identified as being ≥80 pounds per square-inch gauge (psig). According Mr. Eric Alvarado, Senior Gas Program Manager with PG&E, there are no high pressure NGPs located within 1,500 feet of the Project Site.

According to the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) national pipeline mapping system website (www.npms.phmsa.dot.gov), there are no liquid natural gas pipelines (LNGPs) located within 1,500 feet of the Project Site. Information obtained from the PHMSA website is presented in **Appendix C**.

HIGH VOLUME WATER PIPELINES

Padre contacted the City of Clovis, Public Utilities Department (PUD) requesting information regarding the presence of high-volume water pipelines (≥12-inch diameter) located within 1,500 feet of the Project Site. According to information provided by the PUD, they do not operate any high-volume water pipelines located within 1,500 feet of the Project Site.

Padre contacted the Fresno Irrigation District (FID) requesting information regarding the presence of high volume water pipelines (≥12-inch diameter) located within 1,500 feet of the Project Site. According to information provided by the FID, the following underground water pipelines are located within 1,500 feet of the Project Site:

- 18-inch diameter water pipeline (non-reinforced concrete) located southwest and adjacent to the Project Site on the south side of the Enterprise Canal;
- 18-inch diameter water pipeline (non-reinforced concrete) located approximately 700 feet southwest of the Project Site that parallels the south side of the Enterprise Canal; and
- 16-inch diameter water pipeline (non-reinforced concrete) located approximately 1,400 feet southwest of the Project beneath Behymer Avenue.

These pipelines are gravity fed from the Enterprise Canal and utilized to irrigate agricultural fields located south and southwest of the Project Site. Pipeline information provided by FID is presented in **Appendix C**.

ELECTRO-MAGNETIC FIELDS/ELECTRICAL POWER LINES

The School Facilities Planning Division (SFPD) of the CDE, in consultation with the State Department of Health Services (DHS), has established the following limits for locating any part of a school site property line near the edge of easements for high voltage power transmission lines:

- 100 feet from the edge of an easement for a 50-133 kilovolt (kV) line;
- 150 feet from the edge of an easement for 220-230 kV line; and
- 350 feet from the edge of an easement for a 500-550 kV line.

Padre contacted PG&E to inquire about the presence of high voltage power transmission lines located within 350 feet of the proposed school site. According to PG&E, the Project Site is not located within 100 feet from the edge of an easement for a 50-133 kilovolt (kV) line; 150 feet from the edge of an easement for a 220-230kV line; or 350 feet from the edge of an easement for a 500-550kV line. Overhead power lines observed within the search radius consist of 12kV and 21kV lines. Therefore, there are no CDE setback requirements for the Project Site.

PROXIMITY TO FACILITIES GENERATING HAZARDOUS AIR EMISSIONS

Padre submitted a letter of inquiry to the San Joaquin Valley Air Pollution Control District (SJVAPCD) requesting information regarding facilities located within a ¼-mile radius of the Project Site, which might reasonably be anticipated to emit hazardous air emissions. According to the SJVAPCD, there are no permitted facilities located within a ¼-mile radius of the Project Site. Information provided by SJVAPCD is presented in **Appendix D**.

PROXIMITY TO RAILROADS

Padre reviewed the available USGS topographic map, Friant Quadrangle (1964), an aerial photograph (Google Earth) dated February 2018, and performed a site reconnaissance of the Project Site on May 30, 2018. No railroad track easements were observed to be located within 1,500 feet of the Project Site.

PROXIMITY TO AIRPORTS

Padre reviewed the California Department of Transportation (CalTrans) Division of Aeronautics database (March 2016), an aerial photograph (Google Earth) dated February 2018, and the USGS topographic map, Friant Quadrangle (1964). No airports are located within two nautical miles of the Project Site.

WATER AND FUEL STORAGE TANKS

No aboveground water and/or fuel storage tanks were observed on or adjacent to the Project Site during the course of Padre's site reconnaissance conducted on May 30, 2018.

TRAFFIC CORRIDOR

CDE defines freeways or busy traffic corridors as 100,000 vehicles per day in urban areas. Padre reviewed the California Department of Transportation (Caltrans) 2016 Annual Average Daily Traffic (AADT) Volume database for information regarding traffic corridors within 500 feet of the Project Site. Based on a review of the Caltrans database, no busy traffic corridors were identified within 500-feet of the Project Site.

Table 1 – Title V Environmental Hazards Summary

Site Identification	**Earthquake Fault Zone (EFZ)**	**Flood Hazard**	**Dam Inundation**	**NOA Bearing Outcrops within 10-miles**	**Solid Waste Facilities Within 1-Mile**	**Natural Gas pipeline(s) (>80 psig)**	**Hazardous Liquid Pipeline(s)**
New Elementary School	No	No	**Yes[1]**	No	No	No	No
Site Identification	**High Volume Water Pipeline(s) (≥12-inches),**	**Power Lines within 350-ft or Cell Towers on or near the site**	**Facilities with hazardous air emissions within ¼ mile**	**Railroad tracks within 1500-ft**	**Airports within 2-nautical miles**	**Large aboveground water/fuel tanks**	**Freeway or other busy traffic corridor within 500-ft**
New Elementary School	**Yes[2]**	No	No	No	No	No	No

Notes:

Yes – Additional studies/information will be required by CDE.

No – Additional studies/information do not appear necessary.

(1) – Project Site subject to inundation from the Big Dry Creek Dam.

(2) – Two 18-inch dia. and one 16-inch dia. water pipelines are located within 1,500-feet of the Project Site.

CONCLUSIONS AND RECOMMENDATIONS

Padre makes the following conclusions and recommendations based on the results of this limited geologic and environmental hazards evaluation:

- At this time the Project Site is not located within the boundaries of an Alquist-Priolo Earthquake Fault Zone, and no active faults are known to traverse the Project Site;
- Ground shaking caused by events on distant, active faults is considered a potential seismic hazard at the Project Site;
- The potential for liquefaction is considered low based estimated depths to high groundwater (>50 feet). However, actual conditions should be determined by a site-specific subsurface exploration and geotechnical analyses;
- Seismically-induced settlement caused by earthquake shaking is considered a potential seismic hazard at the Project Site. However, actual conditions should be determined by site-specific subsurface exploration and geotechnical analyses;
- The Project Site is identified as being underlain by soils with a low to moderate shrink-swell potential. However, actual conditions should be determined by site-specific subsurface exploration and geotechnical analyses;
- Based on the likely future demand for pumping groundwater, the potential for subsidence to occur exists. The potential for subsidence at the Project Site should be addressed as part of a site-specific geotechnical analyses;
- The potential for landslides or the failure of natural slopes to affect the Project Site is considered low;
- The Project Site is located within Flood Zone X - Areas determined to be outside the 0.2% (500-year) annual chance floodplain;
- The nearest dam of significant size that could impact the Project Site in the event of failure is the Big Dry Creek Dam (Big Dry Creek Reservoir). Based on the dam inundation map (March 1977) obtained from Cal OES, the Project Site is located within the estimated boundary of inundation for the Big Dry Creek Dam with flood waters reaching the Project Site in less than 1 hour, however flood water heights are not provided;
- The potential for a tsunami or a seiche to affect the Project Site is considered low;
- The potential for a volcanic eruption to affect the Project Site is considered low;

- The potential for radon hazard associated with building structures is considered low to moderate and is dependent on building construction specifications;

- There are no active oil-gas wells located on or within a one-mile radius of the Project Site.

- Based on past agricultural activities conducted at the Project Site, a PEA is being performed for the Project Site under the oversight of the California DTSC;

- According to State of California environmental databases (CalRecycle, Geotracker, and Envirostor), there are no solid waste facilities or landfills located within one-mile of the Project Site;

- According to PG&E there are no natural gas transmission pipelines (≥80 psig) located within 1,500 feet of the Project Site;

- According to FID, there are three high volume water pipelines (≥12-inch diameter) located within 1,500 feet of the Project Site;

- According to PG&E there are no high voltage power transmission lines located within 350 feet of the Project Site;

- According to SJVAPCD, there are no permitted facilities located within a ¼-mile radius of the Project Site;

- There are no railroad tracks located within 1,500 feet of the Project Site;

- There are no airports located within two nautical miles of the Project Site;

- There are no aboveground water or fuel tanks located adjacent to the Project Site; and

- There are no busy traffic corridors located within 500 feet of the Project Site.

The results of the report identified liquefaction, seismically induced settlement, expansive soil and subsidence as potential geologic hazards that cannot be eliminated without a site-specific geotechnical study. A site-specific geotechnical study will be required by the California Division of the State Architect, and mitigation measures will be incorporated prior to and/or as part of site improvements and school construction. The geotechnical study generally consists of a number of exploration locations (drill holes, cone penetration test soundings, or other methods) over the site development area. Soil samples are collected and tested in the laboratory and the results of field and laboratory data are used by the geotechnical engineer to develop earthwork and foundation recommendations for the proposed development. The potential geohazards identified in this report (if found to be present at the Project Site) can typically be mitigated through either ground improvement methods or the use of deep foundation systems.

This report was prepared in general accordance with California Education Code §17212, California Geological Survey Note 48 and Special Publication 117, and California Code of Regulations, Title V, §14010 et seq.

LIMITATIONS

This report has been prepared by Padre Associates, Inc. (Padre) for the Clovis Unified School District under the professional supervision of the principal and/or senior staff whose signatures and/or seals(s) appear hereon. Neither Padre, nor any employee assigned to this assessment program, has an interest or contemplated interest, financial or otherwise, in the subject site or surrounding properties, or in any entity that owns, leases, or occupies the subject site or surrounding properties or that may be responsible for environmental issues identified during the course of this assessment, or a personal bias with respect to the parties involved.

The information contained in this report has received appropriate technical review and approval. The conclusions represent professional judgment and are founded upon the findings of the assessment activities identified in the report and the interpretation of such data, based on our experience and expertise according to the existing standard of care. No other warranty or limitation exists, either expressed or implied.

In expressing the opinions stated in this report, Padre has exercised the degree of skill and care ordinarily exercised by a reasonable, prudent environmental professional in the same community and in the same time frame, given the same or similar facts and circumstances. Documentation and data provided by others, or from the public domain, and referred to in the preparation of this assessment, have been used and referenced with the understanding that Padre does not assume responsibility or liability for their accuracy.

REFERENCES

California Department of Health Services – Radon Program, *Radon Database for California*, February 2016.

California Department of Toxic Substances Control (http://www.envirostor.dtsc.ca.gov/public/)

California Department of Transportation, 2016 Traffic Volumes on California State Highways (http://www.dot.ca.gov/trafficops/census/docs/2016_aadt_volumes.pdf)

California Department of Transportation, Division of Aeronautics, California Public Use Airports and Military Airfields – 2016.

California Department of Water Resources (http://www.water.ca.gov/waterdatalibrary/)

California Division of Mines and Geology (1997), Special Publication 117, *Guidelines for* Abrahamson, N.A. and Silva, W.J. (1997), *Empirical Response Spectral Attenuation Relations for Shallow Crustal Earthquakes*, Seismological Research Letters, Seismological Society of America, Vol. 68, No. 1, January/February.

California Division of Mines & Geology, 1996, *Probabilistic Seismic Hazard Assessment for the State of California,* DMG Open-File Report 96-08.

______ 1997, *Guidelines for Evaluating and Mitigating Seismic Hazards in California,* Special Publication 117*.*

______ 1999, *Fault-Rupture Hazard Zones in California*, Special Publication 42.

California Geological Survey, 2000, *A General Location Guide For Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos*. Open File Report 2000-19.

______ 2002, *Guidelines for Geologic Investigations of Naturally Occurring Asbestos in California*. Special Publication 124.

California Geological Survey, *Geologic Map of California – Fresno Sheet (1:250,000)*, 1966 (fourth printing, 1991).

California Geological Survey, *Geologic Map of California – Mariposa Sheet (1:250,000)*, 1967 (fourth printing, 1991).

California Integrated Waste Management Board- Solid Waste Information System website (www.calrecycle.ca.gov/).

City of Clovis - Department of Public Utilities, Paul Armendariz - Interim Assistant Public Utilities Director

Federal Emergency Management Agency, *Flood Insurance Rate Map- Community Panel Community Panel Number: 06019C1040H*, Effective Date February 18, 2009.

Fresno Irrigation District, Jeremy Landrith

Fresno Metropolitan Flood Control District (http://www.fresnofloodcontrol.org/water-resources/).

Green, J. H., 1964, *The Effect of Artesian Pressure Decline on Confined Aquifer Systems and its Relation to Land Subsidence*, USGS Water-Supply Paper 1779-T.

Jennings, C.W. (2010), *Fault Activity Map of California and Adjacent Areas, with Locations and Ages of Recent Volcanic Eruptions*, Scale 1:750,000, California Division of Mines and Geology Geologic Data Map No. 6.

Norris, R. M., & R. W. Webb, 1976, *Geology of California*, John Wiley & Sons, New York, pp. 289-305.

Odell Planning and Research Inc., Scott Odell

Pacific Gas & Electric, Eric Alvarado

Pacific Gas & Electric, Michael J. Allen.

Padre Associates, Inc. *Geologic and Environmental Hazards (Title V) Evaluation, Proposed New K-6 School, South Perring Avenue and West of Minnewawa Avenue, Fresno, Fresno County, California,* January 2015.

Placeworks *General Plan and Development Code Update, State Clearinghouse No. 2012061069, City of Clovis*, June 2014.

San Joaquin Valley Air Pollution Control District (SJVAPCD), Central Region, Fresno, California.

State of California Division of Oil, Gas, and Geothermal Resources Regional Maps, http://www.consrv.ca.gov/DOG/index.htm.

State Water Resources Control Board, GeoTracker Website, http://geotracker.swrcb.ca.gov/

U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) website (www.npms.phmsa.dot.gov).

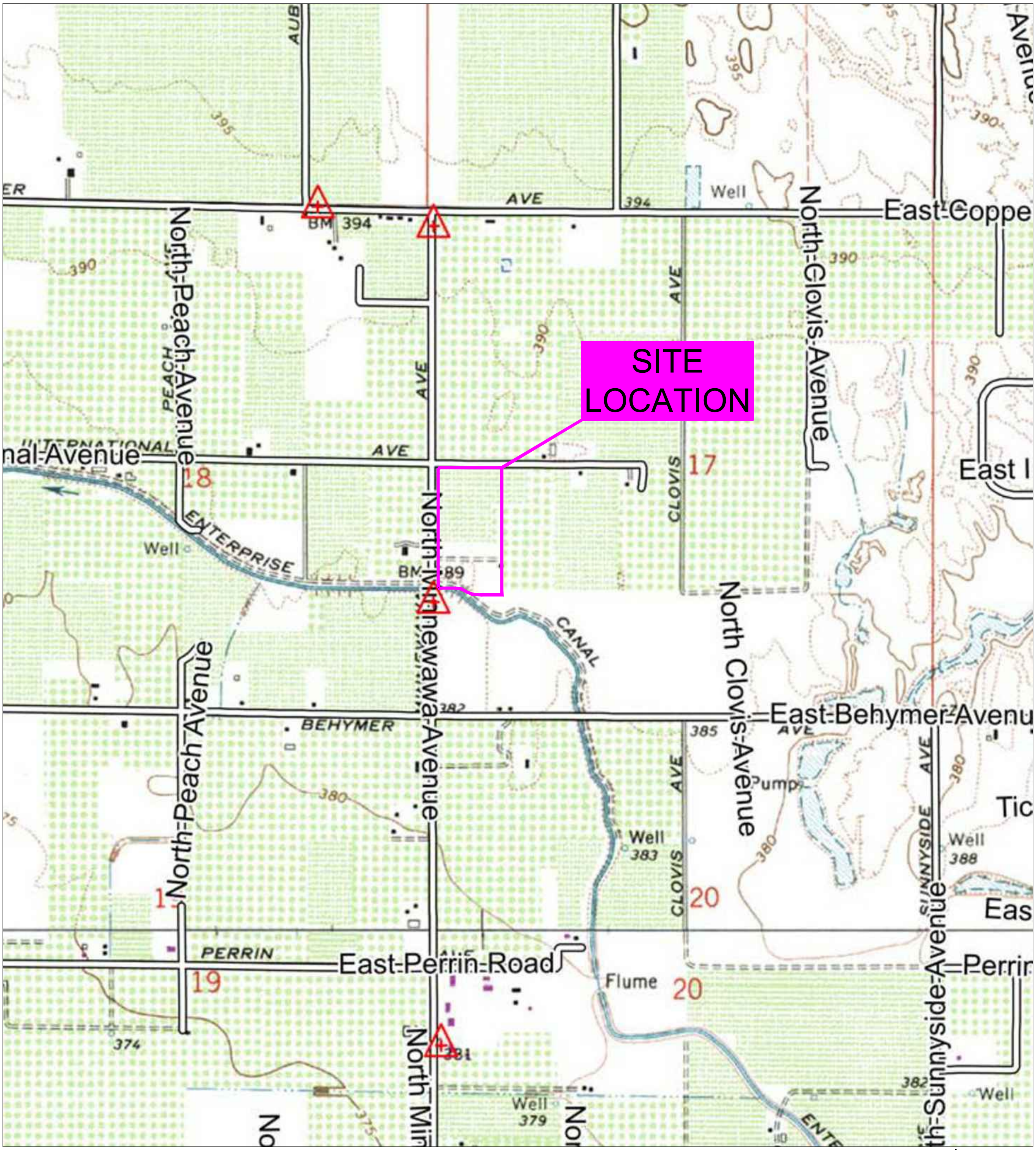
United States Department of Agriculture, National Resources Conservation Service, Soil Survey Eastern Fresno Area, California (1971).

United States Geological Survey, Topographic Map; Friant Quadrangle, California, 1964.

United States Geological Survey, 2002, *What Are Volcano Hazards?,* U.S. Geological Survey Fact Sheet 002-97.

______ 1999, *Long Term Outlook for Volcanic Activity in Long Valley Caldera and Mono-Inyo Craters Volcanic Chain*, U.S. Geological Survey Volcanic Hazards Program, Long Valley Observatory.

PLATES



U.S.G.S. 7.5 MINUTE QUADRANGLE
FRIANT, CA 1964

0 1500'
SCALE

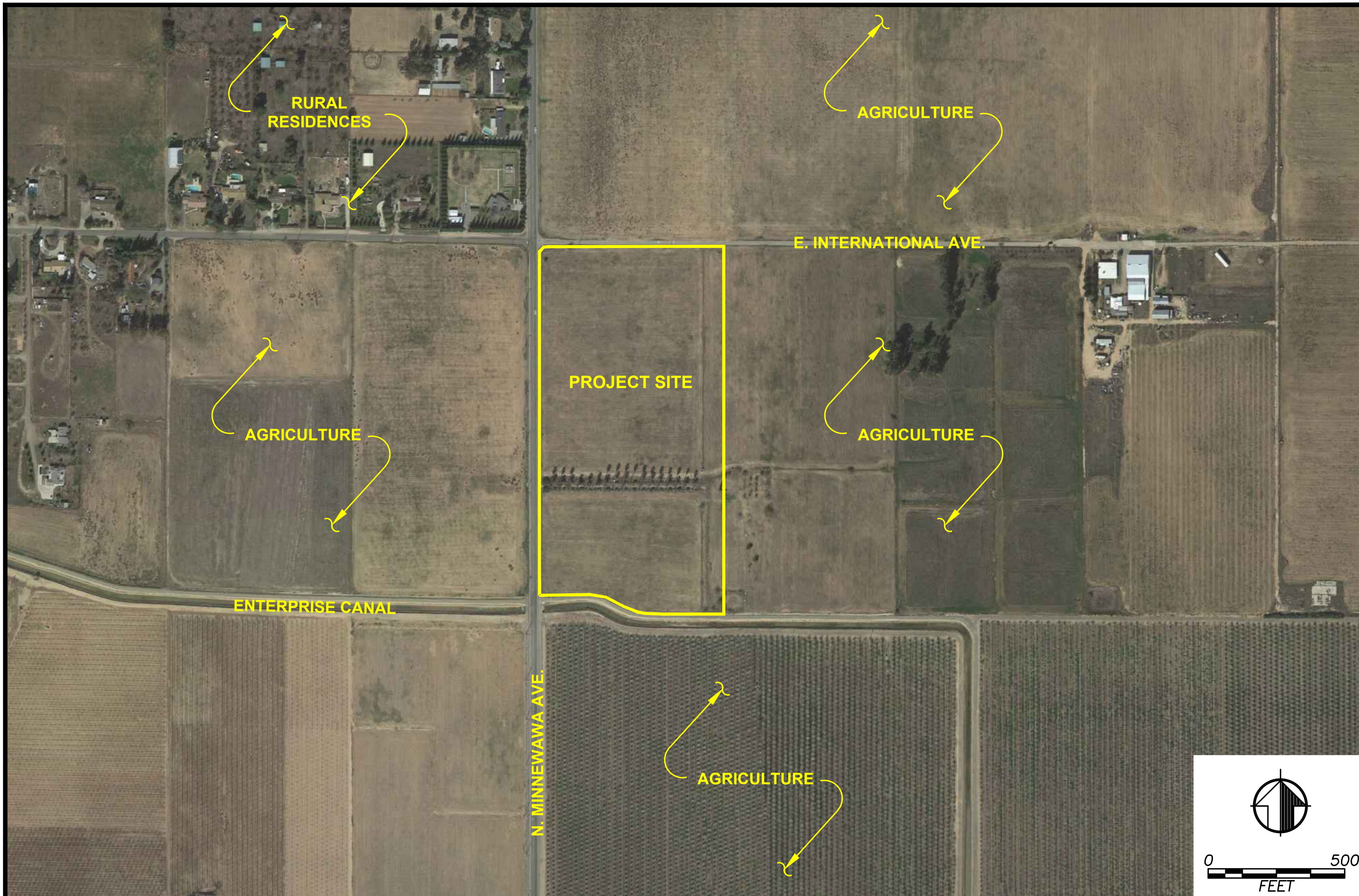
padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROPOSED ELEMENTARY SCHOOL
MINNEWAWA AVE. AND INTERNATIONAL AVE.
CLOVIS, FRESNO COUNTY, CALIFORNIA

PROJECT NO.	DATE	DR. BY	APP. BY
1801-1671	5/21/18	AC	JKS

PLATE 1

SITE LOCATION



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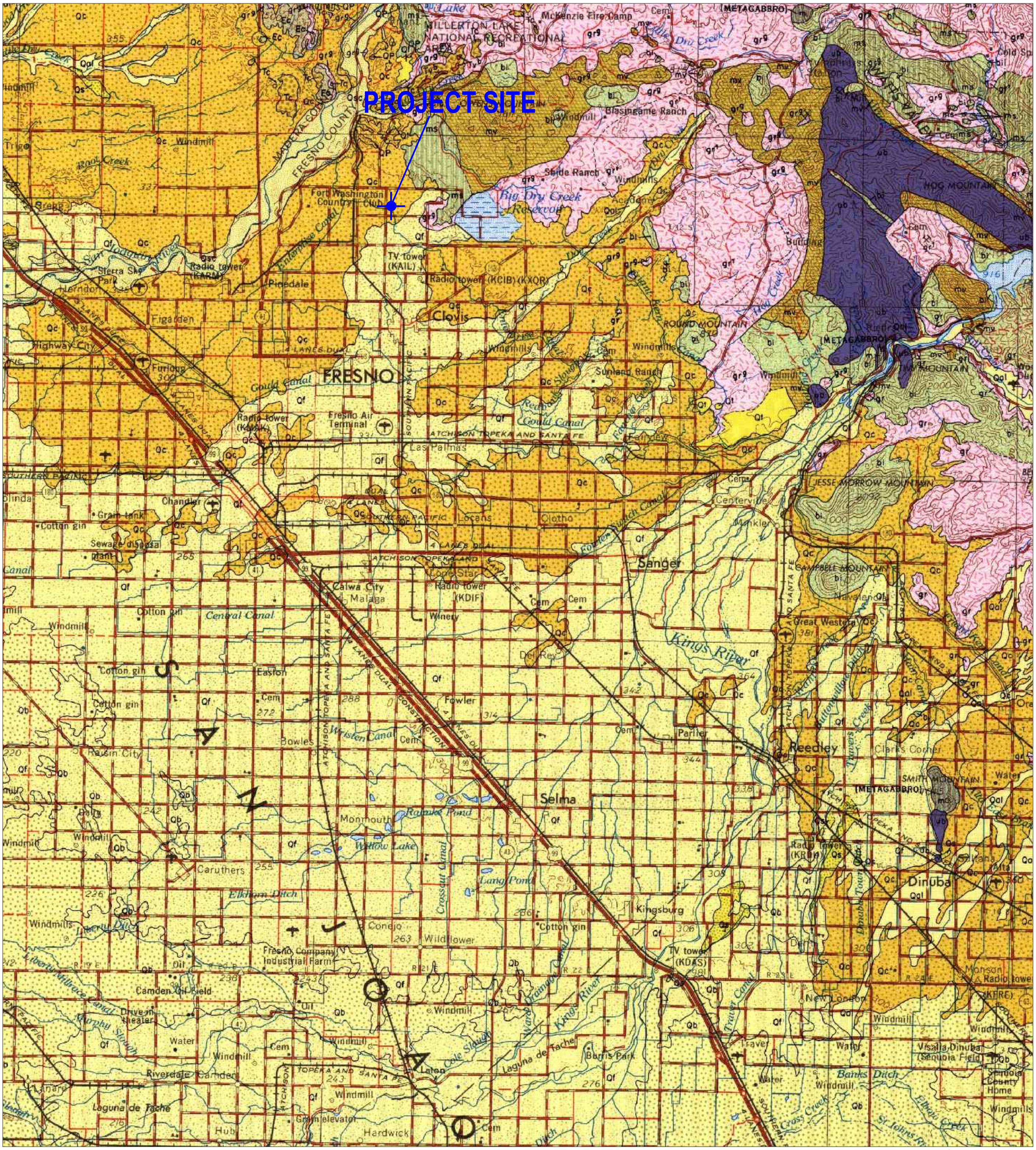
SOURCE: GOOGLE EARTH MAP DATED FEB. 2018

PROPOSED ELEMENTARY SCHOOL
MINNEWAWA AVE. AND INTERNATIONAL AVE.
CLOVIS, FRESNO COUNTY, CALIFORNIA

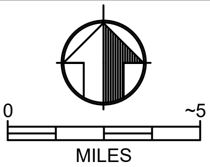
PROJECT NO.	DATE	DR. BY	APP. BY
1801-1671	5/24/18	AC	AJK

PLATE 2

SITE MAP



GEOLOGIC MAP OF CALIFORNIA - FRESNO SHEET (SCALE 1:250,000)
CALIFORNIA GEOLOGICAL SURVEY (1966, Second Printing 1991)



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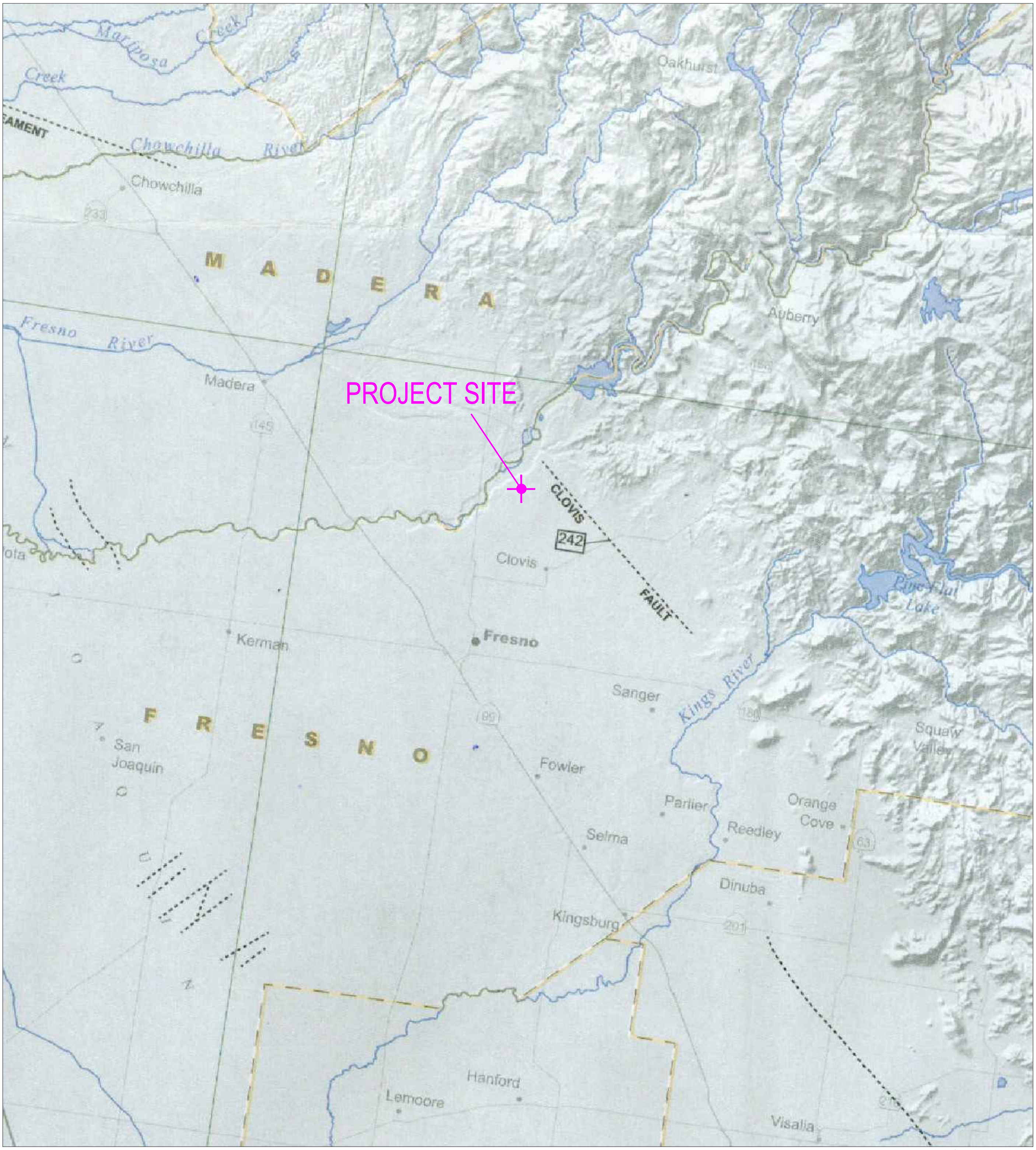
PROPOSED ELEMENTARY SCHOOL
MINNEWAWA AVE. AND INTERNATIONAL AVE.
CLOVIS, FRESNO COUNTY, CALIFORNIA

PROJECT NO.	DATE	DR. BY	APP. BY
1801-1671	5/21/18	AC	JKS

PLATE 3

GEOLOGIC MAP



MAP TAKEN FROM CALIFORNIA GEOLOGIC DATA MAP SERIES
FAULT ACTIVITY MAP OF CALIFORNIA AND ADJACENT AREAS (2010)

0 ~10
MILES

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROPOSED ELEMENTARY SCHOOL
MINNEWAWA AVE. AND INTERNATIONAL AVE.
CLOVIS, FRESNO COUNTY, CALIFORNIA

PROJECT NO.	DATE	DR. BY	APP. BY
1801-1671	5/24/18	AC	JKS

PLATE 4

FAULT ACTIVITY MAP

APPENDIX A
ASSESSOR'S PARCEL MAP AND FLOOD MAP

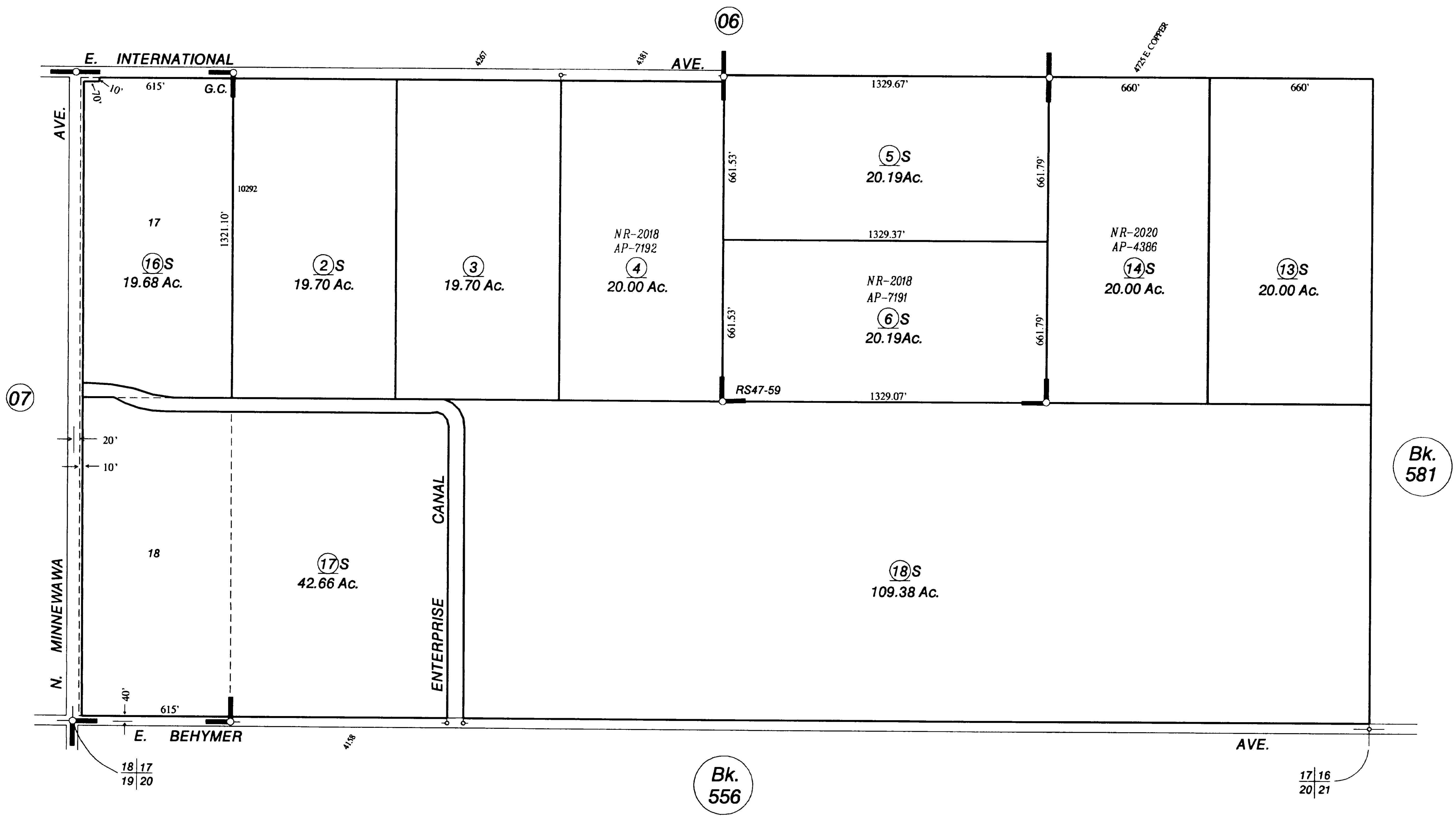
--- NOTE ---
This map is for Assessment purposes only. It is not to be construed as portraying legal ownership or divisions of land for purposes of zoning or subdivision law.

SUBDIVIDED LAND IN POR. SEC. 17, T.12 S., R.21 E., M.D.B. & M.

Tax Rate Area
76-045
76-052

580-08

1"= 400'



Agricultural Preserve
Garfield Colony - R.S. Bk.2, Pg.46
Record of Survey - Bk 47, Pg.59

12-03-10

NOTE - Assessor's Block Numbers Shown in Ellipses.
Assessor's Parcel Numbers Shown in Circles.

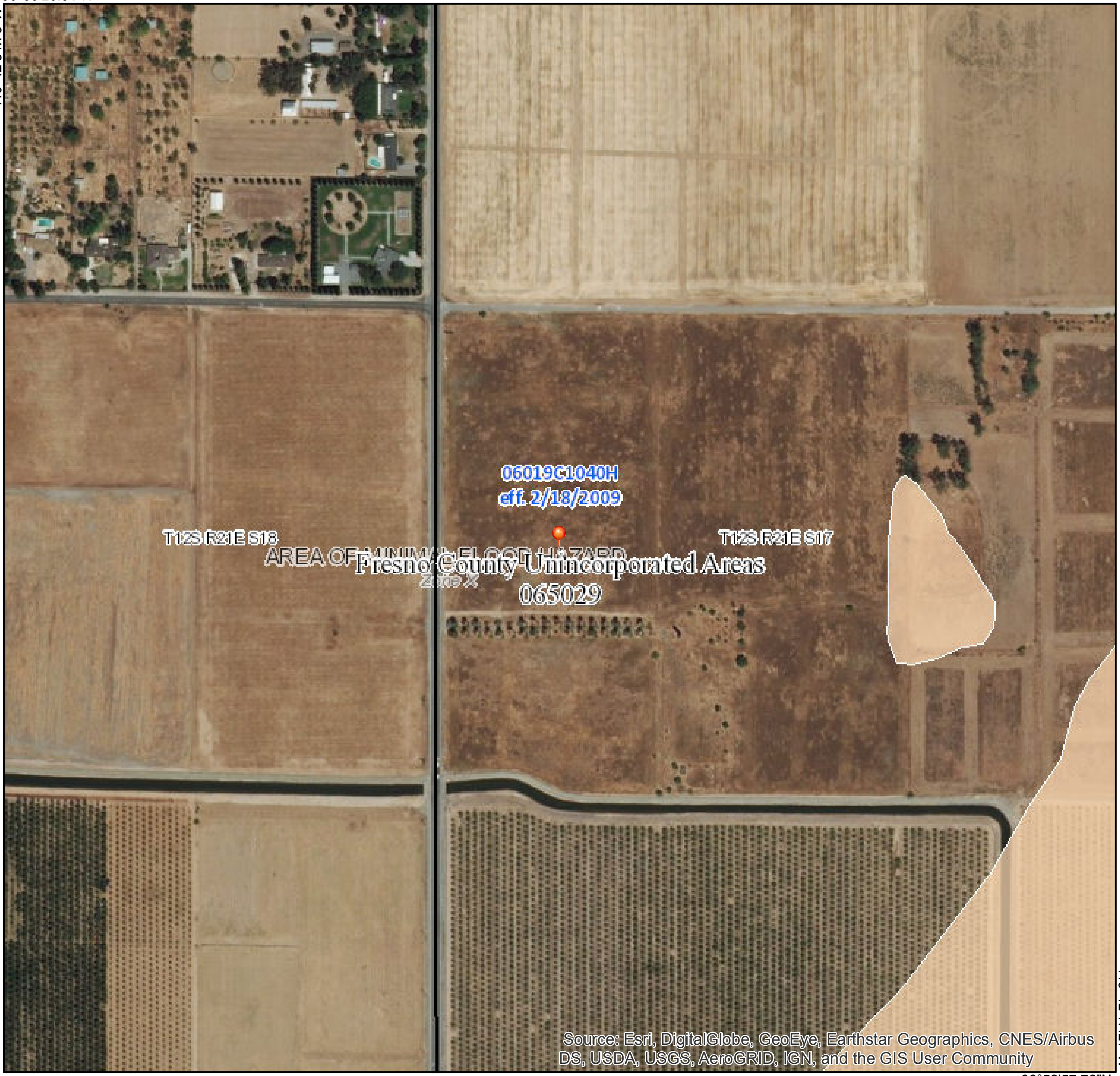
Assessor's Map Bk.580 - Pg. 08
County of Fresno, Calif.

National Flood Hazard Layer FIRMette

FEMA

36°53'26.51"N

119°42'54.73"W



119°42'17.27"W

36°52'57.73"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A, V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
	Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard *Zone X*
	Effective LOMRs
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
OTHER FEATURES	B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
	8 Coastal Transect
	513 Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
MAP PANELS	Digital Data Available
	No Digital Data Available
	Unmapped

N

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA's base map accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/21/2018 at 7:49:12 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX B
PROJECT SITE PHOTOGRAPHS

Photo 1: Looking north across the Project Site from the south Project Site boundary. North Minnewawa Avenue is located on the left.

Photo 2: Looking east along the south Project Site boundary. Enterprise Canal is located on the right.

Photo 3: Looking south across the Project Site from the north Project Site boundary (E. International Ave). A former palm tree-lined driveway is located in the background.

Photo 4: Looking northwest across the Project Site from a central area of the Project Site.

Photo 5: Looking south along the west Project Site boundary (Minnewawa Avenue).

Photo 6: Looking east along the former palm tree-lined driveway.

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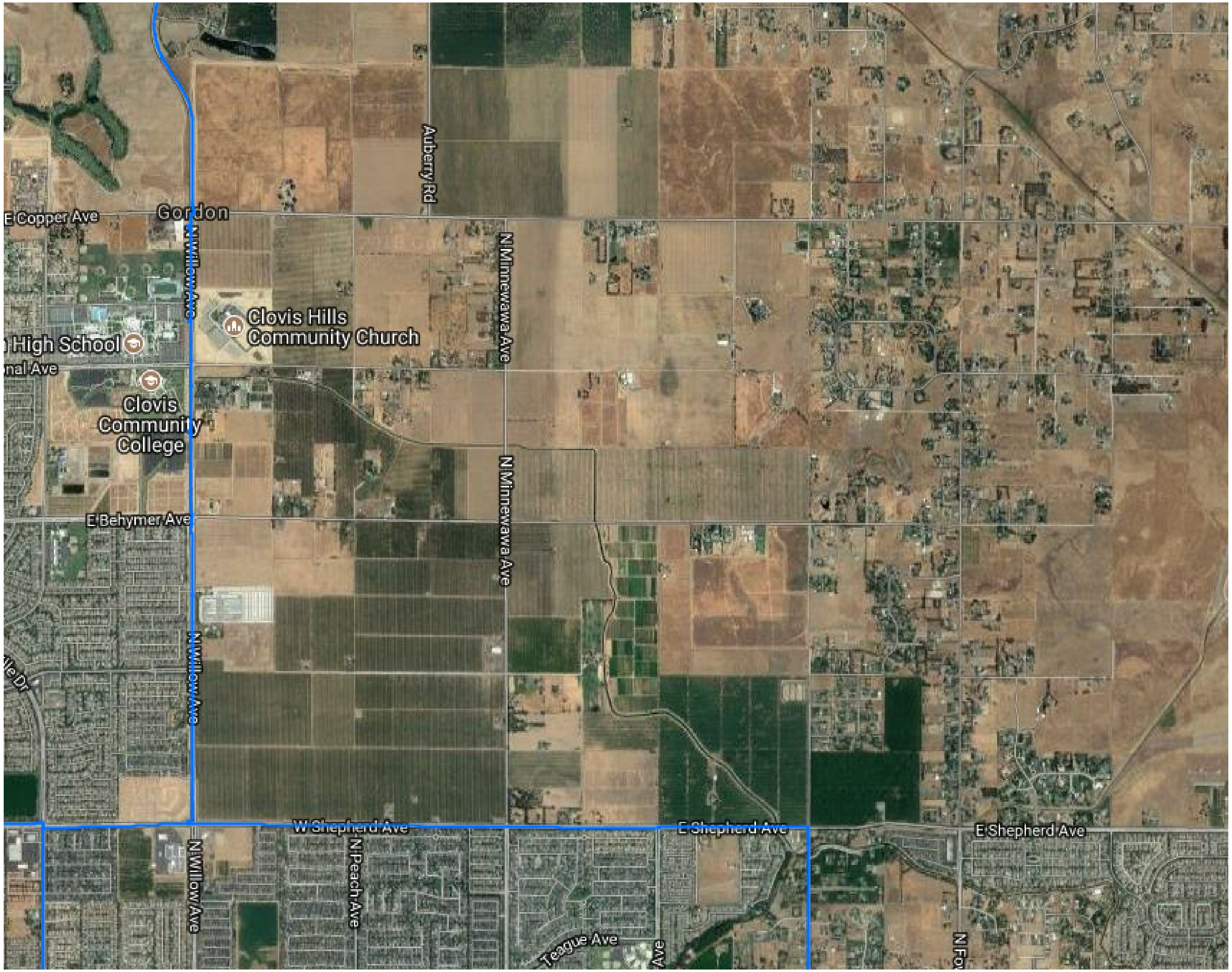
APPENDIX C
PIPELINE INFORMATION



Legend

- Gas Transmission Pipelines
- Hazardous Liquid Pipelines

500 m
1000 ft

Pipelines depicted on this map represent gas transmission and hazardous liquid lines only. Gas gathering and gas distribution systems are not represented.

This map should never be used as a substitute for contacting a one-call center prior to excavation activities. Please call 811 before any digging occurs.

Questions regarding this map or its contents can be directed to npms@dot.gov.

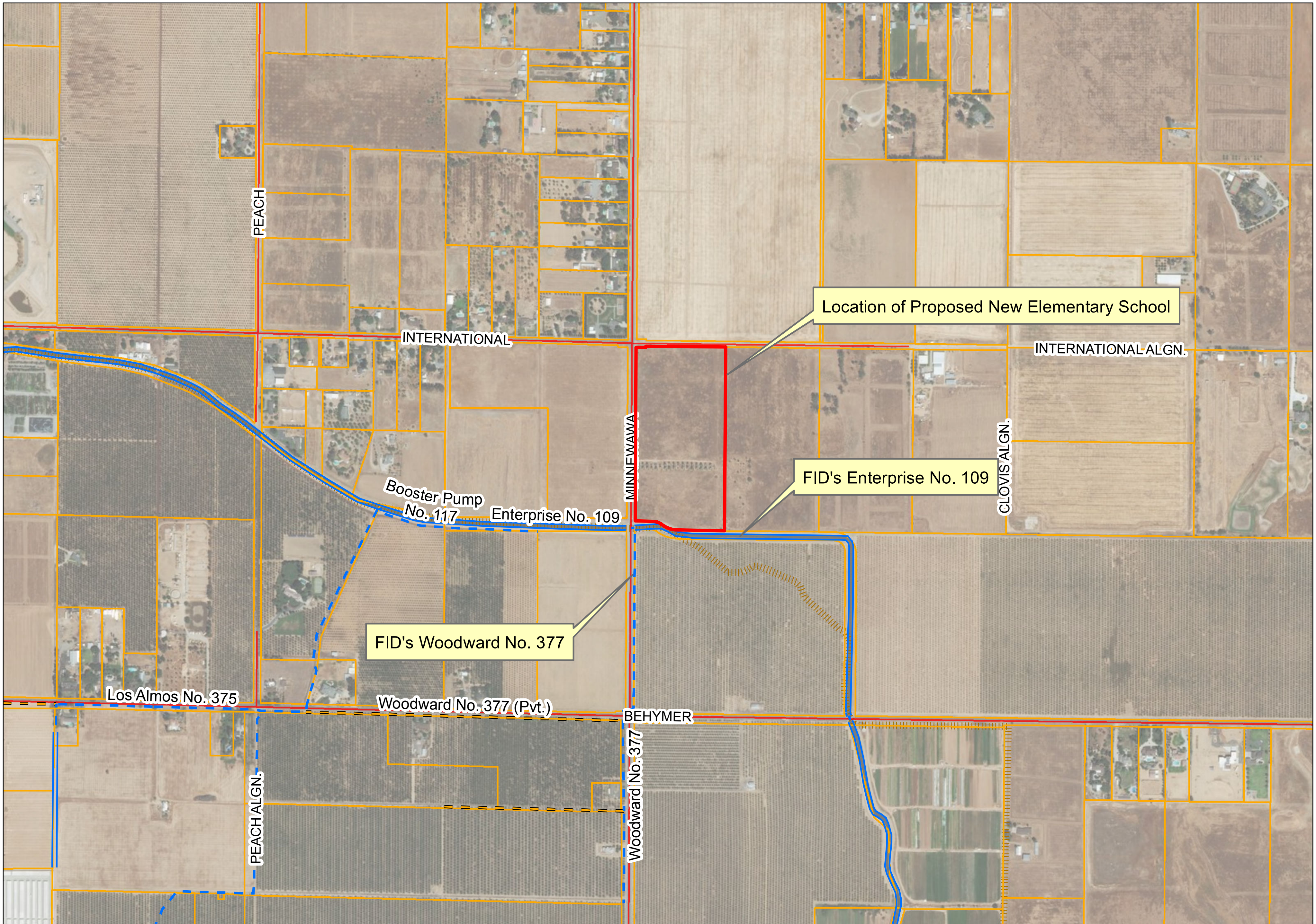
Projection: Geographic

Datum: NAD83

Map produced by the Public Viewer application at www.npms.phmsa.dot.gov

Date Printed: May 24, 2018

811 Know what's below. Call before you dig.



This map was produced by the Fresno Irrigation District and is provided for reference and informational purposes only and is not intended to show map scale accuracy or all inclusive map features, nor for legal purposes. FID makes no statements regarding the accuracy of this map as the features shown are in their approximate location. Please contact the FID Engineering Dept. at (559) 233-7161 for further information on FID facilities.

Legend

FID Canal
Private Canal
Abandoned Canal
FID Pipeline
Private Pipeline
Abandoned Pipeline
Stream Group
Other-Creek\River
Other-Pipeline
FID Boundary
Railroad
Streets & Hwys
Parcel
FMFCD Acquired Basins
FMFCD Proposed Basins

0 445 890 Feet

1 inch = 875.07 feet

Date Saved: 3/21/2018 11:38:26 AM
Path: C:\Users\clundeen\Desktop\2018 Map Template.m

APPENDIX D
SJVAPCD INFORMATION

PUBLIC RECORD RELEASE REQUEST FOR

Padre Associates Inc.
PRR Request #: C-2018-5-106

Proposed Location:
The proposed school is to be located in South East intersection of North Minnewawa Ave and East International Avenue (LatLong 36.887326, -119.710177) in Clovis, CA.

The San Joaquin Valley Air Pollution District has reviewed the location according to Public Resource Code 21151.8 and makes the following conclusions:

Permitted Facilities:

- No Permitted facilities are located within a ¼ mile.

Freeway, High Volume Roadways, & Railways:
- The District recommends the PRR applicant contact CALTRANs and/or their local transportation agency to identify freeways and busy traffic corridors as defined in the Health and Safety Code.
- No Railways are located within a ¼ mile.

Other Facilities:

- There are agricultural facilities within ¼ mile of the proposed school site. These sources may reasonably be anticipated to emit hazardous compounds or handle hazardous materials from the operation of internal combustion engines driving irrigation pumps, gasoline dispensing tanks, application of pesticides, or other agricultural-related operations.

Prepared by
Will Worthley
Technical Services

Appendix 5

High-Volume Water Pipeline Risk Analysis

High-Volume Water Pipeline Risk Analysis

Clovis Unified School District
Minnewawa-International
Elementary School Site
Clovis, Fresno County, California

September 2018

J House Environmental, Inc.
Site Assessment ✧ Remediation ✧ Safety Risk Analysis

J House Environmental, Inc.
Site Assessment ✧ Remediation ✧ Safety Risk Analysis

September 18, 2018

Mr. Kevin Peterson
Assistant Superintendent, Facility Services
Clovis Unified School District
1450 Herndon Avenue
Clovis, CA 93611

Subject: **High-Volume Water Pipeline Risk Analysis**
Clovis Unified School District
Minnewawa-International Elementary School Site
Clovis, Fresno County, California

Dear Mr. Peterson:

J House Environmental, Inc. is pleased to present the results of our High-Volume Water Pipeline Risk Analysis for the Clovis Unified School District's proposed Minnewawa-International Elementary School Site, located southeast of the intersection of Minnewawa Avenue and International Avenue in Clovis, Fresno County, California. As required by California Code of Regulations, Title 5. Education, Section 14010(h), the assessment provides an evaluation of potential safety hazards posed by high-volume water pipelines located in proximity to the proposed school site.

The pipeline risk analysis is based on information obtained from Fresno Irrigation District and Garfield Water District regarding construction and operation of the high-volume irrigation water pipelines. The report includes an evaluation of potential risks associated with pipeline failure, an identification of risk management measures, and conclusions and recommendations.

If you have any questions regarding this report, please contact us at (530) 885-7801.

Sincerely,

Jackie House

Jackie House, PG, CEG
Principal Geologist

REGISTERED GEOLOGIST
JACQUELYN HOUSE
No. 4221
EXP 3/20
STATE OF CALIFORNIA

High-Volume Water Pipeline Risk Analysis

Clovis Unified School District
Minnewawa-International Elementary School Site
Clovis, Fresno County, California

September 18, 2018

Prepared for:

Clovis Unified School District
1450 Herndon Avenue
Clovis, CA 93611

Prepared by:

J House Environmental, Inc.
371 Nevada Street #7366
Auburn, CA 95604

TABLE OF CONTENTS

FIGURES

APPENDICES

HIGH-VOLUME WATER PIPELINE RISK ANALYSIS

CLOVIS UNIFIED SCHOOL DISTRICT
MINNEWAWA-INTERNATIONAL ELEMENTARY SCHOOL SITE
CLOVIS, FRESNO COUNTY, CALIFORNIA

1.0 INTRODUCTION

This report presents results of the high-volume water pipeline risk analysis conducted by J House Environmental, Inc. for the Clovis Unified School District's proposed Minnewawa-International Elementary School Site. The approximately 22.7-acre project site is located southeast of the intersection of Minnewawa Avenue and International Avenue in Clovis, Fresno County, California (Figure 1 and Figure 2).

Five high-volume (12-inch diameter and greater) water pipelines have been identified within 1,500 feet of the project site. The high-volume water pipelines are irrigation water lines, two of which are owned and operated by Fresno Irrigation District (FID), one of which is privately owned, and two of which are owned and operated by Garfield Water District (GWD). The locations of the subject pipelines are shown on Figure 1.

1.1 Purpose and Scope

The purpose of the risk analysis is to identify whether the subject pipelines could pose an unacceptable safety hazard at the proposed school site. California Code of Regulations, Title 5. Education, Section 14010(h), specifies that a school site shall not be located within 1,500 feet of a pipeline that can pose a safety hazard as determined by a risk analysis study.

The pipeline risk analysis is based on information obtained from FID and GWD regarding construction specifications, operating parameters, and inspection and maintenance procedures for the subject pipelines and observations made during an area reconnaissance by Ms. Jackie House of J House Environmental, Inc. on September 11, 2018. Potential risks associated with pipeline failure are estimated based on: 1) an identification of events that could lead to failure; 2) an assessment of the probability or frequency of these events occurring; and 3) an estimation of the consequences that could result from a pipeline failure. The risk analysis has been prepared in accordance with guidelines set forth in the February 2007, California Department of Education (CDE) *Guidance Protocol for School Site Pipeline Risk Analysis* (CDE Protocol).

1.2 Report Organization

The remainder of this report is organized into the following sections:

- 2.0 Setting;
- 3.0 High-Volume Water Pipeline Risk Analysis;
- 4.0 Conclusions and Recommendations; and

- 5.0 References.

Area reconnaissance photographs are presented in Appendix A. Appendicies B and C contain information provided by Fresno Irrigation District and Garfield Water District, respectively. Standard CDE reporting forms for the pipelines evaluated in the risk analysis are presented in Appendix D.

2.0 SETTING

The Clovis Unified School District is developing plans for construction of a new elementary school on the subject property. It is anticipated that school facilities will include classrooms, an administration building, a multipurpose building, parking lots, hard courts and playfields. The proposed school site is intended to accommodate approximately 750 students in grades K through 6, with an estimated staff of 50.

Area reconnaissance was conducted by Ms. Jackie House of J House Environmental, Inc. on September 11, 2018 to view the high-volume water pipeline alignments and observe conditions in the project area. Photographs taken during the area reconnaissance are presented in Appendix A.

The topography in the project area is relatively flat, with a slight southwesterly slope. At the time of the area reconnaissance, the proposed school site consisted of a vacant, fallow agricultural field. Areas surrounding the project site include agricultural fields and rural residential parcels. The FID Enterprise Canal, which is used to convey irrigation water, is located immediately south of the project site.

3.0 HIGH-VOLUME WATER PIPELINE RISK ANALYSIS

Fresno Irrigation District and Garfield Water District were contacted to obtain information regarding the high-volume (12-inch diameter or greater) water pipelines identified within 1,500 feet of the proposed Minnewawa-International Elementary School Site, as follows:

- An 18-inch diameter north-south trending FID irrigation water pipeline located within the Minnewawa Avenue right-of-way on the south side of the FID Enterprise Canal. At the closest point, this 18-inch diameter pipeline is approximately 65 feet south of the southwestern corner of the proposed school site (see Figure 1). This irrigation water pipeline is known as the Woodward No. 377 line. This pipeline is reportedly constructed of non-reinforced concrete and is gravity-fed from the Enterprise Canal. Based on the separation between this irrigation water supply pipeline and the project site provided by the east-west trending FID Enterprise Canal and based on the generally southwestward sloping topography in the project region, the subject pipeline is not considered to pose a potential safety hazard at the subject property and will not, therefore, be further evaluated in this pipeline risk analysis.
- An 18-inch diameter east-west trending FID irrigation water pipeline located along the south side of the FID Enterprise Canal in the area west of the project site. At the closest point, this 18-inch diameter pipeline is approximately 700 feet west of the southwestern corner of the proposed school site (see Figure 1). This irrigation water

pipeline is known as the Booster Pump No. 117 line. This pipeline is reportedly constructed of non-reinforced concrete and is gravity-fed from the Enterprise Canal. Based on the separation between this irrigation water supply pipeline and the project site provided by the east-west trending FID Enterprise Canal, the significant distance between this irrigation water supply pipeline and the project site, and the generally southwestward sloping topography in the project region, the subject pipeline is not considered to pose a potential safety hazard at the subject property and will not, therefore, be further evaluated in this pipeline risk analysis.

- A 16-inch diameter east-west trending private irrigation water pipeline located within the Behymer Avenue right-of-way southwest of the project site. At the closest point, this 16-inch diameter pipeline is approximately 1,350 feet south of the southwestern corner of the proposed school site (see Figure 1). This irrigation water pipeline is known as the Woodward No. 377 Pvt line. This pipeline is gravity-fed from the Enterprise Canal. Based on the separation between this irrigation water supply pipeline and the project site provided by the east-west trending FID Enterprise Canal, the significant distance between this irrigation water supply pipeline and the project site, and the generally southwestward sloping topography in the project region, the subject pipeline is not considered to pose a potential safety hazard at the subject property and will not, therefore, be further evaluated in this pipeline risk analysis.

- A 12/14-inch diameter east-west trending GWD irrigation water pipeline that traverses the northern edge of the project site (see Figure 1). The portion of the pipeline that traverses the project site and extends eastward is 14-inch diameter and is referred to as the GWD Lateral No. 8. In the area west of Minnewawa Avenue, this irrigation pipeline is known as the GWD Lateral No. 7 and has a 12-inch diameter. GWD indicates that this pipeline is constructed of precast concrete and is gravity fed from the Friant-Kern Canal. GWD indicates that the irrigation water distribution system which includes this pipeline was constructed in the early 1960's.

- A 16/18-inch diameter north-south trending GWD irrigation water pipeline located west of Minnewawa Avenue (see Figure 1). This pipeline is the GWD District Main. At the closest point, this pipeline is approximately 60 feet west of the northwestern corner of the project site. The portion of the pipeline closest to the project site is 16-inch diameter; at approximately 1300-feet north of International Avenue, the pipeline diameter changes to 18-inch. GWD indicates that this pipeline is constructed of precast concrete and is gravity fed from the Friant-Kern Canal. GWD indicates that the irrigation water distribution system which includes this pipeline was constructed in the early 1960's.

3.1 Risk Analysis

The Garfield Water District 12/14-inch and 16/18-inch high-volume water pipelines are further evaluated in this risk analysis based on a qualitative analysis of potential impacts at the proposed school site in the event of a catastrophic pipeline failure. An assessment of areas potentially subject to physical impacts, sheet flow runoff and flooding is presented. The estimated water release impacts have been developed based on guidelines set forth in the CDE Protocol. The pipeline risk analysis does not address geotechnical or structural engineering requirements that may be associated with new construction in proximity to the buried irrigation pipeline that traverses the northern edge of the project site. Figure 2 shows the locations of the GWD pipelines that are further evaluated in this risk analysis.

Since the pipelines do not pose a safety hazard unless their structural integrities are compromised, resulting in a release of water to the environment, the first step in this risk analysis is to identify events that could lead to pipeline rupture or failure. In the second step, a qualitative assessment of the probability or frequency of such events occurring is made. Consequences that could result from pipeline rupture or failure are then evaluated through a qualitative consequence analysis.

As noted above, the irrigation water pipelines that have been identified in the area south of the east-west trending FID Enterprise Canal are not considered to pose a potential safety hazard at the subject property and will not, therefore, be further evaluated in this pipeline risk analysis. These pipelines are separated from the project site by the canal and are located downslope from the site.

3.1.1 Pipeline Construction Specifications and Operating Parameters

The east-west trending GWD 12/14-inch diameter irrigation water pipeline that traverses the northern edge of the project site and the north-south trending GWD 16/18-inch diameter irrigation water pipeline located west and northwest of the project site are both constructed of precast concrete. The pipelines are gravity fed from the Friant-Kern Canal.

3.1.2 Pipeline Incident Event Identification

Four types of events are generally recognized as the main causes of pipeline rupture and/or failure:

- Third Party Dig-ins;
- Corrosion and Deterioration;
- Weld or Material Defects; and
- Ground Movement.

Third party dig-ins can result from construction activities that are not associated with pipeline construction and maintenance. Third party dig-ins are generally associated with development or reconstruction projects (i.e., subsurface digging with a backhoe or exploratory soil borings).

Pipeline corrosion and deterioration can occur both internally and externally. There are a number of possible causes of corrosion and deterioration. External corrosion or deterioration is generally the result of direct contact of the pipeline material with soils, water, and/or air.

Weld or material defects can weaken pipeline structures and result in leaks and/or ruptures. Improper material selection, pipeline design and construction, or quality control can lead to potential weld and material defects that can compromise the pipeline integrity.

Ground movement can compromise the structural integrity of a pipeline, resulting in leaks or ruptures. Underground pipelines are most sensitive to ground movement associated with seismic shaking, fault rupture, liquefaction, and landslides.

3.1.3 Pipeline Incident Probability/Frequency Analysis

The probability and/or frequency of a pipeline rupture or failure occurring in the vicinity of the proposed school site is related to the probability of occurrence of the four types of events described above. An assessment of the potential for each of these events to occur is presented below. The qualitative assessment ranks the likelihood of an event occurring as very low, low, moderate, high or very high.

Third Party Dig-ins: The potential for third party dig-ins to occur is typically related to the amount of construction being performed in the immediate vicinity of a pipeline structure. At the time of the site reconnaissance, no construction activities appeared to be underway at the proposed school site or in immediately surrounding areas. Construction activities are planned for the new elementary school site and offsite construction or infrastructure maintenance/repair may take place in the future in the area of the subject pipelines. As required by law, Underground Service Alert (USA) will be contacted by contractors working in the area prior to any excavation or drilling activities. The potential for third party dig-ins to occur along the portions of the high-volume water pipelines located on and in the vicinity of the proposed school site is considered low to moderate.

Corrosion and Deterioration: The potential for pipeline corrosion and deterioration to occur is related to pipeline material type, the age of the pipeline and corrosive preventative measures. The GWD pipelines are constructed of precast concrete. GWD has not identified any concerns with respect to pipeline deterioration for these irrigation lines. The potential for a compromise in the structural integrity of the subject pipelines to occur due to material deterioration is considered low to moderate.

Weld or Material Defects: The potential for weld or material defects to occur is related to the use of insufficiently qualified operators (welders) and/or defectively manufactured materials. High-volume water pipelines, such as the 12/14-inch diameter GWD lateral and the 16/18-inch diameter GWD main, are typically designed and constructed in accordance with American Water Works Association (AWWA) standards. The potential for a compromise in the structural integrity of the subject pipelines to occur due to material defects is considered low to moderate.

Ground Movement: The potential for ground movement to occur in the area of the subject pipelines is related to the potential for surface fault rupture, seismic shaking, liquefaction and/or landsliding. The proposed school site and the nearby pipeline segments are not located within a currently-designated Alquist-Priolo Earthquake Fault Zone; these zones are defined by the State of California, Department of Conservation, California Geological Survey (CGS) to identify areas at risk from surface fault rupture. No mapped faults traverse the project site or the nearby pipeline segments (California Department of Conservation, 2005). This suggests that the potential for surface fault rupture to impact the subject pipelines in the vicinity of the proposed school site is low. Ground shaking from earthquakes generated along faults located in the region would not be expected to result in a significant seismic shaking hazard in the area of the proposed school site. The California Geological Survey indicates that for a seismic event with a 10% probability of exceedance in 50 years, a relatively low peak horizontal ground acceleration (PGA), approximately 0.156g (g=gravity), can be expected in the project area. The proposed school site and the nearby pipeline segments are not located in an area considered susceptible to high liquefaction hazard. Based on reported depths to groundwater in the project area of approximately 60 feet below ground surface (bgs), the liquefaction potential can be considered low. Due to the flat-lying nature of the subject property, the site is not considered susceptible to slope failure or landslide hazard. Overall, the potential for a compromise in the structural integrity of the subject pipelines to occur due to ground movement is considered low to very low.

<u>3.1.4 Pipeline Incident Consequence Analysis</u>

A qualitative evaluation of consequences that could result from rupture or failure of the subject pipelines is presented in this section. Two types of hazards are considered in the consequence analysis: 1) physical impact from a ruptured pipeline and 2) flooding.

<u>*Physical Impact*</u>: In the unlikely event of a catastrophic pipeline failure, fragments of the pipeline may be projected into areas surrounding the point of rupture, resulting in potential damage to structures and injuries to persons. Subterranean failure of a pipeline can saturate and erode subsurface soils, which can result in subsidence or a sinkhole and create a potential hazard to nearby structures, roads and people.

It is reasonable to assume that the most significant and potentially dangerous physical impacts associated with a catastrophic pipeline failure would occur within approximately 20 feet of the pipeline alignments. Areas most susceptible to physical impact are shown on Figure 3.

The east-west trending GWD 12/14-inch diameter irrigation water pipeline is located within the northern portion of the project site. In the event of a catastrophic failure of this pipeline, significant physical impacts could be anticipated along the pipeline easement and adjoining areas, including the northern edge of the proposed school site.

At the closest point, the north-south trending GWD 16/18-inch diameter irrigation water pipeline is approximately 60 feet west of the northwestern corner of the project site. In the event of a catastrophic failure of this pipeline, significant physical impacts would not be anticipated within the project site.

<u>*Flooding*</u>: A qualitative hydraulic consequence analysis has been conducted to estimate potential impacts at the proposed elementary school site associated with a release from the subject high-volume water pipelines. The consequence analysis incorporates simplifying assumptions that provide a conservative estimate of risk and is based on “worst-case” full diameter pipeline rupture with an instantaneous release of water.

Figure 3 shows the anticipated flow directions in the event of a release from the subject pipelines and identifies areas that could potentially be subject to inundation in the event of a catastrophic full release, based on field observations and topographic maps. The flow directions and potential inundation areas shown are based on current conditions in the project area. It should be noted that with build-out of the project site and potential development in nearby areas, natural grades could be modified, affecting the preferred flow paths of water released in the unlikely event of a pipeline rupture.

The proposed school site is located in a relatively flat area. Topographic maps indicate that the ground surface generally slopes very gently toward the southwest, with an average slope of less than 1 percent.

In the event of a release from the east-west trending GWD 12/14-inch irrigation water pipeline that traverses the northern portion of the project site, water would discharge as surface runoff. Much of the discharge would be expected to flow southwestward along the direction of the gentle land slope in the area and across the project site. Due to the generally flat-lying nature of the site and since there are no significant constraints to surface flow in immediately surrounding areas, the depth of water would not be expected to exceed 0.5 to 1.0 feet. Therefore, potential inundation at the proposed new elementary school site due to rupture or failure of the GWD 12/14-inch irrigation water pipeline is not considered to pose a significant safety hazard.

In the event of a release from the north-south trending GWD 16/18-inch irrigation water pipeline, water would discharge as surface runoff. Much of the discharge would be expected to flow southward within the Minnewawa Avenue right-of-way. A portion of the discharged water could potentially flow southwestward across the rural-residential properties in that area. It is possible that a small portion of the discharged water would also flow southeastward toward the northwesternmost corner of the project site. Due to the generally flat-lying nature of the site and since there are no significant constraints to surface flow in immediately surrounding areas, the depth of water would not be expected to exceed 0.5 to 1.0 feet. Therefore, potential inundation at the proposed new elementary school site due to rupture or failure of the GWD 16/18-inch irrigation water pipeline is not considered to pose a significant safety hazard.

3.2 Risk Management

Risk management measures are intended to: 1) reduce the probability of occurrence of an event that could result in a pipeline failure and 2) mitigate the consequences that could result if pipeline failure were to occur due to such an event. The pipeline owners and operators have a number of risk management measures in place to accomplish these goals. The matrix table presented below highlights measures intended to reduce the probability of occurrence of the key events associated with pipeline failure.

Risk Management Measures	Main Causes of Pipeline Failure			
	Third Party Dig-ins	**Corrosion and Deterioration**	**Ground Movement**	**Weld or Material Defects**
Design, construction, operation, and maintenance in accordance with AWWA standards.		**X**		**X**
Monitoring, regular maintenance and pipeline inspection.		**X**		**X**
Participation in USA.	**X**			
Development and maintenance of emergency planning documents.	**X**	**X**	**X**	**X**

4.0 CONCLUSIONS AND RECOMMENDATIONS

In the unlikely event of failure of the east-west trending GWD 12/14-inch irrigation water pipeline that traverses the northern edge of the project site, the northernmost portion of the project site could be subject to physical impact and much of the project site could be subject to sheet flow runoff. Physical impacts would be expected to be greatest within approximately 20 feet of the pipeline alignment along the northern edge of the site. Released water resulting from leak or rupture of this irrigation water pipeline would be expected to primarily flow southwestward across the project site. However, the depth of water would not be expected to exceed 0.5 to 1.0 feet and would not, therefore, be considered to pose a significant safety hazard.

In the unlikely event of failure of the north-south trending GWD 16/18-inch irrigation water pipeline, the project site would not be expected to be subject to significant physical impact. The northwestern corner of the proposed school site could be subject to minor sheet flow runoff. However, the depth of water would not be expected to exceed 0.5 to 1.0 feet and would not, therefore, be considered to pose a significant safety hazard.

J House Environmental, Inc. recommends that site development plans take into consideration the presence of the east-west trending GWD 12/14-inch diameter irrigation water pipeline that traverses the northern edge of project site, with the goal of minimizing student and staff use of areas within 20 feet of the pipeline alignment. Areas in closest proximity to this high-volume pipeline should be considered for low average occupancy level uses, such as parking lots, or designated as landscaped “buffer” areas. This would help mitigate potential physical impacts in the unlikely event of a catastrophic pipeline rupture. As described previously, this analysis does not address geotechnical or structural engineering requirements that may be associated with new construction in proximity to the buried irrigation pipeline that traverses the northern edge of the project site.

Risk management measures are in place by the utility operators to minimize the potential for occurrence of an event that could result in pipeline failure. To provide an added degree of risk management, J House Environmental, Inc. recommends that any emergency plan documents that are prepared for the new elementary school site identify the presence of the high-volume irrigation water pipelines and include an emergency contact list with phone numbers to be used in the event of an incident.

5.0 REFERENCES

California Department of Conservation, California Geological Survey, *Digital Database of Quaternary and Younger Faults from the Fault Activity Map of California, Version 2.0*, 2005.

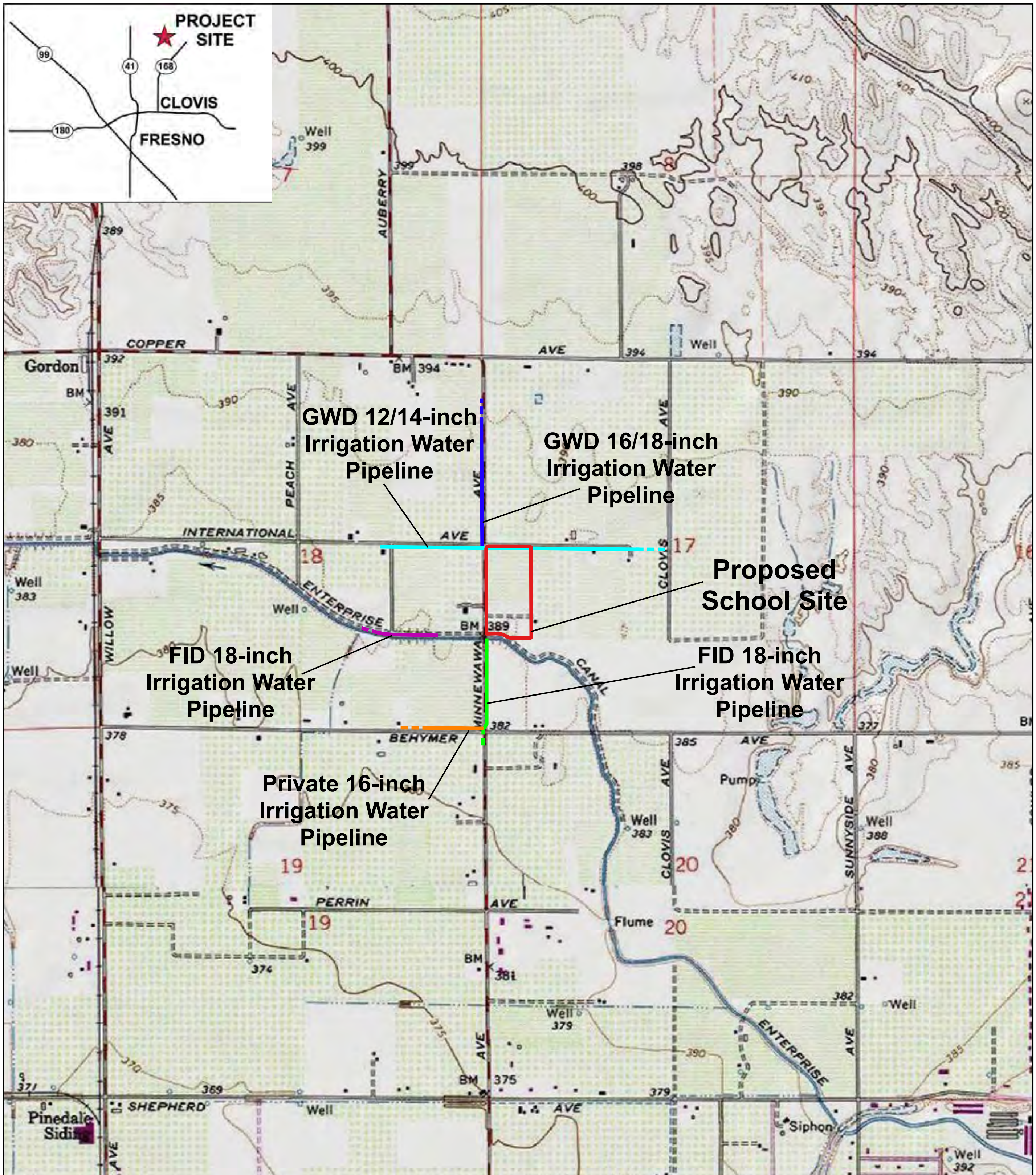
California Department of Conservation, Probabilistic Seismic Hazards Ground Motion Interpolator (2008)

California Department of Education, *Guidance Protocol for School Site Pipeline Risk Analysis*, February 2007.

California Department of Transportation, Caltrans, *California Seismic Hazard Map*, 1996.

Padre Associates, Inc., *Geologic and Environmental Hazards Review (Title V), New Elementary School Site, North Minnewawa Avenue and East International Avenue, Clovis, Fresno County, California*, June 2018.

FIGURES



Source Map: USGS Topographic Map, Friant and Clovis, CA Quadrangles (1981), 1:24,000

J House Environmental, Inc.
Site Assessment ✧ Remediation ✧ Safety Risk Analysis

(530) 885-7801
371 Nevada Street #7366 • Auburn, CA 95604

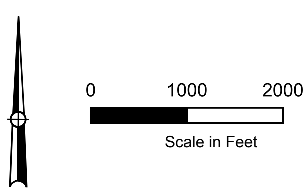
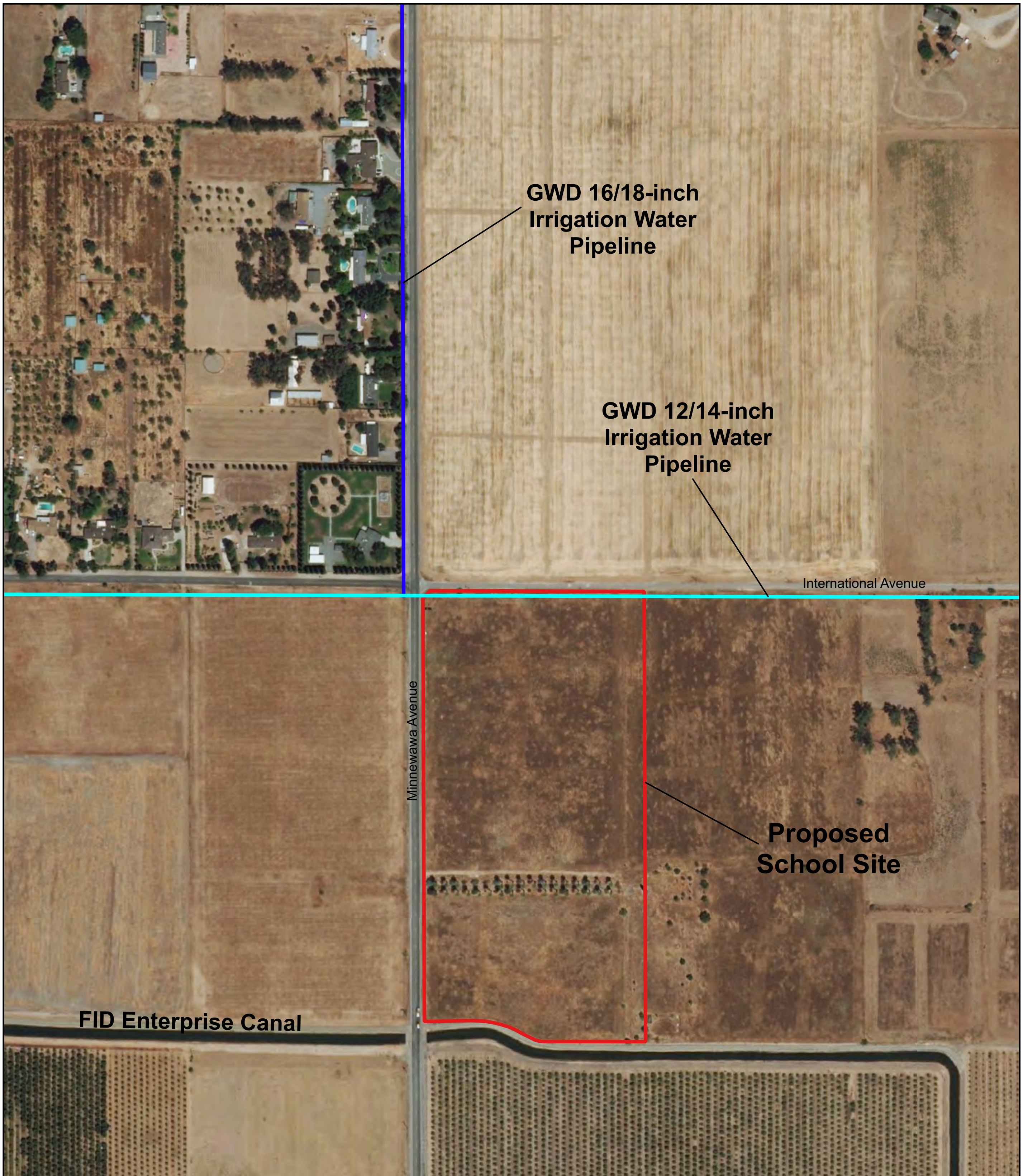


Figure 1

VICINITY MAP

Clovis Unified School District
Minnewawa-International
Elementary School Site
Clovis, California

Map Date: 9-7-18



J House Environmental, Inc.
Site Assessment ✧ Remediation ✧ Safety Risk Analysis

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0 200 400
Scale in Feet

Figure 2

SITE MAP

Clovis Unified School District
Minnewawa-International
Elementary School Site
Clovis, California

Map Date: 7-7-18

J House Environmental, Inc.
Site Assessment ✧ Remediation ✧ Safety Risk Analysis

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Figure 3

POTENTIAL WATER PIPELINE IMPACT AREA
Clovis Unified School District
Minnewawa-International Elementary School Site
Clovis, California

Map Date: 9-18-18

APPENDIX A

AREA RECONNAISANCE PHOTOGRAPHS

Photo 1 – View west along GWD 12/14-inch pipeline alignment that traverses the northern portion of the project site. International Avenue at right.

Photo 2 – View southwest from northeastern portion of project site at GWD 12/14-inch pipeline alignment toward central portion of project site.

Photo 3 – View east along GWD 12/14-inch pipeline alignment from area west of Minnewawa Avenue. International Avenue at left; project site in background.

Photo Date: 9-11-18

Photo 4 – View southeast from northwestern corner of International Avenue and Minnewawa Avenue across GWD 16/18-inch pipeline alignment and GWD 12/14-inch pipeline alignment toward project site.

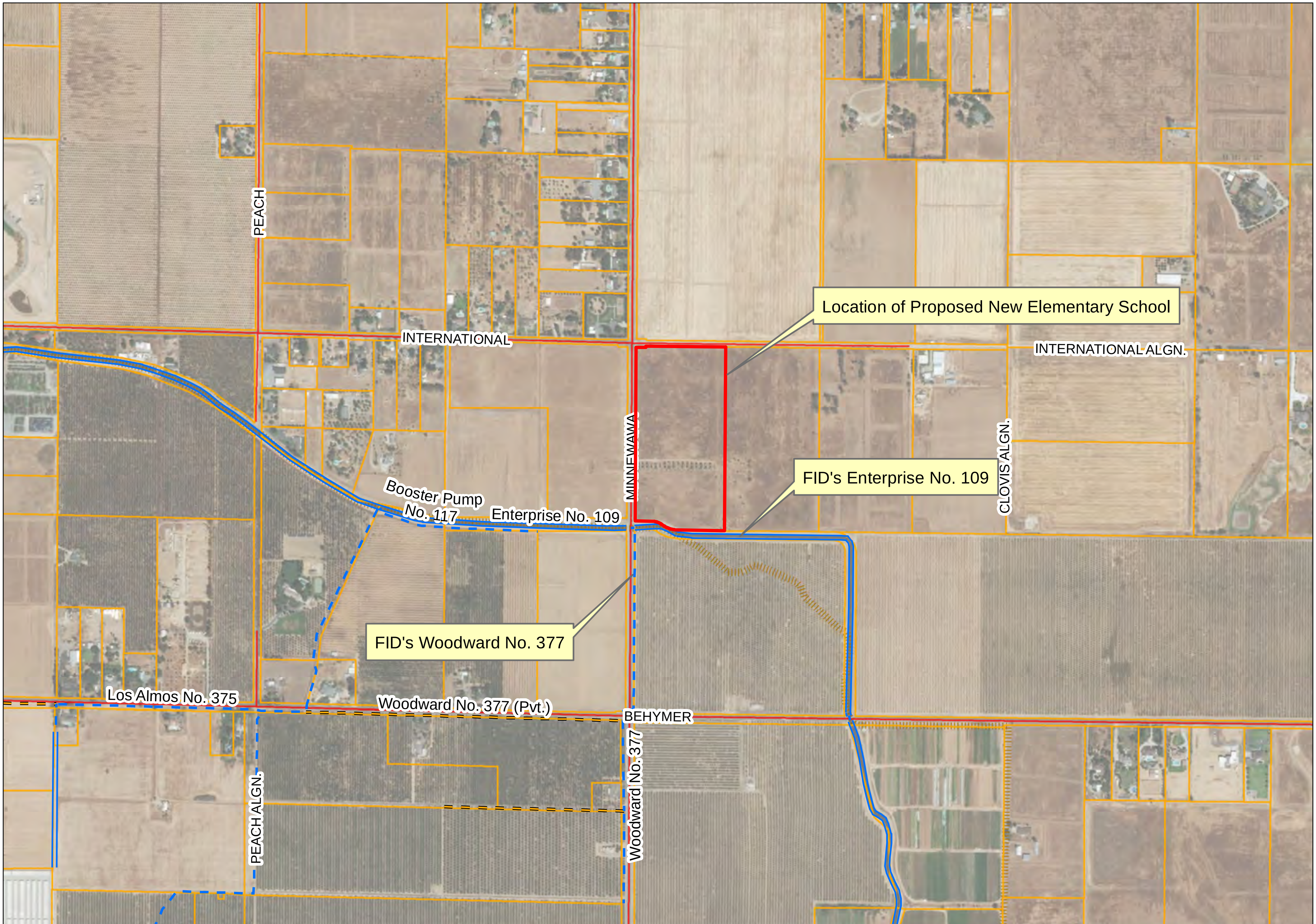
Photo 5 – View south along GWD 16/18-inch pipeline alignment. Minnewawa Avenue at left; project site at background left.

Photo 6 – View north along GWD 16/18-inch pipeline alignment. Minnewawa Avenue at right.

Photo Date: 9-11-18

APPENDIX B

INFORMATION PROVIDED BY FRESNO IRRIGATION DISTRICT



This map was produced by the Fresno Irrigation District and is provided for reference and informational purposes only and is not intended to show map scale accuracy or all inclusive map features, nor for legal purposes. FID makes no statements regarding the accuracy of this map as the features shown are in their approximate location. Please contact the FID Engineering Dept. at (559) 233-7161 for further information on FID facilities.

Legend

- FID Canal
- Private Canal
- Abandoned Canal
- FID Pipeline
- Private Pipeline
- Abandoned Pipeline
- Stream Group
- Other-Creek\River
- Other-Pipeline
- FID Boundary
- Railroad
- Streets & Hwys
- Parcel
- FMFCD Acquired Basins
- FMFCD Proposed Basins

0 445 890 Feet

1 inch = 875.07 feet

Date Saved: 3/21/2018 11:38:26 AM
Path: C:\Users\clundeen\Desktop\2018 Map Template.m

QUESTIONNAIRE FOR HIGH-VOLUME WATER PIPELINE RISK ANALYSIS

SUBJECT PROPERTY: Clovis Unified School District
Proposed Minnewawa/International Elementary School Site, Clovis, Fresno County, Ca

INFORMATION REQUEST:

1. Owner, ID, type (line #, municipal/irrigation water): FID, Woodward No. 377, Irrigation Water
2. Pipeline location (describe right-of-way/alignment) Along Minnewawa Ave south of canal
3. Date of Installation (year): ____
4. Pipeline diameter (inches): 18
5. Construction Material/ Wall Thickness (inches): non-reinforced concrete
6. Depth of Burial (feet) in vicinity of proposed school: 3
7. Operating Pressure (psig): gravity fed; not pressurized
8. Throughput (cfs/gpm): ____
9. Distance to Nearest Pump Stations: ____
10. Distance to Nearest Shutoff Valves: ____
11. Shutoff Valve Type (automated or manual?): ____
12. Estimated time to full shutoff in the event of leak/rupture: 1-2 hours
13. Standard Safety and Inspection Practices: ____
14. Inspection/Testing Results (method, date, etc.): ____
15. History of Incidents, Accidental Releases: ____
16. Estimated volume that could be released in the event of pipeline failure: ____

QUESTIONNAIRE COMPLETED BY:

Name: Christopher Lundeen Signature: telephone interview

Title: Engineering Technician Date: 7/18/18 Phone: 559-233-7161

Company: Fresno Irrigation District Email: ____

RETURN TO: J House Environmental, 371 Nevada Street #7366, Auburn, CA 95604

Ph 530-885-7801, jhouse@jhouseenvironmental.com

QUESTIONNAIRE FOR HIGH-VOLUME WATER PIPELINE RISK ANALYSIS

SUBJECT PROPERTY: Clovis Unified School District
Proposed Minnewawa/International Elementary School Site, Clovis, Fresno County, Ca

INFORMATION REQUEST:

1. Owner, ID, type (line #, municipal/irrigation water): FID Booster Pump No. 117, Irrigation Water
2. Pipeline location (describe right-of-way/alignment) Along south side of Enterprise Canal
3. Date of Installation (year): ____
4. Pipeline diameter (inches): 18
5. Construction Material/ Wall Thickness (inches): non-reinforced concrete
6. Depth of Burial (feet) in vicinity of proposed school: 3
7. Operating Pressure (psig): gravity fed; not pressurized
8. Throughput (cfs/gpm): ____
9. Distance to Nearest Pump Stations: ____
10. Distance to Nearest Shutoff Valves: ____
11. Shutoff Valve Type (automated or manual?): ____
12. Estimated time to full shutoff in the event of leak/rupture: 1-2 hours
13. Standard Safety and Inspection Practices: ____
14. Inspection/Testing Results (method, date, etc.): ____
15. History of Incidents, Accidental Releases: ____
16. Estimated volume that could be released in the event of pipeline failure: ____

QUESTIONNAIRE COMPLETED BY:

Name: Christopher Lundeen Signature: telephone interview

Title: Engineering Technician Date: 7/18/18 Phone: 559-233-7161

Company: Fresno Irrigation District Email: ____

RETURN TO: J House Environmental, 371 Nevada Street #7366, Auburn, CA 95604

Ph 530-885-7801, jhouse@jhouseenvironmental.com

QUESTIONNAIRE FOR HIGH-VOLUME WATER PIPELINE RISK ANALYSIS

SUBJECT PROPERTY: Clovis Unified School District
Proposed Minnewawa/International Elementary School Site, Clovis, Fresno County, Ca

INFORMATION REQUEST:

1. Owner, ID, type (line #, municipal/irrigation water): Private_Woodward No. 377, Irrigation Water_
2. Pipeline location (describe right-of-way/alignment) _Along Behymer Ave__________________
3. Date of Installation (year): ____________________________________
4. Pipeline diameter (inches): ____16______________________________
5. Construction Material/ Wall Thickness (inches): ____non-reinforced concrete___________
6. Depth of Burial (feet) in vicinity of proposed school: ___________________________________
7. Operating Pressure (psig): _gravity fed; not pressurized ___________
8. Throughput (cfs/gpm): ____________________________________
9. Distance to Nearest Pump Stations: _____________________________________
10. Distance to Nearest Shutoff Valves: ______________________________________
11. Shutoff Valve Type (automated or manual?): ______________________________________
12. Estimated time to full shutoff in the event of leak/rupture: _____________________________________
13. Standard Safety and Inspection Practices: ____
14. Inspection/Testing Results (method, date, etc.): ____
15. History of Incidents, Accidental Releases: ____
16. Estimated volume that could be released in the event of pipeline failure: _________________________

QUESTIONNAIRE COMPLETED BY:

Name: _Christopher Lundeen___________ Signature: __telephone interview______________

Title: _Engineering Technician____________ Date: __7/18/18____________ Phone:_559-233-7161__

Company: _Fresno Irrigation District________ Email:_______________________________________

RETURN TO: J House Environmental, 371 Nevada Street #7366, Auburn, CA 95604

Ph 530-885-7801, jhouse@jhouseenvironmental.com

APPENDIX C

INFORMATION PROVIDED BY GARFIELD WATER DISTRICT

DENNIS R. KELLER
CONSULTING CIVIL ENGINEER, INC.
JAMES H. WEGLEY
CONSULTING CIVIL ENGINEER, INC.
JAMES A. BLAIR, R.C.E.
EDWARD D. GLASS, JR., R.C.E.

DENNIS R. KELLER
JAMES H. WEGLEY
CONSULTING ENGINEERS

209 SOUTH LOCUST STREET
P.O. BOX 911
VISALIA, CALIFORNIA 93279-0911
PHONE 559/732-7938
FAX 559/732-7937
KELWEG1@AOL.COM

August 24, 2018

Ms. Jackie House
J House Environmental, Inc.
371 Nevada Street #7366
Auburn, CA 95604

RE: PROPOSED CLOVIS UNIFIED SCHOOL DISTRICT ELEMENTARY SCHOOL

Dear Jackie:

This letter is being transmitted in response to your email request dated July 18, 2018, for information for the proposed Clovis Unified School District's elementary school located at the southeast corner of the intersection of Minnewawa and International Avenues. Your request states that the California Department of Education requires that, as part of the school siting evaluation, all "high-volume" (12-inch diameter or greater) water pipelines located within 1,500 feet of the project site be identified. Through prior communication you identified the proposed project will be located on APN 580-080-16S and an approximately three (3) acre segment of APN 580-080-02S. Both of these parcels have been identified as parcels located within the boundaries of the Garfield Water District (District).

In response to your request, we offer the following:

General
1. The subject portion of the District's distribution system was constructed in the early 1960's; and
2. The District holds easements for all facilities of its distribution system.

APN 580-080-16S

1. The District's Lateral No. 8 water pipeline, a 14-inch precast concrete pipeline, is located approximately thirty (30) feet south of the centerline of International Avenue;
2. The District's Lateral No. 8 water meter is located in the Northwest corner of the parcel; and
3. The District holds a twenty (20) foot easement for said pipeline.

APN 580-080-02S

1. The District's Lateral No. 8 water pipeline, a 14-inch precast concrete pipeline, is located approximately thirty (30) feet south of the centerline of International Avenue;
2. The District has an inactive water meter located approximately 1,082 feet east of the intersection of Minnewawa and International Avenues; and
3. The District holds a twenty (20) foot easement for said pipeline.

Within 1,500 Feet of the Proposed Project Site

1. The District's Lateral No. 8 water pipeline, a 14-inch precast concrete pipeline, is located approximately thirty (30) feet south of the centerline of International Avenue to a point 1,267 feet east of the intersection of Minnewawa and International Avenues. From said point, the Lateral No. 8 water pipeline is located approximately twenty-two (22) feet south of the centerline of International Avenue to a point 2,230 feet east of the intersection of Minnewawa and International Avenues;
2. The District's Lateral No. 7 water pipeline, a 12-inch precast concrete pipeline, is located approximately thirty (30) feet south of the centerline of International Avenue, beginning at the District's main water pipeline, located thirty (30) feet west of the centerline of Minnewawa Avenue, to a point 1,421 feet west of said main water pipeline; and
3. The portion of the District's main water pipeline that is located west of Minnewawa Avenue between Copper and International Avenues is an 18-inch precast concrete pipeline from a point approximately thirty (30) feet south of Copper Avenue to a point 1,314 feet south. From said point, the main water pipeline is a 16-inch precast concrete pipeline to its distribution point for Laterals No. 7 and No. 8, a length of approximately 1,334 feet.

For reference, we have enclosed a location map of the District's distribution system. Please notify our office should you have any questions regarding the above.

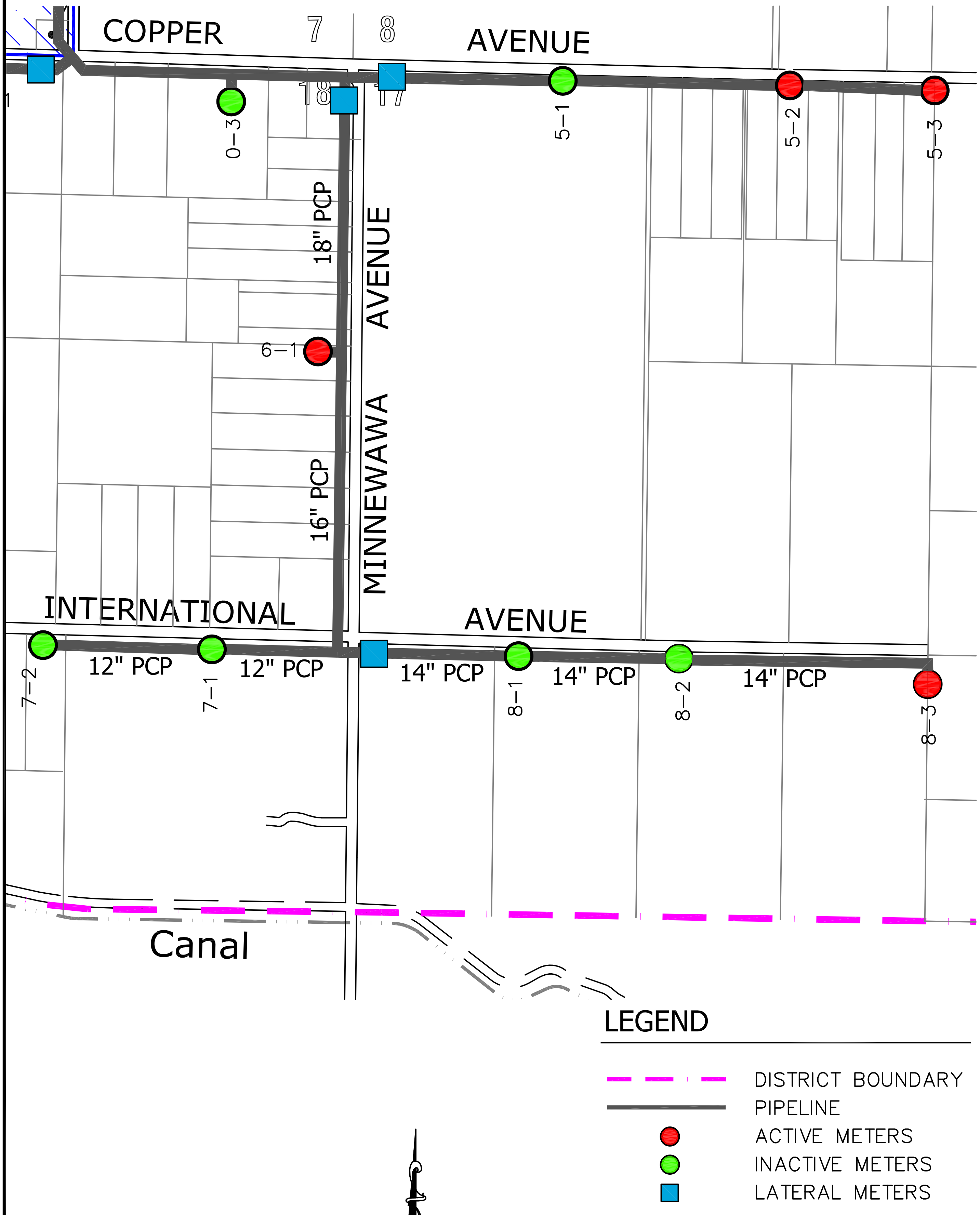
Very truly yours,

Nicholas

Nicholas I. Keller
Staff Engineer

cc: Mr. Paul Woodworth, Garfield WD via email

FIGURE 1



LOCATION MAP

DISTRIBUTION SYSTEM

GARFIELD WATER DISTRICT

L:\Garfield WD\dwg\Distribution System - CUSD.dwg

KELLER/WEGLEY

APPENDIX D

CDE STANDARD PIPELINE REPORTING FORMS

California Department of Education
CCR, Title 5, Pipeline Risk Analysis Report
Form 1 – Administrative, Summary, and Signature Form

Local Educational Agency						
Date	September 18, 2018					
Local Educational Agency	Clovis Unified School District					
Contact	Mr. Kevin Peterson Assistant Superintendent, Facility Services					
Telephone Number						
E-mail Address	KevinPeterson@clovisusd.k12.ca.us					
Street Address	1450 Herndon Avenue					
Department or Mail Drop						
City	Clovis					
County	Fresno					
Zip Code	93611					
Proposed School Campus Site						
Name	Minnewawa-International Elementary School Site					
Location Description	Located southeast of the intersection of Minnewawa Avenue and International Avenue in Clovis, Fresno County, California.					
Pipeline of Interest						
Operator / Owner	Garfield Water District					
Product Transported	Irrigation Water					
Pipeline Diameter (inches)	12/14 Inch					
Operating Pressure (psig)	Gravity fed					
Closet Approach to Property Line (or boundary between the usable and unusable portion of the site if the unusable portion faces the pipeline.) (ft)	Traverses northern edge of project site.					
Individual Risk Estimate Result – NOT APPLICABLE						
Type of Analysis (Check One)	**Stage 1 →**		**Stage 2 →**	**X**	**Stage 3 →**	
Individual Risk Estimate Value						
Individual Risk Criterion						
IR Significance (check one)	**Significant**					
	Insignificant					

(Continued on next page)

Population Risk Indicator Result	
Protocol Average IR	
IR Indicator (Average IR / Property Line IR Ratio)	
Population Risk Indicator	

Prevention Measures:

The Garfield Water District pipeline is operated in accordance with State regulations and industry standards designed to prevent accidental release and ensure public health and safety.

Mitigation Measures:

It is recommended that site development plans take the presence of the high-volume irrigation water supply pipeline into consideration with the goal of minimizing student and staff use of areas within 20 feet of the pipeline alignment. Areas in closest proximity to the pipeline should be considered for low average occupancy level uses, such as parking lots, or designated as landscaped "buffer" areas to help mitigate potential physical impacts in the unlikely event of a catastrophic pipeline rupture. It is suggested that any emergency plan documents prepared for the site identify the presence of the pipeline and include an emergency contact list with phone numbers to be used in the event of an incident.

Conclusions/Other Suggestions/Recommendations *(Add more sheets, if needed.)*

The risk analysis indicates that the northern portion of the proposed school site could be subject to physical impact in the event of failure of the GWD irrigation water pipeline that traverses this portion of the site. Physical impacts would be greatest within approximately 20 feet of the pipeline alignment. It is recommended that site development plans take the presence of the high-volume irrigation water supply pipeline into consideration with the goal of minimizing student and staff use of areas within 20 feet of the pipeline alignment. Areas in closest proximity to the pipeline should be considered for low average occupancy level uses, such as parking lots, or designated as landscaped "buffer" areas to help mitigate potential physical impacts in the unlikely event of a catastrophic pipeline rupture.

In the event of a pipeline incident, released water would be expected to flow southwestward across much of the project site. However, the depth of water would not be expected to exceed 0.5 to 1.0 feet. Therefore, potential inundation at the project site is not considered to pose a significant safety hazard.

To provide an added degree of risk management, it is suggested that any emergency plan documents prepared for the project site identify the presence of the pipeline and include an emergency contact list to be used in the event of an incident.

This analysis does not address geotechnical or structural engineering requirements that may be associated with new construction in proximity to the buried irrigation pipeline that traverses the northern edge of the project site.

Certification and Signatures of Risk Analyst(s)

This analysis was conducted according to the 2007 CDE Protocol except as noted. All modifications within the Stage 2 framework, and Stage 3 analyses and exceptions to the data and processes established in the 2007 CDE Protocol, if any, were based upon my professional opinion and in a manner consistent with the standards of care and skill ordinarily exercised by professionals working on similar projects.

I certify that the estimated risk levels were derived based upon the 2007 CDE Protocol, unless otherwise noted, and that these levels demonstrate, within reasonable expectations of uncertainties for such estimates, that the estimated Individual Risk for the school site, as the site was planned at the time of this analysis, including mitigation measures, if any, meets the Individual Risk Criterion stated in the 2007 CDE Protocol, based on the information provided to me.

Printed Name	Signature	Position or Title
Jackie House	Jackie House	Principal Geologist

Notice: In the event that the Individual Risk Criterion could not be met, at the option of the LEA, CDE will still accept a report for review and consultation with the LEA.

REGISTERED GEOLOGIST
JACQUELYN HOUSE
No. 4221
exp 3/20
STATE OF CALIFORNIA

California Department of Education
CCR, Title 5, Pipeline Risk Analysis Report
Form 2 - Pipeline Risk Analysis Input Data

Date: September 18, 2018		
Local Educational Agency: Clovis Unified School District		
Proposed School Site Name: Minnewawa-International Elementary School Site		
Proposed School Estimated Population: Approximately 800		
Product	*Designate by an "X"*	
Natural gas (NG)		
Crude oil		
Gasoline		
Liquefied natural gas (LNG)		
Liquefied petroleum gas (LPG)		
Natural gas liquids (NGL)		
Other refined product (specify)		
Other substance (specify)	X	Water
Pipeline Location Attributes	**Units**	**Value**
Segment length	Ft	
Closest approach to property line	Ft	
Closest approach to usable portion of the school site	ft	0
Land use by class location (49 CFR Part 192)	Class	
Pipeline Attributes		
Diameter	inches	12/14
Maximum operating pressure	psig	Gravity fed
Average operating pressure	psig	Gravity fed
Depth of burial	ft	
Distance to nearest compressor (gas) or pump station (liquid)	miles	
Throughput		
Liquid (enter value, meter, etc.)	gpm	
Nearest block valve locations, upstream and downstream of segment of concern		
Above ground components within 1500-ft zone		
Number		
Type		
Pipeline location on terrain gradient relative to school (Designate with an "X" by appropriate description)		
Flat		X
Up gradient		X
Down gradient		
"Convoluted"		

California Department of Education
CCR, Title 5, Pipeline Risk Analysis Report
Form 1 – Administrative, Summary, and Signature Form

Local Educational Agency	
Date	September 18, 2018
Local Educational Agency	Clovis Unified School District
Contact	Mr. Kevin Peterson Assistant Superintendent, Facility Services
Telephone Number	
E-mail Address	KevinPeterson@clovisusd.k12.ca.us
Street Address	1450 Herndon Avenue
Department or Mail Drop	
City	Clovis
County	Fresno
Zip Code	93611
Proposed School Campus Site	
Name	Minnewawa-International Elementary School Site
Location Description	Located southeast of the intersection of Minnewawa Avenue and International Avenue in Clovis, Fresno County, California.
Pipeline of Interest	
Operator / Owner	Garfield Water District
Product Transported	Irrigation Water
Pipeline Diameter (inches)	16/18 Inch
Operating Pressure (psig)	Gravity fed
Closet Approach to Property Line (or boundary between the usable and unusable portion of the site if the unusable portion faces the pipeline.) (ft)	Approximately 60 ft

Individual Risk Estimate Result – NOT APPLICABLE						
Type of Analysis (Check One)	**Stage 1 →**		**Stage 2 →**	**X**	**Stage 3 →**	
Individual Risk Estimate Value						
Individual Risk Criterion						
IR Significance (check one)	**Significant**					
	Insignificant					

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California Department of Education
CCR, Title 5, Pipeline Risk Analysis Report
Form 1 – Administrative, Summary, and Signature Form
(Continued from previous page)

Population Risk Indicator Result	
Protocol Average IR	
IR Indicator (Average IR / Property Line IR Ratio)	
Population Risk Indicator	

Prevention Measures:

The Garfield Water District pipeline is operated in accordance with State regulations and industry standards designed to prevent accidental release and ensure public health and safety.

Mitigation Measures:

It is suggested that any emergency plan documents prepared for the site identify the presence of the pipeline and include an emergency contact list with phone numbers to be used in the event of an incident.

Conclusions/Other Suggestions/Recommendations *(Add more sheets, if needed.)*

The risk analysis indicates that in the event of a release from the subject pipeline, a small portion of the discharged water may potentially flow onto the northwesternmost corner of the proposed school site. However, the depth of water would not be expected to exceed 0.5 to 1.0 feet. Therefore, potential inundation at the project site is not considered to pose a significant safety hazard.

To provide an added degree of risk management, it is suggested that any emergency plan documents prepared for the project site identify the presence of the pipeline and include an emergency contact list to be used in the event of an incident.

Certification and Signatures of Risk Analyst(s)

This analysis was conducted according to the 2007 CDE Protocol except as noted. All modifications within the Stage 2 framework, and Stage 3 analyses and exceptions to the data and processes established in the 2007 CDE Protocol, if any, were based upon my professional opinion and in a manner consistent with the standards of care and skill ordinarily exercised by professionals working on similar projects.

I certify that the estimated risk levels were derived based upon the 2007 CDE Protocol, unless otherwise noted, and that these levels demonstrate, within reasonable expectations of uncertainties for such estimates, that the estimated Individual Risk for the school site, as the site was planned at the time of this analysis, including mitigation measures, if any, meets the Individual Risk Criterion stated in the 2007 CDE Protocol, based on the information provided to me.

Printed Name	Signature	Position or Title
Jackie House	Jackie House	Principal Geologist

Notice: In the event that the Individual Risk Criterion could not be met, at the option of the LEA, CDE will still accept a report for review and consultation with the LEA.

REGISTERED GEOLOGIST
JACQUELYN HOUSE
No. 4221
Exp 3/20
STATE OF CALIFORNIA

California Department of Education
CCR, Title 5, Pipeline Risk Analysis Report
Form 2 - Pipeline Risk Analysis Input Data

Date: September 18, 2018		
Local Educational Agency: Clovis Unified School District		
Proposed School Site Name: Minnewawa-International Elementary School Site		
Proposed School Estimated Population: Approximately 800		
Product	*Designate by an "X"*	
Natural gas (NG)		
Crude oil		
Gasoline		
Liquefied natural gas (LNG)		
Liquefied petroleum gas (LPG)		
Natural gas liquids (NGL)		
Other refined product (specify)		
Other substance (specify)	X	Water
Pipeline Location Attributes	**Units**	**Value**
Segment length	Ft	
Closest approach to property line	Ft	
Closest approach to usable portion of the school site	ft	60
Land use by class location (49 CFR Part 192)	Class	
Pipeline Attributes		
Diameter	inches	16/18
Maximum operating pressure	psig	Gravity fed
Average operating pressure	psig	Gravity fed
Depth of burial	ft	
Distance to nearest compressor (gas) or pump station (liquid)	miles	
Throughput		
Liquid (enter value, meter, etc.)	gpm	
Nearest block valve locations, upstream and downstream of segment of concern		
Above ground components within 1500-ft zone		
Number		
Type		
Pipeline location on terrain gradient relative to school (Designate with an "X" by appropriate description)		
Flat		X
Up gradient		X
Down gradient		
"Convoluted"		